

R E P O R T

FROM THE

SELECT COMMITTEE

ON

**POSTAGE LABEL STAMPS;**

*TOGETHER WITH THE*

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND INDEX.

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*Ordered, by The House of Commons, to be Printed,*  
*21 May 1852.*

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*Martis, 16° die Martii, 1852.*

*Ordered, THAT* a Select Committee be appointed to inquire and report upon the present mode of Engraving, Printing and Gumming the Postage Label Stamps; and likewise whether and how the Perforating Machine invented by the Patentee could be applied to the same with advantage to the public.

*Lunæ, 22° die Martii, 1852.*

Committee nominated, of—

Mr. Muntz.	Mr. Mostyn.
The Marquis of Chandos.	Mr. Hodgson.
Mr. Cornwall Lewis.	Mr. Henry Drummond.
Mr. Mowatt.	Mr. John Greene.
Mr. Grogan.	Mr. Ormsby Ore.
Mr. Geach.	Mr. Spooner.
Sir John Tyrell.	Lord Alfred Paget.
Mr. Rich.	

*Ordered, THAT* the Committee have power to send for Persons, Papers, and Records.

*Ordered, THAT* Five be the Quorum of the Committee.

*Martis, 6° die Aprilis, 1852.*

*Ordered, THAT* the Petition of Charles Maybury Archer to be examined before the Committee, be referred to the said Committee.

*Martis, 11° die Maii, 1852.*

*Ordered, THAT* the Return (presented 21st July 1851) on Postage Stamps, be referred to the Committee.

*Veneris, 21° die Maii, 1852.*

*Ordered, THAT* the Committee have power to Report their Observations, together with the Minutes of Evidence taken before them, to The House.

REPORT - - - - -	p. iii
PROCEEDINGS OF THE COMMITTEE -	p. v
MINUTES OF EVIDENCE - - - - -	p. 1
INDEX - - - - -	p. 223

## R E P O R T.

**THE SELECT COMMITTEE** appointed to inquire and report upon the present mode of Engraving, Printing, and Gumming the **POSTAGE LABEL STAMPS**, and likewise whether and how the Perforating Machine invented by the Patentee could be applied to the same with Advantage to the Public, to whom a Petition of Charles Maybury Archer was referred, and also a Return to an Order of The House, ordered to be printed 24th July 1851, and who were empowered to Report their observations, together with the Minutes of Evidence taken before them, to The House:—**HAVE** considered the Matters to them referred, and have agreed to the following **REPORT**:—

**Y**OUR Committee have examined numerous witnesses upon the subjects submitted to their consideration, and are unanimously of opinion that the perforating of the Postage Stamps would be a great convenience and advantage to the public.

Your Committee are further of opinion that it would be for the general benefit that the machine for perforating Postage Label Stamps, constructed by Mr. Archer, and his rights as patentee, should be purchased for the use of the public. They therefore recommend that a negotiation should be opened with Mr. Archer by the proper department of the Government for this purpose, and that if he be willing to part with his machine and his rights as a patentee, such a reasonable compensation (to be paid in the manner to be agreed upon) as the Government shall determine, shall be assigned to him, either by absolute purchase or by a percentage on the amount of perforated Stamps sold.

Your Committee beg leave to call the attention of The House to the opinion contained in the Report of the Commissioners of Inland Revenue, dated 27th August 1850, that the application of the perforating machine would afford

Return ordered to be printed, 24th July 1851.

additional security against forgery, inasmuch as the accurate perforation of counterfeit sheets would be a work of great difficulty, and sheets not accurately perforated would at once excite suspicion if offered for sale.

With regard to printing the Postage Labels, much conflicting evidence has been given as to the greater or less security against forgery afforded by copper-plate engraving than by surface printing. Your Committee does not feel qualified to pronounce a decision on this technical point, but since it is stated by all the witnesses that considerable saving might be effected by the adoption of surface printing, the subject appears worthy of being referred to the investigation of competent persons.

Your Committee find that the Labels are now printed by Messrs. Bacon & Petch, under a contract dated 27th August 1851, and made for five years, computed from 5th July 1851; And it has appeared to Your Committee that an inaccuracy exists in the Return made to the House of Commons, and ordered to be printed 24th July 1851, wherein it is stated that the above-mentioned agreement would be the same in all respects, except the reduction in price, as the previous agreement of 5th May 1843; whereas this last agreement was determinable by the Commissioners at pleasure. Your Committee regret that this inaccuracy should have occurred, as although they do not consider it to have been intentional, some persons appear to have been misled by it, and thereby prevented from taking measures to bring the subject earlier under the consideration of Parliament.

Your Committee are also of opinion, that a tender having been made by Mr. Archer for printing, gumming, and perforating the Postage Label Stamps for a smaller sum than was at the time of such tender paid for engraving, printing, and gumming the same, it was inexpedient to communicate the terms of such tender to any other person who may have been a contractor, or may have proposed to become a contractor for such work.

Your Committee are further of opinion, that in the renewal of the contract lately made with Messrs. Bacon & Petch, it was not necessary to make it for a term of five years, and that neither the interest nor the convenience of the public was thereby secured.

21 *May* 1852.

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 PROCEEDINGS OF THE COMMITTEE.
 

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*Mercurii, 23<sup>o</sup> die Martii, 1852.*

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## MEMBERS PRESENT:

Sir John Tyrell.	Mr. Ormsby Gore.
Marquis of Chandos.	Mr. Geach.
Mr. Hodgson.	Mr. John Greene.
Mr. Spooner.	Mr. Muntz.

Mr. MUNTZ called to the Chair.

The Committee deliberated on their course of proceeding.

[Adjourned till Friday next, at One o'clock.]

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*Veneris, 26<sup>o</sup> die Martii, 1852.*

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## MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. Grogan.	Mr. Spooner.
Mr. Ormsby Gore.	Mr. Rich.
Marquis of Chandos.	Sir John Tyrell.
Mr. Hodgson.	Mr. Geach.
Mr. John Greene.	Mr. Henry Drummond.

Mr. *Henry Archer* examined.

[Adjourned till Monday next, at half-past Twelve o'clock.]

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*Lunæ, 29<sup>o</sup> die Martii, 1852.*

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## MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. Mostyn.	Mr. Rich.
Mr. Spooner.	Mr. Grogan.
Marquis of Chandos.	Mr. Ormsby Gore.
Mr. John Greene.	Mr. Henry Drummond.
Sir John Tyrell.	Mr. Geach.

Mr. *R. E. Branston* examined.  
 Mr. *Edwin Hill* examined.

[Adjourned till to-morrow, Tuesday, 30th, at One o'clock.]

*Martis, 30<sup>o</sup> die Martii, 1852.*

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MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Sir John Tyrell.		Mr. Mostyn.
Marquis of Chandos.		Mr. Grogan.
Mr. John Greene.		Mr. Rich.
Mr. Spooner.		Mr. Ormsby Gore.

Mr. *Edwin Hill* further examined.

Mr. *Rowland Hill* examined.

Mr. *Henry Archer* examined.

[Adjourned till Friday next, at half-past Twelve o'clock.]

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*Veneris, 2<sup>o</sup> die Aprilis, 1852.*

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MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. John Greene.		Mr. Geach.
Mr. Grogan.		Mr. Spooner.
Mr. Rich.		Sir John Tyrell.
Marquis of Chandos.		Mr. Ormsby Gore.

Mr. *Cooper* examined.

Mr. *Addenbroke* examined.

[Adjourned till Tuesday, 20th April, at Twelve o'clock.]

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*Martis, 20<sup>o</sup> die Aprilis, 1852.*

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MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. Henry Drummond.		Sir John Tyrell.
Mr. Rich.		Mr. Mostyn.
Mr. Cornwall Lewis.		Mr. Spooner.
Mr. John Greene.		Marquis of Chandos.
Mr. Mowatt.		

Mr. *J. B. Bacon* examined.

[Adjourned till Tuesday next, 27th, at Twelve o'clock.]

*Martis, 27<sup>o</sup> die Aprilis, 1852.*

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## MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Sir John Tyrell.  
Mr. Cornwall Lewis.  
Mr. Spooner.  
Mr. Rich.  
Mr. Mowatt.  
Mr. Geach.

Mr. Grogan.  
Mr. Mostyn.  
Marquis of Chandos.  
Mr. Ormsby Gore.  
Mr. John Greene.

Mr. *Wickham* examined.Mr. *Coe* examined.Mr. *Keogh* examined.Mr. *Charles Maybury Archer* examined.

The Chairman was instructed to prepare a Draft Report.

[Adjourned till Tuesday next, at One o'clock.]

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*Martis, 4<sup>o</sup> die Maii, 1852.*

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## MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. Spooner.

Mr. Rich.

*Jovis, 6<sup>o</sup> die Maii, 1852.*

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## MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. Spooner.  
Mr. Grogan.  
Sir John Tyrell.  
Mr. Ormsby Gore.  
Mr. Henry Drummond.

Mr. John Greene.  
Marquis of Chandos.  
Mr. Mowatt.  
Mr. C. Lewis.  
Mr. Rich.

Motion made, and question proposed (Marquis of *Chandos*), "That the Committee do now proceed to the consideration of the Draft Report prepared by the Chairman." Amendment proposed (Mr. *John Greene*), to leave out from "That" to the end of the question,

tion, in order to add the words, "forged postage labels having, to Mr. John Greene's knowledge, passed through the post without detection, Mr. John Greene be examined thereon." Question, "That the words proposed to be left out stand part of the question," put. Committee divided.

Ayes, 4.  
Mr. Spooner.  
Mr. Mowatt.  
Sir John Tyrell.  
Mr. Ormsby Gore.

Noes, 2.  
Mr. John Greene.  
Mr. Grogan.

Original question put, and agreed to.

Draft Report read a first time, as follows:—

"Your Committee have examined numerous witnesses upon the subjects submitted to their consideration, and are unanimously of opinion that the perforating of the Postage Stamps would be a great convenience and advantage to the public.

"Your Committee are of opinion that the present expensive mode of printing the Labels by copper-plate engraving does not afford any greater security against forgery than surface printing; and that as a large reduction in the cost of them might be effected by a change in the present system, they recommend the evidence upon these points to the serious attention of the Government.

"Your Committee find that the Labels are now printed by Messrs. Bacon & Petch under a contract dated 27th August 1851, and made for five years, computed from 5th July 1851; And it has appeared to Your Committee that an inaccuracy exists in the Return made to the House of Commons, and ordered to be printed 24th July 1851, wherein it is stated that the above-mentioned agreement would be the same in all respects, except the reduction in price, as the previous agreement of 5th May 1843; whereas this last agreement was determinable by the Commissioners at pleasure."

Question, "That the Draft Report be read a second time, paragraph by paragraph," put and agreed to.

Paragraph 1. Read and agreed to.

Motion made, and question proposed (Mr. C. Lewis.), "Your Committee are further of opinion that it would be for the general benefit that the machine for perforating Postage Label Stamps, constructed by Mr. Archer, and his rights as patentee, should be purchased for the use of the public. They therefore recommend that a negotiation should be opened with Mr. Archer by the proper department of the Government for this purpose, and that if he be willing to part with his machine, and his rights as patentee, such a reasonable compensation (to be paid him in the manner to be agreed upon) as the Government shall determine, shall be assigned to him." Amendment proposed (Mr. Grogan), after the words "in the manner," to leave

leave out the word "to." Question, That the word "to" stand part of the question, put. Committee divided.

Ayes, 6.  
Mr. C. Lewis.  
Mr. Rich.  
Mr. Spooner.  
Marquis of Chandos.  
Sir J. Tyrell.  
Mr. Henry Drummond.

Noes, 4.  
Mr. John Greene.  
Mr. Mowatt.  
Mr. Grogan.  
Mr. Ormsby Gore.

Another amendment proposed (Mr. *Spooner*), to add at the end of the question the words "either by absolute purchase, or by a percentage on the amount of perforated stamps sold."

[Adjourned till Monday next, at One o'clock.]

*Lunæ, 10<sup>o</sup> die Maii, 1852.*

MEMBERS PRESENT:

Mr. MUNTZ in the Chair.

Mr. Spooner.  
Mr. Grogan.  
Mr. Ormsby Gore.  
Marquis of Chandos.

Mr. C. Lewis.  
Mr. Rich.  
Mr. Mowatt.

The amendment to the question proposed by Mr. Spooner at the last sitting of the Committee, further considered.

Question, "That those words be there added," put and agreed to.

Main question, as amended, put, and agreed to. Paragraph inserted.

Motion made (Mr. *Grogan*), and question proposed: "Your Committee beg leave to call the attention of The House to the opinion contained in the Report of the Commissioners of Inland Revenue, dated 27 August 1850, that the application of the perforating machine would afford additional security against forgery, inasmuch as the accurate perforation of counterfeit sheets would be a work of great difficulty, and sheets not accurately perforated would at once excite suspicion if offered for sale."

Question put and agreed to. Paragraph inserted.

Paragraph beginning "Your Committee are," read.

Question, "That this paragraph stand part of the Report," put. Committee divided.

Ayes, 3.  
Mr. John Greene.  
Mr. Grogan.  
Mr. Ormsby Gore.

Noes, 4.  
Mr. C. Lewis.  
Mr. Rich.  
Mr. Spooner.  
Marquis of Chandos.

Paragraph struck out.

Motion made (*Mr. Rich*), and question proposed: "With regard to printing the postage labels, much conflicting evidence has been given as to the greater or less security against forgery afforded by copper-plate engraving than by surface printing. Your Committee does not feel qualified to pronounce a decision on this technical point, but since it is stated by all the witnesses that considerable saving might be effected by the adoption of surface printing, the subject appears worthy of being referred to the investigation of competent persons."

Amendment proposed (*Mr. Grogan*), to leave out from "printing" to the end of the question. Question, "That the words proposed to be left out stand part of the question," put. Committee divided.

Ayes, 5. Mr. C. Lewis. Mr. Rich. Mr. Spooner. Marquis of Chandos. Mr. Ormsby Gore.		Noes, 2. Mr. John Greene. Mr. Grogan.
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Original question put and agreed to. Paragraph inserted.

Paragraph beginning "Your Committee find," read. Motion made (*Marquis of Chandos*), and question proposed, to add at the end of the paragraph the words: "Your Committee regret that this inaccuracy should have occurred, as although they do not consider it to have been intentional, some persons appear to have been misled by it, and thereby prevented from taking measures to bring the subject earlier under the consideration of Parliament." Question put and agreed to. Question, that "The paragraph as amended stand part of the Report," put and agreed to.

Motion made (*Mr. Grogan*), and question put: "Your Committee are also of opinion, that a tender having been made by Mr. Archer for printing, gumming, and perforating the Postage Label Stamps for a smaller sum than was at the time of such tender paid for engraving, printing, and gumming the same, it was inexpedient to communicate the terms of such tender to any other person who may have been a contractor, or may have proposed to become a contractor for such work."

Committee divided.

Ayes, 4. Mr. Grogan. Mr. John Greene. Mr. Mowatt. Mr. Ormsby Gore.		Noes, 4. Marquis of Chandos. Mr. Spooner. Mr. Rich. Mr. C. Lewis.
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The voices being equal, the Chairman gave his vote with the Ayes. Paragraph inserted.

[Adjourned till Friday next, at Two o'clock.

*Veneris,*

*Veneris, 14<sup>o</sup> die Maii, 1852.*

MEMBERS PRESENT :

Mr. MUNTZ in the Chair.

Mr. Mostyn.  
Mr. Grogan.  
Mr. Mowatt.  
Sir John Tyrell.

Mr. John Greene.  
Mr. Ormsby Gore.  
Mr. Geach.

The Committee deliberated.

[Adjourned till Friday, 21st, 1852.]

*Veneris, 21<sup>o</sup> die Maii, 1852.*

MEMBERS PRESENT :

Mr. MUNTZ in the Chair.

Mr. John Greene.  
Sir John Tyrell.  
Mr. Mostyn.  
Mr. Ormsby Gore.  
Mr. Geach.

Marquis of Chandos.  
Mr. C. Lewis.  
Mr. Mowatt.  
Mr. Grogan.

Draft Report further considered.

Motion made (Mr. *Mowatt*), and question proposed: "Your Committee are further of opinion, that the circumstances of the case do not appear to them to have justified the Board of Inland Revenue in setting aside the lower tender of Mr. Archer—including, as it did, the offer to perforate the Stamps without any additional charge—in favour of the higher and less desirable tender of Messrs. Bacon & Petch, and without making any provision for obtaining for the public the advantage of having the Stamps perforated."

Amendment proposed (Mr. *Geach*), to leave out from "Your Committee" to the end of the question, in order to add the words:—"Are of opinion, that in the renewal of the contract lately made with Messrs. Bacon & Petch, it was not necessary to make it for a term of five years, and neither the interest nor the convenience of the public was thereby secured."

Question, "That the words proposed to be left out stand part of the question," put. Committee divided.

Ayes, 4.  
Mr. John Greene.  
Mr. Mowatt.  
Mr. Grogan.  
Mr. Ormsby Gore.

Noes, 5.  
Mr. C. Lewis.  
Marquis of Chandos.  
Mr. Mostyn.  
Sir John Tyrell.  
Mr. Geach.

Words struck out,

386.

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Question,

Question, "That the words proposed be added," put. Committee divided.

Ayes, 6.  
 Mr. John Greene.  
 Mr. Mowatt.  
 Sir John Tyrell.  
 Mr. Grogan.  
 Mr. Ormsby Gore.  
 Mr. Geach.

Noes, 3.  
 Mr. C. Lewis.  
 Marquis of Chandos.  
 Mr. Mostyn.

Words added.

Main question, as amended, put, and agreed to. Paragraph inserted.

Motion made (Mr. *Mowatt*), and question put: "Your Committee are further of opinion, that in regranting the said contract to Messrs. Bacon & Peich, without making any provision for acquiring the advantage of having the Stamps perforated, the public interests were not duly considered." Committee divided.

Ayes, 4.  
 Mr. John Greene.  
 Mr. Mowatt.  
 Mr. Grogan.  
 Mr. Ormsby Gore.

Noes, 5.  
 Mr. C. Lewis.  
 Marquis of Chandos.  
 Mr. Mostyn.  
 Sir John Tyrell.  
 Mr. Hodgson.

Question, "That this be the Report of the Committee," put. Committee divided.

Ayes, 6.  
 Mr. John Greene.  
 Mr. Mowatt.  
 Sir John Tyrell.  
 Mr. Grogan.  
 Mr. Ormsby Gore.  
 Mr. Geach.

Noes, 3.  
 Mr. C. Lewis.  
 Marquis of Chandos.  
 Mr. Mostyn.

Question, "That the Chairman do report the evidence to the House," put and agreed to.

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**MINUTES OF EVIDENCE.**

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LIST OF WITNESSES.

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*Veneris, 26° die Martii, 1852.*

Mr. Henry Archer - - - - - p. 1

*Lunæ, 29° die Martii, 1852.*

Mr. Robert Edward Branston - - - - - p. 35

Edwin Hill, Esq. - - - - - p. 54

*Martis, 30° die Martii, 1852.*

Edwin Hill, Esq. - - - - - p. 87

Rowland Hill, Esq. - - - - - p. 92

Mr. Henry Archer - - - - - p. 109

*Veneris, 2° die Aprilis, 1852.*

Edward Cowper, Esq. - - - - - p. 115

Mr. Joseph Addenbrooke - - - - - p. 131

*Martis, 20° die Aprilis, 1852.*

Mr. Joshua Butters Bacon - - - - - p. 149

*Martis, 27° die Aprilis, 1852.*

Henry Lewis Wickham, Esq. - - - - - p. 173

John Coe, Esq. - - - - - p. 176

Henry Hensman, Esq. - - - - - p. 181

Thomas Keogh, Esq. - - - - - p. 188

Mr. Charles Maybury Archer - - - - - p. 220

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## MINUTES OF EVIDENCE.

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*Veneris, 26<sup>o</sup> die Martii, 1852.*

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### MEMBERS PRESENT.

Mr. Spooner.	Mr. Grogan
Mr. Ormsby Gore.	Mr. Rich.
Sir John Tyrrell.	Marquis of Chandos.
Mr. Geach.	Mr. Henry Drummond.
Mr. Hodgson.	Mr. John Greene.

GEORGE FREDERCK MUNTZ, Esq.,  
IN THE CHAIR.

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Mr. *Henry Archer*, called in ; and Examined.

1. *Chairman.*] ARE you the Inventor and Patentee of a plan for perforating the sheets of Postage Labels, so as to effect their instant separation without the aid of any cutting instrument?—Yes.

2. When did you first invent that plan?—In the autumn of 1847.

3. When did you first submit that plan to the Postmaster-general?—I submitted it to the Postmaster-general in the autumn of 1847; I think early in October.

4. Did his Lordship subsequently refer your plan to the practical department of the Post-office?—He referred the plan to the practical department of the Post-office, with the view of ascertaining whether it would, upon public grounds, be desirable to adopt it.

5. And what report did the officers of that department make?—The officers of that department, Mr. Bokenham and Mr. Smith, made the following report: “The machine appears to be a very clever and useful invention; we are thoroughly convinced that postage stamps separated by it, having jagged edges, will adhere to letters far better than those cut from the sheets by knives or scissors; we submit it is most desirable

Mr.  
*H. Archer.*  
26 March  
1852.

Mr.  
H. Archer.  
26 March  
1852.

that the invention be recommended to the notice of the Commissioners of Stamps. (signed) *W. Bokenham. R. Smith.* Inland Office, 14th October 1847." Mr. Bokenham told me, at an interview I had with him, he was very desirous about the sticking of the postage stamps to the letters, as there were upwards of 400 found daily loose in the bags.

6. Mr. *Grogan.*] That had parted from the letters?—That had parted from the letters, through the want of better adhesion; it is considered that the jagged edges would make them stick better.

7. *Chairman.*] Did the Postmaster-general send that report to the Commissioners of Inland Revenue?—Yes.

8. Did the Commissioners of Inland Revenue make any report upon it?—I addressed to them a letter on the 25th of October 1847, in which I stated the terms upon which I was willing to undertake to make a machine for them, in the following words: "So fully confident am I that, if the plan shall be adopted, it will essentially contribute to the efficient working of the postage-stamp system, and prove moreover a great convenience to the public, that I am willing my claims for compensation shall be contingent upon the complete success of the plan; or when it shall have received the unqualified approbation of the public, the Postmaster-general, and Her Majesty's Commissioners of Stamps. I am also willing to furnish the machine, on the understanding I am not to be repaid the money it has cost me until the plan shall have succeeded."

9. What answer did they give you to that?—They replied to me as follows: "Inland Revenue, Somerset House, 17th January 1848. Sir,—The Board having had before them your letter of the 28th October, relative to the machine you have invented for separating postage labels, I am directed to acquaint you that they have been authorised by the Treasury to give a trial to that plan as an experimental measure. By your letter above-mentioned, you stated that you were prepared to supply the machines for the experiment, with the understanding that you were not to be repaid the cost of them until the plan was brought into successful operation: and I am to express the acquiescence of the Board to this arrangement. The machines, when completed, may be sent to Messrs. Bacon and Petch, of Fleet-street, who have received the Board's instructions in the matter. I am, Sir, your obedient servant, *Thomas Keogh.* Henry Archer, Esq."

10. After that you made the machine, I suppose?—I then replied to the Commissioners by stating that although I only proposed

proposed to make one machine, I would, nevertheless, comply with the wishes of the Commissioners, and have two constructed for them. To this communication I received the following reply, dated the 25th of January 1848: "Sir,—Having laid before the Board your letter of the 17th instant, I am directed to acquaint you that they concur in the course which you have taken; but that in order to insure the completeness of the second machine for the purpose in view, it is desirable that you should communicate with Mr. Edwin Hill, and also that the machinists employed should distinctly understand the precise purpose to which each machine is to be applied. I am, sir, your obedient servant, *Thomas Keogh*, Assistant secretary. *Henry Archer, Esq.*"

Mr.  
*H. Archer.*  
—  
26 March  
1852.

11. Had you patented it at that time?—No; but shortly afterwards I did. On the receipt of a letter from Mr. Keogh, I employed an eminent mechanical engineer to construct the machine, according to the plan submitted to the said Commissioners. When the first machine, however, was constructed, it was found upon trial that the piercing rollers (I then proposed to do it by piercing), so wore the table upon which the sheets were laid, it was considered that the wear and tear would be too costly for carrying out the plan with advantage to the public. I was therefore compelled to abandon the plan of punching the sheets by rollers. I subsequently had another puncturing-machine constructed by other parties upon the fly press principle; but finding that the bed of this machine would likewise suffer from the puncturing tools, though in a far less degree than the table of the first machine, I was compelled to abandon this also. For these machines however I have not attempted to make any charge, being precluded from so doing by the arrangements referred to. Notwithstanding these failures, I felt convinced that it was still possible to construct a machine to answer the object designed, freed from such objections. This is the first plan (*producing one*). That was for piercing.

12. And the second plan was for punching?—It was. Notwithstanding these failures, as I have already observed, I felt convinced that it was still possible to construct a machine to answer the object designed, free from such objections, and after several experiments I invented a machine to perforate the sheets by means of short flat-ended steel wires, or punches, fixed vertically over a matrix steel plate, whose holes correspond in position and diameter with the descending punches. Instead of making two such machines, as required by the Commissioners, I, with a view of saving expense in

Mr.  
H. Archer,  
26 March  
1852.

the working, proceeded (with the full sanction of the Commissioners) to construct a double machine for them on the perforating principle. Before the construction of this machine was commenced, I was handed for my guidance a model sheet by the present printers of the postage labels, with a positive assurance that all the sheets printed by them were exactly the same size; I therefore had the machine constructed, to perforate sheets of the same dimensions as the one so furnished to me by the said printers. When the machine, however, was constructed, it appeared, on the occasion it was first tried at Somerset House, that nearly all the sheets were different in size, owing to the plates from which they were printed not being alike; and also in consequence of the unequal shrinking of the paper in drying first after the printing, and secondly, after the gumming. The consequence was, that most of the sheets that were passed through the machine on this occasion, were perforated so much beyond the white lines as to spoil the stamps.

13. Mr. *Grogan.*] Have you any of those spoilt sheets with you?—No, I have not; Mr. Hill has them. The supervisor, Mr. Edwin Hill, therefore, came to the conclusion, that unless an adjusting power could be attached to the machine, to extend or contract the movements to suit the various sizes of the sheets, he did not think it would answer the object for which it was intended. I am free to admit that Mr. Hill, under the circumstances, came to a very proper conclusion.

14. Mr. *Spooner.*] Was the purpose of that statement you have now made to us, at any time communicated to the Commissioners, and if so, when and how?—I forwarded the whole statement to the Treasury in May 1850.

15. Was that correspondence in writing or verbal?—In a memorial.

16. Mr. *O. Gore.*] Do you refer to the memorial at page 22 of the printed papers?—Yes.

17. Mr. *Spooner.*] Were the Commissioners of Inland Revenue made acquainted from time to time with the various experiments you were making?—There was nothing done without their sanction; and in reference to the objections referred to, I stated distinctly in the memorial that Mr. Hill, admitting the reasonableness of my objections, proposed with his usual straightforwardness to accompany me and the machinist (who was cognizant of the facts referred to) to Mr. Keogh, the secretary of the Commissioners of Stamps and Taxes, with a view of ascertaining whether, under the circumstances,

stances, he would permit the machine to be tried at Somerset House, instead of at the establishment of the said printers. Mr. Keogh, conceiving that it was due, both to the public and to me, to secure that the machine should have a fair trial frankly stated that he would bring the matter before the Commissioners the first opportunity, with a view of obtaining their consent to have the machine worked at Somerset House under Mr. Hill's superintendence. A few days after this interview, Mr. Hill, having received the Commissioners' permission, requested me to forward the machine for use to Somerset House. I did so, and there it has been ever since.

18. Mr. *Grogan*.] With reference to the question that was put to you, as to the facts that you have now laid before the Committee bearing upon the knowledge of the Commissioners or their secretary at Somerset House, when were these experiments which you have detailed to us carried on?—Some of them were carried on at the premises of my mechanical engineer, and also at Somerset House; the greater part of them were at Somerset House; the difficult part.

19. You have frequently mentioned Mr. Hill, what office does he hold?—He is the supervisor; in fact, his is the practical department, and I consider him a very valuable officer. He is the brother of Mr. Rowland Hill.

20. He is a Government officer?—Yes.

21. And those experiments you have detailed to us, were they carried on in his presence?—He used to come there two or three times a week, and was very anxious to see it completed.

22. Mr. *Ormsby Gore*.] Were they carried on in his presence?—Not always in his presence, but with his concurrence.

23. Marquis of *Chandos*.] Were they carried on in his presence?—Not always, but he was very anxious about it.

24. Sir *J. Tyrrell*.] He was cognizant of the whole thing?—Yes; he could not have been more anxious if it were his own matter.

25. And from time to time you were carrying on these things with his privity, knowledge, and concurrence?—Yes, the Commissioners desired me to do everything under his direction.

26. And you did so?—Yes.

27. Mr. *Rich*.] Then when your invention was perfectly and sufficiently tested, did he see those experiments?—No; he saw the difficulties I had to contend with, and he helped me to endeavour to overcome them.

28. He had no directions to join himself with you in per-

Mr.  
H. Archer.  
26 March  
1852.

fecting the machine?—The letter of the Commissioners of the 20th of January 1848 says, “In order to insure the completeness of the second machine for the purpose in view, it is desirable that you should communicate with Mr. Edwin Hill, and also that the machinists employed should distinctly understand the precise purpose to which each machine is to be applied.”

29. I comprehend from that that you were submitting to Mr. Hill, not that he was acting with you?—He was acting on the part of the Commissioners.

30. Mr. O. Gore.] He was acting under the orders of the Commissioners of Stamps and Taxes, to superintend what you were doing?—Yes; and to show as an instance of interference, I may mention that Mr. Hill had a notion of his own about overcoming the difficulty of the adjusting power. He saw I had been put to a great expense and great loss of time by the difficulties thrown in my way by the printers, and on the 3d of September this official letter came to my machinist: “Postage Stamps, 3 Sept. 1849: Alter the guiding apparatus to Mr. Archer’s piercing machine, according to Mr. Hill’s instructions.—E. Hill; C. P. Rushworth” (who is one of the Commissioners). To Mr. Addenbrooke.”

31. Mr. Rich.] When you speak of Mr. Hill’s interference, do you mean that he interfered to arrest the progress of your machine, or to assist it?—He acted in the most friendly way. If Mr. Hill had not been most honest, and had not meant fairly, I could never have overcome the difficulties I had to contend against; I give him the greatest credit for his conduct throughout.

32. Mr. Grogan.] Mr. Hill gave you every facility in carrying your invention into effect and making it perfect?—In the most cordial possible manner.

33. Mr. Rich.] You feel, therefore, that you have to thank the Commissioners and their officer for the assistance they rendered you?—Yes; I wish also to make the remark, that on the receipt of that order by my machinist he relieved me from all subsequent responsibility, saying, “Mr. Archer, all the expenses from this time are to be borne by the Commissioners.”

34. Mr. O. Gore.] To what period do you speak?—On the 3d of September 1849, Mr. Addenbrooke considered that the Commissioners were from thenceforth to be responsible.

35. Marquis of Chandos.] Who is Mr. Addenbrooke?—He was the machinist employed by me.

36. Sir

36. Sir *J. Tyrrell*.] In fact, Mr. Hill can corroborate you in all those statements?—Yes.

37. Mr. *Spooner*.] You have mentioned two machines, one that failed, and a second one that was perfected; was Mr. Hill acquainted with all your movements with regard to the one that failed?—He was acquainted with everything.

38. And he was in the habit of attending while your experiments were being carried on?—Not on the first machine.

39. Then he was not in the habit of attending while your experiments were being carried on on the first machine?—No.

40. He did attend subsequently, while you carried on the machines that you perfected?—On an average he attended twice a week at least.

41. Mr. *Rich*.] I understand you to say that you feel great thankfulness to Mr. Hill for the assistance he rendered you?—Yes.

42. And I think you further state, that your first machine having failed, you would hardly have succeeded in the second without that assistance you received from Mr. Hill?—I do not go that length, because in point of fact his idea of the adjusting power failed, and I was obliged to try my own.

43. Mr. *Spooner*.] He assisted you?—Yes, very much, and he was of great use to me. As I have said, I do not think that, if Mr. Hill was not a straightforward honest officer of the Crown, I could ever have accomplished what I did, or have overcome the difficulties I had to contend with.

44. Mr. *O. Gore*.] Do you think you could have remedied the objections without Mr. Hill's assistance?—Of course I could, because his suggestion did not answer.

45. *Chairman*.] I understand you to say Mr. Hill proposed a mode of adjusting the machine?—Yes.

46. Did that mode he advised answer the purpose, or not?—No.

47. Did you then alter the machine as to the mode of adjusting power?—Yes, with Mr. Hill's concurrence.

48. Mr. *J. Greene*.] Was not the adjusting apparatus of that machine required, from the irregular manner of printing the present postage stamps?—It was entirely.

49. Mr. *O. Gore*.] Who were they printed by?—Messrs. Bacon & Petch.

50. Mr. *Grogan*.] After you had completed the machine with its adjusting power, where was the next trial of that machine made?—At Somerset House. The Commissioners then

Mr.  
H. Archer.  
—  
26 March  
1852.

saw that there was not fair play given to the first trial by Bacon & Petch, and they ordered the machine to be tried at Somerset House.

51. Was the first trial in Messrs. Bacon & Petch's establishment?—It was.

52. And Mr. Hill was present?—He was present.

53. The machine was then removed to Somerset House?—Yes; they spoilt the machine at Bacon & Petch's.

54. And the machine was subsequently removed?—Yes.

55. It was removed to Somerset House, and the trials were made there?—Yes, after I had again put it in order.

56. Under the superintendence of Mr. Hill?—Entirely.

57. You have stated your machinery was spoilt?—Yes.

58. You stated your machine had been injured or damaged in the establishment of Messrs. Bacon & Petch; was that from the clogging of any part of the work, or from what other reason?—The machine was on trial, and it clogged when the sheets were put in, on the first day of trial.

59. Mr. O. Gore.] What did it clog in consequence of?—The gum upon the sheets being wet.

60. Was it always clogged with the gum?—Mr. De la Rue, who has great experience in such matters, was then referred to, and he declared that, so far as his experience would allow him to say, he considered that the gum would materially improve the perforation, and facilitate it, and therefore inferred that the sheets must have been put in wet.

61. It was in consequence of the gum being wet that the machine was clogged?—Yes.

62. If the gum had been dried, am I to understand you that that would have facilitated the operation of perforating?—Yes.

63. Mr. Grogan.] Then the impression upon Mr. De la Rue was, that owing to the manner in which the sheets were submitted to your machine, that was the cause of the clogging of the machine?—Yes, that the clogging was through putting in wet sheets instead of dry.

64. Sir J. Tyrrell.] In fact, it was clogged?—Yes, completely so.

65. Mr. Grogan.] When the machine was tested in Somerset House afterwards, did the same objection arise in regard to the clogging?—No.

66. When the machine was altered with the adjusting power, according to the statement that I hold in my hand, it was adapted to the particular form of printing postage sheets?—Yes.

67. When

67. When you tried the machine on the sheets so submitted to you, did the machine work well with them?—With the view of governing me in making the machine, Messrs. Bacon & Petch gave me a model sheet, and assured me there would be no shrinking, and I made the machine according to the sheet they then gave me, but afterwards I found all the sheets different in size.

68. You found that the machine would not work with the model sheet so given to you?—It worked with the model sheet, but not with other sheets; it would not work with other sheets; there are 12 plates, and there must be 12 different sheets, in consequence of the plates not being of the same size.

69. When you adapted your machine to the model sheet given you, was it found, on trying it with other sheets, that it did not work?—It did not work.

70. What was the reason of that?—Because the other sheets, being struck from different plates, were all of different sizes.

71. Then your machine, having been adapted to the model sheet furnished by Messrs. Bacon and Petch, when tried with other sheets, furnished also by them, they did not correspond?—No.

72. They did not work?—No, they did not work.

73. And the subsequent sheets of postage labels so submitted to your machinery were destroyed?—Of course.

74. *Mr. J. Greene.*] Do you not conceive that you completed your contract in making your machine do its duty with the model sheet?—Certainly; but my contract went further, for it stated that, if the Commissioners approved of it, and if the plan was received well by the public, I was to be paid.

75. Was the model sheet given to you with the understanding that all the sheets were similar in size?—Yes.

76. And that a machine adapted to that model sheet ought to be perfectly capable of perforating all others?—No doubt.

77. The portions of the machine that got clogged were the punches?—Yes, and the matrixes.

78. Which were to carry out the perforation?—Yes.

79. *Chairman.*] The difficulty was not with respect to the clogging in consequence of the varied size of the sheets, was it?—No, that is a different thing altogether; the clogging was one thing, and that was another.

80. The difficulty you had with respect to the variation in the size of the sheets was this, that as the spaces between the

Mr.  
*H. Archer.*  
26 March  
1852.

Mr.  
H. Archer.  
—  
26 March  
1852.

the edges were at different distances, your machine would not follow the distances?—Just so.

81. How did you remedy that?—By an adjusting power.

82. That was your great difficulty?—Yes.

83. You put that adjusting power?—Yes.

84. Mr. Hill first proposed a plan that failed?—Yes.

85. And you proposed another that answered?—Yes.

86. After you did put that adjusting power, did the machine work well with regard to all the varied sized sheets?—In consequence of the first failure, Messrs. Bacon & Petch were directed by Mr. Hill to make new plates to adapt them to the machine. On the trial at Somerset House, it appeared that all those plates and sheets were different. They were ordered to be made uniform, so as to be adjusted to the machine; and I stated in my memorial, that “more than one-half of them were found to be palpably defective; and it further appeared that the greater portion of the sheets furnished by the printers, on the first day of trial, were printed from the defective plates. It was therefore manifest that the irregularities observed in the sheets which were punched on the first day of trial were not attributable to any defect in the machine; and this will appear the more obvious, when your Lordships are informed that when the sheets which by Mr. Hill’s directions had subsequently been printed from the perfect plates were passed through the machine, no objection of any kind was observable.”

87. Mr. Rich.] Those ill-formed sheets were supplied by whom?—They were worked from 12 plates, but one half of those plates were irregular; there were some of them perfect, and those perfect were selected.

88. Were those all supplied by Messrs. Bacon & Petch?—Yes.

89. Marquis of Chandos.] What was the date of the first trial at Messrs. Bacon & Petch’s?—I believe the 6th of December 1848.

90. When was the second trial at Somerset House?—I think it was about January 1850.

91. It was between those two trials that your machinist, Mr. Addenbrooke, received the order from those two gentlemen, Mr. Hill, the Supervisor, and Mr. Rushworth, the Commissioner?—Yes.

92. Mr. Spooner.] What were your reasons for stating that the Commissioners knew that you had not been fairly treated by those persons, Messrs. Bacon & Petch?—Mr. Addenbrooke and I explained to Mr. Hill the difficulties that were thrown  
in

in our way by them when the machine was ordered to be sent again to the printers. Mr. Hill then said, "I will go with you to Mr. Keogh, and you and Mr. Addenbrooke can state your objections to him;" and on this occasion Mr. Hill intimated to Mr. Keogh that he believed our statements were true, and upon that he applied to the Commissioners.

Mr.  
H. Archer.  
26 March  
1852.

93. In your presence he intimated that?—Yes; and in the presence of Mr. Addenbrooke.

94. He believed your complaint, that Messrs. Bacon & Petch had not fairly dealt with you, and then Mr. Hill, in your presence, stated that to Mr. Keogh?—He did; and my request, which was, that the machine might be worked at Somerset House.

95. And that request was granted?—It was.

96. *Chairman.*] You say your machine was not fairly worked at Messrs. Bacon & Petch's, and you requested Mr. Hill, he agreeing with you in that respect, that it should be removed to Somerset House; will you tell the Committee where the unfairness in working the machine was?—I thought I explained that it was by clogging, in the first instance; and also that they were continually making sheets that did not answer the machine.

97. You mean to say your machine was spoilt by putting wet sheets in?—Completely spoilt.

98. *Mr. J. Greene.*] Were you present when the experiments were made by Messrs. Bacon & Petch?—Yes.

99. Could you not have objected to their using those sheets?—They put in the sheets; and I did not know anything about their state at the time.

100. *Mr. O. Gore.*] When this wet gum was put in, was it in your first instrument, or your second?—The second instrument; the present instrument.

101. *Mr. Grogan.*] The improved machine?—Yes.

102. *Mr. O. Gore.*] The first one had failed entirely?—Yes.

103. That second machine was constructed by the assistance of Mr. Hill, and aided by the experiments you were able to make at Somerset House?—And also at the machinist's, as well as Somerset House; as much by the experiments at Somerset House as at the other place.

104. *Marquis of Chandos.*] When was the use of your machine for the circulation of stamps perforated by your machine first approved of, do you recollect?—It was officially approved of in April 1850.

105. In January 1848 was there any approval of the machine for the circulation of stamps pierced by your machine, provided

Mr.  
H. Archer.  
26 March  
1852.

provided the cost did not exceed a certain sum, or was there any order to that effect?—No, never.

106. You never heard of any order of that sort about the date of January 1848?—No, none.

107. Did you not produce the machine in January 1848?—Yes, I did.

108. Did not you receive some sanction in January 1848?—Yes, this is the machine we are talking about.

109. Did Mr. Keogh sanction it?—Yes.

110. On what date?—6th December 1848.

111. I am referring to January 1848; I believe on that date you showed your machine to Mr. Keogh?—Yes.

112. Was any letter written to you, or to any other party, referring to that?—Yes, I have stated that I received a letter instructing me to make a machine for them.

113. On what date?—17th January 1848.

114. Just before that, had there been no proposal, or any approval of any proposition, that stamps perforated by your machine should be put in circulation, provided the cost did not exceed a certain sum per annum?—Not then; that was subsequently.

115. When was that?—On the 30th of September 1850.

116. You do not know anything of any proposal or any approval of those perforated stamps in January 1848?—Yes; in January 1848, I know that the Commissioners had reported to the Treasury to say that the plan ought to be adopted.

117. But was no remark made to you, or any letter sent to you?—Yes, by an order ordering me to make the machines.

118. On the 17th of January?—Yes.

119. Nothing else?—That was in fact approving of the plan.

120. Mr. *Grogan*.] You have given us now a description of your machine in its different stages towards perfection; were there any postage stamps printed from that machine, and circulated through the country, to test the opinion of the country upon it?—Yes, in some of the provincial towns.

121. Do you mean that some perforated label sheets were issued to provincial towns?—Yes.

122. Mr. *Hodgson*.] Some were issued in London; were there not?—Not except to the Houses of Parliament.

123. Mr. *Grogan*.] They were issued for the supply of the Members of Parliament in the Houses of Parliament?—They were.

124. Mr. *Spooner*.] Who were they issued by?—They were in the first instance given to me.

125. By whom were they given to you in the first instance?  
—By the stamp distributors at the Stamp Office.

126. What are their names?—Mr. Allen and Mr. Powell.

127. They are stamp distributors, are they?—Yes.

128. And they delivered to you some stamps perforated by your machine?—Yes.

129. For what purpose were they delivered to you?—For the purpose of distributing to the Members of Parliament through the postage label distributors.

130. Were any given to you, for the purpose of distributing in the provincial towns?—No they sent them themselves.

131. Mr. Allen and Mr. Powell, do you mean?—No, the Commissioners of Inland Revenue.

132. Mr. *Hodgson*.] Do Messrs. Allen and Powell act under the authority of the Commissioners?—Yes, and I understand that the pressure of the country towns was so great, they stopped them.

133. Mr. *Spooner*.] That is, the demand was so great, after they had been once tried, that they ceased to give out any more?—Yes.

134. Mr. *Geach*.] Where were those perforated?—At Somerset House.

135. Did you superintend the machines?—Yes, always.

136. And how many machines had you at Somerset House?  
—One double machine, which is, in fact, two.

137. And how many sheets did you perforate?—Ten sheets at the time; five sheets in each wing.

138. What quantity did you perforate altogether?—About 5,000, I should think.

139. About 5,000 sheets?—Yes.

140. How long were you doing them?—I cannot say; not very long.

141. Did you do them at intervals, or altogether?—We did them at intervals; we could only do so many thousand a day; the principal delay was the trials and experiments at Somerset House.

142. You say you might have perforated 5,000; how many did you do in one day in the machine?—We could do about 3,000.

143. What did you do?—We did all that we could, because the office would not keep open for us.

144. How many did you ever do in one hour?—I think 500 or 600.

145. Did you do 600 in any one hour while the machine was working?—Yes, I think we did.

Mr.  
*H. Archer.*

26 March  
1852.

146. Can

Mr.  
H. Archer.  
26 March  
1852.

146. Can you recollect how many hours you worked?—No, I cannot; the Commissioners would not allow the men, except only just occasionally, and Mr. Hill could not attend, and various things of that kind.

147. Mr. O. Gore.] There were various interruptions?—Yes.

148. Mr. Geach.] If you could have been supplied with stamps and allowed to work the machine in your own way, you have no doubt you could have done 3,000 sheets in a day?—No doubt.

149. Practically the machine worked in such a way as to satisfy you you could do that; it is not any mere conjecture, but it is the actual fact of the working?—The Commissioners and Mr. Hill are perfectly consenting to that.

150. Mr. J. Greene.] Did you do that work with one set of punches?—With one set.

151. You were not obliged to change them?—No; after I made the machine the Commissioners ordered a new set of punches, which I understand cost 100 guineas, and they spent some other money upon the machine.

152. Mr. Grogan.] A question has been put to you as to whether your machine was very regularly and consecutively worked, or whether it was only at intervals: how is that?—It was only worked at intervals.

153. After the striking off or punching of those 5,000 sheets, were the Commissioners satisfied the machine was in as good working order as at first?—Yes.

154. You were the inventor of this perforating machine?—Yes.

155. You have described that you had to construct three different machines?—Yes.

156. Are you able to inform the Committee what the construction of those machines cost you?—I never made any account for the two first; but as to the present machine, what I have paid for it, and what bills have been furnished to me, and which I gave to Mr. Hill, came to 900 l.

157. You inform the Committee that the expense of constructing the machine now in Somerset House, which has been tested and proved perfect, cost 900 l.?—Yes.

158. Is that exclusive of your expenditure upon the two former machines?—It is.

159. The Committee are distinctly to understand then that is entirely exclusive of all expenditure incurred on the two former machines?—Yes.

160. Which two former machines had to be constructed, and

and altered by reason of the irregular shapes of the plates, and other difficulties thrown in your way?—No, the two first machines the Commissioners had nothing to do with; I have nothing against the Commissioners in respect of them; I could not carry out the piercing principle.

Mr.  
H. Archer.  
26 March  
1852.

161. Then, the two former machines were imperfect?—Yes, they were objectionable.

162. Did you patent the machine?—Yes.

163. What was the expense of the patent?—I only took it out for England; it cost about 140 *l*.

164. Mr. Rich.] That is not included in the 900 *l*?—No.

165. Mr. Grogan.] How long were you in negociation, or in correspondence with the Board of Inland Revenue?—I was 2½ years full; since October 1847 constructing the machine, daily in attendance here.

166. You mean in London?—Yes; I have been ever since here in daily expectation of a settlement, and I have never been able to leave London, except one day.

167. Do you mean four years?—It is four years and a half altogether.

168. You have been 4½ years detained in London?—I have never gone further than Windsor; I have been every week expecting the matter to be finally completed.

169. You have been four and a half years occupied in London in perfecting the machine, and bringing it to a conclusion as it is at present?—Yes.

170. Mr. Rich.] That is, prosecuting your claim and bringing the machine to perfection?—Yes.

171. Mr. Grogan.] What part of those four years and a half were occupied upon the first two machines, which you admit were imperfect?—I think there were not more than a few months; the two first machines occupied me about six months; that is shown by a letter dated the 26th November 1848. I was six or eight months occupied in making those two machines.

172. Mr. Rich.] Do you consider your residence in London, and your communication with the Board of Stamps, afforded you peculiar facilities in working out and perfecting your second machine?—Certainly.

173. In no other part of the kingdom could you have had such advantages?—No, I could not.

174. Marquis of Chandos.] The two first machines that were inefficient were both set aside as useless in the beginning of 1848?—About July 1848.

175. Was

Mr.  
H. Archer.

26 March  
1852.

175. Was the trial of Messrs. Bacon and Petch with the first machine at Somerset House?—With the present machine.

176. *Chairman.*] After the Commissioners of Inland Revenue had acknowledged the advantages of the invention, what offer did they make to you as compensation?—They offered me 300*l.* towards paying me for my expenses, and 200 *l.* for my invention.

177. That was the first offer?—The first offer.

178. Mr. *O. Gore.*] £. 300 and 200*l.*; you mean 500 *l.* altogether?—Yes.

179. What was the second offer?—I refused that, and another 100*l.* was offered me.

180. That was 300 *l.* and 300 *l.*?—That was 600 *l.* altogether.

181. *Chairman.*] That was for the machine, the patent right and your expenses?—Yes, and my expenses.

182. You refused that?—Yes, I refused that, and at the time I refused it I wrote to say that I would leave it to any military engineer of rank, or any other person that the Government thought proper to appoint, and I would abide by his decision. I also offered to leave it to arbitration in the way usually adopted by the Post Office in disputed cases of compensation. I also wrote to Mr. Hill to say, that if he entertained any doubt as to the charges for the machine, he might call in one of the trade to put a value upon it, and I would abide by his decision.

183. Mr. *O. Gore.*] Did you submit any statement of your expenses, of those 900 *l.*?—Yes, I did. I sent in the bills to Mr. Hill. The way, however, in which the Commissioners viewed the matter, will be seen by the following passages of their report:—“Mr. Archer has devoted much pains and labour, and incurred considerable expense, in the trial of a succession of experiments for the purpose of obviating the mechanical difficulties that were found to exist, and which, if they had not been surmounted, would have left the contrivance unavailable for actual use. He has at length overcome these difficulties, so as to present the machine in complete working order. The value of the invention may be considered in two lights; first, as it relates to the advantage of the revenue; and, secondly, as it tends to promote the convenience of the public. On the former point it is to be observed, that a large proportion of the revenue of the Post Office is still received in the form of money payments, which involve much trouble and expense in the collection. Anything, therefore, that tends to increase the use of stamps, is valuable as a step towards

towards the abolition of payments in money. There can also be little doubt that there will be an additional security against forgery by reason of this contrivance, inasmuch as the accurate perforation of counterfeit sheets would be a work of great difficulty; and sheets not accurately perforated would at once excite suspicion if offered for sale. The convenience to the public consists in the readiness with which sheets, or portions of sheets, can be folded into convenient shapes, and carried about without creasing the stamps; the readiness with which the stamps can be detached, without the use of cutting instruments, and their superior adhesiveness, from the jagged edges not being so liable to be detached by the curling up of the stamp, as the smooth edge is found to be. These considerations are regarded as likely to lead to an increased use of the stamps, and are therefore not only applicable to the second point of the public convenience, but also the first, as having a tendency to decrease the charge of collection, which results from payments of postage in money. The foregoing are the grounds on which the plan has been adopted, and the advantages which are expected to result from it. It remains for us to state what occurs to us with regard to a reward to Mr. Archer. In the first place, it seems to us that the reasonable outlay incurred by Mr. Archer in the construction of the machine should be repaid; and the remaining point is, what sum should be awarded to him for the invention? We are informed that a second machine of the kind, with its appendages, might be constructed for about 200 *l.*; but as it is well known that a first machine, wherein everything has to be originated, is vastly more expensive than one which is a mere copy of others previously constructed, we think that, in fairness, at least 100 *l.* ought to be added on that score. It should be observed, that the machine is made upon a different and more expensive plan, and will be more expensive to work, than the machines first proposed; the change having been made chiefly in consequence of great practical difficulties attending the first plan, but partly also in consideration of the very superior effect producible by a machine of the present construction." Now I beg to observe, that I consider, under my agreement, that the Commissioners were bound to pay me what the machine actually cost me, and not according to the price for which a copy of it might be constructed.

184. Mr. *O. Gore.*] I think you said you offered to refer it to any individual who was a scientific person?—Yes.

185. Did you name any person?—I named Sir Frederick

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Mr.  
*H. Archer.*

26 March  
1852.

Mr.  
H. Archers.

26 March  
1852.

Smith and Sir Charles Pasley, or any person as competent as them.

186. Mr. Rich.] Had you any knowledge, at the time, of this report having been made by the Commissioners from which you have read an extract, in which they state that a machine could have been constructed similar to yours for 200 *l.*, and in which they recommend that an additional 100 *l.* should be given to you, whereby a proper compensation, amounting to 300 *l.*, would be given to you for that machine; had you any knowledge of their making that report?—No.

187. Were you consulted or examined by them?—No.

188. Had you no opportunity of laying before them a statement showing that your expenses were 900 *l.*?—I left all the bills with Mr. Hill, and requested him, if he had any doubt, to call in any mechanical engineer in the trade to put a value upon the machine, and I would abide by it.

189. Did you submit vouchers to Mr. Hill to the amount of 900 *l.*?—Yes.

190. Mr. Grogan.] Are those vouchers in his possession now?—I do not know.

191. Did you ever receive them from him back again?—I gave them to him, and he said he was satisfied.

192. Mr. Rich.] Have you those vouchers?—Yes.

193. Mr. O. Gore.] You did not leave them with him?—I left part of them; the receipts of what I paid for the machine, and the other is an account of the repairs.

194. You say he had them; did you give them to him or only show them to him?—I gave him part, and took away some.

195. Mr. Rich.] Have you any objection to put in as evidence those vouchers?—Mr. Hill has part of them.

196. You have no objection to Mr. Hill putting in those vouchers?—No, not the slightest.

197. And those you have you are ready to put in?—Yes.

198. Mr. Spooner.] Have you vouchers which will prove that the last machine cost 900 *l.*, as you have said?—Yes.

199. Are you willing to put those vouchers before the Committee?—I have only one voucher, which is a bill for the repairs; the others Mr. Hill has.

200. Mr. Hill and you together have vouchers which will prove that you expended that 900 *l.*?—Yes.

201. And have you, then, any objection to those vouchers being produced to the Committee?—Not the slightest.

202. Will you take care that at the next meeting of the Committee those vouchers are so produced?—Yes.

203. Mr.

203. Mr. *J. Greene.*] In that 900 *l.* is there any allowance for your time?—Not a halfpenny.

Mr.  
*H. Archer.*  
26 March  
1852.

204. It is merely the outlay for the machine?—I considered the bill furnished to me for the repairs was extravagant; and though I considered I was not liable for it, in consequence of the order given to Mr. Addenbroke, signed by one of the Commissioners, to alter the machine according to Mr. Hill's direction, I did not like to be a consenting party to what I considered an excessive charge. I wrote this letter to Mr. Hill, the 29th of June 1850:—"Sir,—As Mr. Addenbroke still refuses to give me any particulars of his charge for altering the machine, I quite agree with you, that the most proper course to take, under the circumstance, is to call in one of the most eminent machinists in the punching trade to put a value on the work done by Mr. Addenbroke; and I can only say, that whatever sum such valuator shall consider him entitled to, I am ready and willing to accept from the Government in full discharge of Mr. Addenbroke's claim against me; so that, in case he shall refuse to receive the same when tendered to him, I alone am to be held responsible for any proceedings he may take against me to enforce the payment of his demand." I believe that Mr. Hill did not think they were extravagant.

205. Is that letter prior to your offering to take the contract for the engraving, printing, and gumming?—This was when the Commissioners referred it to Mr. Hill to see what I had paid for the machine.

206. Mr. *Hodgson.*] I think you said, a little time ago, in order to enable you to construct this machine, you were obliged to live in London four years?—Four and a half.

207. In that sum of 900 *l.*, is there anything for your expenses in London?—No.

208. Nor for loss of time?—Not a halfpenny. I gave Mr. Hill the receipts I paid for the machine.

209. Mr. *O. Gore.*] Upon the subject of your offering a reference, it appears that you offered a reference twice: you offered a reference to a machinist, according to that?—Yes.

210. To check your bill?—Yes.

211. And you offered to leave it to Sir Frederick Smith or Sir Charles Pasley to determine the compensation for the whole?—Yes; or any other engineer the Government might think proper to appoint.

212. Mr. *Grogan.*] Was there, on the part of the Inland Revenue, any subsequent offer made to you to pay you money?—There was an offer of 2,000 *l.* made to me.

- Mr. 213. When?—On the 24th of January 1852.
- H. Archer. 214. You declined that offer?—I declined that offer.
- 26 March 1852. 215. Had there been any communication with you on the part of the Inland Revenue, relative to the expense you had incurred in the making of your machine, and other incidentals subsequent to their offer of 600*l.* and previous to their offer of 2,000*l.*?—Yes; when I had refused the offer of 600*l.*, I wrote, on the 26th of March 1851, this letter “To Thomas Keogh, esq., Upper Eccleston Place, Eccleston-square. 26th March 1851. Sir,—As the sum which has been awarded to me for the cost of the perforating machine, and the purchase of my patent right, is wholly inadequate to defray the mere outlay incurred by me on account of the former, I have written to the Treasury declining to accept the offer; I therefore now beg leave to inform you that I am prepared, in conjunction with Mr. Branston, the eminent engraver, to enter into a contract, not only for perforating, but for engraving, printing, and gumming the postage label sheets in a manner very superior to the present for 1*l.* 15*s.* a thousand less than what is now paid to Messrs. Bacon and Petch for engraving, printing and gumming only; so that should the Commissioners be pleased to enter into this contract, they would not only effect a saving of 2,000*l.* a year to the Post Office, but be enabled to give the benefit of the perforating invention, free of cost, to the public; the operation to be performed at Somerset House or the Post Office, or whatever place the Commissioners may consider will afford the greatest security to the revenue. I beg also to state, that Mr. Branston and myself are prepared to offer unexceptionable security for the due performance of the contract. I have, &c. (signed) *Henry Archer.*”
216. Is that the last letter between you and the Commissioners on the subject of your remuneration?—That is the last letter on the subject of my remuneration.
217. Mr. Spooner.] That is the last from them, but there is one from you subsequently, is there not?—Yes, one to the Treasury.
218. Mr. Grogan.] In this letter of yours, you have declined the offer of 2,000*l.*?—Yes.
219. And you have made a species of tender that, in conjunction with Mr. Braunston, you were prepared to engrave print, gum, and perforate the postage label stamps?—Yes.
220. Chairman.] The offer made by the Government to you of giving you 2,000*l.* for the patent machine and the invention, was subsequent to your having proposed to undertake

take the printing, gumming, and perforating at so much per thousand?—Yes, it was.

221. Mr. *Grogan*.] Was this letter of yours that covers a kind of tender, or certain terms on which you were prepared to do the whole of the work of the postage label stamps, ever followed by a formal tender on your and Mr. Branston's part to do that work?—Yes, it was.

222. When was that?—On the 16th of May 1851.

223. Will you state in what form you made that tender?—The letter we addressed to Mr. Keogh was in the following terms: "London, 16th of May 1851. Sir,—We, the undersigned, beg to inform you that we are willing to undertake to engrave, print, gum, and perforate the sheets of postage labels, and to find and provide all the necessary printing machines, plates, and apparatus, and likewise all the perforating machines (except the present) that hereafter may be required, for the sum of  $4\frac{1}{2}d.$  for every thousand stamps. We beg further to state, that we are prepared to give the usual security for the due performance of the contract, and to conform to the existing rules of keeping and using the plates, or to any other rules the Commissioners may be pleased to direct in respect thereto. As Mr. Archer, in his letter of the 21st ultimo, has pointed out to you the advantages of the proposed mode of engraving and printing the postage labels, as compared with the present, we do not consider it necessary to particularize them again in this communication; we therefore have only to add, that in order to cause the labels to adhere more firmly to the letters, as well as to render them perfectly innocuous when applied to the mouth, we propose to gum the postage sheets with the best white gum, instead of with the glutinous mixture at present used for the purpose. We may remark that the cost of the former is considerably more than double that of the latter; still, according to the terms of our proposal, the public will have the benefit of the superior article without any additional expense."

224. Now what answer did you and Mr. Branston receive to that tender?—On the 27th of May 1851 I received the following letter: "Sir, I have laid before the Board the letter of yourself and Mr. Robert Branston of the 16th instant, offering to print and otherwise prepare the postage labels required by this department, at the rate of  $4\frac{1}{2}d.$  per thousand, or if required to be executed in the present mode of printing, at the rate of  $5d.$  per thousand. In reply, I am directed to inform you, that the Board have been in communication with Messrs. Bacon & Petch relative to the terms on which the printing of the label stamps

Mr.  
H. Archer.  
26 March  
1852.

Mr.  
H. Archer.  
—  
26 March  
1852.

is performed by them, and that they have consented to a reduction of those terms. As the Board are fully satisfied with the manner in which this service has been performed by Messrs. Bacon & Petch, and with all their arrangements in connexion with it, they see no reason for putting the matter into new hands, from which measure no possible advantage would accrue to the public, and the Board must therefore decline your and Mr. Branston's proposal. I am, &c. (signed) *Thomas Keogh.*"

225. Is that the only communication, written or verbal, that you received from Mr. Keogh subsequent to the tender made by you and Mr. Branston?—I called upon Mr. Keogh on the business.

226. Subsequent to your tender?—Subsequent to my tender; I replied to that, but after I had replied I called upon Mr. Keogh.

227. Mr. O. Gore.] Have you not been offered 2,000 l.?—Yes.

228. By Mr. Cornwall Lewis?—Yes.

229. When; was not it subsequent to that?—Subsequent to that; six months afterwards.

230. And Mr. Cornwall Lewis offered you 2,000 l.?—The Treasury did.

231. And what was your reply?—I declined it.

232. But he did offer you 2,000 l.?—Yes.

233. And that was the last offer?—It was in reference to the tender. I think I had better read this letter, which I wrote in answer to Mr. Keogh: "24, Upper Eccleston-place, Eccleston-square, 30th May 1851. Sir,—I have the honour to acknowledge the receipt of your letter of the 27th instant. As the Commissioners by their communication of the 8th ultimo, and otherwise, have sanctioned and encouraged me to make the tender which I lately forwarded to you, I consider that it was unfair for them to make use of it for the purpose of inducing Messrs. Bacon & Petch so to reduce their present terms as to afford an excuse for renewing their contract, and rejecting the proposal of Mr. Branston and myself. As, however, the new arrangement with Messrs. Bacon & Petch does not include the perforating of the postage sheets, nor the superior mode of engraving, printing, and gumming them, nor the exclusive supervision of this large pecuniary business by the public officers at the Stamp Office, as proposed by Mr. Branston and myself, I am at a loss to conceive upon what grounds the Commissioners should have been pleased to arrive at the conclusion 'that no possible advantage would

would accrue to the public by accepting our proposal.' Although I am gratified to find that I have already been the means of saving 1,000 *l.* a year, through the reduction Messrs. Bacon & Peteh have consented to make, still, on public grounds, I am compelled to inform you that it is my intention to appeal to the honour and justice of Parliament for redress with the least possible delay. I am, &c. (signed) *Henry Archer.*"

Mr.  
*H. Archer.*  
—  
26 March  
1852.

234. Mr. *Rich.*] I think by your letter of the 26th March to Mr. Keogh, you offered to undertake the stamping and printing, the whole of the duty of the labels, in fact, at the sum of 1 *l.* 15 *s.* per thousand less than the contractors received?—Yes.

235. That was at the rate of 5  $\frac{1}{2}$  *d.*?—At the rate of about 5 *d.*, or 4  $\frac{1}{2}$  *d.* instead of 6 *d.*

236. On the 30th of April 1851, you made a formal tender at the rate of 4  $\frac{1}{2}$  *d.*?—Yes.

237. What induced you, between the 26th of March and the 30th of April, to reduce your tender?—Mr. Keogh wrote to me this letter. "Inland Revenue, Somerset House, 8th April 1851. Sir,—With reference to your letter of the 26th ultimo, in which you offer, in conjunction with Mr. Branston, to print, gum, and perforate the whole of the postage label stamps upon terms which, you state, will effect a considerable saving to the Post Office, I have to observe, that it does not appear, upon the face of your letter, that you are acquainted with the terms at present paid; nor is it likely that you can be fully informed of all the particulars of the work done, or of the securities which are necessary to be taken to prevent error, fraud, &c. If you and Mr. Branston desire to obtain full information in these respects, you may do so by application at this office; and should you and he afterwards have any proposal to make, such proposal will be duly considered by the Board. I am, &c. (signed) *Thomas Keogh.*"

238. Upon what grounds did you make the offer of 5  $\frac{1}{2}$  *d.* on the 26th of March 1851?—I say it is only 5 *d.*; it is 1 *l.* 15 *s.* I got that from the Parliamentary Return, and I made a calculation of what was paid for the postage labels; that is what I got it from.

239. You say that it is at the rate of 5 *d.*?—Yes; but when I went to the Stamp Office and got full information; and having also obtained a copy of the agreement with the present contractors, I altered the terms.

Mr.  
H. Archer.

26 March  
1852

240. Are you aware how many pence there are in 1 *l.* 15 *s.*?  
—Yes.

241. You must have made a hasty contract, as you do not appear to know whether it was 5  $\frac{1}{2}$  *d.* or 5 *d.*?—I made my calculation from the Parliamentary Return.

242. I understand you to say you tendered at 5 *d.*, while the tender states 1 *l.* 15 *s.*, which is 5  $\frac{1}{2}$  *d.*?—It is the same in both cases; the proposition was to save 2,000 *l.* a year. I stated that in the letter of the 26th of March, and I stated the same thing in the other letter, for I there proposed to print them for 4  $\frac{1}{2}$  *d.* and 5 *d.* a thousand heads. I said it would be also a saving of 2,000 *l.* a year in the former case, and 1,500 *l.* in the latter.

243. How can the saving be the same, when, by the tender of the 26th of March 1851, there is a proposal of 5  $\frac{1}{2}$  *d.*, and on the 10th of April 1851 it is at 4  $\frac{1}{2}$  *d.*?—No, that is for different processes. I said if the present plan was persevered in, I would do it at 1 *d.* less, and if the proposed plan was adopted I would do it for 4  $\frac{1}{2}$  *d.*

244. Mr. *Grogan.*] At the time you wrote this letter of the 26th of March 1851, the letter containing the proposal on your part with Mr. Branston, to enter into a contract for doing the whole of the work connected with the postage label stamps, were you aware of the requisites for the doing of such work as the Inland Revenue Office demanded?—Yes, I was.

245. Mr. Keogh wrote in reply to you, that you should have every information on the subject, if you chose to make a tender?—Yes.

246. Were you at the time that letter was sent to you by Mr. Keogh, fully acquainted with those circumstances also?—Not fully; but afterwards, from the information I received at the Stamp Office, both from Mr. Hill and the solicitor, I was fully informed; that was previous to my sending in a formal tender.

247. On the receipt of the letter of Mr. Keogh's of the 8th of April 1851, did you in point of fact make any inquiries as to what was necessary for you to do?—I did.

248. Did you find on that inquiry that you were ignorant of any of the circumstances it was necessary to comply with when you wrote your first letter?—Not with regard to the prices; the detailed part was given me, and I considered and made my calculation, which I gave in ultimately.

249. What information did you obtain on that investigation in reference to the price at which Messrs. Bacon and Petch engraved,

engraved, printed, and gummed the postage label stamps?—The solicitor of the Stamps, by the direction of the Board, gave me a copy of their contract.

250. What was the price they were then paid for it?—Sixpence a thousand.

251. Is that copy that was given to you the copy of the contract that is in this paper?—Yes.

252. Turn to the passage where 6 *d.* a thousand is stated?—“Sixpence for every thousand of such stamps” shall be the charge, “when such quantity shall amount to 32,000 or upwards.”

253. Then on the information contained in that contract, you founded your estimate at 6 *d.* per thousand stamps, which was the price then paid to the gentlemen who executed the work?—Yes.

254. And then what was the price offered in your's and Mr. Branston's tender?—Fourpence-halfpenny.

255. For every thousand stamps?—And 5 *d.* should the Commissioners deem it advisable not to change the present mode of engraving and printing the labels; that is the 30th of April 1851.

256. That is not a tender?—It is a tender with regard to the 4½ *d.*

257. You made, then, a tender signed in your own name, and that of Mr. Branston. That is a formal act; now, what was the price you proposed to do it at in that tender?—Fourpence halfpenny.

258. Mr. *O. Gore.*] When did you do that?—On the 16th of May 1851.

259. Mr. *Grogan.*] Did the 4½ *d.* per thousand stamps which you tendered at, include the perforating, and the whole value of your invention?—Yes, it did.

260. Then subsequent to that tender you received a letter in which Mr. Keogh states that he had given the contract to another party and saw no necessity to take it from the old hands?—Yes.

261. Subsequent to that letter, and the answer that you have read, was any proposal for compensation made to you on the part of the Government?—Yes; about six months afterwards, in January 1852.

262. What was the amount?—£. 2,000.

263. Did any communication take place between you and any officer of the Inland Revenue or any department of the Government, subsequent to your last letter and previous to that tender?—Yes; I called upon Mr. Keogh for some information,

Mr.  
H. Archer.

26 March  
1852.

Mr.  
H. Archer.  
26 March  
1852.

mation, and he said to me, "It is no use; we have agreed with Messrs. Bacon & Petch for the term of five years, and you cannot have any more to do with it." I then remarked, "I think that is very extraordinary, for the contract (the copy that I have) shows it is for pleasure;" and immediately I went down to Mr. Muntz, and had all the papers moved for, and it appears by the return that the contract by Messrs. Bacon & Petch was at pleasure, and they state at the end of this agreement, "The arrangement to take effect from 15th July 1851 will be the same as the foregoing one, except in the alteration of terms from 6*d.* to 5*d.* per thousand." I then made up my mind it was for pleasure, and therefore determined to press for the contract. I found, however, when Parliament was over, that the Commissioners had, in the face of that pledge, made an agreement for the term of five years with Messrs. Bacon & Petch; and I also found that Mr. Keogh had sent to Messrs. Bacon & Petch the very day I sent in my tender, who, in replying to Mr. Keogh, thus conclude their letter: "We presume that your honourable Board will permit the alteration to date from the 5th July next, and we also trust that the new contract may be for the term of five years as heretofore." Now according to the return made to Parliament that "heretofore" is during pleasure. Notwithstanding, as I have stated, I find by the return that was made this Session, that the Commissioners in the face of that statement had made a contract on the 27th of August 1851, for a term of five years with Messrs. Bacon & Petch, whereby I was precluded from making any further offer for the printing and perforating the stamps.

264. Mr. J. Greene.] One of your grounds for refusing the 2,000 *l.* was, that you were not fairly treated, as you considered, when you offered for the contract at 5*d.*?—Four pence half-penny.

265. A communication was then made to the present contractors, Messrs. Bacon and Petch?—Yes.

266. Stating that you had done so, and asking them if they would undertake the contract at the same price you did, at 5*d.*?—Yes.

267. In consequence of the communication with Mr. Keogh, you inquired more accurately into the circumstances of the case?—Yes.

268. And you offered to do it for 4½*d.*?—Yes.

269. To do the same thing in a better manner for 4½*d.* than the present contractors do it, and to give in addition, for the public benefit, the perforating?—Yes.

270. On the 16th of May you sent in that tender?—Yes.

271. On that 16th of May, did not the Board of Inland Revenue make a communication to Messrs. Bacon & Petch, stating that the Board accepted their tender at 5*d.* a thousand, without perforating?—Yes.

272. And you, in consequence of being, as you believed, unfairly treated by the official organ of the Board of Inland Revenue, demanded compensation for that violation of faith with you, in communicating with those contractors?—Yes, upon every ground, and that amongst the rest.

273. Is not the loss which you suffer, and which the public suffer as well as you by not getting the benefit of the contract, one of the grounds why you demand a large compensation?—Yes.

274. Mr. *Geach.*] In other words, if you had obtained a contract at 5*d.* a thousand, you would have considered that a full compensation for all your trouble?—Yes.

275. Mr. *Rich.*] Did you make any calculation of what would be your profit and loss upon the contract of 4½*d.*?—Yes.

276. Did you make calculations upon the profit and loss on the contract at 5½*d.*?—Yes, of course.

277. Did you find you would make a profit on 5½*d.*?—I never made it for 5½*d.*

278. I find it so by your letter?—It is a mistake. I said in every letter 2,000*l.* a-year less. I said 1*l.* 15*s.*, but I may have made a mistake.

279. Mr. *Geach.*] You offered to do the same work that is done by Bacon & Petch for 2,000*l.* a-year less?—Yes.

280. And you made a calculation which comes to 5½*d.* It was not that you offered at 5½*d.*, but it was that your 2,000*l.* a-year would bring it to that; and afterwards you made a proposition to do it specifically for 5*d.*, without any reference to any saving?—Yes.

281. And you made an offer at 4½*d.*?—Yes.

282. Mr. *Rich.*] That seems in flat contradiction to your own statement. You say, in your letter of the 26th of March 1851, in writing to Mr. Keogh, that you will “enter into a contract, not only for perforating, but for engraving, printing, and gumming the postage label sheets, in a manner very superior to the present, for 1*l.* 15*s.* a thousand less than what is now paid to Messrs. Bacon & Petch for engraving, printing, and gumming only.” Now, when you wrote that, you tell me you had entered into calculations, and part of those calculations is to know how much 1*l.* 15*s.* is per thousand less than

Mr.  
H. Archer.  
—  
26 March  
1852.

Mr.  
H. Archer.  
26 March  
1852.

than the former contract. I find from calculations that is rather less than a halfpenny a thousand?—Then, according to your calculations, the difference is against myself, and in favour of the public.

283. The specification is 1 *l.* 15 *s.* less per thousand; it amounts to mere common-place calculation; it is rather more than 5  $\frac{1}{2}$  *d.* Did you make that tender upon calculation?—Upon the Parliamentary Return moved for by Mr. Duncombe.

284. Had you no data whether you would make profit or loss?—I had the number of stamps used, and what they were paid for by the million.

285. How is it, then, you do not know now apparently what it is?—I am not governed by those printed things; there are many mistakes. My subsequent tender is against myself, and in favour of the public.

286. Upon what grounds then did you make the tender?—Upon the calculations that I made upon the Parliamentary Return.

287. Do you admit the correctness of this letter?—I believe it is correct.

288. Therefore you admit that you offered at 1 *l.* 15 *s.*?—I do.

289. Are you aware how much per thousand 1 *l.* 15 *s.* is?—What I got it from was the Parliamentary Return moved for by Mr. Duncombe. I got it from no private source.

290. Are you aware that 1 *l.* 15 *s.* less per thousand is rather less than  $\frac{1}{2}$  *d.* per thousand less than the contract of Messrs. Bacon & Petch?—At 6 *d.*

291. Then, in fact, it is rather more than 5  $\frac{1}{2}$  *d.*?—It is rather more than 5  $\frac{1}{2}$  *d.*; I really do not know.

292. Mr. Spooner.] If it is an error, say so?—It must be an error, because in both letters I said 2,000 *l.* a year less.

293. Mr. Rich.] Are you aware that it is rather less than a halfpenny a thousand less than the contract of Messrs. Bacon & Petch?—I have not gone into the calculation; I considered that that tender was founded on proper data; I am not prepared to go into it.

294. Are you aware that it appears in evidence that your subsequent offer was at 4  $\frac{1}{2}$  *d.*?—Fourpence halfpenny and 5 *d.*

295. I see no mention of 5 *d.*?—Yes.

296. Mr. Grogan.] Look to your tender?—Yes.

297. Mr. Rich.] At page 13 it is, “We are willing to undertake to engrave, print, gum, and perforate the sheets of postage labels, and to find and provide all the necessary printing

printing machines, plates, and apparatus, and likewise all the perforating machines (except the present) that hereafter may be required, for the sum of  $4\frac{1}{2}d.$  for every thousand stamps." Is that a correct report of your offer?—It is.

298. Consequently you then offered at  $4\frac{1}{2}d.$  a thousand?—Yes.

299. And in your former offer, in your former letter, you tender at rather more than  $5\frac{1}{2}d.$ ?—Yes.

300. Will you have the kindness to state to the Committee the grounds upon which you changed your offer from  $5\frac{1}{2}d.$  to  $4\frac{1}{2}d.$ ?—That system proposed for the  $4\frac{1}{2}d.$  is another system; it is upon the transfer and relief; printing from relief or letter-press printing; the one at  $5d.$  is for copper-plate printing, as will appear by letter, dated 30th April 1851, at the concluding part of page 12 of Parliamentary Return.

301. Have you any grounds to state to the Committee for the variation of the contract price from the letter which you wrote on the 26th of March; that is, between the first letter and the second?—I got from the Stamp-office full information; there were many things in their contract that I did not know before. At first I had assumed there were certain things to do, and I then made a tender according to that contract. Mr. Keogh said, "You cannot make a definite proposal, until you have got full information upon the subject," and in consequence of that information I made a formal tender and reduced my terms.

302. Mr. Grogan.] On receiving fuller information you reduced the tender?—Yes.

303. In your tender did you propose to engrave a copper plate for the printing of the sheets, in the same manner as your former letter referred to?—There were two plans; one was their plan, and the other was in Mr. Branston's tender with me, which was on the principle of letter-press printing.

304. Then your tender proposed to execute the engraving and printing in a different manner from that referred to in your letter?—Yes.

305. Is the manner you proposed in your tender equally efficient and useful as the manner referred to in your letter?—It is superior.

306. Why do you say it is superior. Has it been tested in any public establishment, or manner?—It has been tested in several.

307. And proved superior?—Yes.

308. Is it more economical in its preparation?—It is.

309. What is the mode of engraving and printing to which your

Mr.  
H. Archer.  
—  
26 March  
1852.

Mr.  
H. Archer.  
26 March  
1852.

your tender referred ; what is it called in art ?—It is letter-press printing.

310. What was the mode that Messrs. Bacon & Petch performed it in. What is that called ?—It is copper-plate, or steel engraving.

311. Now will you specify, in as few words as you can, the difference of the two modes ?—I will. Engraving in creux, or steel, or copper-plate engraving, such as that adopted by Messrs. Bacon & Petch for printing the postage-labels, is that branch of the art where the line or figure intended to be printed on the paper is sunk or cut down into the copper. In printing, these engraved lines are filled with the ink, and the intermediate surfaces between them cleaned off after the plate has been charged ; the ink therefore in printing is transferred from the excavated parts or lines upon the paper, while the intermediate surfaces containing no ink leave the paper white. This mode of printing is called copper, or steel-plate printing.

312. Is that the mode of engraving and printing from it that is in use by Messrs. Bacon & Petch ?—It is. With a view, however, of producing a repetition of fac-similes of the Queen's Head on the same plate, Messrs. Bacon & Petch, instead of engraving the printing plate in the ordinary way, engrave a head in the first instance on a piece of softened steel, which, being subsequently hardened, is pressed into a softened steel roller, or cylinder, in relief—(*producing a model of the same*) ;— and this roller being subsequently hardened, a Queen's head is indented by powerful pressure 240 times into a softened steel plate, which is then ready for printing. Engraving in relief, such as that proposed by myself and Mr. Branston, is that branch where the lines or figures intended to be printed on the paper are left standing on the plate, the intermediate parts being cut away. In this case, which is exactly the converse of the former, the ink is applied to the surface only of these raised lines or figures, and from them transferred to the paper, the intermediate excavated parts containing no ink, and therefore leaving the paper white. This mode of printing is called surface printing, and is the same as type or letter-press printing. It is also called wood-cut, or block printing, because all engravings on wood are printed from the surface. The way in which the proposed plates for letter-press printing are produced is by a similar mode of transferring as that adopted by Messrs. Bacon & Petch ; with this important difference, that the head is engraved in the first instance in relief, instead of by cutting down, whereby the

Mr.  
H. Archer.  
26 March  
1852.

the transferring process throughout (and consequently the printing plates) is exactly the converse of that of Messrs. Bacon & Petch. I am prepared to show the difference of the working, and that my plan is better for the public than the other.

313. Mr. O. Gore.] We want to know why you offered different terms at different times?—Very well.

314. Mr. Grogan.] Are you an engineer yourself?—No.

315. You cannot, then, say of your own knowledge, which of the two modes is the cheapest and most permanent?—Yes, from my own inquiries and experiments.

316. Of your own knowledge?—That is my own knowledge; I am giving you my own knowledge now.

317. From whom did you receive the information that the one mode of engraving, the surface engraving, was more permanent and more effectual than the line engraving?—Every body that I inquired of, and from the works I have read upon the subject; Mr. Branston among others.

318. Then Mr. Branston will of course be able to give the Committee the fullest information as to the comparative merits of the two modes of engraving?—Yes, he will of course.

319. And it was on information received from Mr. Branston on this subject, that your tender, in which he joined, was made?—Not entirely, but partly.

320. Mr. O. Gore.] You have made three different tenders, as shown by my honourable friend on the right. First on the 26th of March 1851, you made an offer that you would engrave, print, and gum the postage label sheets in a manner very superior to the present for 1*l.* 15*s.* a thousand, less than 6*d.* per thousand?—Yes.

321. That was your first tender?—Yes.

322. That amounts to a small sum more than 5½*d.*?—Yes.

323. Your next tender was to do it for 5*d.*, which was on the 30th of April?—Yes.

324. You then offered on the 10th of May to do it for 4½*d.*?—Yes.

325. That is your third tender, is not that so?—Yes.

326. Now as your first tender was for doing it so much less than what Messrs. Bacon & Petch did it for, did you contemplate in that first tender a cheaper mode of printing?—Yes, I did.

327. Then that proposal did not amount to quite a half-penny less?—I contemplated both ways, lest the Commissioners should not be disposed to discontinue their present plan.

328. Therefore

Mr.  
H. Archer.

26 March  
1852.

328. Therefore you tendered at a larger sum than you would otherwise have done?—I think I did, perhaps.

329. Then your second tender was at 5*d.*?—For the present system.

330. At the present system you offered at 5*d.* per thousand?—Yes.

331. That was something less; that is a halfpenny less than on the present system; now your third tender was at 4½*d.*?—Yes.

332. At 4½*d.* you contemplated a cheaper printing, I suppose?—Yes.

333. Was that the cause of your having reduced your tender so much?—Yes, it was certainly.

334. Mr. J. Greene.] You found the existing contract with the parties who now have it at 6*d.*?—Yes.

335. Was not it very natural that you should not go very closely into the items; but that you should conceive, if you offered to contract for 5½*d.*, the Board of Inland Revenue, as trustees for the public, would inquire into that accurately, and would try and give the public the benefit of a contract at 5½*d.*, with your gumming and engraving being better, and the perforating machine being given also to the public?—Yes.

336. Is not that the reason why you tendered at 5½*d.*, and afterwards upon closer inquiry found you could do it at the smaller sum?—Yes.

337. Mr. Geach.] This letter referred to on the 30th of April, contains your first offer to do it at 4½*d.*?—Yes.

338. And you gave them the alternative, that if they wished to have it done in the way it was done before, you would do it for 5*d.*?—Yes.

339. It was then suggested to you, that you had better join Mr. Branston's name with yours, to give a better assurance to the parties you tendered to?—Yes, it was so.

340. Then on the 16th of May Mr. Branston joins you, to make the tender for 4½*d.*?—Yes.

341. You do not in that tender repeat the alternative of doing it for 5*d.*, if they wish to do it in that way?—No.

342. Had you deliberately abandoned the idea of doing it in the same manner as Messrs. Bacon & Petch were doing it for 5*d.*?—Never; I never abandoned that.

343. In your tender of the 16th of May, why did you not include the alternative of doing it for 5*d.*?—Because I should have to go to separate parties whom I had negotiated with; as Mr. Branston does not pursue that branch of the business.

344. There

344. There were two tenders, one from yourself to do it for  $4\frac{1}{2}d.$ , which you say you would do in connexion with Mr. Branston, another from yourself to do it in the way Bacon & Petch were doing it for  $5d.$ ; Mr. Branston joins you in making the offer as far as the  $4\frac{1}{2}d.$  is concerned, but the offer of the 30th of April existed still as to the  $5d.$ ?—Yes.

345. Mr. *J. Greene.*] On the 27th of May the Inland Revenue write to you, referring to your offer of printing the postage label stamps at  $4\frac{1}{2}d.$  a thousand on the new plan, or if required, to execute them in the present mode of printing at  $5d.$  a thousand?—Yes.

346. And they also state that they are satisfied with Messrs. Bacon & Petch, and with all the arrangements, as the matters pass through their hands. On the same date, the 27th of May 1851, Mr. Keogh, the executive officer of the Inland Revenue, writes to Messrs. Bacon & Petch approving of their offer. Are you aware of what steps the Inland Revenue had taken to ascertain what were the relative merits of your different processes?—I believe they never took any.

347. Mr. *Grogan.*] You are not aware of any?—No, I am not aware of any.

348. Your tender embraced many points, two of them being the engraving and printing; we have spoken of those facts, and also embraced the gumming and perforating; we have spoken of the perforating; did you contemplate in your tender any alteration of the paper upon which those heads are printed?—In my tender with Mr. Branston I did.

349. Is it superior or inferior paper?—It is of a very superior description, both in regard to facilitating the sticking of the labels on the letters, and the printing.

350. Mr. *Spooner.*] But would not be more costly paper?—Not more costly.

351. Mr. *Grogan.*] In reference to the gum, did your's and Mr. Branston's tender, or your former tender, contemplate any improved species of gum?—We intended to use, as I stated in my letter, pure white gum, instead of the glutinous wash now used.

352. Are you aware of the ingredients?—I am not of my own personal knowledge.

353. Have you any specimen, or did you make any trial of the new kind of paper and gum to which your offer related?—Yes.

354. Have you any of it with you?—I have some here (*producing the same*), which the Committee may try for themselves.

Mr.  
H. Archer.  
26 March  
1852.

355. What you have now handed in is the species of gum that you proposed to have used?—Yes, it is.

356. You believe it to be superior to the gum or wash used in the other process?—Yes.

357. Your tender embraced that also?—It did.

358. Are you still ready, in connexion with Mr. Branston, to renew your tender and enter into a contract with adequate securities, if the Board of Inland Revenue were disposed to give it you?—Yes, I am.

359. Mr. O. Gore.] With regard to this gum, you praise that gum as being of a very superior quality?—Yes.

360. I bought, the other day, some of your stamps here, and I tell you most honestly, that so far from being superior I cannot get them to stick; I am obliged to put sealing-wax under them?—That is the gum used by the present contractors.

361. Mr. J. Greene.] Are you aware what security the present contractors give for the fulfilment of their present engagement?—None at all.

362. Mr. O. Gore.] Are you personally aware of that?—I am aware of that.

363. Mr. Geach.] In the progress of this machinery, working it at Somerset House, did the parties there object to the efficiency of the machine, or were there any parties there who doubted the machine continuing to do the work you professed it would do and did do, as proved by your evidence, for a certain time?—In consequence of seeing, as I have stated at first, that it could not be worked without an adjusting power, they did protest against it.

364. Subsequently that machine did have an adjusting power, and you say worked for a certain time?—Yes.

365. Were there any doubts expressed by the parties as to its continuing to do the work?—No.

366. Not by any of the parties?—No, never.

367. By the men who did the work?—No, never.

368. There was not any objection to your machine at any time?—No, never since it was completed.

369. Do you think it was fully admitted by all parties that it would do the work?—Yes; they told me they would not recommend it unless they were satisfied upon the subject.

370. Have you had the opinion of any mechanical man upon the subject?—Many people have been to look at it, but none ever threw a doubt upon it; I never heard the slightest objection to it.

*Lunæ, 29<sup>o</sup> die Martii, 1852.*

MEMBERS PRESENT.

Mr. Spooner.	Mr. Grogan.
Mr. Rich.	Mr. Mostyn.
Marquis of Chandos.	Mr. Geach.
Sir John Tyrrell.	Mr. John Greene.
Mr. Ormsby Gore.	

GEORGE FREDERICK MUNTZ, Esq.  
IN THE CHAIR.

Mr. *Robert Edward Branston*, called in; and Examined.

371. *Chairman.*] WHAT business do you follow now?—My pursuits are various; relief engraving in wood and metal, stereotyping, polytyping, electrotyping, and every operation connected with letter-press printing.

Mr. R. E.  
*Branston.*  
29 March  
1852.

372. Not copper-plate printing?—Not copper-plate printing.

373. Were you employed in 1819 and 1820 by the Commissioners employed by Government to inquire into the best means of preventing the forgery of Bank of England notes?—I was, as an assistant to my father.

374. Among the plans submitted to you, was the American system, since adopted, for the postage stamps, brought under your notice?—It was, and all other plans that were at all entertained by the Commissioners were also submitted by one of the Commissioners, Sir William Congreve.

375. What do you call that mode of work they now work upon?—The American plan; I do not recollect the name that is given to it.

376. *Mr. Grogan.*] Is the American plan, as you describe, the letter-press engraving?—Transferring on steel plates; steel-plate engraving for the copper-plate mode of printing.

377. *Chairman.*] It is for copper-plate printing, in fact, I suppose?—It is the production of plates for the copper-plate mode of printing.

378. Was not that plan practised in this country before the introduction of that particular plan?—I am not aware of its having been practised.

379. What was the result of the experiments you and your father instituted to ascertain whether that plan was likely to

Mr. R. E.  
Branston.

29 March  
1852.

answer the purpose?—That it was a costly mode of arriving at the object to be attained, and did not afford greater security than the relief mode of engraving and letter-press printing; and so far as that part of the plan was concerned in which the security from forgery consisted, was easily imitated by relief engraving and letter-press printing, as proved by the published imitations of all their productions at that period, and by the specimen postage stamp now laid on the table.

380. Are you of opinion that the mode now practised is not more secure than the surface printing?—I am.

381. Not in any way?—Not in any way.

382. The general belief is, it is very much more so?—It is not so; I consider it to be not more secure than that from relief printing.

383. Is it more expensive?—It is more costly in the printing, not more costly in the production of the plate.

384. More costly in the operation required for it; that is, for the purpose of making those heads?—No; the process would be the same in both cases, that of transferring from one metal to another.

385. Suppose any one undertook to print those heads by surface printing; could it be done in that case at a cheaper rate than by the present mode?—It would depend upon the mode adopted; it might be done in wood and transferred to soft metal, or done in steel and transferred to steel. In the first instance it would be less costly, and in the latter it would be the same.

386. Suppose it to be done with wood, would it be as safe as that done in steel or copper?—The same effect would be produced at less cost, but the plates produced for printing from would not be so lasting.

387. Would it be possible for any trader to distinguish between those done on wood, and those done on metal or steel?—It would not be possible.

388. Not even by an artist?—Not even by an artist; that is done for letter-press printing. I do not mean to say an imitation from the plates done in wood could not be distinguished by a practised eye, because it could be.

389. Were you appointed, some years ago, by the Commissioners of Excise to engrave the plates for the permits?—My father held that appointment previous to his death, and, subsequently I was myself appointed.

390. Was your engagement for a term of years, or during pleasure?—During pleasure.

391. Mr.

391. *Mr. Grogan.*] Have you a copy of that appointment with you?—No, I have not.

392. *Chairman.*] Was your father appointed also during pleasure?—He was appointed as engraver for the prevention of forgery originally, and afterwards by the Commissioners of Excise, during pleasure, I believe.

393. Have you reason to believe you gave the Commissioners of Excise entire satisfaction?—I have.

394. *Mr. Grogan.*] You said your father had been appointed engraver for the prevention of forgery. What do you mean by that?—He was appointed as engraver to the Government for the prevention of forgery; that was the first appointment he received.

395. *Chairman.*] Do you mean for general superintendence?—I suppose that was an appointment like other appointments, a sort of patronage.

396. Was he consulted in case of suspicion of forgery; or what was the nature of the appointment?—It arose out of various transactions during Sir William Congreve's sitting at the commission.

397. It was during that commission?—Yes, it was previous to our being employed to do the stamps for Government.

398. *Mr. Grogan.*] What stamps?—Stamps for the provincial bank notes, and for the medicine duty. We also did the departure stamps, and the permit plates for tobacco and spirits, &c., for the Excise Office.

399. *Mr. Rich.*] What were your official duties of the office for the prevention of forgery?—Not any; it was merely an honorary appointment.

400. Without salary?—Without salary.

401. *Chairman.*] Was there any particular occupation attached to it?—There was no particular occupation attached to it.

402. Have you reason to believe the Commissioners were quite satisfied with your conduct?—We continued to engrave plates for the use of the Stamp Office; they had machinery fitted there for printing them, and we had nothing more to do with it than to supply the plates.

403. What was the reason your services were dispensed with?—At my father's decease Mr. Whiting held the patent for the compound plates; I then left that establishment; and therefore had nothing more to do with it.

404. Did he continue to do that afterwards?—Mr. Whiting did.

Mr. R. E.  
Branston.

29 March  
1852.

405. Mr. *Spoooner.*] Was Mr. Whiting your father's partner?—Yes.

406. *Chairman.*] You have lately, with Mr. Archer, proposed to produce postage labels of a more secure description than those at present in use, so far as the engraving and printing is concerned?—I have.

407. And also to add the additional security and convenience to the public, of the perforating plan for separating the labels?—Yes.

408. And at a lower rate than at present?—Yes.

409. Then you contemplated, I suppose, to do that on the surface mode of printing?—Yes.

410. In consequence of that, is it that you are able to make a reduction?—Yes.

411. Suppose you had been called upon to do that on the present principle?—I am not prepared to say anything on that.

412. Then it is only supposing the new mode of printing be adopted, that you could do it cheaper than it is done now?—I have not entertained the doing it on the other principle myself at all; that is entirely with Mr. Archer.

413. Mr. *Grogan.*] That is not in your style of art?—It is not in my style of art.

414. *Chairman.*] You have only one plan; that is surface printing?—Yes, I adhere to that.

415. And you adhere to your opinion that the surface mode of printing is quite as secure for the safety of the public as the present mode?—Yes.

416. Mr. *Spoooner.*] The Committee are distinctly to understand that the surface mode of printing is cheaper than the other mode of printing?—It is cheaper than the other mode of printing.

417. Mr. *Grogan.*] Your style, I understand, is altogether what is called letter-press printing?—It is.

418. And you produce that result either by making a relief, or by cutting out the hollows of the plate?—The difference is in the printing; one description is the copper-plate printing, that is the description by which you abstract the ink from the bottom of the lines, and the relief printing is taking the ink from the surface of the plate merely.

419. And that is the description which you say is so much cheaper?—The letter-press mode of printing is very much cheaper than the copper-plate printing.

420. In the preparation of the plates?—Yes.

421. Mr.

421. Mr. *O. Gore.*] Which do you strike from the bottom of the line?—The copper-plate.

422. Mr. *Grogan.*] As to the preparation of the relief plates, which I understand is your peculiar style, and the preparation of the copper-plate, if I understand your evidence, you say that the difference of expense is immaterial?—That depends upon the mode of procedure; whether I produce plates in hard metal or in soft; for instance, I can make an imitation of any of the American patterns in wood, and transfer it to the soft metal; that could be done cheaply; but if I go to work upon steel, and transfer upon steel, it is just as costly as the American mode of procedure.

423. Steel is more durable as a plate to print from than the other mode?—It is everlasting.

424. In your application or in your tender, did you propose to use copper or steel plates?—I did not name either; that would depend upon circumstances, upon the quantity required and the time available to get the plates ready in.

425. When the plates shall have been prepared for printing in either mode, the expense you mention in doing it in steel is pretty nearly equal. Which mode of printing will least damage the plate afterwards?—Letter-press printing, decidedly.

426. Will you explain why?—Because the mode of printing from copper plates is by rubbing or filling the plate with ink; flooding it as it were with ink, then cleansing it with rags, and lastly polishing it with the hand, and the friction of that soon wears the plates out.

427. And makes the impression indistinct?—Yes, of that misty character which the labels generally have.

428. Then the other system, if you please; what is that?—The other system is by merely passing a soft composition roller over the surface, and delivering from it a coating of ink, so that there is no friction and the wear is trifling.

429. The cost of the preparation of the plates, therefore, being nearly equal, one plate lasting much longer than the other, your letter-press printing is, in your idea, much more economical?—Most decidedly.

430. You were assistant to your father, I understood you to say, at the time the investigation was instituted by the Commissioners for Inquiry into the Bank forgeries?—Yes.

431. Are you personally conversant with the transactions that took place then?—Yes.

432. Are you aware of the report made then?—Yes, I am.

433. Will you cast your eye over that, and see if that is the

Mr. R. E.  
Branston.

29 March  
1852.

report (*handing a book to the Witness*)?—This is one portion of it.

434. What is the purport of that report?—It is recommending Messrs. Applegath & Cowper's mode.

435. What was their mode?—Relief printing.

436. The same as you profess?—Yes, the letter-press.

437. Just read that passage?—"Upon the whole, we have ventured to recommend for adoption by the Bank, the plan brought forward by Messrs. Applegath & Cowper, which was originally submitted to the directors, a short time only before the appointment of this Commission, and received immediate encouragement from them; and upon which some improvements have since been made. The directors have readily complied with this recommendation, and that necessary machines are in a state of great forwardness."

438. Are you aware of the other styles of printing which were submitted to those Commissioners at the time?—I am.

439. What were those?—They were various; there were a great many of them.

440. Were any plans submitted by the present contractors? Yes.

441. By Messrs. Perkins & Fairman?—Yes; a great many.

442. Was the plan then submitted as the mode of printing similar or identical with that now in use?—The same as that now in use.

443. And it was investigated by the Commissioners appointed, whose names are there appended, in regard to its utility, economy, and security from forgery?—Yes; it was.

444. Therefore in bringing this subject forward 20 years afterwards, when the contract was first given to Messrs. Bacon & Petch, to print postage label stamps, it could not be considered a new plan?—No, certainly not.

445. It was condemned in fact by those Commissioners?—Yes.

446. Is that the other part of the report to which you refer (*handing another report to the Witness*)?—I think it is.

447. Is there anything in that report which qualifies the report, the purport of which you have already communicated to us?—"Safety, or rather comparative safety, is to be sought to a certain extent in a combination of excellence in various particulars; but chiefly, as we conceive, in the application of a principle beyond the reach of the art of the copper-plate engraver, which in its different processes is possessed of the most formidable power of imitation."

448. Copper-

448. Copper-plate engraving is the system now in use by Messrs. Bacon & Petch?—It is.

449. Now, on the subject of that investigation, you have heard of the name of Sir William Congreve, of course?—Yes.

450. He was one of the Commissioners on that investigation?—Yes, he was.

451. Was your father employed by that gentleman to make any imitations of notes printed on the copper-plate system?—He was; not of real notes, but of specimens sent him.

452. I refer to bank-notes prepared and used in America, in which a large amount of very intricate copper-plate engraving had been introduced?—He was employed to imitate parts of the ornaments that had been used in the bank-notes that were in use in America.

453. How were your imitations printed?—From letter-press.

454. Did your father successfully imitate them?—Very successfully.

455. Did Sir William Congreve print a little work on that subject; just see if that is the book (*handing a book to the Witness*)?—Yes.

456. Turn to any specimen your father imitated of an original design?—Here are several; these are all imitations.

457. Imitations made by your father?—And myself.

458. Of the most intricate style of copper-plate engraving?—Yes.

459. In point of security, therefore, the copper-plate engraving does not afford that so effectually as might have been imagined?—I consider them equal; the one affords as much security as the other. But nothing can be done by that system that cannot be accomplished by letter-press printing, so far as that part on which the security depends is concerned.

460. Now with regard to the expense of preparing these models in the copper-plate style of printing, will you inform the Committee on that subject what is the expense attending it?—The imitations were the work of a few days, which it had been stated could only be accomplished in many years; by combining parts together, and repeated printings, we accomplished that object that they considered, or that they stated, could only be done by engraving; here is one instance.

461. That was one of the grounds of security proposed in that mode of printing the notes?—Yes.

462. Which mode of security was found utterly ineffectual, inasmuch

Mr. R. E.  
Branston.

29 March  
1852.

Mr. R. E.  
Branston.

29 March  
1854.

inasmuch as you and your father had successfully imitated them in so short a period of time?—Yes.

463. The style of printing to which I have directed your attention is the style condemned in the report of the Commissioners, and also the style now in use by the contractors?—It is.

464. And you have mentioned that plates for such printing are less permanent in use than in the letter-press printing style?—Decidedly so.

465. In the tender put in by you in conjunction with Mr. Archer, your tender was for letter-press printing?—It was.

466. The price you and Mr. Archer, I presume, consulted about?—That is an arrangement of Mr. Archer's, what has been done in that respect; I have an understanding with him; he does as he pleases.

467. Have you any doubt that the price therein tendered could fully remunerate the parties who undertook the tender?—Not the slightest.

468. Mr. Spooner.] Will you specify the price?—Four-pence halfpenny.

469. Mr. Grogan.] Read that, if you please (*handing a paper to the Witness*); is that the tender put in by you and Mr. Archer?—Yes.

470. And the price therein mentioned you believe to have been adequate to the performance of the work?—Yes.

471. It is stated that you were prepared to give security in that tender?—It is.

472. And that security I suppose of course was good; that it was a *bonâ-fide* offer?—Quite so.

473. Should you, if an opportunity presented itself of making a tender for the execution of that work, be disposed to renew that tender on the same terms?—I should.

474. You stated that you had every reason to believe the work you and your father performed for the Government as engravers had met with the approbation of the authorities, and given satisfaction to the Commissioners?—I have every reason to believe so.

475. Do you refer to any letters of approval, or anything of that kind, or merely to the continuance of your engagement?—Only to the continuance of my engagement.

476. Were you and your father formally appointed to that office?—My father was originally, and I was subsequently.

477. Have you a copy of those appointments?—I have not, but I can tell you the date of them.

478. At the period of the investigation to which I have referred,

referred, in 1819, when Messrs. Applegath & Cowper's plan was preferred to Messrs. Bacon & Petch's, were you aware if they had full opportunities of submitting their mode of printing to the Commissioners then?—They had.

479. And the Commissioners did report against it?—Yes.

480. And were they as well acquainted with your system of engraving and printing?—Yes; Messrs. Applegath & Cowper's was the same.

481. Are you personally acquainted with the mode in which the postage stamps are at present printed?—I am.

482. Can you give the Committee any information as to the number per hour or per day, that is the working-day, calling it eight or ten hours, whatever it may be, that the contractors are at present able to strike off?—About 400 sheets a day; 400 to 500.

483. Mr. *O. Gore*.] How many in each sheet?—Two hundred and forty in each sheet.

484. Mr. *J. Greene*.] Four hundred sheets from each plate?—Yes.

485. There are 12 plates now in use, are there not?—Eight to twelve, I have understood.

486. Mr. *Grogan*.] About 400 sheets per plate would be fair work under the existing system?—Yes, I conceive so.

487. Would your mode of printing afford any great facilities in point of rapid execution of the work?—Very great indeed.

488. What number would you be able to strike off in the same time per hour with a single plate?—I should not work with a single plate; I should work with more than one; I should work with a larger number of plates than that.

489. What number would you strike off in a day?—I calculate about 3,000 an hour.

490. How many hours going to a day?—Ten.

491. That would be 30,000 in a day?—Yes.

492. You state the present mode of printing by Messrs. Bacon & Petch enables them to strike off 400 sheets per day?—Yes.

493. That would be about 4,000 a day at 10 hours working?—Yes.

494. Is it within your knowledge that that amount is adequate to the supply of the wants of the public?—Of course they can multiply, by increasing their power.

495. Is the demand of the public for the sheets larger than 5,000 a day?—I am not prepared to say.

496. Mr.

Mr. R. E.  
Branston.  
—  
29 March  
1852.

Mr. R. E.  
Branston.

29 March  
1852.

496. Mr. *J. Greene.*] Your machine would be worked with one cylinder?—Yes.

497. From your cylinder, how many impressions would be given per hour?—About 1,000 an hour; that is, supposing the machine to be constantly moving; but there would be stoppages that would cause slight delay.

498. Mr. *Grogan.*] I am supposing your machine in operation; what number of impressions could you take from your plate without its requiring to be touched up, or taken out and replaced?—The heading to the “Times” newspaper, which was done by me, printed 20,000,000, I think.

499. Do you mean the little figures; the arms?—Yes, the arms; the little heading to the leading article is also supplied by me, and has been continuously worked now for some weeks, and that has made no alteration whatever in it. I think I can construct plates for this purpose in steel, and if I accomplish my views there would be no wear at all; they would be made in steel; and hardened, and be everlasting; there would be nothing to wear them; the only damage would arise from rust from the damp used in washing them, or from accidental occurrences.

500. Are the plates that the present contractors use in the printing of those postage sheets steel?—Yes, they are.

501. Will they last so long as that?—They will last 25,000, I imagine; but from the mode of printing, the friction of the hand is so constantly against the plate that it diminishes the brilliancy of colour until the lines are rubbed out, as may be clearly seen by inspecting their sheets of labels; there are no two alike, if worked from two different plates, because there is such a constant grind on the surface, and the wear is so gradual that no two impressions can be precisely alike, and it would be very difficult indeed to identify an imitation.

502. Mr. Archer, on Friday, informed the Committee he had met very great difficulty in adjusting his machine to the perforating of the sheets as at present printed; would your system of printing afford any increased facilities for that purpose?—It would, most decidedly, because I can place points, one point on each side of the plate, which would perforate holes as the impression was taken, and by those holes the sheet can be laid under the punches in Mr. Archer’s machine, accurately and correctly.

503. With guide lines?—Merely the points.

504. There is great difficulty attendant upon the punching of the sheets, as at present prepared, owing to the shrinking of  
of

of the paper; has any plan or mode occurred to you by which that difficulty could be overcome?—Not only from the shrinking of the paper, but the varying size of the plates themselves; the pressing 240 heads on a steel plate causes it to stretch gradually; they are placed on the plates in rows, and each time as they advance the plate will stretch in some degree, and they cannot adopt any arrangement which will enable them to get the plates exactly of a size.

505. You are speaking now of your own practical knowledge?—Of the plates; I am speaking of that knowledge which I derived from viewing their specimens many years since; in all cases where the ornaments being placed upon the steel were of any considerable length, say, three inches, the action of the cylinder upon the plate would cause the plate so to stretch, that the proofs were doubled at each end; the work was blurred.

506. Then as to the paper?—The excessive damping they must give the paper for copper-plate printing causes it to expand very considerably according to the state it may be in at the time the impression is taken; so it shrinks when dry, more or less.

507. *Chairman.*] Do you not damp the paper you print upon in letter-press printing?—It is ordinarily so, but I propose not damping the paper for that purpose.

508. *Mr. Grogan.*] Your system therefore, as contra-distinguished from copper-plate printing, would obviate that difficulty of shrinking?—Entirely.

509. What is the advantage of this system in the gumming; would the gumming throw any obstacle in the way of your printing the sheet with mathematical accuracy for the perforating?—No, because I propose gumming the sheets before printing.

510. What would be the effect?—The paper being dry when used, there could be no shrinking.

511. Would the paper in that state facilitate, or otherwise, the working of the perforating machine?—The advantage to the perforating machine would be that the impressions from the plates would all be precisely of a size.

512. But its being gummed would not prevent the machine doing its work effectually?—No; in both instances the paper is gummed before being perforated.

513. Would its being gummed tend to clog the machine?—It cannot be otherwise than in the gummed state; they cannot gum the sheets after the perforation, they must be gummed previously.

514. *Chairman.*]

Mr. R. E.  
*Branston.*

29 March  
1852.

Mr. R. E.  
Branston.

29 March  
1852.

514. *Chairman.*] Do you feel satisfied that in working upon your principle with dry, or very nearly dry paper, you can get correct impressions?—Yes, if the paper were made according to the instructions I should give.

515. It depends upon the quality of the paper?—It would make no difference in the price of the paper, only in the mode of sizing.

516. Have you any specimens of postage-stamp heads by your printing?—We were ordered to destroy all the impressions, and therefore they have been destroyed. These are the heads of Prince Albert (*producing the same*).

517. Are those surface printing?—Yes.

518. Were they done to show the capability of doing it on your principle?—Principally to show how they might be combined to make one sheet, and the size being always the same; they were not intended as imitations.

519. Mr. J. Greene.] Will you refer to the letter of the Board of Inland Revenue, dated the 27th of May 1851, where Mr. Keogh states that you had sent in a contract for printing stamps at  $4\frac{1}{2}d.$  a thousand by surface printing, and  $5d.$  per thousand upon the present mode; are you aware how the Inland Revenue Office could have acquired the knowledge of such a tender?—That is not a letter signed by me.

520. It is a letter authorized by you, but not signed?—It is not authorized by me. I was a party to the one at  $4\frac{1}{2}d.$ , but not the one at  $5d.$

521. Mr. Rich.] Will you refer to the letter in which Mr. Archer, writing to Mr. Keogh, says, "I now beg to propose to undertake, in conjunction with Mr. Branston, who for many years held the appointment of engraver to the late Commissioners of Excise, to engrave, print, gum, and perforate the sheets of postage labels, and to find and prepare all the necessary printing machinery, plates, and apparatus, and also all perforating machines that may be required (except the present), for the sum of  $4\frac{1}{2}d.$  for every thousand stamps;" did you concur in that offer?—I did.

522. *Chairman.*] That was the only one?—Yes, the only one.

523. You confined yourself entirely to the surface printing?—Yes.

524. Mr. J. Greene.] By your plan of surface printing, have you not guide lines which are very beneficial in adjusting and regulating the perforating of the stamps?—Point holes.

525. Have you not also guide lines?—No.

526. Marquis of Chandos.] In printing the stamps in your suggested

suggested mode, you have no difficulty, have you, in adjusting those registering letters which vary upon every stamp?—They would have to be engraved in each plate.

527. Each letter?—Yes, each letter; there would be a blank left, and that would be engraved in each plate; there would be no difficulty whatever. They must of course adopt the same system.

528. They vary all through the sheet?—Yes, they must be all engraved; they cannot change that.

529. Mr. *Grogan*.] Would the necessity for altering those letters on every sheet occasion increased expense over the present system?—There would be but three plates in use, and those three plates I calculate would last many years; therefore there would not be the necessity that exists at present of constantly changing the plates.

530. And the register letters to which Lord Chandos has called attention, could be added to each of those plates without adding to the expense?—Yes.

531. And, as compared with the expense of the present system, your mode would be more durable, and therefore less costly?—Yes, certainly.

532. Mr. *Rich*.] Would it add to the delay; would the varying of the letter occupy time?—There would be no varying the letter; there would be but three plates, and those when first done would be laid on the press, and would last for years; the necessity of altering arises from the plates wearing out, and getting new ones into use.

533. Does the Bank of England, for its notes, make use of copper-plate or letter-press?—Copper-plate for the notes, and letter-press for the date.

534. The note is the part which they rely on for security against forgery?—Yes.

535. That part is done by copper-plate?—They, in some degree, depend upon the letter-press part; because, they can always judge from that whether the note is genuine or not, as forgers constantly do it all in copper-plate, and the difference in the appearance between copper-plate and letter-press is so obvious, that they can detect it at any moment.

536. But the essential part of the note, I understand, is done from the copper-plate?—Yes, decidedly.

537. Are you aware of any bank issuing notes in this country in which they do not make use of copper-plates?—I can show impressions of two or three (*the Witness produced various specimens*).

538. What proportion should you say the banks which make

Mr. R. E.  
Branston.

29 March  
1852.

Mr. R. E.  
Branston.

29 March  
1852.

make use of engraving from copper-plate, and from letter-press, bear to one another?—Those who have adopted the letter-press principle are very few in number.

539. For how long have they used it?—I should say 30 years.

540. Is the employment of letter-press printing in substitution of copper-plate printing on the increase, or the decrease?—It has not been practised by any one since the decease of my father.

541. Then, with few exceptions, the banking interest of the three kingdoms employ copper-plate in preference to letter-press in the issue of their notes?—Yes, they do.

542. Mr. *J. Greene.*] Is not the adoption of that style of printing considered a great preventive against forgery?—It is.

543. Mr. *Rich.*] If the letter-press printing was conceived to be a preventive against forgery, and were cheaper, do you not imagine that during those 30 years it has been in operation that the practice would have extended?—It has not been carried out; there has been nobody practising it; the letter-press mode of engraving I consider to be quite in its infancy at present.

544. Have you any instances of the Bank of England having attempted to substitute letter-press for copper-plate printing entirely?—They intended to substitute letter-press; according to the advice of the Commissioners, the new note was to have been so.

545. The Commissioners advised it, but the Bank did not adopt it?—They did adopt it to a certain extent; they had the machinery necessary to produce the notes, and they had a large number printed.

546. Having the machinery necessary to produce the notes, and having printed a great number, you find that they did not adopt it, but that they continued the copper-plate?—It was principally put forth for the 1*l.* notes, and as the 1*l.* notes were discontinued, and there was a return to cash payments, it was considered unnecessary to have a new note at all.

547. The Bank of England having the experience of the operation of the letter-press for the 1*l.* notes, did not consider it advisable to adopt the application of it to the 5*l.* notes which are now issued, and to notes of a higher value?—The cause I cannot tell you.

548. Mr. *Spooner.*] Did the Bank of England ever use the letter-press for their 1*l.* notes?—Never.

549. Then

549. Then they never had the experience?—Those notes were never issued.

550. Marquis of *Chandos*.] Did they ever print any?—They printed a very large quantity.

551. Mr. *Rich*.] They never used them?—They never used them.

552. Mr. *Spooner*.] When they printed that large quantity, was it just before the time that they ceased to issue the 1*l.* notes?—I believe it was, but I cannot say.

553. You cannot of your own knowledge say whether they destroyed those notes in contemplation of withdrawing the 1*l.* notes from circulation?—I cannot.

554. Mr. *Rich*.] In your tender which you gave for the letter-press printing, you state that you conceive the 4  $\frac{1}{2}$  *d.* would be amply remunerative?—Yes.

555. Did you enter into calculations upon that?—I did.

556. Would you furnish the Committee with the data on which you framed your conclusions?—I did it in conjunction with Mr. Archer; therefore it would more properly come from him than from me.

557. You are aware that Mr. Archer made two other independent proposals, in which you did not concur?—I know of one other.

558. Which is that to which you refer?—The 5 *d.*; I saw the documents, or copies of them, but I know nothing about it.

559. Have you any cognisance of the previous offer he made to do it for 5  $\frac{1}{2}$  *d.* and a fraction?—No.

560. You stated that, as far as you understand, in the printing of the stamps as now carried on by Messrs. Bacon & Petch, they use from eight to twelve plates?—Yes.

561. Are you aware whether it would add to the expense of working with an increased number of plates?—It would not add to the expense of working.

562. It would be in their power to increase the number of presses and plates?—Yes, it would be in their power to increase the number of presses and plates, and they would employ a larger number of printers.

563. With that increased demand for the stamps, which would render it necessary to increase the number of presses and plates, the expense of making the plates would be borne out by the increased sale of the stamps?—Yes; as I understand their contract, they include the making of plates in the price paid for the labels.

Mr. R. E.  
Branston.

29 March  
1852.

564. Then there would be no danger of a deficiency, so far as I understand?—I do not see that there could be.

565. You stated that there were difficulties in applying the perforating machine to the sheets as prepared by Messrs. Bacon & Petch; those difficulties, as I understand you, would explain the cause why the machine did not operate well when the experiments were made with some of the sheets at Somerset House?—The sheets varied in size; that I understand to be the reason of that failure.

566. Did the variation in size result from the shrinking from the operations you have referred to in your evidence?—I believe so; I have never seen the machine, and I know very little about the perforating.

567. Did you know sufficiently of it to feel that it justified you in entering into a contract with the Government on so large a scale?—Yes, I have a sufficient knowledge of machinery generally to see the practicability of carrying into effect these operations.

568. Mr. J. Greene.] If the number of presses were increased, would not there be still greater uncertainty as to the sheets of stamps, and greater difficulty in perforating them?—Just the same; it would be merely a repetition.

569. Only the same difficulty; not greater?—Only the same difficulty. If plates of uniform thickness be used, still they will not stretch exactly alike; there may be a difference in the quality of the metal; and 240 impressions on a steel plate would not always cause the plate to stretch to the same degree.

570. That is, under the present plan?—Under the present plan. I hardly think it possible for them to make two sheets of a size; if they are of a size it is by mere accident.

571. Then the number of presses being increased, would not the uncertainty of perforating be still more so?—I do not quite think you understand the nature of the mode of making the plates; each plate contains 240 heads, and of course if they wanted more plates, it would be merely the repetition of the same process. Another 240 heads would have to be put on another plate. The process adopted by them, is working backwards and forwards this steel roller; having put one in, they then remove the plate and put in another, and so they travel over the whole of the plate; and the action of this roller upon the plate, causes it to stretch in a slight degree (*explaining the process by a model*).

572. Increasing the number of plates, must increase the uncertainty

uncertainty of perforation?—The uncertainty is just the same.

573. Have not other countries adopted postage labels?—Only France; I have not seen any others.

574. Do you know what description of printing they use there?—Letter-press, in France.

575. Have they made any inquiry as to the system adopted in England, and whether it is prudent to make use of it?—I do not know.

576. Mr. *Rich.*] You are aware there was an inquiry carried on in England, previous to the adoption of the postage stamp, as to the best method of executing the work?—I know there was inquiry made; I know none of the particulars.

577. You were not examined?—No, I was not.

578. Marquis of *Chandos.*] Do you know whether the printers of this letter-press printing for these notes, have been in the habit of printing on dry paper?—I believe the medicine-duty stamps are printed on dry paper at Somerset House.

579. Have you known of any instance within your own knowledge of printing on dry paper?—No, I have not.

580. Do you consider there would be any great difficulty in getting good impressions upon dry paper?—Not if the paper be made according to a plan that would be devised.

581. Were these specimens printed on dry or damp paper?—On dry paper; we invariably take our proofs on dry paper, and those are the best impressions we get from engravings in relief; the less size there is in the paper the better the impression, and there is an absence of all size in India paper.

582. Mr. *Spooner.*] Here is a letter from Mr. Henry Archer, dated 26th of March 1851, in which he says, "I beg leave to inform you, that I am prepared, in conjunction with Mr. Branston, the eminent engraver, to enter into a contract, not only for perforating, but for engraving, printing, and gumming the postage-label sheets, in a manner very superior to the present, for 1 *l.* 15 *s.* a thousand less than what is now paid to Messrs. Bacon & Petch." Then there comes another letter, in which you join with Mr. Archer, and your offer there is, to do it at 4  $\frac{1}{2}$  *d.* a thousand. Are you aware that those two offers are very different one from the other?—I am.

583. Do you concur in the first offer, which is to do the work at 1 *l.* 15 *s.* a thousand less than the sum paid to Messrs. Bacon & Petch?—I can only state, that I concurred in those calculations to which I signed my name.

Mr. R. E.  
Branston.

29 March  
1852.

584. Then you did not concur in that?—I cannot tell whether I did or not without reference to documents.

585. Has your attention ever before been called to the fact, that there were two offers made, the one to do the work at 1 *l.* 15 *s.* less than the contractors have got now, and the other stating that you would do it for 4  $\frac{1}{2}$  *d.* a thousand, and to the fact of the difference which exists between those two offers?—There is a confusion in my mind, arising from having seen all those statements, and reading those documents; therefore I cannot positively say that that has never engaged my attention before.

586. Can you inform the Committee whether the offer of 4  $\frac{1}{2}$  *d.*, made by Mr. Archer conjointly with you, is one made from due calculation, and whether it is an offer to which you are willing now to adhere?—That is so.

587. Marquis of Chandos.] Did you concur in any other offer?—No.

588. Mr. Rich.] Would you inform me whether the practice you have referred to, of printing on dry paper, is substantially a practice, or almost only a theory?—It has been practised for book-work.

589. To a considerable extent?—Very superior paper is used as a mode of superior printing. In the ordinary way, damp paper affords greater facility for letter-press printing than the dry paper.

590. But for the purposes you propose to apply this to, is there any impracticability of working on dry paper?—There is not.

591. In fact, it is a speculation for applying to these purposes that mode of printing which has hitherto been applied to other purposes?—It is.

592. In the printing on that dry paper, what would become of the Crown water-mark?—It would make no difference to the water-mark; it would not affect it at all.

593. Mr. Grogan.] I wish to call your attention to an answer you have this moment given upon the practice of printing on dry paper; is that the answer you wish to be put on the notes?—For this or a similar purpose, that is as I understand it.

594. I understood you to say some short time ago, that the patent medicine labels were printed in that manner?—They were not for gumming; they were printed on dry paper, because the paper was too flimsy to be damped. The object of the Government was that medicine vendors should not transfer

transfer old labels to new bottles; therefore they used a very thin paper, and that was printed dry.

595. Then when you say there is no practice of printing on dry paper, you mean for gumming to be applied to it?—Decidedly, for a similar purpose to this.

596. Not to the act of printing on dry paper itself?—Certainly not.

597. Mr. Rich.] That is, it did not apply to the general practice, but it applied to the printing of expensive books; but as regards thin paper, you have no instance of it, I think you say?—Yes, the medicine labels are instances of its being done on thin paper.

598. Mr. Grogan.] And they have always been printed dry?—I believe so; but it is 20 years since I saw them done. I cannot answer therefore for the present practice.

599. You and your father prepared the plates for the permits for the Excise?—Yes.

600. That was done in the letter-press manner?—Yes.

601. Has the Government continued to use that mode?—They have.

602. Do they use it still?—Yes.

603. How many years has that been in operation?—Thirty years, speaking roughly.

604. And these bills, and notes, and orders that are in use in the India service?—They have plates prepared for the purpose, with very costly machinery.

605. Who engraved them?—I did.

606. They are letter-press printing?—Yes.

607. Has the East India Company continued to use them from the time of their first preparation?—I believe so.

608. How many years is that ago?—It would be 10 years ago. They were so satisfied with the result of their experiments with the first machine, that they ordered a second, which they now have in use.

609. And those instances, the Government permits, bank-note stamps, and the East India drafts that you have in your hands, are they the only instances in which letter-press printing has been used for purposes of that kind?—Certainly not; letter-press printing is very commonly used abroad for bank-notes, and various other similar purposes.

610. From the information you possess, will you inform the Committee of any instances where letter-press printing has been in general use, and continues in use, for these purposes; you spoke of the Bank of France, are you aware of that being letter-press printing?—I am not positive about that, but I

Mr. R. E.  
Branston.  
—  
29 March  
1852.

believe it is so; but there are many notes, the Prussian notes, and many others, are from letter-press; but I am not prepared to state that accurately.

611. Marquis of *Chandos*.] Do you think the paper being gummed would make any difference to the practicability of the letter-press printing?—None whatever.

612. Because all this dry printing has been upon paper without gum or anything at the back?—Yes.

613. And rather thinner?—Yes.

614. You would gum before printing?—Yes.

615. Are not all those instances upon rather thin paper?—Those are mere proof impressions.

616. You think the gum being on the back of the paper, and giving it a considerable substance, would not in any way interfere with the printing by letter-press when it was dry?—Not in any way.

*Edwin Hill, Esq.*, called in; and Examined.

*E. Hill, Esq.*  
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617. *Chairman*.] YOU are Supervisor in the Stamp Department of Somerset House?—I am the Inspector of Postage Stamps.

618. How long have you been in that situation?—Since the commencement of 1840.

619. And the whole of that department has been under your management?—Yes.

620. How long is it since you were first made acquainted with Mr. Archer's plan of piercing the stamps; how long is it since you knew of Mr. Archer's first application?—About five years.

621. Did he propose any plan to you of doing it, or did he merely state it to you in the rough, in the first instance?—Mr. Archer suggested, with reference to the label stamps, that it was desirable to perforate them all round, for the sake of detaching them and other conveniences, and that he was employing an engineer to devise and construct machines for that purpose.

622. Was that the first proposal of the plan, to your knowledge?—To the best of my recollection.

623. You were ordered by the Commissioners to take charge of Mr. Archer's machine, and let him have a fair experiment?—In the first instance, I believe, I was desired to consider the general propriety of perforating the stamps, and in the second instance the likelihood of Mr. Archer's proposed machine to accomplish that purpose.

624. Did

624. Did you make any report to the Commissioners upon the subject?—I did; I reported that my opinion was that it was a very desirable thing to have the labels so perforated, and I thought it probable that the machine of which the drawings were shown to me would effect that perforation.

*E. Hill, Esq.*

29 March  
1852.

625. Is that the machine now in use?—No.

626. The machine now in use was not the first plan proposed?—No.

627. The machine first proposed to you did not answer the purpose as well as it was intended?—I understood from Mr. Archer that they were unsuccessful in making it endure; it would perforate the sheets, but it was soon perceived that it would not continue in working condition.

628. Had Mr. Archer, at that time, taken out a patent for this machine?—Certainly not.

629. And then, afterwards, he proposed to alter his plan?—Afterwards. I lost sight of Mr. Archer for a long time, and when I next heard from him he had, I understood, had a long fever, and also he had determined to change his mode of operation by adopting the plan of perforation, by which I mean cutting the round bit of paper completely out; the other having been that of piercing the paper with a small chisel or needle.

630. At that time had he a machine prepared for it?—I believe, to the best of my recollection, he had ordered a machine to be constructed upon that principle. He showed me paper so perforated.

631. Was that machine tried first in your presence, or where was it tried?—When the machine was ready, I went to see it tried.

632. Where was it at that time?—It was in one of the divisions of Hungerford Market.

633. In your opinion, so far as you saw it, you found it would answer the purpose intended?—As far as I could examine it in such a place, I thought well of it.

634. And was the trial on plain paper?—Yes, the trial was on plain paper.

635. Where was the first trial made on the sheets of stamps?—I believe at the premises of Messrs. Bacon & Petch.

636. Were you present at that trial?—Yes.

637. How did the machine answer then?—It effected the operation of perforation successfully, but the sheets could not be conveniently introduced into the machine; it was a very slow operation, and the provision for holding them in their

E. Hill, Esq.  
 29 March  
 1852.

places, so that the perforation might correspond with the impressions, was incomplete and insufficient.

638. Were alterations made to improve it in consequence of that?—I suggested alterations and additional apparatus, and it was thought best to remove the machine from the premises of Messrs. Bacon & Petch, to have those alterations made, and new trials made.

639. What was the object of removing the machine; was it that it might be under your particular care?—No; the object of removing the machine was, that it was then in rooms which were especially devoted to the production of postage stamps, and where it would have been inconvenient and improper that engineering men should have access to perform the alterations that were necessary.

640. Was there any difficulty found on the trial made before it was removed to your care; with respect to the distances between the stamps, was there any difficulty in piercing in consequence of the variations in the length of the sheets?—I think not at that time; I think the machinery was not in a sufficiently perfect state to manifest that; but very early in the business it occurred to me that there would very likely be difficulties from the irregular shrinkage of the damp paper, and I suggested that difficulty to Mr. Archer, and recommended him to measure with great accuracy a number of sheets, in order to ascertain whether differences existed or not. Afterwards I understood from Mr. Archer that he had so measured several sheets, and that he had not discovered those differences. From what appeared afterwards it seemed that that examination was altogether insufficient.

641. Difficulties still remaining?—The difficulty remained, but was not discovered.

642. What do you suppose was the cause of that irregularity in the lengths of the sheets?—There is no doubt that the plates were not all alike in length. There had been no particular reason that they should be all alike in length, and therefore there had been no particular effort to make them so up to that time; but also the double shrinkage of the paper, first from the wetting necessary to the working, and next from the wetting which occurs by laying the gum on, and the irregularity of the shrinkings in the subsequent dryings caused those differences.

643. Since that time have the sheets been made more equal in length, in consequence of the necessity for that?—Greater care has been taken to make the plates all the same in length.

644. Is

644. Is there any difficulty, upon the present mode of working, in making the plates all alike in length?—I think not. *E. Hill, Esq.*

645. You think it may be done on the present system?—I think so, decidedly. *29 March 1852.*

646. In consequence of finding this difficulty in working those varied lengths, was not there an alteration made in the machine?—Yes; after a time Messrs. Bacon & Petch constructed a new machine.

647. I am not speaking as to the machine for making the plates, but the machine for piercing; was there not an alteration made in the machine for piercing to complete it, to meet the difficulty of the varied lengths of the sheets?—Yes; an adjusting apparatus was introduced.

648. And after that was introduced, the machine worked satisfactorily, did it not?—Ultimately; there were other alterations before the machine was got into a state in which it could do its work; the perforation is attended with more difficulty and expense than was at first contemplated, but we can do the work.

649. On the whole you think it will accomplish the purpose and be useful to the public?—Yes.

650. And check forgery?—Yes; and check forgery.

651. Have you reported upon the usefulness of it to the Commissioners?—I have reported upon it.

652. And explained that it might be employed satisfactorily to the use and benefit of the public, and the security of the stamps?—I gave a general report in approval.

653. Did you make any report as to the remuneration Mr. Archer ought to have in consequence of the success of his machine?—That matter was referred to me, and I made a report upon the subject, not however recommending any specific sum, but giving my general views upon the subject.

654. Was it your view that he should be paid so much for his invention, and so much for his machine, and so much for his trouble?—So much for his invention and so much for his machine.

655. Did you recommend that he should be paid a certain sum, or according to the quantity of stamps pierced?—I gave a scale of sums; of course that was equivalent to recommending a certain sum out and out.

656. A fixed sum?—A fixed sum.

657. You did not make any recommendation as to his being allowed a certain per-centage upon the amount of stamps so pierced?—No, I did not.

658. You

*E. Hill, Esq.*

29 March  
1852.

658. You still retain the same impression, that his machine should be constantly retained for the piercing?—I do.

659. Is it competent to do all that would be required, or would more machines be required?—That I think is hardly known.

660. I suppose if it were necessary to make a fresh machine the extra expense of a new machine would bear no proportion to the cost of the first machine?—I consider the present machine is a very bad piece of engineering.

661. *Mr. Spooner.*] The machine at present in use?—The perforating machine.

662. The one *Mr. Archer* proposes, or the other?—The one now ready for use.

663. *Chairman.*] Still it effects the purpose?—Yes, it effects the purpose, but I believe it would be soon worn out in parts, and get out of order, and that a complete remodelling of it upon more just principles must take place.

664. I suppose that is the case in almost all new machines?—Certainly.

665. You think that the present mode used by *Messrs. Bacon & Petch* might be done so correctly as to answer the purpose for the piercing machine?—I do.

666. And do you think that the mode now in use by *Messrs. Bacon & Petch* is absolutely necessary for the security of the public?—My knowledge of the subject is not sufficient to constitute me an authority; but, judging from experience, it seems to have been eminently successful.

667. There has been no infringement of it, and no forgery?—I cannot say there has been none, I think there have been one or two prosecutions for forgeries, the counterfeits were, however, quite obvious.

668. You are quite aware of the different nature of the two principles; the surface printing and the copper-plate engraving?—Yes.

669. You know that one is more expensive than the other?—That was fully known and considered at the outset.

670. The only reason there could be for adopting the copper-plate printing would be the consideration that it would be more secure?—That it would be considered more secure.

671. What is your own private opinion upon that subject; is it more secure?—I believe it is decidedly more secure; the copper or steel-plate printing is decidedly more secure from counterfeit.

672. Then you do think it possible that the surface-printing could

could be done so correctly as to secure the public from counterfeits?—I think not, but I do not hold myself an authority.

673. Have you ever seen any attempt made to imitate the present stamp?—In one case a stamp was brought before me, being a counterfeit, for my examination.

674. Would that counterfeit have passed through the Post-office?—No, it was detected in a post-office in Ireland, and sent to London for my inspection.

675. Are you at all aware how it was done?—No; it was a very clumsy imitation.

676. I suppose if you could have it shown to you that the present stamp might be easily imitated, your opinion as to the great importance of copper-plate engraving would not remain the same?—Certainly not.

677. It all depends upon that?—It depends much upon that.

678. Supposing it could be proved that the present plan of copper-plate engraving could be imitated, so as to pass without discovery through the Post-office, you would recommend the cheaper mode if it answered the purpose as well?—The number of persons conversant with letter-press printing is so vastly greater, as far as I am acquainted with it, than those conversant with the copper-plate printing, that I think if the imitation were proved to be equally easy, copper-plate printing would be still much preferable, because the temptation to imitate would address itself to a much smaller body of persons.

679. Still, if there was a disposition to forge the Queen's Head on the postage stamps, there are plenty of people, both in the case of the copper-plate printers and the surface printers, who could do it, I suppose; the copper-plate printers are not limited to so small a number as to make it difficult to obtain a copper-plate counterfeit if people were base enough to require it?—I believe it is much more difficult to make a number of copper-plate engravings, all exactly similar to each other, vastly more difficult than it is to make a number of letter-press impressions, all exactly similar to each other; and that exact similarity is one of the means of detecting forgeries.

680. Supposing that the present stamp was to be imitated by surface printing, do you think, with the rapidity with which it passes through the Post-office, and never returns again, it might not be successfully done?—Therein I speak not as an authority, but my own decided impression is, it would be impossible

*E. Hill, Esq.*

29 March  
1852.

*E. Hill, Esq.*

29 March  
1852.

impossible to imitate it by surface printing, so that it would not be readily detected.

681. You know that the stamps go through the Post-office with very great rapidity, and that very little notice is taken of them; if they were very similar, they would not be very easily seen, would they?—I am quite aware of that; but, on the other hand, I have had a number of imitation stamps sent for my inspection that have been detected in the Post-office; and I have been surprised that in mere country places they should have detected such stamps. They were not counterfeits. I may be allowed to explain what they were. In some of the small periodicals, the “Mechanics’ Magazine,” and “Punch,” and I think other periodicals, occasionally designs have been introduced, or sketches, containing letters, and upon those letters have been engraved an imitation of the postage stamp, and those have been cut out by parties, and stuck upon letters.

682. Those were not done for the express purpose of forgery, but for amusement?—One was detected in some remote country place in Oxfordshire, so cut out of “Punch,” and I was surprised at the time that the postmaster should have detected it.

683. I presume there was a very striking difference, or he would not have detected it?—The difference was not very striking.

684. Do you suppose that the advantage of copper-plate printing is so great that if the surface printing was to be adopted, with a saving of 4,000 *l.* or 5,000 *l.* a year, the present plan ought to be retained?—I should think it a most hazardous experiment to make the change, if, as I believe, it in any way diminished the security; for a few Government prosecutions in a year would run away with 5,000 *l.*, besides the loss occasioned to the revenue by the imitations.

685. There has never been any extensive imitation or attempt at it yet, has there?—I am supposing that by the adoption of surface printing the security was diminished, and that that brought on imitations, which brought a loss upon the revenue directly, and indirectly by prosecutions for counterfeits.

686. I suppose you had nothing whatever to do with the new arrangement of the Commissioners, in the new contract made by them with Messrs. Bacon & Petch?—Those things come before me for any observation I may have to make.

687. Were you consulted with respect to that contract, before it was made?—No, I was not.

688. Are you at all aware as to whether the first contract was

was

was determinable at any time or on any notice?—I am not aware.

689. You know that the last, the one made in 1851, is subject to a five-years' tenure?—I have not examined it with that in view.

690. With respect to Mr. Archer's invention, you still maintain your opinion that it is a useful invention, and ought to be applied to the piercing of the stamps, to the benefit and convenience of the public and the security of the Post Office?—That is my opinion, certainly.

691. Marquis of *Chandos*.] But you do not think the printing by letter-press advisable, instead of printing by copper-plate?—Certainly, I think it most inadvisable in the present state of knowledge upon the subject.

692. You think there would be greater facilities existing for imitation, if the letter-press printing were adopted, than there are attaching to the system of copper-plate printing?—As far as my knowledge goes, very much greater.

693. Mr. *Grogan*.] Were you consulted when the contract for printing the postage label stamps was originally made with Messrs. Perkins, Bacon & Petch, as to the mode of printing and executing the work?—I believe the matter was nearly determined, if not wholly so, before my appointment, and that I was not consulted.

694. Are you aware that so far back as 1819 and 1820 there was a Commission appointed to investigate the subject of letter-press printing?—I have merely a general impression of that being done.

695. Did you ever hear of it?—I certainly have heard of it.

696. Mr. *Spooner*.] You do not know anything about it?—Nothing particularly.

697. Did it come within your knowledge that that report distinctly condemned copper-plate printing as a prevention of forgery?—I never heard of it before I heard it mentioned in this room this morning; I was not aware of it.

698. Take that report, with the names of the Commissioners at the end of it, viz.: Sir Joseph Bankes, Sir William Congreve, Mr. William Courtenay, Mr. Davis Gilbert, Mr. Jeremiah Harman, Mr. William H. Woollaston, and Mr. Charles Hatchet. Did you ever hear any of those names before?—Sir William Congreve I have, and Sir Joseph Bankes, certainly.

699. Those Commissioners investigated the subject; their report is in my hands; they investigated the subject fully in relation

*E. Hill, Esq.*

29 March  
1852.

*E. Hill, Esq.*  
 —  
 29 March  
 1852.

relation to the prevention of forgery, as between copper-plate printing, of course, with other objects; and they decided that Messrs. Bacon & Petch's plan of copper-plate printing was not right. Does the decided expression of opinion, by those gentlemen, in any way tend to shake your own convictions now?—Certainly not; and I will ask leave to explain why. I know a good deal of the extreme care and labour which was bestowed in deciding the question in the year 1840, and that all that matter was taken into consideration; then a reward was offered to the public from the Treasury, and some thousands of letters containing plans of all kinds were received, and looked through, and inquired into; and ultimately, after the decision, upon which as much care and trouble was bestowed as possibly could be bestowed, and by men of high ability, as I consider them, a decision was made by parties under all the weight of official responsibility; which those Commissioners were not under.

700. Who are the parties you refer to?—I refer to my brother, Mr. Rowland Hill, to the Chancellor of the Exchequer, Mr. Baring, now Sir Francis Baring, and I believe other gentlemen then connected with the Government.

701. Mr. Rowland Hill, who is at present in the Post-office department, was one of the Commissioners in that investigation?—He was not a Commissioner; he was then the servant of the Government, employed in the Treasury under the Chancellor of the Exchequer, for the special purpose of introducing a change in the Post-office system.

702. He was one of the parties who investigated that subject, and decided it?—Yes, he was the suggester of the whole subject of postage label stamps, and therefore he was pledged in his whole reputation to the success of the measure.

703. Does it come within your knowledge how the postage label stamps are prepared in France; are they prepared by copper-plate or letter-press?—I really cannot positively answer that question.

704. Do you know whether any investigation of our mode of preparing them in this country was instituted by French authorities previous to their adopting any system?—There was, certainly; I myself made reports upon the subject to several of the continental governments, and the French among the number, I believe.

705. What was the general query from the foreign governments made to you?—They wished to know all the particulars relating to the making of the paper, and the mode of putting on the stamps; the mode of accounting for them, and securing them

them against fraud and robbery; the mode of distribution, and everything that could be communicated.

706. Did their inquiries extend to the engraving part of it? —Yes, in several instances. I believe in most of the instances I have accompanied the agents of the foreign governments to examine the engraving and other processes.

707. In your replies to those queries, did you recommend any particular mode of engraving?—Certainly not; I was merely asked for information as to what we did, and not for recommendations, and therefore I did not make any.

708. Mr. *O. Gore*.] Mr. Rowland Hill, I understood you, recommended the copper-plate printing?—He was one of the parties who had the decision of that matter.

709. He decided on the copper-plate printing?—He decided on the copper-plate printing.

710. Are you aware that the present envelope stamps are letter-press printing?—They are a combination of embossing and printing; the embossing is the principal part of them.

711. Are they not letter-press printing?—It may be called letter-press printing, but it is a great strain of words to call it so.

712. What sort of printing would you call it; you would not call it copper-plate printing on dry paper?—Certainly not; nor should I call it letter-press printing; for when they were first introduced, I applied to a printers' ink maker, who I was told was one of the first in the trade. I do not recollect his name at this moment; but he, after weeks of attempt to make a suitable ink (it being his especial business to make ink for letter-press printing), abandoned the attempt; he could not do it.

713. Still those are printed as letter-press, in the same mode as letter-press printing?—I do not think that can be so said; one is printed by a moderate pressure upon a very soft ink, the other is printed by a violent blow, which would drive a soft ink in all directions.

714. Mr. *Grogan*.] Does your distinction amount to this, that there is a different degree of pressure used in the plates from which the two kinds are printed; is that the distinction you wish to put before the Committee?—So complete a difference in the degree of pressure, as to make it a distinct operation; no letter-press printer could do that work.

715. Are you aware that the distinction of the phrases "copper-plate printing" and "letter-press printing," is where the line that is marked on the paper is in relief or in the hollow; are you aware that that is the technical distinction between

*E. Hill, Esq.*

29 March  
1852.

*E. Hill, Esq.* between letter-press and copper-plate printing?—That is a mode of distinction; and the distinction usually recognised.

23 March  
1852.

716. Is it the distinction recognised between all professional parties in the business?—As far as I know.

717. Did you ever hear the distinction you have yourself now drawn of the amount of pressure applied to the plate being introduced as an element between the different kinds of printing?—I have not, but it is nevertheless perfectly just.

718. Marquis of *Chandos*.] Is not that a process of embossing, the raising the Queen's Head upon the envelope, rather than printing at all upon the envelope?—The printing is a very important part of this stamp; I would defy any letter-press printer in London to do that printing, unless he had learned it especially.

719. You do not in fact colour the envelopes at the same instant they are embossed?—Yes, we do.

720. How is it, then, that you have some constantly coming out without colour?—When they are stuck double, that is, one below another.

721. That is by accident?—It is a mere accident.

722. Mr. *Rich*.] In the proposal that was submitted by Mr. Archer, in the name of himself and Mr. Branston, that they would print, if they were to take the present mode of engraving and printing, if that were required, at a charge of 5*d.* a thousand, but that if they were allowed their own mode of engraving and printing, it should be at 4½*d.*; do you not conceive that there is a wide distinction between the mode of printing proposed by Messrs. Archer & Branston, from that which is now in use at the factory of Messrs. Bacon & Petch?—All the distinction between letter-press and steel-plate printing.

723. You would call the one engraving and the other printing?—Yes.

724. Mr. *Geach*.] Will you have the kindness to state the plan that is now adopted for engraving those plates; that is, the process from the beginning, with the steel plates?—There is one original artistic design, one single head, which was engraved by the late artist, Mr. Heath, upon a small steel block; to that has been added some ornamental engine-turning; and from this block, which is hardened, an impression like this is derived (*producing a specimen*), by rolling a soft cylinder of steel upon it, under severe pressure; several additional impressions having been taken upon the surface of the cylinder, the cylinder is hardened, and then we take the precau-  
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tion to produce a number upon separate steel blocks, to be used as originals in future time to save the first, which is never resorted to, unless when absolutely necessary. Having taken that precaution, impressions are produced upon a soft steel plate; 240 of such impressions are produced by rolling the steel cylinder, under heavy pressure, upon the soft steel plate. There is then removed from it some little amount of steel that is driven backwards and forwards by the rolling of the cylinder upon it, and certain letters are engraved by hand upon it, so as to distinguish each individual stamp upon the plate; then the plate is hardened, and it is ready for use.

725. Now, with letter-press printing, is there any mode by which you could gain the same advantage of having one original model?—By stereotyping, or some operation of that kind. The electrotyping is a more perfect operation still.

726. You would get blocks from this particular model in the same way; at first you would get stereotyped designs?—From the model prepared for letter-press printing, copies would be obtained by stereotyping or by electrotyping, electrotyping being by far the most perfect plan.

727. Could this be done as perfectly, so as to retain the same original impression in this stereotyping or electrotyping, as it would be in the steel plate?—Certainly not by stereotyping, but probably by electrotyping; but that is a matter upon which I speak with hesitation, from not being very familiar with it. But I know that stereotyping is imperfect, from the shrinkage, first, of the plaster cast that is taken, which shrinks considerably in drying, and secondly, from the shrinkage of the metal after the stereotyped plate is cast.

728. Through the multiplication of impressions that would be taken, as there must be in the first place from the steel, and then from the original block for letter-press printing, your impression is, that you would not get so perfect a representation of the original in the last one in the letter-press printing as you would by the steel-plate printing?—My impression is that letter-press printing, as an art, is decidedly inferior to copper-plate printing as an art; that no piece of letter-press, however excellent, ever equalled, as far as I know, the corresponding copper-plate.

729. Mr. O. Gore.] Not even the stereotyping?—Electrotyping will copy anything perfectly, but I doubt exceedingly whether the original plate or die can be possibly prepared so perfectly and well for letter-press as it can be for copper-plate; I consider that the copper-plate engraving is a higher order of art than letter-press printing.

*E. Hill, Esq.*

—  
29 March  
1852.

730. *Mr. Geach.*] Then your opinion is that the copper-plate gives a greater security, as you have stated; now does not that security depend upon the exact similarity of the postage stamps; I do not mean to say as to the ink, but the transfer part of it; the original die that you have causing every stamp to be similar almost, as I may say, as to the expression of the countenance, one to the other?—We consider the security lies there, in the certainty of exact similarity.

731. And the slightest alteration of that similarity, or at least the slightest defect or not coming up to the standard of the plate, you think would be very injurious, or at least it would render it more difficult to detect forgeries?—The kind of correctness which, according to my recollection, was most insisted upon, was that which preserves the expression of Her Majesty's countenance; any imperfection that would disturb the countenance would be obvious to everybody.

732. Now I am asking you these questions more particularly because I have personally a knowledge of the same thing in the countenance of the Britannia which is in the corner of the Bank of England note. Although a very simple matter, the slightest change in that countenance I should detect as readily as if the Noble Marquis were to get into the chair, and Mr. Muntz to take his place. I want to know from you, seeing that the slightest alteration must make a difference in the expression of the countenance, whether the perfect similarity is not as well secured by letter-press as by copper-plate printing?—I presume that would resolve itself into the question whether it is more or less easy to imitate a countenance manifested in copper-plate, or a countenance manifested in letter-press.

733. No, it does not amount so much to that as to the power of always keeping it precisely the same; because if the genuine stamps should have the slightest alteration, then your eye would become accustomed to an alteration of some kind, and you would not know whether it was the alteration of the forgery or the alteration of the genuine stamp?—Then I think it would not be more difficult, so far as I know, to preserve the exact countenance by letter-press than by copper-plate; but I think that the one could be much more easily counterfeited than the other.

734. *Mr. O. Gore.*] Did not I understand you to say, at the commencement of your examination, that Mr. Archer's system would be a check upon forgery?—I think it would to a certain extent.

735. But

735. But this latter portion of the evidence is to the contrary? *E. Hill, Esq.*  
—It is the perforation that would be a check upon forgery.

736. And it was upon that ground you recommended its adoption to the Commissioners?—That was one ground.

29 March  
1852.

737. May I ask what the other ground was?—The general convenience.

738. The general convenience to the public?—Yes, the general convenience to the public; and I considered it would be probably productive of economy, for this reason, (I speak now of something which occurred two years ago): I knew that it was considered highly important in the Post Office to do away with the money pre-payment of letters, because it caused a great deal of trouble, expense, and delay in keeping an account of such money pre-payments, and transmitting the accounts and money from office to office; I considered, therefore, and stated in my report, that Mr. Archer's system in facilitating the use of stamps would do away with some part of the objection to the relinquishment of money pre-payments, and so far would be advantageous to the revenue, in helping to get rid of that expensive and troublesome system, and the delay incident there

739. You therefore recommended Mr. Archer's system upon the three principles; the one as being a check upon forgery, the other as being more economical, and the third as being more convenient to the public?—Yes, I took those three grounds.

740. Were there any other grounds upon which you recommended it?—I do not recollect any other; but I have a copy of the report here.

741. Will you put in the copy of your report?—I will.

742. Will you be kind enough to read it?—It is as follows: “Observations relating to Mr. Archer's Remuneration. The advantages expected from the use of Mr. Archer's machine or perforating the postage label sheets may be considered first with relation to the revenue, and secondly with relation to the convenience of the public; as to the revenue, it is still the case that a large proportion of the revenue of the Post-office is received in the form of money payments, a form involving much trouble and expense in the collection. Any increase of facility in the use of stamps is therefore valuable, as a step towards the abolition of payment in money. Again, when the use of perforated stamps becomes general, there can be little doubt that an additional security against fraud will ensue, inasmuch as the accurate perforation of counterfeit sheets would be a work of difficulty, and sheets not accurately per-

E. Hill, Esq.

29 March  
1852.

forated would at once excite suspicion if offered for sale. As to the convenience to the public, this consists of the readiness with which sheets or portions of sheets can be folded up into convenient shapes without creasing the stamps, the readiness with which the stamps can be detached without the use of cutting instruments, and their assumed superior adhesiveness, from the jagged edges not being so liable to be detached by the curling up of the stamp as the smooth edge would be. It would seem to be a very moderate estimate of the advantage of Mr. Archer's plan to the revenue and to the public jointly to take it at one farthing per sheet of 240 stamps. The number of sheets printed exceeds 900,000 per annum; 900,000 farthings are equal to 937 *l.*; if from this amount the sum of 200 *l.* be deducted for current expenses, then, upon the assumed data, 737 *l.* will represent the net annual advantage. The question remaining is, what portion of the gain ought to be assigned to Mr. Archer as his reward for suggesting the plan; herein regard must be had to the degree of probability there was of others making the same suggestion if Mr. Archer had not done so; which probability seems considerable, inasmuch as the perforating process was well known, and this particular application of it was all that Mr. Archer suggested. On the other hand, it must not be overlooked that Mr. Archer has had great practical difficulties to surmount, arising from the unequal shrinkage of the label sheets after the printing and the gumming. Being unacquainted with any precedent bearing upon the case, I do not feel competent to offer a suggestion as to the amount of remuneration due to Mr. Archer; I therefore merely add a scale of a few (approximate) annual proportions, with the capital, which at four per cent. per annum interest, these may be taken to represent, viz. :—

One-eighth	£. 92 per annum	-	£. 2,300 Capital.
One-ninth	82	„ -	2,050 ditto.
One-tenth	74	„ -	1,850 ditto.
One-eleventh	67	„ -	1,670 ditto.
One-twelfth	61	„ -	1,500 ditto.
One-fourteenth	57	„ -	1,420 ditto.
One-sixteenth	46	„ -	1,150 ditto.
One-eighteenth	41	„ -	1,025 ditto.
One-twentieth	37	„ -	925 ditto.

Regarding the sum to be paid to Mr. Archer for the machine, as distinct from his compensation for the invention of the plan, I think a second machine of the kind, with its appendages,

lages, might be constructed for about 200 *l.*; but as it is well known that a first machine, wherein everything has to be originated, is vastly more expensive than one which is a mere copy of another previously constructed, I think that in fairness at least 100 *l.* ought to be added on that score. It should be observed that this machine is made upon a different and more expensive plan, and will be more expensive to work than the machines first proposed; the change was made chiefly because of great practical difficulties besetting the first plan, but partly also in consideration of the very superior effects produced by machines of the present construction. (signed) *E. Hill.*—  
The Honourable Commissioners of Inland Revenue.”

*E. Hill, Esq.*

29 March  
1852.

743. There is one other point with reference to which I should like to ask you a question; that is, with regard to the gum; have you turned your attention at all to the gumming of the stamps?—Certainly; the gumming has been a source of great anxiety and care to me.

744. Have you turned your attention to the gumming of the present stamps, comparatively with the gumming according to Mr. Archer's proposition?—I never heard of the plan until I heard it from Mr. Branston this morning; that is the plan of gumming them before they are printed.

745. Do you approve of that?—If the letter-press system were to be adopted, and if it were found the paper could be printed dry, as Mr. Branston is of opinion it can be, then certainly it would be advantageous to gum them first.

746. Then allow me to ask you if that gum is not more likely to be adhesive than the present system?—I have no reason to think so.

747. Because we have it reported to us that 400 stamps have been found loose in the letter-bags, the adhesiveness is so very little; I have in my pocket some stamps, and I am obliged to put sealing-wax under them to make them adhere?—The gumming some years ago was very much to be complained of; for many years now I think it has been as good as it can be, unless a more expensive gum be adopted. It is a very cheap gum, certainly. But some years ago I drew up a set of short recommendations as to the mode of affixing them, and had them printed, and put them in the newspapers; and I have never had an instance of complaint from any person who has received my printed recommendations.

748. Mr. *Spooner.*] And that report, I observe, goes entirely to the system of perforation?—Entirely so.

749. Would not that system of perforation be equally applicable under the copper-plate printing as under the letter-

*E. Hill, Esq.*  
 29 March  
 1852.

press printing?—Certainly. This report was written before the letter-press printing was spoken of.

750. The copper-plate printing may be adopted together with the perforating system?—Certainly.

751. And do you conceive that if, as you have just stated, the paper could be printed dry and a superior gum were substituted, that under those circumstances the copper-plate printing would be preferable to the letter-press printing?—If the choice lay with me I should continue the copper-plate printing, certainly, until the letter-press printing came to be recommended by its general use by bankers or other parties whose interests are much stronger than ours, because the amounts which they have at stake are much greater; viz., 5*l.*, 10*l.*, 20*l.*, 100*l.* notes; until I saw letter-press printing adopted by those other parties, I should view with great apprehension any change, on the part of Government, in the present system.

752. On the whole, you think it would be too great a risk, according to your present impressions, to change the plan?—A risk which the Government would be decidedly unwise in running.

753. *Mr. Grogan.*] Are you aware that in the revenue department letter-press printing is used, and has been used for many years, in the Excise, for instance, for permits, and quittances, and things of that kind?—A kind of letter-press printing essentially different from this proposition, and much more secure.

754. You have used the words “letter-press printing” as greatly distinguished from copper-plate printing?—Yes.

755. The trade and artists have two distinctions only, and both kinds can be rendered more difficult and intricate by superadding ornaments of course; but are you aware that in the Excise branch of the Government letter-press printing is used, and has been used for the last 10 or 12 years?—Compound letter-press printing, I believe, has been used, but not simple letter-press printing.

756. What is the difference?—The difference is that more than one colour is introduced into the design.

757. But it is letter-press printing still?—I do not think any one in London could be found to call it letter-press printing; it would be called compound printing.

758. *Mr. Rich.*] For all practical purposes it is different?—Yes.

759. *Mr. J. Greene.*] You say the surplus amount of ink is removed by the hand; in the printing to which *Mr. Grogan* refers,

refers, is the surplus ink removed by the hand?—Not in letter-press printing, nor in compound.

760. Then you have the advantage of very great increased rapidity by it?—It is more rapid, but nothing like so rapid as ordinary printing.

761. In the stamped envelopes how is the ink removed; by the hand?—No, by the machine.

762. In the new machine at present in use in the Stamp-office, for printing newspaper stamps, is not that done by surface printing?—That is done by surface printing, certainly.

763. Is it found to answer?—It is in course of experiment; I have no doubt of its answering.

764. Could you give an opinion whether that sheet is surface printing or engraved (*presenting a specimen to the Witness*)?—I should suppose this to be surface printing, but I cannot say that I am absolutely sure, although I have very little doubt about it.

765. It is a sheet of postage labels, apparently?—This is French.

766. And if the French have adopted that plan, would it shake your opinion about the superiority of engraving?—Certainly not; the French have tried to adopt something different in every instance; in everything they have done they have endeavoured to do it different to the English plan.

767. If the Belgian government have also adopted surface printing, what would you think then?—It would not shake my opinion.

768. If, upon consideration, Sir William Congreve, who is considered to have understood engraving very well, conceived that the description of engraving now made use of for the postage labels was no security, and upon recent inquiries those foreign governments have taken his view, is not it a subject very much deserving of inquiry?—I always understood Sir William Congreve was an interested witness, and I should not receive his opinion as of any weight on that account.

769. Mr. Rich.] To this report which has been referred to, I find certain names attached, amongst them that of Sir William Congreve, and other persons of scientific attainment, but only one person connected with mercantile affairs. I find in the report that those persons recommended the adoption of the plan of surface printing, proposed by Messrs. Applegath & Cowper to the Bank of England, and I find that the Bank of England constructed machinery to carry out that recommendation. It has been stated in evidence that the Bank of England did carry it out to the construction of divers one-

*E. Hill, Esq.*  
29 March  
1852.

pound notes which were not used. Judging from those facts, and seeing that the Bank have never acted upon that recommendation, but have continued the system of engraving, do you not think that it would have been an unwise movement on the part of the Government to have adopted the system of surface printing?—I think it would have been highly unwise.

770. *Chairman.*] What is the number of stamps made per annum now?—The number last year amounted to as many as sold for 1,200,000*l.* of the labels only; not 1,200,000 sheets, because 3 per cent. of them are twopenny sheets; therefore 100*l.* worth is 98½ sheets.

771. *Mr. Grogan.*] Then how many sheets were there sold?—This is a statement of every year from the beginning:—

SALES OF POSTAGE LABELS, 1*d.* and 2*d.*

	£.
In 1840 (three quarters of the year only) -	309,693
1841, the whole year - - -	443,570
1842           " - - -	468,072
1843           " - - -	512,857
1844           " - - -	564,847
1845           " - - -	685,094
1846           " - - -	693,420
1847           " - - -	798,797
1848           " - - -	802,882
1849           " - - -	913,322
1850           " - - -	1,034,726
1851           " - - -	1,201,530

*N.B.* Each 100 *l.* of duty denotes (about) -  $\left\{ \begin{array}{l} 97 \text{ sheets of penny labels } \text{£. } 97 \\ \text{and } 1\frac{1}{2} \text{ sheet of twopenny ditto } \quad 3 \\ \hline 98\frac{1}{2} \text{ sheets} \quad - \quad - \quad \text{£. } 100 \end{array} \right.$

772. Is the present mode of printing and preparing the postage labels under your department altogether?—In my department.

773. Where are the premises in which those operations are carried on?—In Fleet-street.

774. Is it a private or public warehouse or office?—It is a warehouse belonging to the contractors, of which they have engaged to devote a sufficiency of rooms entirely to the printing of the postage stamps, to the exclusion of everything else.

775. Is it within your knowledge whether those gentlemen give

give any security to the public or not?—I am not aware that they do. *E. Hill, Esq.*

776. Would it be in the knowledge of your department?—No, it is not my official business to know that. *29 March 1852.*

777. Your business is merely superintendence?—Merely superintendence of postage stamps.

778. Have you visited the establishment when the printing is going on?—I visit it frequently.

779. Is there any officer of yours superintending or watching the process?—A deputy of mine who takes charge of the plates, and has general charge of the whole operation.

780. *Mr. Rich.*] Is he always present?—Yes, he is always present; he locks up the plates at dinner-time, and again at night, and unlocks them in the morning, and after dinner.

781. *Mr. Grogan.*] Are the processes all at work in one room?—They are all in one room.

782. How many are at work at one time?—There are 14, but only 13 are at work now.

783. Is it possible, in fact, that any of those sheets could be stolen from the place without the knowledge of your officer?—I cannot say it is impossible, but great care is taken to prevent it.

784. You called him your deputy; is he permanently appointed to the stamp department?—He is appointed by the Treasury.

785. Permanently appointed?—Not appointed by warrant; he is not upon the establishment; I am not, in fact, myself.

786. What may be his salary?—£. 200 a year.

787. Has he any assistant at any time in case of illness or occasional absence?—In case of his absence by illness or holiday, I furnish a clerk out of my department to take his place, generally.

788. Then the entire security to the public is on this gentleman who may be there, or his substitute?—And, upon the high character of the house of Bacon & Petch, who are in the habit of printing for a great many governments documents of the highest value connected with their public securities, and whose character stands as high as that of any tradesmen can stand.

789. I do not call the character of those gentlemen in question in the slightest degree; but would it tend, in your opinion, to the security of the public, if this branch of the service were performed in some Government office, such as Somerset House, for instance?—No, it would not.

790. Why?—

*E. Hill*, Esq.

29 March  
1852.

790. Why?—I do not find men in public offices more careful than those gentlemen are.

791. *Mr. Spooner*.] Did you observe, during those experiments, on the part of Messrs. Bacon & Petch, any desire to throw any hindrance or obstacle in the way of Mr. Archer?—Certainly not.

792. Did you ever state to the Commissioners that you believed that such a statement of obstruction having taken place, which was made by Mr Archer, was true?—Never.

793. Was it at your application, or are you aware of the reason why an application was made, that the experiments should be no longer carried on at Messrs. Bacon & Petch's, but be carried on at Somerset House?—I stated in another part of my examination, that the machine, when tried at the premises of Messrs. Bacon & Petch, failed entirely; that it was removed to have the necessary changes and additions made. When those were made, Mr. Archer applied to me, under a strong impression that Messrs. Bacon & Petch were disposed to thwart him, and I thought that, whether correctly founded or otherwise, it was due to him to have the machine tried under circumstances free from that objection; and also for other reasons. If you will allow me, I will put in my Report, upon that particular subject: "Honourable Sirs, I beg leave to report that Mr. Archer's machine for piercing the postage label sheets is now nearly ready for work; I think it most probable that difficulties will present themselves in the bringing of the machine into practical operation (as is commonly the case with new applications of mechanism); and in order that such difficulties may be overcome with the least trouble, expense, and loss of time, I am of opinion that it will be best that the use of the machine should be commenced here, under my own inspection. Should this plan be approved of, the empty room adjoining the Stationer's Room, No. 1, will be a suitable place for the purpose. Some temporary assistance, viz., that of one or perhaps two persons will be required, which I shall have no difficulty in procuring, if so authorized. I therefore beg leave to submit that I may receive instructions in accordance with the foregoing suggestions.—*E. Hill*."

794. Was that report drawn up after Mr. Archer had stated that he thought Messrs. Bacon & Petch had thrown obstacles in his way?—Yes.

795. *Mr. Rich*.] Certain facts have been stated as to the shrinking of the sheets under the operation of being pressed; would not that account for the irregularity in the form of those

those which were submitted to Mr. Archer, upon which he made his experiments?—I think so, decidedly. E. Hill, Esq.

796. Such irregularities might occur without any desire on the part of Messrs. Bacon & Petch to unfairly hinder him of a proper trial of his experiment?—Entirely so: I find, upon close examination, that even the same sheet will shrink differently in respect of its two diagonals.

29 March  
1852.

797. I think you stated you recommended Mr. Archer to measure and examine various sheets of paper before he constructed his machine?—I did.

798. In the construction of that machine, had you opportunities of frequent communication with Mr. Archer?—Yes, I saw the machine very frequently, and took a great deal of interest in it.

799. Mr. Archer is an experienced machinist, is not he?—Certainly not.

800. Is not he a mechanician himself?—I believe not; I have no belief that he is.

801. Who gave the directions for the construction of the second machine that was made, and which ultimately was found capable of working?—Mr. Archer found a man, who had a great knowledge of machinery, and put it very much into his hands, and I myself took a great deal of interest in it, and assisted the matter as much as I could.

802. Then from what you say, the Committee would understand that the idea of the proposition arose in the mind of Mr. Archer, but the working out of the construction of the machine was done by other persons; by another mind?—Certainly so; Mr. Archer had to find parties as well as he could to make the mechanism; the idea was entirely his own.

803. Did you yourself make any suggestions as to the mechanism?—Yes, several.

804. Are any of the details of the mechanism, such as you suggested, still in use in the machine, now found to be tolerably perfect?—Certainly, several of them.

805. Mr. Grogan.] Mr. Rich has used the words “tolerably perfect;” do you state the machine to be perfect for its use or not at present; does it do its work efficiently?—Certainly, I believe so as far as we have tried it.

806. Mr. Rich.] It is efficient, but it is capable of much improvement hereafter?—I think it would soon get out of order and wear out.

807. Mr. Grogan.] Has it got out of order since it has been under your supervision?—I may state this, that upon  
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E. Hill, Esq.

29 March  
1852.

more than one occasion difficulties have presented themselves; the machine would not do its work, and it was the most mysterious thing to find out why it would not do its work; and then those imperfections in its construction always came in the way; because some attributed the difficulty to those imperfections, and others thought there must be some other cause, and thus there was great perplexity to know where the cause lay.

808. Those are imperfections which would require a scientific mechanic, acting upon experience, to obviate?—Exactly; to construct the machine upon more satisfactory principles.

809. Are you acquainted with any matters touching the expense of the construction of the machine which has since been working?—I know, in the first instance, that Mr. Archer paid a sum of money, about 120 *l.*, I think, for the machine as first constructed, before it went to Messrs. Bacon & Petch's.

810. I am speaking of the machine that is working?—Then after that it was in the hands of another machinist a long time, and no doubt very heavy expenses were incurred, but what they were I do not know; I know the charge that was made, but it has never been settled; it is still in a state of uncertainty.

811. There were no accounts submitted to you then?—There were no accounts of particulars.

812. And you have none now in your possession?—Not to my recollection.

813. *Chairman.*] Do you know Mr. Reynolds, the engraver?—Slightly.

814. Had you a communication from him, saying he had assisted Mr. Archer with respect to the mode of printing or engraving those heads, and that he had sent copies of them to you; have you any of the copies of those heads he made with you?—I have those that he sent to me; he requested I would bring them here, and I have them. (*The Witness produced the same.*)

815. Those, I see, are Prince Albert's heads?—Yes.

816. He never made any with the Queen's head upon them?—No; I cautioned him as soon as I knew what he was doing.

817. *Mr. Grogan.*] How are those heads printed?—They are printed by letter-press, I believe, the same as Mr. Branston's.

818. Then you see no difficulty in doing the work by letter-press?—As it is there done, certainly not.

819. Is

819. Is that superior, equal, or inferior to the existing mode?—I consider it very inferior, comparing what I may call the proof impression of the one with the proof impression of the other; that is the only fair way of comparison.

*E. Hill, Esq.*  
—  
29 March  
1852.

820. *Chairman.*] Suppose that a certain number were printed by the present mode of copper-plate printing, a certain number of thousands of heads, for instance, from a plate, and a certain number printed in the surface mode of printing, what quantities would be the nearest average to one another and show the least variation?—I can hardly venture to say that, from my experience, I could answer that question.

821. You know that the rubbing of the copper-plates reduces the impression, as you say, in the stamp now in use; from your experience, how would the average of the two qualities turn out?—I cannot give any positive opinion upon that subject. I know there is a very great variation in letter-press printing, and also in copper-plate printing; so much depends upon the care of the parties engaged.

822. In the present mode of making the heads for the postage stamps there is a great variation in the appearance; some are very faint, some very dark, arising from the state of the plates, the same as any other proofs?—Undoubtedly; the same differences are observable in letter-press printing.

823. *Mr. Geach.*] That is only as to the quantity of ink upon it, is it not?—One man printing from a plate will print much heavier than another; one man will rub more ink in a plate than another, as a matter of habit; and in letter-press printing, if a man or boy neglects the machine for a moment, the printing may all get wrong.

824. *Chairman.*] I thought the machine fed itself with ink?—The printer is constantly obliged to adjust and correct the quantity of ink. He must look at the impressions, from time to time, to see that they are right, and let the ink flow more freely, or stop it off. That work cannot be done, except by skilful persons. In steel-plate printing neglect will produce differences with respect to the wear of the steel plate. My own experience is, that such wear is due chiefly to two circumstances; the one is the imperfect grinding of the ink, by which the ink is a little gritty, which cuts the plates; and the other is its chemical power; anything which bites and acts upon the plate would be injurious. I do not think that what is said about the hand rubbing it away is well founded.

825. Do you think the hand will not rub it away?—I think the hand will not rub it away. It does not rub upon those  
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*E. Hill, Esq.*  
 —  
 29 March  
 1852.

those parts which are important; it is rubbed over the plain parts; the hand is not intended to touch the engraved parts.

826. You rub the ink off the plain part; the engraved part is sunk, and from that you take the impression?—You may rub a long time at a flat surface of a hard plate without effect, unless the ink is gritty.

827. *Mr. J. Greene.*] Is not it practically the fact with all engravings, that they will bear a very limited number of good impressions compared with any surface printing?—The ordinary engravings are upon copper-plate, which is very soft.

828. I speak of engravings upon steel?—I have no very great practical acquaintance with that matter; but I believe the fact to be as you state, that the proof impressions can be but few; after that they deteriorate.

829. The proof impression is that where great accuracy exists?—The early impressions, I believe, are called proof impressions.

830. *Marquis of Chandos.*] You have alluded to some forgeries, and imitations of postage stamps?—Yes.

831. Those you alluded to were cut out of certain papers; have you any actual imitations?—One or two cases; one I remember well.

832. Were they good imitations?—No, they were bad.

833. Were they done by letter-press or engravings?—I do not know; they were made in Ireland, but I do not know how.

834. Could you form any opinion from an inspection of them?—It is six or seven years ago, and I cannot recollect exactly.

835. Have you had none since?—None since, to my knowledge.

836. *Mr. Archer* yesterday said, he had submitted to you vouchers for the amount of 900*l.* The question put to *Mr. Archer* yesterday, was this, Have you submitted vouchers to *Mr. Hill*, to the amount of 900*l.*? The answer of *Mr. Archer* is Yes. Can you explain that at all?—*Mr. Archer* showed me a bill which *Mr. Addenbrooke* had sent in to him, in which he had charged 900*l.*

837. In which *Mr. Addenbrooke* had charged *Mr. Archer* 900*l.*?—Yes, certainly; but that bill has not 1*s.* of it ever been paid, to the best of my belief.

838. He said that he had left part of the vouchers with you; have you got any of them?—I have not the least recollection that *Mr. Archer* did so; but if he said he did, perhaps I have them, but I have no recollection of the fact.

839. Had

839. Had you any vouchers submitted to you for the cost of the machine; about 120 *l.* you state you were aware of?—I do not recollect any, but I knew the fact of the payment.

*E. Hill, Esq.*  
—  
29 March  
1852.

840. You are satisfied that payments to that amount were made?—I think that was the amount.

841. With regard to the 900 *l.*, the charge made by Mr. Addenbrooke, did you look over those bills, or examine them?—That charge was all in one item, according to my recollection. I recommended Mr. Archer to apply for particulars; I think Mr. Archer did apply, but I have no recollection of ever seeing any bill of particulars.

842. These were the questions put to Mr. Archer, and his answers: “Have you vouchers which will prove that the last machine cost 900 *l.*?—Yes.” “Are you willing to put those vouchers before the Committee?—I have only one voucher, which is a bill for repairs; the others Mr. Hill has.” Have you any recollection of them?—Not the slightest.

843. Can you give any idea or opinion as to what the cost of the machine has been, the proper cost of it?—I think the first payment of 120 *l.* was a very moderate one for what was done; for what was done afterwards by Mr. Addenbrooke I really thought 900 *l.* an enormous charge.

844. Are you sufficiently acquainted with machinery of that description to give any opinion of what you think would be a correct charge?—I should not like to have such a task put upon me.

845. Could you not give any idea how much of that 900 *l.* would have been an over-charge, as compared with the work done?—I should have thought half of it a very sufficient payment.

846. That would have been in addition to the 120 *l.*?—Yes, certainly.

847. *Chairman.*] You have seen a great deal of machinery, and had to do with new machines; therefore I will ask you this question: That being the case, do you think it possible for any man to make an estimate of what will be the cost of a machine which is to answer a new purpose?—I should consider it perfectly impossible.

848. *Mr. Rich.*] Then would not the expense be increased by a person who is a bad mechanist ordering a machine to carry out an idea on its first application, than if carried out under the suggestion of a person well acquainted with machinery?—Certainly, there would have a great many errors to be gone through and corrected.

849. You

*E. Hill, Esq.*

29 March  
1852.

849. You have stated that no forgeries have taken place within the last seven years?—Not to my knowledge.

850. Has the supply of stamps from Messrs. Bacon & Petch been regular and sufficient?—Quite so; the only difficulty occurred when they had occasion to rebuild their premises many years ago; they then made very great provision, which was deposited in the hands of the bankers, but in consequence of the time occupied in re-building the premises, that stock was brought rather uncomfortably low; that was the only occasion of anxiety.

851. Have the transactions between the Stamp-office and Messrs. Bacon & Petch, so far as you are acquainted with them, been satisfactory?—Highly so.

852. The Commissioners have had no reason to complain of the method in which Messrs. Bacon & Petch have carried out their various agreements with them?—Sometimes there have been complaints, as there always will be in such cases, but more correct and accurate men I never knew in my life.

853. Do you find that the public are gradually employing the heads more and more, in proportion to the quantities of letters that are sent by post?—I believe that that is the case; but I, only knowing the quantity of stamps, and not so accurately knowing the quantity of letters, cannot speak to that; I can only state my general impression that it is so.

854. Speaking generally, then, you find that the head as now devised, and now engraved by Messrs. Bacon & Petch, answers the purpose for which it was designed, at the time of the introduction of the penny postage?—I think nothing ever answered the purpose better.

855. What would be the difference of expense between the head, as now printed, or as now engraved and supplied by Messrs. Bacon & Petch, or if sent in and supplied according to the contract of  $4\frac{1}{2}d.$ ; what would be the difference of the halfpenny a thousand in the amount of stamps supplied by Messrs. Bacon & Petch during the year, speaking roughly?—About 2,500 *l.*

856. You have stated, that according to your impression, the resorting to the method of preparing the stamps by surface printing would be more liable to forgery than that which now exists, and it might be open to those objections?—That is my impression, decidedly.

857. And that, thereby, a considerable loss might accrue to the revenue; first, by the forgery itself, and subsequently by the expense of prosecutions to bring home that forgery to the persons

persons by whom it was committed?—I may add to that, the moral evils of forgery which I presume would ensue.

858. But setting aside all those, and supposing that the method suggested by Messrs. Archer & Branston would not be liable to those objections, still do you think, under the general considerations of the supply being regular from the present house, and the transactions of business by that present house having been upon the whole satisfactory, that for the sake of saving 2,500 *l.* a year under the contingencies that might arise, it would have been wise or expedient to remove the contract from the one body of persons to the other?—The saving is important, if there was nothing to be considered but the saving. I cannot give a decided opinion, but I think it ought, of course, to be taken into serious consideration. I believe Mr. Branston is a very respectable man in business, and therefore I should think it due to him certainly, and to Mr. Archer in conjunction with him, to consider the matter very closely.

859. In giving this answer, you set aside the contingencies of forgery and the expenses arising out of forgeries?—Setting aside that; at the same time it would be necessary to ascertain whether Mr. Branston has separate and distinct premises which he could cut off and devote to this business; that, in the first instance, limited the range of choice.

860. But with your experience in the matter of printing, either by engraving or surface-printing, and from the experience of the great banks of England not adopting the surface-printing, have you reason to fear that forgeries might take place?—I should fear that, decidedly.

861. Therefore you would consider that that 2,500 *l.* a year would be a very costly economy?—I should consider it so.

862. Mr. *Grogan.*] You have already stated that the saving between 4½ *d.* and 5 *d.* per thousand heads on the consumption would amount to a saving of 2,500 *l.* a year; what is the sum total per annum paid to Messrs. Bacon & Petch for the supply of stamps; say for last year, what sum was paid to them for postage label stamps last year?—I am not prepared to say, but I can reckon it up in a moment.

863. *Chairman.*] What were they paid before the reduction?—Sixpence a thousand; now it is 5 *d.*, since the reduction.

864. Mr. *Grogan.*] Therefore by the application made on the part of Mr. Archer, the first effect has been to reduce the expense to the public 5,000 *l.* a year?—There is something

*E. Hill, Esq.*  
 —  
 29 March  
 1852.

to be explained with respect to that; the first price paid to Messrs. Bacon & Petch was  $7\frac{1}{2}d.$  a thousand in the year 1840.

865. In the year 1843, before this last contract, what was it?—The Commissioners then pressed for a reduction of price, because they thought that in those three years Messrs. Bacon & Petch had had the business long enough to remunerate them for the first outlay; a kind of sliding scale was established, by which they had  $6\frac{1}{2}d.$  per thousand when the consumption did not exceed a certain amount,  $6\frac{1}{4}d.$  if it exceeded that, and fell within a certain other amount, and  $6d.$  when it reached a certain third amount, which was 32,000,000 of heads within a quarter of a year: when it came to that number they had but  $6d.$

866. Did it reach the  $6d.$ ?—It reached in process of time the  $6d.$ , and it went on increasing upon that. In the meantime, according to my recollection, the rebuilding of their premises took place, which we thought gave them a claim to some consideration, not to be disturbed very soon in the matter; but in time the increase became so large, that it seemed proper that a further reduction should be proposed; the thing was in my mind, and I alluded to it in my report.

867. Could you turn to that report conveniently?—I am afraid I have not it here.

868. Do you recollect the date of it?—It was in connexion with Mr. Archer's machine. It arose in this way: I stated in that report, that I thought Messrs. Bacon & Petch might be fairly called upon to bear the extra expense of perforating in consideration of the increased number.

869. But the intention on the part of the authorities to reduce the payment to Messrs. Bacon & Petch originated subsequently to Mr. Archer's invention being brought under your notice?—It came to a point subsequently.

870. I do not understand what you mean by coming to a point; what do you mean by that?—I mean this, that when the 32,000,000 were reached it was to be  $6d.$ , and that that number was getting to be so much exceeded, that an impression was in the minds of the parties, my own among them, that we must ask for a further reduction, and that growing feeling was brought to a point by the proposition of Mr. Archer to undertake the printing and gumming.

871. But that new action on the part of your office, or the authorities in whose department it is, was not made for a reduction until Mr. Archer's patent was brought under your notice?—No further than I mentioned.

872. A floating thought in your own mind?—I reported  
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my opinion that in consequence of the greatly exceeding numbers, Messrs. Bacon & Petch might be reasonably called upon to bear the expense of the perforation without charge.

873. Well, after Mr. Archer's proposition to do the whole work at  $4\frac{1}{2}d.$ , a proposition was made by Messrs. Bacon & Petch to do the work for  $5d.$ ; that in itself was a saving to the public of how much per annum?—That is not quite a correct statement of the matter; Messrs. Branston & Archer proposed to do the work for  $4\frac{1}{2}d.$  by surface printing; but Mr. Archer stated also that he, in conjunction with other parties, would do it as it is now done for  $5d.$ , and it was that proposition to do it as it is now done with which Mr. Branston had nothing to do.

874. What was the saving to the public in consequence of Mr. Archer's proposition?—The saving to the public in consequence of the change of price is  $1d.$  per thousand heads.

875. What is it in pounds sterling?—I believe it is  $5,000l.$ \* a year.

876. So that by reason of Mr. Archer's propositions to your department a saving, at one step, of  $5,000l.$  a year is effected for the public?—As I before said, it was brought to a point; it would have been effected, but not so soon.

877. Mr. *O. Gore.*] It was not effected, but it would have been effected?—I believe it would have been effected; my brother had mentioned it also.

878. Mr. *Grogan.*] Had you submitted, in any report to the heads of your department, recommendations for a reduction of the charge by Messrs. Bacon & Petch, previously to Mr. Archer's invention being brought under your notice?—Certainly not.

879. But you did subsequently?—When the question of who should bear the extra expense of perforating the sheets was considered, I reported that I thought that might be fairly expected of Messrs. Bacon & Petch, in consequence of the great number they were then printing.

880. Is it the fact, now, that Messrs. Bacon & Petch do the same work for the public for  $5,000l.$ \* a year less than they previously received for it?—If the calculation is right, there is no doubt about it.

881. And the additional security which you are of opinion would be afforded against forgery, and public convenience, and public

*E. Hill, Esq.*

—  
29 March  
1852.

\* This should be  $1,200l.$  instead of  $5,000l.$ ; see Question and Answer No. 912.

E. Hill, Esq.  
 29 March  
 1852.

public economy, arising from the perforating machine, is not any part of the arrangement with Messrs. Bacon & Petch?—That has no connexion with it.

882. Now supposing that 2,500 *l.* a year could have been saved in addition; supposing that the use of the perforating machine was superadded to that saving, and supposing a better system of gumming were superadded to both of those points, would it or would it not in your opinion have been judicious that the trials should have been made, and the public have had the benefit of those advantages?—Adopting the surface-printing.

883. Yes?—Certainly not.

884. On what grounds?—The hazard of forgery.

885. Your impression is, that there would be facility of forgery?—Yes, that is my impression.

886. Do you know anything about the printing of the patent medicine labels?—Yes, it is under my care.

887. How is it done?—By compound printing; printing in two colours at once.

888. It is not copper-plate printing?—No, it is not copper-plate printing.

889. Is it done on thick or thin paper?—It is rather thicker paper, I think, than the postage labels; not very different.

890. About the same consistency of paper as the postage labels?—Rather thicker.

891. Has there been any change in the mode of gumming the postage label stamps lately made?—Not lately.

892. Since when?—Probably four years.

893. Have you seen it, or how do you know the fact to be that any of the sheets of postage stamp labels are now gummed with pure white gum?—I do not think any of them are gummed with any gum essentially different from that before used.

894. You know it is a very discoloured sort of gum; have you seen or do you know of any postage labels that are stamped with gum as white as this (*presenting to the Witness a specimen*)?—Some of it is very white, but I do not think there is any difference in the gum; I think the difference of appearance is caused by a chemical action between the gum on the one side of the paper and the print on the other side, and the alum which is used in the size.

895. Mr. Rich.] Is there any change in the quality of the gum?—Not to my knowledge.

896. Mr. Grogan.] Now, what is the difference between those two, if you please (*producing specimens to the Witness*)?

—I do

—I do not believe that there is any essential difference in the gum beyond the usual difference in the same kind of articles.

E. Hill, Esq.  
29 March  
1852.

897. What is this that they have contracted to put on the postage labels?—I believe that those differences arise from the chemical action between the gum and the alum which the size contains, and the ink on this side; and I have been very much troubled with it when I know the gum has been taken out of the same cask. The size varies very much in the paper; there is nothing varies so much as the size. Our gum is potato starch, slightly burnt or toasted.

898. Mr. *Rich.*] Does the chemical agency that alters the colour of the gum affect the adhesiveness?—It used to do so, and to trouble us very much in that way, but Messrs. Bacon & Petch have found a remedy for it; it does not now, I believe.

899. Mr. *Grogan.*] That gum is not affected by the colour of the stamp (*presenting another specimen*)?—No.

900. Mr. *Geach.*] Will the machine that you have in Somerset House now, in your opinion, perforate 3,000 sheets a day?—I think it will; I am hardly in a position to say.

901. Have you any doubt at all, from what you have seen of the machinery, that it can be so adapted as to be able to do the work practically?—I think there is no doubt.

902. Mr. *J. Greene.*] Mr. Archer, in his letter of the 30th of April 1851, makes an offer to supply the stamps at 5 *d.* per thousand, done as they are at present; the Board of Inland Revenue, in their letter of the 16th of May, make a communication to Messrs. Bacon & Petch, stating that they have received that offer, and asking them whether they would reduce it to 5 *d.*; is that the case?—No doubt.

903. Do you think that that is meeting a contractor fairly, who comes into the market and offers to do the business at a lower price, to immediately communicate to the party already in possession of the contract?—I think in this case it was perfectly fair; and for this reason, that Mr. Archer had been able to ascertain from the report made by myself to the House of Commons, the exact price at which the present contractors were doing the work, so that he was in precisely the same situation when he made his offer, and therefore it was perfectly fair to put the present contractors into that situation.

904. Would not the effect of that itself be this, that no party would offer for contracts, having no security for getting them, no matter on what terms he made the proposal?—I can hardly say what the effect would be.

*E. Hill, Esq.*

—  
29 March  
1852.

905. Would you yourself offer for a contract a second time had you been so treated?—I do not think I should; but I consider that the circumstance of Messrs. Bacon & Petch's price having been published, put them under that kind of disadvantage, and that therefore they were entitled to be put upon an equal advantage on the other side.

906. Have not the public a right to expect that the prices should be published so as to enable anybody to calculate whether they could undertake to send in a lower contract?—I can only say, if they are so published, then the matter is taken out of the rules of ordinary business; a merchant would not publish his prices, he therefore would receive tenders from one man without telling him the price of another; but by the publication of the prices the matter is taken completely out of that rule.

907. But the public gain by it?—That is doubtful.

908. What reason would there be for its being doubtful?—The very circumstance of its acting to deter persons from giving in prices that are very low; the fear of their being published might deter persons.

909. If the lowest prices were sent in would not the public get the benefit of it; in fact, in the present instance, I believe the public do get that benefit, in consequence of Mr. Archer's contract, although not adopted, being sent in. If that tender had not been sent in, would not the public be paying 5,000 *l.* a year more practically, now, for the postage labels, than they do?—I understood that it was a comparison between the system of a merchant who does not publish his prices on the one hand, and the system of the Government, which occasionally, upon the returns being called for, does publish the prices on the other hand; a system I do not at all feel competent to give an opinion upon, as to which is the most advantageous system; but half of the system cannot be applied; it must be applied altogether or not at all, as it appears to me. If one man's price is to be known, another man's must be known also.

910. *Mr. Grogan.*] Is it customary to communicate to competing parties the tender of the one to the other?—No, not with merchants.

911. Is it customary for the Government?—I am not in a position to answer that question.

*Martis, 30<sup>o</sup> die Martii, 1852.*

MEMBERS PRESENT.

Mr. John Greene.	Marquis of Chandos.
Mr. Grogan.	Mr. Mostyn.
Sir John Tyrrell.	Mr. Rich.
Mr. Spooner.	Mr. Ormsby Gore.

GEORGE FREDERICK MUNTZ, Esq.,  
IN THE CHAIR.

*Edwin Hill, Esq.*, called in; and further Examined.

912. *Chairman.*] YOU stated just now to me that you had agreed yesterday to some inaccurate statement made relative to the difference in the amount of the expense between the one charge and the other, which you wish to have an opportunity to correct?—I think it will be in the recollection of the Committee that I qualified my statement several times, by saying that if a certain calculation made by an honourable Member of the Committee was correct, then certain amounts were correct; but upon reflecting upon it, I find that calculation was not correct; in this way, that sheets were spoken of, when thousands of heads were intended. I gave in an account of the number of sheets sold, and the calculation was made on the erroneous assumption that a sheet contained a thousand stamps: 5,000 *l.* a year was spoken of as the saving between the two prices of 6 *d.* and 5 *d.*; whereas it is only 1,200 *l.* a year.

*E. Hill, Esq.*  
30 March  
1852.

913. *Mr. Grogan.*] Will you just explain then, if you please, that difference?—The price paid is per thousand heads, and the number of sheets was spoken of; and whereas a sheet only contains 240 heads, the number of sheets was taken as if it represented so many thousands of heads.

914. Just state how many thousand sheets are annually printed by the present contractors?—I gave in a statement yesterday; and for last year, which was much the largest, it was 1,200,000 *l.* worth of stamps, which represents nearly that number of sheets, but not quite.

915. How many heads would that be?—It would be 1,200,000 multiplied by 240 nearly; it is not quite that, be-

*E. Hill, Esq.*

30 March  
1852.

cause the twopenny stamps interfere to the extent of one-and-a-half per cent.

916. *Chairman.*] Is it limited to 1,200 *l.* between 5 *d.* and 6 *d.*?—Upon 1,200,000 sheets the difference is precisely 1,200 *l.*

917. There were 1,200,000 sheets?—Yes, each containing 240 heads.

918. *Mr. Grogan.*] And 1,200 *l.* is the actual saving to the public?—Yes, the actual saving to the public.

919. Those gentlemen, Messrs. Bacon & Petch, are paid 5 *d.* per sheet at present?—Per thousand heads, which is rather more than four sheets.

920. *Marquis of Chandos.*] Were you present at the trial of the machine at Messrs. Bacon & Petch's?—Yes.

921. Did you consider that Messrs. Bacon & Petch gave every facility for it?—Yes, certainly.

922. Did you see the sheets put into the machine?—Undoubtedly, I did.

923. Did you see the machine clogged by the gum from the stamps?—I do not remember that.

924. Do you recollect hearing that it had been so clogged?—I remember some question arising, but it stands in my mind in this way; that I felt myself some apprehension that by the rapid working of the machine, the small steel punches going in and out so rapidly might by the friction become warm, and in that case they would melt the gum, and make the sheets stick together.

925. Will heat affect the gum?—Dry heat will melt the gum.

926. Did Mr. Archer make any objection in your presence that the sheets were wet, or that the gum was wet?—Not that I recollect.

927. *Mr. Mostyn.*] Do you consider that his machine had a fair trial?—Yes, perfectly so.

928. *Marquis of Chandos.*] And was no complaint made of unfairness to the machine while it was at Messrs. Bacon & Petch's?—Not the least.

929. *Mr. Grogan.*] Do you remember the number of sheets that were perforated at Messrs. Bacon & Petch's?—I do not; as many as were thought necessary. Mr. Archer was present when everything was done.

930. *Marquis of Chandos.*] Do you suppose it was 500 or 1,000?—I doubt whether 100 were perforated; it was only a small quantity.

931. *Mr. Grogan.*] Mr. Archer mentions 10 only?—The sheets

sheets were perforated, but it was extremely difficult to introduce them into the machine, from the exceeding closeness of the parts; also, the apparatus for holding them correctly in the machine, whereby they might be perforated in what a printer calls the register, was not sufficient for the purpose.

932. And the probability is, you did not perforate any number?—Certainly not.

933. Then when the machine was set up in Somerset House, how many do you think might have been perforated from it subsequently?—I dare say 5,000 or 6,000; but I should state that those were done in the course of weeks or months. There was trial after trial, and change upon change.

934. How many do you think were done at any one period in an hour or two hours, or whatever length of time the work was going on; were there 100 or 500?—Yes; I should suppose at least 500 have been done consecutively.

935. Did the objection you apprehended, and to which you referred a moment ago, arise, of the machine becoming warm by the friction?—No.

936. Consequently any obstruction that may have arisen in Messrs. Bacon & Petch's establishment, in the idea of the patentee, could not have arisen from the heating of the machine?—Certainly not.

937. Marquis of *Chandos*.] How long together did you see the machine worked at Somerset House; how long a time continuously?—I think it might have worked two or three hours continuously.

938. You do not know how many sheets were perforated in that time?—I do not; but I may be allowed, perhaps, to state, that after the machine was completed, so far as I thought Mr. Archer was fairly concerned, it remained to adapt a variety of contrivances for the sake of facilitating the working of the machine, and an elaborate contrivance of my own has been adapted to the machine purely with that view.

939. Since it was delivered, as you consider complete, by Mr. Archer?—Since it was delivered by Mr. Archer.

940. Did you ever time the machine to see how many sheets were perforated in five minutes, or ten minutes, or an hour?—I am not able to speak to that point.

941. Do you know whether any person connected with your department checked it in that way?—It has been tried in that way, with a view to judge whether that one machine would be likely to do all that would be required to be done; my impression is, that it would not; from the quantity, I should say, having very considerably increased since Mr. Archer's first proposition. I do not mention that as against his

*E. Hill, Esq.*

30 March  
1852

*E. Hill, Esq.*

30 March  
1852.

his machine in any way; it is not sufficient for the *present* purpose.

942. You think his calculations, when the consumption of the stamps was so much less, may have been right, though now the machine would not perforate a sufficient quantity?—Exactly.

943. Have you any doubt in your mind of the perfect applicability of the machine to the perforation of the stamps, as printed by Messrs. Bacon & Petch?—Judging from what I may call a narrow experience, my impression is, that the perforation of all the sheets that we issue can be accomplished as now printed.

944. It would not be difficult for Messrs. Bacon & Petch to give larger spaces between the stamps, which would allow for a little irregularity in the shrinking?—It would involve a great deal of trouble, but there would be no essential difficulty; there would be a good deal of trouble in the outset, but that would be all.

945. In making new plates?—In making the new paper and new moulds, and everything of that kind; it would be one troublesome effort, but there would be no difficulty afterwards.

946. *Mr. Rich.*] I think you said the instrument, though it would work practically well, would still require improvements if brought into constant operation?—Decidedly so, improvements to give greater facility in putting the sheets in, and taking them out; and improvements in the principle upon which the machine is constructed, whereby its great durability would be secured, and its liability to get out of order decidedly lessened, which is quite necessary.

947. In fact, the idea of the principle is good, but it requires further scientific mechanical knowledge to perfect it?—Exactly so.

948. Do you happen to know whether, in the communications with Messrs. Bacon & Petch, Mr. Archer received any assistance from any mechanist in the employment of Messrs. Bacon & Petch?—I do not know that he did.

949. Have they any mechanist of their own?—Yes, they have a clever mechanist, and, if I have not mentioned it already, I should properly mention that Messrs. Bacon & Petch constructed a press for transferring the impressions, so that the plates might be more uniform in size.

950. *Marquis of Chandos.*] For the purpose of assisting this machinery?—For the purpose of assisting the perforating machine entirely.

951. *Mr.*

951. Mr. *Rich.*] In your report you state that this machine, if brought into practice, would, by the rendering the stamps more easily affixed, and generally more acceptable to the public, increase the sale of them, I think?—While money prepayment was allowed I was of that opinion; now money prepayment is generally disallowed, the facility of using the stamps is very much thrown out of the question.

*E. Hill, Esq.*

30 March  
1852.

952. Is it now absolutely prohibited?—It is prohibited excepting in London, but it still affects probably the quantity of unpaid letters, to a certain extent.

953. Whatever would tend to the multiplication of stamps would tend, I apprehend, to the increased profits of Messrs. Bacon & Petch?—So long as they are the contractors.

954. Mr. *Spooner.*] One of your great reasons for recommending the perforating machine was, was not it, that you conceived the use of it would tend to do away with the paid letters?—That was one reason.

955. Now you have done away with paid letters by an absolute prohibition?—That has been done.

956. But the inconvenience you anticipated to have been remedied by the perforating machine now falls entirely upon the public?—Exactly so.

957. Mr. *Grogan.*] Did you at the time you stated that it had been in your contemplation, or at least in the contemplation of your Board, to reduce the payment to Messrs. Bacon & Petch, owing to the very great quantity of stamps they were printing, intimate that you thought they ought to include the perforating in their bargain?—That was in one of my reports, not in the report put in in evidence.

958. Have you that report by you?—I have it not here.

959. In that report have you formed any calculation, or any estimate of what Messrs. Bacon & Petch ought to pay the patentee for the use of his machine; was there any suggestion of yours contained in it to that effect?—That report did not contemplate Messrs. Bacon & Petch paying the patentee; it merely went to this, that the expense of working the perforating machine might be reasonably expected to be borne by Messrs. Bacon & Petch, considering the greatly increased quantity of stamps they were producing.

960. Your report went to this extent, then, that the use of the machine being required by the Government, the gentlemen who now print those stamps ought to work it without extra expense?—Yes.

961. And give the public the advantage of perforation?—Yes.

*Rowland Hill, Esq.*, called in; and Examined.

*R. Hill, Esq.*  
30 March  
1852.

962. *Chairman.*] I BELIEVE you are the original inventor or the proposer of the penny postage stamp?—Yes.

963. How many years is it since it was first introduced?—It was early in 1840; that would be 12 years since.

964. And you were one of the parties, I believe, who were appointed to investigate the best mode of carrying out the manufacture of the stamps, were you not?—It was left very much with me; the investigation was carried on in the Treasury, and I acted under the instructions of Sir Francis Baring, who was then Chancellor of the Exchequer.

965. And you went through an extensive examination of the best mode of manufacturing the stamps, so as that they should not be subject to forgery or fraud?—Yes, in conjunction with the Stamp Office, I made that investigation.

966. And after a long examination and deliberation, you determined that the present mode was the only safe mode of doing it?—That was the decision of the Treasury on my recommendation.

967. You examined, I presume, into the comparative merits of the present copper-plate mode, and the mode of surface printing?—We did.

968. And you determined it was impossible to carry out the surface printing, so as to be a check upon fraud?—The surface printing was considered to be less secure from fraud than the copper-plate printing, and it was thought advisable to adopt the most secure means.

969. We had detailed by your brother yesterday, the mode in which it is accomplished by making the original head, and taking it step by step, and making copies so as to keep the original as a reference if it be needed; is it practicable to carry out that principle in surface printing?—Means somewhat analogous might be adopted in surface printing by casting from one mould a number of types, each a separate head, and arranging them in a form from which an impression might be taken.

970. Could you not take an original impression in the same manner, only that one would be in relief and the other in surface printing; the same as you do now for copper-plate printing?—I have scarcely knowledge enough of the modes of printing to be able to answer that question; I would suggest that the Committee put that question to some one who is familiar

familiar with the different modes of printing now in use, which I am not. *R. Hill, Esq.*

971. I thought you had gone so minutely into it that you had become familiar with all the bearings of the question?—I believe I was perfectly so then; it is now 12 years since, and the matter has to a great extent faded from my recollection.

30 March  
1852.

972. Is there any alteration in the mode of surface printing since that time?—Not that I am aware of.

973. And since you have proved this mode of carrying it out for 12 years, has there been any forgery committed upon the present plan?—There have been one or two attempts, but they were detected immediately.

974. Upon what principle have they been done; have you ascertained that?—No, I have not; but judging from the appearance of the forged stamps, I should suppose that they were engraved in copper-plate.

975. Were they carried on to any extent?—I very much doubt if more than one ever came into the office.

976. That is, which have come to your knowledge?—Of course.

977. Have you any reason to suppose they were carried out to any further extent?—No, it was so clumsy a thing that any one would detect it at once; it was so very different from the genuine stamp it could not by possibility have passed undetected.

978. Have you ever had any plan submitted to you or proposed, by which the present stamp might be imitated so as to escape detection?—I think there were plans suggested about the time that the stamps were first brought out.

979. Has there been any plan intimated to you latterly?—I believe not; I have no recollection of any; but there may have been some addressed to the Stamp-office, or even to the Post-office, without my knowing it.

980. They did not come to your knowledge?—I have no recollection of any, and have every reason to believe there have been none; I heard that Mr. Archer had said he could imitate the stamps, but by what means I do not know.

981. Have you seen Mr. Archer's plan for piercing?—I have seen the results, not the machine itself.

982. What is your opinion as to the advisableness of adopting such a principle?—My opinion is, it is advisable; I have stated that opinion in a minute addressed to the Postmaster-general, which is now before the Committee; I do not speak strongly

*R. Hill, Esq.*  
 —  
 30 March  
 1852.

strongly upon the matter; my opinion is that it would be useful and acceptable to the public to a certain extent.

983. Have they had any difficulty in carrying it out throughout the whole of the postage labels, or has there been any complaint?—I am not aware of any difficulty, but I have not examined the machine; I know from Mr. Edwin Hill that the machine may be applied to the purpose; I may say this, that there would be great practical difficulty in supplying the postmasters with stamps perforated, and also with stamps unperforated, to be sold at different prices.

984. Do you think that the public would not consent to pay the difference in the price between the perforated and unperforated stamps?—The difference could not be represented by any coin we have. I observe Mr. Archer suggests that a sheet of perforated stamps might be charged a penny more than the unperforated one, but you could not divide the penny by 240, and sell a single stamp at a higher price; now it is an essential part of the plan that stamps should be sold singly.

985. I suppose the great majority of the stamps sold are not sold singly?—A great many stamps are sold singly to the poor, and even where not sold singly, they are sold in shillingsworths, so that you would soon realise the difficulty of dividing the penny; you might sell half a sheet for an additional halfpenny, or a quarter sheet for an additional farthing, but there you would stop.

986. And if the plan was adopted, you contemplated that as an expense to the country for the benefit of the public?—Certainly, and it would scarcely be correct to call the system a system of penny postage, unless the stamp could be got for a penny.

987. *Mr. J. Greene.*] As Mr. Archer and Mr. Branston offer to contract to supply the perforated stamps, as well engraved, printed, and gummed, for 5*d.*, why should that question be entered into; why is it necessary to add a penny per sheet to the price of it?—I am not aware of any necessity, nor do I consider it desirable; I am only answering his proposition.

988. Those stamps could be supplied without any loss to the public perforated, had Mr. Archer's contract been accepted by the Board of Inland Revenue?—That is a matter rather for the Board of Inland Revenue than for me to consider.

989. *Mr. Spooner.*] Is it your opinion that the perforated stamps could be afforded by Mr. Archer's machine at as cheap a price

a price as they are supplied at present?—I think it is very likely, because the cost of perforation would be exceedingly small, and, as far as I understand the case, it is the intention of the Stamp-office, if the machine should be used, to supply them without any extra charge.

990. Mr. *J. Greene*.] You furnished the Treasury, I conclude, with a report, entering into the relative merits of surface and copper-plate printing; could you supply the Committee with a copy of that report?—I am not sure that I made a report upon that question; but whatever report was made to the Treasury would be of course in the Treasury, and can be obtained. I have not the means of supplying such documents.

991. The Committee of 1837 and 1838 for inquiring into the postage, do not appear to have entered to any extent into the difficulty of forgery with those different systems?—I think not, according to my recollection; they took the opinion of the Stamp-office, which was to the effect that practical security against forgery could be obtained.

992. Their principal hope, as a preventive of forgery, was in adopting a distinctive sort of paper for envelopes, was not it?—I cannot recollect. I should mention, perhaps, that immediately after my plan was adopted by the Legislature, the Treasury issued an invitation to the public to suggest means of constructing stamps, and they offered premiums or rewards for the best means suggested; the result was, that about 3,000 plans, I think, were sent in to the Treasury; and the first duty I had to perform on going to the Treasury was to look over those 3,000 plans, to select those I thought best, and to recommend to the Treasury what individuals should be rewarded, and using those plans, and making use, of course, of the investigations which I myself had previously made, to advise the Treasury as to the best mode to be adopted. Of those plans, several, I recollect, consisted of proposals for surface printing, some of them submitted by men of great eminence as printers, and fully acquainted with the subject of printing. There was, I think, a plan recommended by Professor Cowper, who probably knows more on the subject of printing than any man living; and according to my recollection he advised that the stamps should be printed by surface printing. If the Committee desire to obtain an accurate opinion upon the subject, I would venture to suggest their calling in that gentleman.

993. As you were the party to whom those objects were submitted, I conclude that you referred to the Report of the  
Committee

*R. Hill, Esq.*

30 March  
1852.

R. Hill, Esq.  
 30 March  
 1852.

Committee of 1820, where Sir Joseph Banks, Sir William Congreve and others recommended that Messrs. Applegath & Cowper's plan, which was one of the surface printing, was that most beneficial to the public as secure against forgery, and supplying with the necessary rapidity the notes of the Bank of England?—I believe I have read that Report, because I considered it my duty to get all the information that could possibly be obtained; but I am referring to the proposition sent in at the time by Professor Cowper, in consequence of the invitation of the Treasury.

994. But the circumstance of the opinions of such men as Sir Joseph Banks and Sir William Congreve, who were satisfied that copper-plate engraving could be forged with equal facility with letter-press, has a right to considerable weight?—Unquestionably.

995. You mentioned that you were not aware of any improvement connected with surface printing that might not be made applicable to the present arrangement; is not the electrotpe capable of being connected with surface printing, so as to have the most accurate multiplication of those different surface engravings?—The electrotpe, according to my recollection, was well known at the time I am speaking of, in the latter part of 1839.

996. Was not 1837 the first year when electrotyping was brought up?—That was the year in which I proposed the plan of penny postage.

997. But as to the electrotyping, was not 1837 the first year of its being brought forward?—That I cannot say; but if it was proposed in 1837, it would of course be known in 1839.

998. But not generally applied?—That I cannot speak to; but I feel very certain it was known, and that it was considered among other points in 1839.

999. If more recently the French Government and the Belgian Government have thought, after an inquiry into the arrangements of this country, it desirable to adopt surface printing, do you not think there must have been some new elements brought under thir notice?—The French Government, judging from the appearance of the stamps, adopted surface printing; the Belgian Government, I think, did not.

1000. There is a sheet; are they surface printing (*handing a specimen to the Witness*)?—I have no doubt they are; they are the French stamps; but I have reason to believe, there is some anxiety felt on the part of the French Government as to the forgery of the stamps, but it is a point on which I am not

not certain; I speak from letters which I have had from private correspondents in France. R. Hill, Esq.

1001. If the surface printing were as secure from forgery as the copper-plate engraving, possessing as it does the advantages of one machine, doing a so much larger number per hour, and being as it is so much less expensive, would not it be desirable to have the stamps printed on that plan?—Unquestionably. 30 March  
1852.

1002. Then the only point to be settled is the question as to forgery?—I am not aware of any other; that was the ground of the preference given in 1839 by the Treasury. We were well aware then that the surface printing was cheaper, and that it could be executed more rapidly than the copper-plate printing; but it was thought better to sacrifice something in the cost of stamps for the sake of the greater security which the copper-plate printing was believed to afford.

1003. If by any arrangement the head for surface printing could be made moveable, as a permuting lock, that the hair of the head should be arranged differently for certain sets of impressions, would not that be a greater preventive of forgery?—I do not think it would afford any security against forgery.

1004. *Chairman.*] What do you think is the great preventive of forgery now?—The extreme difficulty, amounting as I believe almost to impossibility, of transferring the stamps, and then printing from the transfer. The danger of forgery consists almost entirely in that of using the genuine stamp as a means of obtaining an imitation.

1005. *Mr. J. Greene.*] Could you not print stamps separately by one head engraved with a great deal of trouble from copper-plate engraving for the heads to be sold singly, the difficulty being in printing in the plate?—It would be exceedingly difficult to do that; the single die, which is the original matrix of all the stamps now issued, cost as much as 60 guineas (I think it was), to engrave; and, in addition to the work of the engraver, the groundwork which surrounds the head is engraved by a machine belonging to Messrs. Bacon & Petch, and it presents a pattern which, I believe, could not be executed by hand.

1006. Were not the American notes presented to that Committee engraved by a machine of the best possible description, and were they not supposed to require a very great length of time to supply a copy of them, and still did not engravers in this country imitate them within a very few days?—That is a point I could not speak to. In further answer to your first question, perhaps you will allow me to

R. Hill, Esq.

30 March  
1852.

add that the danger of which you speak, of the stamps being printed singly, was foreseen and guarded against; if you examine the sheet of stamps, you will find that every stamp in the sheet is distinguished from every other by certain letters; those letters were introduced in order to protect the revenue and the public against the very danger you apprehend.

1007. Would not that letter so supposed to be forgery, be sent to the head quarters of the Post-office?—It was thought at the time that any considerable sale of stamps so printed, all having the same letter, and being sold separately, not in sheets, would necessarily attract attention and lead to inquiry; and the fact is, that by some means or other we did succeed in obtaining a stamp which costs very little indeed in the production, and which does, so far as we can judge from an experience of 12 years, afford great security to the revenue; and here I think I ought to add, that I consider the Government and the public greatly indebted to Messrs. Bacon & Petch for that stamp, for we were obliged to rely mainly upon them for suggesting the means of execution.

1008. *Chairman.*] They were the first proposers of this plan?—They were the proposers of the plan in its detail; when it had been decided that such a stamp as that which is now issued should be adopted, we called in Messrs. Bacon & Petch to advise as to the means, and they took great pains, and incurred, I have no doubt, considerable expense in giving advice, and hence it is that the first contract which they entered into gave them a somewhat larger remuneration probably than would have been the result of competition.

1009. Then I understand you to say you have never seen a copy of one of those stamps made from the stamp itself; that you have never seen an imitation of one of those postage labels taken from the original. Suppose you saw one, and you could not distinguish one from the other, what should you say then?—I should think there was great danger then.

1010. *Mr. J. Greene.*] Is that a respectable forgery (*handing a specimen to the Witness*)?—No, it is not a respectable forgery; in the first place, it is not an imitation of the stamp; it is the head of Prince Albert.

1011. *Mr. Spooner.*] That is not a forgery at all?—I should like to examine this with a magnifying glass, because the security of the other stamp depends very much upon its background; it is a particular pattern, which can only be seen by a magnifying glass.

1012. *Marquis of Chandos.*] It is engine-turned?—I believe it is engine-turned.

1013. Do

1013. Do you think those stamps before you, if they were surface printing, could be used as a means of printing imitations?—Yes. R. Hill, Esq.  
30 March  
1852.

1014. One of those original ones?—Yes.

1015. The instance of forgery that came under your notice, was the one your brother alluded to as having been cut out of an illustrated paper, or something of that kind?—No, I do not think it was cut out of an illustrated paper.

1016. Mr. *Mostyn*.] It was the case of a schoolmaster in Ireland?—Yes, I think so.

1017. Marquis of *Chandos*.] Was it detected in the Irish Post-office?—I cannot recollect; it is a many years ago.

1018. Mr. *Grogan*.] Could a forgery very well take place, considering that the stamps must be issued by gentlemen either under your own control or under that of another department of Government; under those circumstances, could a forgery take place without the connivance of those gentlemen in some degree?—There is no doubt that that regulation forms one security against forgery, but I do not think we could rely upon it as the sole security.

1019. Marquis of *Chandos*.] Would there be any practical difficulty in a private party, suppose he forged those stamps, selling them in small quantities?—He must break the law to do it; but, in fact, the genuine stamps are sold illegally, and every now and then something arises which excites suspicion that fraud is going on. I need not say it is at once carefully investigated, and the result has hitherto invariably been that they proved to be the genuine stamps sold illegally.

1020. Mr. *Mostyn*.] They are sold at all the club-houses?—They are also used as change at the club-houses.

1021. *Chairman*.] What am I to understand by the term “selling illegally”?—The law restricts the sale of all stamps to certain parties who have a license.

1022. So that after they are once sold, they cannot be sold from one party to another?—No.

1023. In reference to the question as to the capability of forgery, I wish to ask you a question; the forgery is one thing, the disposing of the forged article is another; how do you think it possible for any one to make it worth his while to forge penny postage stamps for the purpose of selling them?—If he could do it and escape detection, it would be exceedingly well worth his while, because a sheet of penny stamps is in fact a one-pound note.

1024. Mr. *Rich*.] With regard to the surface printing and engraving,

R. Hill, Esq. engraving, the one, you said, would be cheaper than the other?—No doubt.

30 March  
1852.

1025. Have you ever attempted to form any calculation of what would be the economy by adopting the letter-press printing?—Not recently; I think the probability is that it was done 12 years ago, but I cannot speak with confidence as to the result.

1026. Could you roughly give any opinion of what would be the difference per thousand, or per 10,000 sheets?—I could not give any opinion which would be useful to the Committee.

1027. It has been stated by your brother that a reduction of a penny per thousand gives an economy of 1,200 *l.* a year; do you apprehend that the difference between surface printing and engraving would make a difference to the contractors, and enable them to keep it at a difference of more than a penny?—I think it not improbable that it might be something more than a penny.

1028. Do you think it would amount to 2 *d.*?—I am merely guessing, having no sufficient knowledge on the subject; but I think it not improbable that it might even amount to 2 *d.* I should think that was something like the maximum, but it is a useless sort of guess.

1029. The maximum saving would amount to between 2,000 *l.* and 3,000 *l.* a year then?—I think that would be the maximum, but it is a point on which I cannot speak with confidence.

1030. You state that no forgeries to any extent whatever have taken place since the institution of the penny postage?—We have every reason to believe that none have taken place.

1031. Do you find that the supply has been sufficient for the demand?—Certainly.

1032. Have the Post Office authorities had any reason to complain of the execution of the stamps with regard to their printing?—We have once or twice directed the attention of the Commissioners of Stamps, I think, to that matter; but it is, I believe, very rarely the case.

1033. And from the public have you received any complaints; my question including the whole question of stamps as applied to letters, the gumming, and everything?—There have been complaints, but not many; we always transmit them to the Stamp Office.

1034. Upon the whole you find the system, as at present organized for the printing and gumming the stamps by the present contractors, has worked from the time of its first institution

institution till now in a satisfactory manner?—Certainly; and I may mention this in confirmation of my opinion, that before any steps were taken to enforce the use of stamps, there was a gradual increase in the proportion of stamps used voluntarily by the public.

R. Hill, Esq.

30 March  
1852.

1035. If the adoption of the surface printing were found unsuccessful, that is, if it resulted in forgeries or dissatisfaction to the public, do you apprehend that the circulation of letters might fall off?—I do not think the circulation of letters would fall off; the injury would be to the revenue, by the substitution of forged for genuine stamps. It would not, I think, affect the circulation of letters.

1036. What would be the cost to the public of a prosecution for forgery?—That is question for the solicitor to answer rather than myself

1037. Then you think the prosecutions would absorb any 2,000 l. or 3,000 l. you might save by the substitution of surface printing for engraving?—Yes; and if we felt insecure in the matter, it would be very injurious.

1038. *Chairman.*] If you were really secure and felt insecure, would it be injurious?—If we really were secure, I presume we should not long feel insecure.

1039. *Mr. Rich.*] You strongly recommend the system by which the stamps are supplied at present?—Yes, I do, certainly.

1040. The machine of Mr. Archer, you say, as far as your own experience goes, is applicable to the present stamps?—I cannot judge of the machine, but I have seen the results of it; that is, I have seen sheets that have been perforated by it. So far as I can judge, from what I have seen and heard, it seems to be applicable to the purpose.

1041. And likely to be beneficial to the public?—I think so, to a certain extent.

1042. Upon those grounds you would recommend that compensation should be given to the inventor?—I have always been of opinion the inventor should be compensated.

1043. *Mr. J. Greene.*] If, in the Third Report of the Inquiry into our system of Postage, you found the solicitor of the Post Office giving his opinion that the best security against forgery was that in the transmission of those letters to the post they were the subject of inquiry, and that the capability of tracing to the party who might have forged was so easy, that he considered that was the best check, what should you say to that?—It was the solicitor of the Stamp Office, Mr. Timm. There is no doubt that the facility which the

R. Hill, Esq. Post Office authorities possess of tracing forgery affords great security.

30 March  
1852.

1044. *Chairman.*] Have you ever been asked for those pierced stamps at the Post Office?—The application would not come to me; I am not aware whether any application has been made to any of the vendors of the stamps, or not.

1045. *Mr. Grogan.*] With reference to the different modes of engraving, I understand your attention has been called to the report made by the Commission issued for inquiring into the forgery of Bank notes in 1819 and 1820?—Yes, it has been, this morning.

1046. Who were the parties in conjunction with yourself who investigated the different modes of engraving and preparation of the stamps, prior to the adoption of the plan now in use?—I think the investigation rested almost entirely with myself; it being understood that I was to apply for information to any one I pleased in matters of difficulty.

1047. It was you, principally, who conducted the investigation?—Yes, it was.

1048. Were you aware at the time that the Commission whose report you hold in your hand, had been appointed on the same subject?—I believe I was aware of it, and that I consulted it; it is now more than 12 years since the investigation was made, and therefore I am unable to speak with confidence as to what took place.

1049. Are you aware that your decision was decidedly adverse to the decision of those gentlemen whose names you will see to that report?—I cannot say that I was aware of it, because I do not recollect the circumstances; but even if I had been aware of it, I do not know that I should have hesitated on that ground to adopt what I believed to be the safest course.

1050. Will you read the third paragraph in reference to Messrs. Applegath & Cowper?—“Upon the whole we have ventured to recommend for adoption by the Bank, the plan brought forward by Messrs. Applegath & Cowper, which was originally submitted to the directors a short time only before the appointment of this Commission, and received immediate encouragement from them, and upon which some improvements have since been made. The directors have readily complied with this recommendation, and the necessary machines are in a state of great forwardness.”

1051. Was that recommendation within your knowledge at the time you made the investigation you have referred to?—I have every reason to believe it was.

1052. And you ventured not to follow it?—Yes; I believe that

that this (*referring to a specimen*) is the very kind of note of which I saw a forgery at the time. R. Hill, Esq.

1053. Will you say what note you are now referring to?—A Bank of England note; an experimental Bank of England note; a note which was never issued, but proposed to the Bank.

30 March  
1852.

1054. Sir William Congreve's is one of those names appended to that report; I presume you know the party?—Yes.

1055. He devoted a great deal of attention to this question?—Yes, he did.

1056. To the different modes of imitation, and preparation, and manufacture of notes with a view to prevent forgery?—Yes.

1057. Are you aware he wrote a little work upon the subject?—I do not at this moment recollect that I have ever seen his work, but I know his mode of printing exactly; I investigated it very carefully at the time, and arrived at the result that it would be exceedingly hazardous to adopt it for our purpose.

1058. Are you aware that at the time of the investigation which that report refers to, specimens of American notes were submitted to the Commission?—I have no recollection of the report at all, or the circumstances to which you refer.

1059. Have you seen the American notes?—I think it is most likely that I have, but I do not recollect.

1060. Have you seen that (*a specimen being handed to the Witness*)?—I do not recollect seeing that.

1061. Is that copper-plate or letter-press engraving?—That I cannot say.

1062. Mr. Spooner.] You are not practically acquainted with those things?—No.

1063. Mr. Grogan.] You have now seen that American note?—I have seen a note which I understand from you is an American note.

1064. Do you conceive that that note is prepared in the manner most calculated to avoid forgery?—No, I do not.

1065. Will you point out what you consider its defects to be?—The investigation which I made in the year 1839 led me to distrust all those complicated designs for notes.

1066. Did I rightly understand you, in a former answer, to state that you conceive that the copper-plate engraving now in use in the postage label stamps could not easily be imitated?—I believe that it could not be easily imitated.

1067. Is the design on the postage stamps more difficult, or easier,

*R. Hill, Esq.*  
 30 March  
 1852.

easier, of imitation than the note the model of which I have shown you?—My opinion is that it would be more difficult of imitation than that; but, as I have said repeatedly, it is a point on which I cannot speak with anything like confidence.

1068. Do you observe the four figure-heads there?—There are two heads, and two figures.

1069. In what respect do you consider the heads there drawn, afford greater facility for forgery than the heads on the postage label stamps?—Speaking still with very imperfect knowledge upon the subject, I should say the head in this note may be imitated by transfer. You might take an impression from the note, and with that impression print another.

1070. Could you do the same with the postage label stamps?—No, that has been tried repeatedly; and has invariably failed.

1071. On what grounds do you then conceive you could take a transfer from the one so easily, and not from the other?—Because the lines here are much farther asunder than they are in the postage stamp.

1072. Is that the only point?—That is the main security.

1073. Then take the margin; are the lines in the margin farther asunder than those on the postage label stamps?—I cannot say; but if your question is whether a large design of that kind does not present some difficulties which a small design like a postage stamp does not contain, then I must qualify my opinion; I thought the question had reference to the comparative facility of imitating this as a note, and imitating a postage stamp as a postage stamp.

1074. I have called your attention particularly to the margin?—I very much doubt, now I examine this margin, whether it could be imitated by transfer.

1075. Or in any mode; you use the word transferred; I say, imitate?—Perhaps the Committee will allow me again to remind them that I am being examined upon matters on which I have very little information.

1076. I have called your attention to the several parts of the note, with a view of ascertaining your opinion as to the facility, or possibility, of its being imitated; will you just turn the page over, and tell me, do you see any difference in comparing them, as far as you are able to judge; take the heads, and compare the heads one with another?—I do not detect any difference.

1077. Will you now examine the margin, which is more intricate; the part which is given there?—There do appear to me to be slight differences in the margin, but it would require  
 a very

a very long examination to be quite sure that there are no differences. *R. Hill, Esq.*

1078. Are the differences such as would enable you, say, to detect which was the original, and to detect the imitation?—No, they are not.

30 March  
1852.

1079. What class of printing do you conceive that smaller specimen to be?—I am not able to state.

1080. Would it change your opinion as to the security against forgery in any way, if you were informed that one plate was copper-plate, and the other letter-press printing?—If I were informed upon such testimony as I could rely upon, certainly it would.

1081. But by your inspection of the plates?—The two plates are so much alike, I certainly should infer that they are both printed by the same means; but if any credible person acquainted with the means should assure me they are different, I should of course believe it.

1082. Would you be of opinion that they were printed from the same plate, so far as the parts extend?—No, I see slight differences in the margin. I do not detect any differences in the head.

1083. *Mr. O. Gore.*] Can you detect which is letter-press and which is copper-plate?—I cannot distinguish that.

1084. *Mr. Grogan.*] You have already stated that you know, by character at least, Sir William Congreve?—I know some of his inventions.

1085. And that he has devoted a great deal of attention to this subject?—Yes.

1086. You know Mr. Branston?—By reputation.

1087. And his father?—I was not aware that there were two gentlemen of that name.

1088. *Mr. Rich.*] You are understood to have stated that it was impossible that the postage stamp could be imitated; do you mean to say so, without qualification?—No, certainly not.

1089. *Marquis of Chandos.*] You meant to state that, in your opinion, it is exceedingly difficult?—Yes; of course that which can be done by one can be repeated with the same means by another.

1090. *Mr. Mostyn.*] You say that, in the course of the 12 years the penny postage has been in operation, there have been only one or two instances of forgery?—Only one or two have come to our knowledge; and we have reason to believe that we have detected the only attempts that were made. They were very clumsy indeed.

1091. *Mr.*

R. Hill, Esq.  
 —  
 30 March  
 1852.

1091. Mr. Rich.] With regard to the question of compensation for Mr. Archer's devising and completing his machine, were you consulted as to the amount of compensation that should be given to him?—No, I was not.

1092. Had you nothing whatever to do with that?—No.

1093. Then you cannot speak upon that subject?—No.

1094. Would you inform the Committee under whose department it fell at the Post-office to make the recommendation upon that subject?—I believe it originated with the Postmaster-general. The Postmaster-general called upon Colonel Maberly and myself for our opinions, but he did not ask us as to compensation, and we of course answered the questions put. In my minute I do not touch upon the question of compensation, and Colonel Maberly, I think, is equally silent upon it.

1095. Was no question put before you as to the amount of the compensation?—None whatever.

1096. *Chairman.*] Did you ever meet with any plan for piercing or severing the postage stamps prior to Mr. Archer's?—No, I believe not. I have no recollection of any previous plan of the kind.

1097. Mr. Grogan.] You mentioned a gentleman of the name of Cowper as a professor?—He is one of the gentlemen mentioned in that report as Messrs. Applegath & Cowper.

1098. Mr. Spooner.] Do you believe that the perforating machine invented by Mr. Archer is a valuable machine?—Yes, I do.

1099. Do you believe it might be beneficially used for the purpose for which it is intended?—Certainly.

1100. And beneficially to the public?—Yes.

1101. Do you believe that that benefit to the public could be obtained without any increase of expense to the public?—I think it may, understanding that what is meant by the term "increased expense to the public" is the increased expense to the persons buying the stamps.

1102. But do you think there would be any material increase of charge upon the revenue?—Very trifling, compared with the amount of revenue.

1103. Do you think the object to be obtained is worth the risking of that possible increase to the revenue?—Yes, certainly.

1104. Then you would recommend the adoption of the perforating machine?—Yes.

1105. Though it may be adopted by Messrs. Bacon & Petch,  
do

do you not think Mr. Archer is entitled to a full remuneration for his invention?—I think he is. R. Hill, Esq.

1106. Can you give the Committee any information at all as to what that remuneration ought to be?—I have not very carefully examined that point, but I am prepared to say that the sum offered by the Treasury of 2,000 *l.* appears to me to be a liberal compensation. 30 March  
1852.

1107. If you were informed that Mr. Archer had been as much and perhaps more out of pocket than that 2,000 *l.*, would you then not conceive that the remuneration offered was too small; would you then give him a further remuneration?—If the expenditure was incurred with care and due regard to economy, most assuredly then I should think 2,000 *l.* too little; but Mr. Archer states in his papers, according to my recollection, that the expenditure had been about 900 *l.*

1108. *Chairman.*] That is actual expense and outlay upon his machine; you are aware that he took out a patent for it?—Yes.

1109. *Mr. Spooner.*] Are you aware that he devoted four years to that subject, which is not reckoned in the 900 *l.*?—I know of a statement of that kind; I presume what is meant is, that the matter was in hand during that time. I should be surprised to learn that the construction of such a machine occupied the whole of the four years.

1110. *Mr. Rich.*] Do you know whether Mr. Archer is a mechanist or not?—I cannot tell you.

1111. In estimating the sum spent by an inventor upon a machine, should you estimate that sum at a higher rate, if the man himself was a mechanist, and employing his own mechanical skill and knowledge upon the subject, than if the man had only entertained a conception or idea of the improvement, and had to submit the working out of it to others?—Certainly I should.

1112. The value of his own time, then, would be a very small element in the compensation?—I am not quite prepared to assent to that; I think when any one brings forward a successful scheme like this, he should be liberally rewarded; but I must add that I considered the 2,000 *l.* a liberal reward.

1113. *Mr. O. Gore.*] Have you taken into consideration that it has been returned twice, and that the inventor has had to undertake the whole of the business and bear the whole of the expense of bringing it to perfection?—As I said at first, I have no detailed information upon the subject, but the Committee desired to have my opinion, and I give it for what it is worth; but perhaps the Committee would allow me to submit

*R. Hill, Esq.* submit whether this might not be a means of ascertaining the amount, namely, to call in a mechanist and ask him for what sum he would undertake the construction of a machine to produce such and such results.

30 March  
1852.

1114. *Mr. Rich.*] Are you aware of the name and address of the mechanist who did construct the machine?—No; nor should I think he would be the proper person; I mean some one who has never seen the machine; the means of perforating paper had been known for many years; Mr. Archer, as I understand, has, with great ingenuity, applied those means to a special purpose; I conceive that if any experienced mechanist had been called upon by the Commissioners of Stamps, and told, “We want a machine to effect such and such a purpose,” he would, almost as a matter of certainty, have devised such a machine.

1115. *Mr. O. Gore.*] If you called in a mechanist in that way, and he gave an opinion of what expense such a machine could be made for, he could not take into consideration the loss of time, and the loss of capital upon the failure of attempts to bring that machine to perfection. The expense must be considerable to an individual who makes various efforts to get that done, as the original inventor. He will only give you the expense of making the machine, where the plan is already submitted to him?—I intended to guard myself against that mistake by suggesting that the Committee might call in some one who had not seen the machine, and knew nothing of the means employed by Mr. Archer, and say, For what sum would you undertake to devise and construct a machine to produce that result? I have reason to believe that an experienced mechanist would undertake the performance of such a duty. But then, again, I am merely giving you the impressions upon my mind.

1116. And until he has tried it, he does not know what delay may be thrown in his way?—But such a man would undertake to produce a given result for a given sum; he might say, I would make such a machine for 2,000 l.; if he does not produce the machine, then you would not pay him anything.

1117. *Mr. Rich.*] But independently of that, you think Mr. Archer is entitled to a reward for the conception of it?—Yes.

1118. *Mr. Grogan.*] But do you consider that the fair way of estimating that reward is, to view that machine brought to perfection, and then to ask another mechanist to construct a similar one?—Certainly not, unless you made a large addition to the result he would arrive at. If you show the machine to  
a mechanist,

a mechanist, and ask him what sum he would undertake to make a similar machine for, then in determining Mr. Archer's compensation you would be bound to make a large addition to that sum for the cost of the experiments, and for the ingenuity displayed.

R. Hill, Esq.

30 March  
1852.

1119. [Sir J. Tyrrell.] In point of fact, this machine never could have been brought to perfection had not it been for the facilities that from time to time were given to Mr. Archer by the Government; it does not necessarily follow that that must be spread over such a large number of years?—I cannot tell what the facilities were, but it appears to me that the fact of its having occupied four or five years does not show that the remuneration should include payment for four or five years' services, because I presume Mr. Archer during part of that time had other duties to perform.

1120. [Chairman.] Which do you think would be the preferable plan for remunerating Mr. Archer, supposing there is an uncertainty of its principle being carried out in full; would it be better to give him an absolute sum to take his patent and his machine and his invention, or to allow him something according to the amount of piercing that took place; that is, a certain sum per thousand, by way of a per-centage?—I think there is no medium between taking the machine and piercing all the stamps, and leaving the machine alone and piercing none; we could not, without complicating the accounts of the department very much, issue two kinds of stamps.

1121. But suppose, for example, there is a doubt as to the machine succeeding in all the stamps being pierced, is it most just to give Mr. Archer a certain sum for his machine, his expenses, and his patent right, and have done with it, or to allow him a per-centage, so much per thousand upon the amount of work done?—I think that the first course is the best for all parties.

Mr. Henry Archer, called in; and further Examined.

1122. [Marquis of Chandos.] ON the first day when you were examined, you stated that you had no objection to put in certain vouchers as evidence, but that Mr. Hill had part of them. The former question was, "Are you willing to put those vouchers before the Committee?"—I kept the contract that I made with the mechanist to make the original machine, and the payments I made to him. The last I contracted with I paid him 150 *l.*; and the last payment I made was 50 *l.* on delivering the machine to Messrs. Bacon & Petch.

Mr.  
H. Archer.

1123. Mr.

Mr.  
H. Archer.  
30 March  
1852.

1123. Mr. *Rich.*] Are you speaking of the first machine or the second?—The bill for the perforating machine I am speaking of; I contracted with a person in the habit of perforating for Dobbs' House for 140 *l.*, and I gave him 10 *l.* besides. I paid him 70 *l.* in the first instance in the first month or thereabouts; I gave him some more afterwards. The last payment was 50 *l.*, which I gave to Messrs. Bacon & Petch, saying, "Mr. Hill wants the machine to be tried at your house, and here is 50 *l.*" He then gave me a stamp receipt for it.

1124. Mr. *Grogan.*] How much did you pay him?—That is all I paid him.

1125. Marquis of *Chandos.*] The question in your former evidence which I refer to is this, "Have you vouchers that will prove the last machine cost 900 *l.*?" The answer is "Yes."—I delivered to Mr. Hill the contract, with the mechanist I have referred to, and his receipt in full, and Mr. Hill stated in his evidence that he was aware Bacon & Petch had paid it.

1126. Mr. *Grogan.*] What was that contract for?—£. 140.

1127. And you paid him 10 *l.* over?—Yes, for some trials he made; I paid him 150 *l.* before the failure at Bacon & Petch's, and bringing it to Mr. Addenbroke's.

1128. *Chairman.*] You mean after the failure in working?—Yes; for putting it in order and making various alterations; it cost 750 *l.*

1129. Is that Addenbroke's charge?—Yes.

1130. Have you got that bill?—Yes; this is the bill that he furnished to me. I said that it was extravagant; but I still said to Mr. Hill, if he thought otherwise, I would see Mr. Addenbroke on the matter. I afterwards saw Addenbroke, and told him that I considered his charge too high; still, I said I had such confidence in Mr. Hill, I would consent to refer it to him to say whether it was too high. Mr. Addenbroke would not consent to this proposal. Then I proposed to Mr. Hill to call in a mechanist, or any one in the trade, to value it, and that I would abide by the decision of that mechanist. I wrote to him a letter, and also had conversations with him to that effect.

1131. Marquis of *Chandos.*] Have you got the vouchers?—Yes, here is a voucher. My objection to pay that bill is this: I considered that the Commissioners were liable, and not me, because the Commissioners and Mr. Hill gave an undertaking to Mr. Addenbroke to be responsible to him for all the repairs; and immediately on getting that undertaking, he told my friends and myself that I was not liable to him for the expenses

expenses subsequent to his receiving that order. Since then he has run up a bill to the amount of 500 *l.* or 600 *l.*

1132. This is a bill merely; you have referred to a receipt; have you a receipt for this; have you paid it?—No, I have not paid it.

1133. Mr. *Spooner.*] If you believe that the liability is not upon you, upon whom is it, according to your idea?—The Commissioners; but he has brought an action, which I am obliged to defend for the amount of this bill of 750 *l.*

1134. Marquis of *Chandos.*] What is the result of the action?—He stopped proceedings when he heard the Government had only offered me 500 *l.* for my invention, for my expenses, and for the value of my machine. I believed the man really has had a great deal of trouble, and I was disposed to pay him about 500 *l.* of it. I was very anxious to settle with him; but I would not be a party to an exorbitant charge.

1135. Your answer to a question put to you in your former examination was this: “I left part of them, the receipts of what I paid for the machine.” Those receipts I want to see?—I gave them to Mr. Hill.

1136. Has he got them?—Messrs. Bacon & Petch paid the money, and had the receipts in full; but I will bring the mechanist here.

1137. Have you any receipts for any payments?—I delivered the receipts to Mr. Hill for the 150 *l.*

1138. Mr. *Mostyn.*] But as I understand, you have paid no part of those 750 *l.*?—No, I have not.

1139. Marquis of *Chandos.*] What money have you paid over on account of this machine?—£. 150.

1140. Who has the receipt for that?—I gave it to Mr. Edwin Hill, and the contracts.

1141. Mr. *Rich.*] You think 500 *l.* would be sufficient to remunerate Mr. Addenbroke?—I do believe that it would.

1142. Marquis of *Chandos.*] You stated that you had given a receipt for 150 *l.*, and the contract for that sum to Mr. Edwin Hill?—Yes.

1143. Have you paid any other sum of money in addition to that?—No, I have not.

1144. With regard to the bill of Mr. Addenbroke's for 750 *l.*, how long does that run over; just give me the dates?—From April 14th, 1849, to May the 5th, 1850; I believe he was every day engaged at the machine.

1145. Were there any other workmen employed upon it?—Yes, there were all his principal mechanics.

Mr.  
H. Archer.  
30 March  
1852.

Mr.  
H. Archer.  
30 March  
1852.

1146. Mr. *Grogan*.] Have you ever submitted that bill to Mr. Hill since you received it?—Yes, I have.

1147. Did Mr. Hill express any opinion upon the subject?—He did not express any; he was very cautious; I rather think he took Mr. Addenbroke's part.

1148. Did he express any opinion upon the subject whether he considered it high or otherwise?—I could not get any expression of opinion from him.

1149. Marquis of *Chandos*.] With regard to your residence; did you take up your residence in London specially for the purpose of perfecting this machine?—Yes, entirely.

1150. Did you leave or give up any profession or remuneration with that view?—No; I was always actively employed in North Wales, I hope to the benefit of the country, till the last five years, and I have been unable to go down ever since.

1151. Were you employed as secretary or engineer on the Festiniog Railway?—I was managing director.

1152. Did you resign that situation?—Yes, I did.

1153. For the purpose of coming to town to carry out this machine?—No, I followed other pursuits; I promoted a communication between the two counties, and I was secretary to the North Wales Railway Company.

1154. Had your engagements with that railway terminated previously to your coming to town about this machine?—Yes, and I was engaged on other works besides.

1155. Were you deriving any emoluments from any other occupation at the time?—I always was in pursuit of some public measure.

1156. Were you holding any salaried position at the time?—It was just about then that I resigned the North Wales Railway.

1157. Did you receive any salary from that engagement?—Not afterwards.

1158. Mr. *Grogan*.] At the time your attention was directed to the construction of this machine, were you in the receipt of any payment on any other public account?—No, never one halfpenny; I devoted my entire time to this business.

1159. Marquis of *Chandos*.] When you came to town did you resign any situation for that purpose?—No, I did not, but I gave up every other pursuit.

1160. Were you at the time you came to town in the receipt of any salary?—No, I was not.

1161. Mr. *Rich*.] Can you state when you ceased to be the secretary of the North Wales Railway Company?—I cannot; it was shortly before that.

1162. You

1162. You cannot say what time had elapsed between your ceasing to be secretary to the railway and your coming to town?—I do not know.

1163. Was it a year?—About a year.

1164. Did you mean that a year had elapsed between your ceasing to be secretary to the North Wales Railway and your coming to town to carry out this machine?—Yes; but I was pursuing other subjects.

1165. Mr. *Mostyn*.] Did you act for the North Wales Railway gratuitously?—No, I did not.

1166. Mr. *Rich*.] You say about a year elapsed between those two events?—I think about a year; I am never idle.

1167. Mr. *Mostyn*.] What was the amount of salary you received from the North Wales Railway Company?—I think they gave me about 1,500 *l.* for the short time I was in it; and for some other matters; I was not a year there.

1168. You received, in short, from that company 1,500 *l.*?—Yes.

1169. Mr. *Rich*.] For your duties as secretary?—I was also the promoter of it.

1170. Marquis of *Chandos*.] Did that include travelling expenses?—No, it was as compensation for myself.

1171. Mr. *Rich*.] For labour done?—Yes; and they in fact awarded me 10,000 *l.*, but the company broke up.

1172. Mr. *Grogan*.] And you got but the 1,500 *l.*—Yes.

1173. Mr. *Rich*.] Upon what grounds did they offer you the 10,000 *l.* as compensation?—The directors gave that to me for my services for promoting the measure.

1174. How long were you engaged?—A year.

1175. And they gave you 10,000 *l.* for it?—Yes; I also got up the company.

1176. Mr. *Grogan*.] Are the books of the company in existence?—Yes.

1177. Who has those books?—The company have them, of course; that is, the North Wales Railway directors.

1178. Was there any formal minute recorded awarding you 10,000 *l.*?—Yes.

1179. Mr. *Spooner*.] Having got up the company, were you appointed director and manager?—This was another company that I was appointed secretary to.

1180. And for your getting up the company, and for your duties as secretary, they awarded you 10,000 *l.*?—Yes.

1181. And the company afterwards broke up?—Yes, the company afterwards broke up.

Mr.  
H. Archer,  
30 March  
1852.

1182. And they were not able to pay you more than 1,500 *l.*?—No.

1183. Sir *J. Tyrrell.*] When the expenditure of this sum of 750 *l.* for perfecting this machinery took place, and you employed certain artists or mechanists to do the works, were you under the impression that the Government were responsible for the cost, or that you were doing it at your own cost and risk?—I was always under the impression, and so was my engineer, that the Government would pay me very handsomely for it; and Mr. Hill always said, “If you complete this, Mr. Cobden and Mr. Hume will not begrudge you ample remuneration.”

1184. But you had no distinct promise?—No. After the Commissioners referred it to Mr. Hill, to ask what was the amount paid for the machine, I wrote him this letter: “1st August 1850. Dear Sir,—In reply to your inquiry, I beg to inform you that the sum I originally paid to Mr. Wilkinson, who constructed the machine for me, was 150 *l.*, as will appear by his contract and receipts, which I will bring in the course of to-morrow. For the additional alterations which Mr. Addenbroke subsequently made, he, as you are aware, has furnished me with a bill of 750 *l.*, but as I consider that this is a most unwarrantable exorbitant charge, I have communicated to him that unless he made a very considerable reduction, I would dispute his claim to the utmost; the consequence is, he has commenced legal proceedings against me for the amount. Now as it is not right that my quarrel with Mr. Addenbroke should prevent the Commissioners making use of the machine at once, I beg to say that if the Commissioners pay me the sum of 375 *l.* in discharge of Mr. Addenbroke’s claim, I will give them a receipt in full for the same, so that whatever may be the result of the action, the Commissioners will in no way be responsible. Yours, &c. *Henry Archer.* To Edwin Hill, Esq., Supervisor of Stamps.”

1185. Mr. *Spooner.*] When was your attention first called to the invention and construction of your perforating machine?—In October 1847.

1186. From October 1847, was your sole and undivided attention given to the carrying out of that machine?—It was given entirely to the carrying out of that machine, except that I was pursuing literature, but not profitably.

1187. Mr. *Rich.*] When you say your were pursuing literature, do you mean that you were pursuing it for your own gratification, or with a view to profitable application?—Never with any view to profit.

Veneris, 2<sup>o</sup> die Aprilis, 1852.

## MEMBERS PRESENT.

Mr. Spooner.		Mr. Grogan.
Mr. Rich.		Mr. John Greene.
Sir John Tyrrell.		Mr. Geach.
Marquis of Chandos.		Mr. Ormsby Gore.

GEORGE FREDERICK MUNTZ, Esq.  
IN THE CHAIR.

*Edward Cowper*, Esq., called in; and Examined.

1188. *Chairman.*] YOU are, I believe, Professor of Manufacturing Arts and Machinery in King's College?—Yes, I am, in King's College.

*E. Cowper,*  
*Esq.*

1189. I believe you have for many years directed your attention to copper-plate and letter-press printing?—For many years to letter-press printing, but not to copper-plate printing.

2 April 1852.

1190. You understand the art of copper-plate printing?—Yes, quite so.

1191. Will you be so good as to inform the Committee whether you consider the present mode of engraving and printing the postage labels preferable to any other plan that might be introduced upon the letter-press principle, regard being had to economy, security, and despatch?—In respect to economy, there is no doubt that letter-press printing is considerably cheaper than copper-plate printing. If I were to give you an instance, it would be this: The copper-plate printer prints 300 impressions in the day from one plate, or from one press; and if you were to take two of those sheets, (because they are half-sheets which the postage stamps are printed upon,) if you took one entire sheet of paper, our printing machines now in general use print at the rate of 750 impressions per hour; that is whole sheets, containing 480 stamps. If we suppose that they work only six hours, which is about the office hours, I believe, in the Stamp Office, that would produce 2,160,000 stamps per day, instead of 72,000. The cost of nine reams of folio post would be 9*l*. The ink might cost about 4*s*. 6*d*. The wages I have put down at 14*s*.;

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*E. Cowper,*  
*Esq.*

2 April 1852.

and just to make up the amount, the et-ceteras I have put down at 1*s.* 6*d.*; that will make 10*l.* Then you have, putting them into thousands, 2,160,000 heads for 10*l.*, or 216,000 for 1*l.*, or 10,000 for 1*s.*, or 1,000 for 1 ½*d.* That of course is the printing and the paper; I say nothing about the gumming; I know nothing about that.

1192. Can you tell us the relative cost of the copper-plate printing?—That I cannot go into. I know they print 300 sheets per day. And making another comparison with the common press, when the postage stamp was first proposed, Mr. Whiting estimated that at the common Stanhope press, the charge being 12*s.* a ream, the cost at our machine being 2*s.*, it was about 1 ½*d.* or 2*d.* a thousand. That was proposed by Mr. Whiting to be worked in the Stamp Office. It was also proposed by myself to be worked in the Stamp Office merely as a public man, proposing what I supposed to be the best for the public. But there was a Committee at that time who paid 100*l.* to two or three persons who wrote essays on the occasion; and after those essays had all been considered by the Committee, they determined upon having copper-plate, and of course they must pay copper-plate price.

1193. Mr. *Grogan.*] What Committee are you speaking of?—I think it was the Committee that was appointed to consider what was the best plan of carrying out Rowland Hill's system. I do not know whether it was a commission or not; he was appointed secretary, I think, to that commission, and he received my evidence.

1194. *Chairman.*] You communicated all this evidence to him at that time?—Exactly; this was all stated to him.

1195. Are you able to give us an opinion as to the comparative merits and security of the two principles, the copper-plate and letter-press printing?—I think the security is upon a par. I think there is no security in either.

1196. Suppose it was worth any man's while to forge those heads, would the one be as easily forged as the other?—The more confused it is, the easier it is to forge. (*The Witness produced certain specimens to the Committee, to illustrate that point.*)

1197. Mr. *Grogan.*] You mean the more confused the impression from the plate is?—Yes, and the number of lines in the engraving.

1198. Sir *J. Tyrrell.*] The more elaborate it is; you mean the greater number of lines, the easier it is to forge?—Yes; if you take one of the present postage stamps, I would defy any person almost to trace the lines; and if you could not trace

trace the lines in the original, you could not trace them in a forgery; but if you take any of those that are printed clearly, you would see the slightest speck in it.

1199. Mr. *J. Greene.*] You mean the more delicate the tracery of the lines upon the copper-plate, the more confused they appear when struck off?—The more confused they appear, and the easier it is to forge it; the lines may be so nicely engraved that, if every one with a great deal of care is taken, the lines would be distinct; but, referring to postage stamps now, it is all confusion, no one can trace those lines.

1200. Is not the fact of their being printed in red ink, instead of black, one of the causes of their appearing confused?—I hardly know what to state to that; I think it is more the nature of the engraving.

1201. Mr. *Grogan.*] The book of models you have sent in were models prepared by you and Mr. Applegath, in reference to the investigation that took place by the Royal Commissioner, on the subject of forgery in 1819-20?—Exactly so.

1202. Those models were made by the direction and wish of that Commissioner?—Of the Bank of England, because our plan was adopted.

1203. You stated that there were 170 competing plans submitted to the Commissioners on that occasion?—Yes.

1204. The plan proposed by you and Mr. Applegath, was the one finally approved of?—Yes, it was.

1205. Your plan having been approved of, the report states that machines were in course of erection at the Bank for their use?—Yes.

1206. Those machines were erected?—They were erected, and we printed 100,000 notes a day.

1207. What notes were they?—One-pound notes.

1208. Has your system continued in use at the Bank?—It has not.

1209. Were those notes ever issued?—They were all burnt three years afterwards.

1210. Mr. *Spooner.*] Did this occurrence take place at the time that it was in the contemplation of the Bank to withdraw one-pound notes from circulation?—It did.

1211. And do you suppose that was the reason why your scheme was laid aside?—That I believe to be the case.

1212. Mr. *Grogan.*] Your plan having been approved of, do you know why it was not adopted for the printing of other notes?—When we asked the Bank whether they would not like to have it for the five-pound notes, the answer given to us was, the five-pound notes would take care of themselves.

*E. Comper,*  
Esq.

2 April 1852.

1213. *Mr. Rich.*] Have you not known forgeries of five-pound notes?—That was their answer to us. I have heard of such forgeries, but I have not seen any.

1214. Has it never come within your knowledge, as a general subject of acquaintance, that five-pound notes have been forged?—I do not recollect at this moment.

1215. Have you never heard of any note above five pounds being forged?—Yes, certainly.

1216. *Mr. Grogan.*] Have you any knowledge of the fact?—No.

1217. *Mr. Rich.*] Without speaking of specific knowledge, do you know whether notes above the value of one pound have been forged or not?—I believe so.

1218. To a very great degree?—I do not know.

1219. To a considerable degree?—I cannot say.

1220. To what extent do you conceive?—I cannot say; I thought it would be very proper that they should adopt that for the five-pound notes.

1221. Have you heard of many persons having been hung for forging notes above 1*l.*?—I have no doubt of it; I do not recollect.

1222. Therefore, to that extent, the five-pound notes have not protected themselves?—No.

1223. On the occasion to which you refer, the Commission of 1819-20, do you recollect any plan submitted on the part of the American artists?—Messrs. Bacon & Co. Yes.

1224. *Mr. Grogan.*] Had you seen imitations of the American notes before?—I had.

1225. The imitations by Messrs. Branston?—Yes; I had seen them all before.

1226. Have you any doubt, speaking from your knowledge of the facility with which copper-plate engraving may be imitated?—None at all.

1227. Is that one of the reasons why you stated that, in point of security, the mode of engraving was immaterial?—Exactly.

1228. Will you state, as far as your knowledge practically extends, in what you consider the security against forgery of postage stamps consists?—I think it entirely depends upon the very nature of the thing and the persons who sell the stamps, and particularly by the difficulty there is in the way of printing them singly; that would be a protection against their being forged. For instance, a stationer would not forge them because he would run such very great risk of conviction, and the parties who issue these stamps are all licensed; that is  
another

another reason why they would not be forged; the great difficulty of putting them into circulation; the almost impossibility of putting them into circulation would operate against the forgery.

*E. Cowper,*  
*Esq.*  
2 April 1852.

1229. Then on this part of the question does your evidence amount to this, that the economy in the mode of preparation would be a serious desideratum in the style of engraving?—There can be no doubt of the difference of over economy in surface printing over copper-plate engraving; there cannot be the slightest doubt whatever; they can be hardly compared.

1230. *Mr. J. Greene.*] Would not there be a much greater number of persons capable of forging from surface printing than from engraving, by reason of the greater education of the community in that department of printing, and from the number of wood engravers, and so on?—I tried my own hand once at wood engraving, and got on tolerably well; but I should not do copper-plate so easily.

1231. Without referring to the relative question, does it make any difference as to the numbers?—I think wood engraving is easier than copper-plate engraving.

1232. What would be the relative costs of plates for surface printing; could it be done on steel; what were the plates from which the notes of the Bank of England were struck off?—They were made of the ordinary stereotype plates, and I think they could not be made of steel. I do not see any mode of multiplying them.

1233. Cannot they be multiplied by electrotpe?—Decidedly.

1234. And still that would give very great security?—In identity. I consider identity is the great security against forged documents, notes, or anything of this kind.

1235. The electrotpe would give perfect identity?—No doubt.

1236. When the Bank adopted surface printing, did they do so with the idea that it was as secure as engraving?—That it was more secure; we were able to put a great deal of intricate work in it, and also two sorts of printing; two colours.

1237. Have any of the private banks in this country adopted surface printing for their notes?—Some of them adopted Sir William Congreve's or Mr. Whiting's plan, with the double plate, but we never did anything of that kind.

1238. *Mr. Grogan.*] Are those coloured designs printed in a single plate?—Yes.

*E. Cooper,*  
*Esq.*  
 2 April 1852.

1239. *Mr. J. Greene.*] Could the postage stamps at present be easily forged without lithographing?—If it were transfer ink, nothing would be easier; but I am not aware of the nature of the ink; it is stated it is not transferable.

1240. You mentioned, as one of the items of economy in the production of postage labels, the using of a reciprocating printing machine, giving 750 perfect copies per hour?—Yes.

1241. What is the reason why a bent plate should not be applied to the machine so as to get rotatory printing, the same as in calico printing and other things?—That was my patent about 33 years ago.

1242. Has anything induced you to think that plan could not be carried out satisfactorily with those bent plates?—The four millions were printed with curved plates in the Bank of England.

1243. For printing purposes, a machine with a circular plate to it answers every purpose?—Yes.

1244. The only difficulty is the feeding with sufficient rapidity?—Yes.

1245. But cannot you feed with any machine at the rate of 1,250 impressions per hour?—That is about the limit.

1246. You have stated, by reciprocating, 750 would be the limit?—I have put it down at the lowest rate, working in a Government office, at the Government hours, and at the Government rate; but the rate at which we print, with machines I have sent to France and other places, is 1,000 per hour, the common rate; and when we come to newspapers of a large size, that is 1,200 sheets of a large size, I have taken only a sheet of ordinary post; if it were worked at Clowes's or a newspaper office, it would be quicker. The postage sheet I have taken, I have supposed to be half a sheet of folio post; a printing machine would either print copies of that size or four times that size.

1247. Have you any reason to limit the size?—I am underrating it very considerably; if I gave four times the size, it doubles the amount; and instead of printing two millions a day, it would print four millions a day.

1248. If you adopted the printing press you refer to, as having patented a number of years ago yourself, would not one machine do the work of three or four by increasing the number of printing cylinders?—It would not be so well in point of economy; it would not be so easily managed. In the newspaper machines we make a form of type pass under one cylinder, or under two cylinders, or under four cylinders; or, as Mr. Applegath has lately done, under eight.

1249. When

1249. When you refer to Mr. Applegath having done that lately, it is by putting types outside the cylinder, and getting a machine with a vertical axle, and the printing cylinder outside it?—Yes.

*E. Cowper,  
Esq.*

2 April 1852.

1250. In fact, revolutionizing the reciprocating machine?—Going back to my old cylindrical machine, only putting it up on end.

1251. What objection would there be, having that precedent before your eyes, to introducing a number of printing cylinders, because there happened to be a stereotyped plate which would give a perfect cylindrical surface instead of types to print from?—It is necessary in any good engraving to have a very perfect distribution of the ink, which is not so necessary in a newspaper; therefore I do not think such a machine would be so well adapted for anything of this kind as an ordinary machine.

1252. In fact, you would prefer to print with one cylinder?—Yes.

1253. You mentioned the limit of rapidity was the feeding; at present they feed about 1,250?—Yes, about 9,000 an hour.

1254. Are you not aware in America, by having a cylinder in which the axle is horizontal instead of vertical, they feed 2,500 an hour?—I have heard of that, and I believe the explanation is they count a double sheet as two. That is, a man does not really and truly lay on twice that quantity; but the sheet he lays on being twice the size, and divided afterwards, it counts for two.

1255. There must be two forms of matter if that is the case?—Yes.

1256. Have you read over the evidence of the Newspaper Stamp Committee?—No, I have not.

1257. You stated the limit of rapidity was that of feeding at present?—Yes.

1258. Is not the limit of rapidity of the Times the taking off; must you not wait till that paper, having been printed, is pulled down, from the axle being vertical instead of horizontal?—No, it comes out at the same speed as it is fed.

1259. Has not it to be stopped and pulled down?—There is no other sheet that is coming upon that before the other gets away; there is no difficulty there at all.

1260. Is not the limit of the machine with the horizontal axle the rapidity with which you feed, the centrifugal force throwing out the paper and preventing any delay, as in the Times?—No, there is no technicality in that.

1261. But if it is practically found Mr. Archer's machine does

*E. Cooper,*  
*Esq.*  
2 April 1852. does feed 2,500 an hour, it would be a great advantage to the public?—Yes, exactly; but I do not give much credit to it at present.

1262. *Mr. Geach.*] In respect of those notes that you made for the Bank of England, were not they imitated at the time?—They were attempted to be imitated by Mr. Bawtry, the engraver to the Bank, but it was eight weeks and three days before he produced an imitation; a number of impressions, perhaps about a dozen, were mixed with the impressions he had printed from the true plate. We were then summoned into the Bank parlour, and they put those notes into our hands and said, “Which are the forgeries?” Mr. Applegath being rather nervous, pushed them on to me; I said, “Gentlemen, I can only apply to myself the same rule you would give to everybody else; I must look for identity;” and I looked for identity in that small space, just about an inch square, namely, the Britannia, and I threw out every forgery of theirs, and we stated that they were forged, and I found that there were two forgeries, and I laid them all out. We had then certainly thrown them all out, but the directors considered the imitation sufficiently near to make it dangerous.

1263. Now you know the mode that is adopted for printing the postage labels, that it is by copper-plate printing?—Yes.

1264. And the way in which the original engraving is carried out?—By Perkins’ rolling process; that is the way the Britannia is now put in at the Bank of England; it is rolled in so as to insure identity.

1265. You admit, then, that by that process every postage stamp is alike?—Exactly.

1266. That there is no variation, excepting from the greater or less quantity of ink?—Exactly so.

1267. Could you get the same accuracy, and perpetuate the same regularity, by letter-press printing?—We did it by stereotype; electrotype was not then known. I think electrotype infinitely superior to stereotype; the mode that I proposed when the postage stamp was first instituted, was to insure identity, not by stereotype, but by actual stamping, after the manner of a medal, the same as you have the letters upon a coin; so that it was possible to cover the whole surface with work, and to stamp them as you would a coin, and to use them as a thing to print on; then we should have insured identity; considering in every case identity to be an important thing.

1268. Would you, as a practical man, say you could get the

the same identity, and the same regularity, as to every postage-stamp, not to one or another only, equally by letter-press printing, as you could by copper-plate printing?—Certainly.

1269. With all the knowledge that there is of copper-plate printing at the present time, you say that they can produce about 300 sheets a day from one machine?—That is about the mark; we have always considered that very fair working.

1270. Is that produced by machinery, or hand?—By hand, and by the rolling press; the large star wheel, and pull over.

1271. Then by the plan you would propose, the letter-press printing, how many sheets a day could they produce?—You would strike off, from one machine, 2,160,000 stamps per day of six hours; and if they worked for 10 hours, you would strike off 3,600,000.

1272. How many sheets would that be, the 2,160,000?—It would be 4,500 whole sheets; that would be equal to 9,000 sheets of the size of the postage sheets.

1273. Mr. *J. Greene.*] From how many machines would that be?—From one machine.

1274. You would require four plates for that machine?—No, only two.

1275. Then your paper would be double the size of the present?—Yes.

1276. So as to admit of its being done with one feeding?—The machine is big enough to take four times that size. I have only taken it at two, as being more manageable.

1277. There is no objection to having the paper four times the size?—No.

1278. Are the transferring presses, such as are in Messrs. Bacon & Petch's establishment, general through the trade?—No, I think not.

1279. Is that a machine confined to that particular office?—That transferring machine is confined to Messrs. Bacon & Petch's office, and to the Bank of England. I do not know that it is used anywhere else; they use something similar in the calico printing, which consists of a steel roller, called a mill.

1280. Is not the pattern transferred by pressure upon that cylinder in a soft state, and then the cylinder hardened?—Yes.

1281. You consequently suppose that where the cylinders are made, there are transferring presses of a similar description?—In the calico printing.

1282. Yes?—They use copper rollers; they then transfer  
from

*E. Cowper,*  
*Esq.*

2 April 1852.

*E. Cowper, Esq.* from the mill the little figures on to the copper roller by pressure.

2 April 1852. 1283. *Chairman.*] That is very old?—Very old.

1284. *Mr. J. Greene.*] To use Mr. Archer's invention, there requires great accuracy of guide lines?—I do not know what his plan is.

1285. Without seeing the machine, you can say whether it would be very necessary to have great accuracy in separations?—I do not know at all anything about it.

1286. Take the perforated sheet of postage labels now before you, the accuracy of those white lines should be perfect?—If one thing is to fit the other they must be perfect.

1287. You conclude that it must be so to perforate the sheet accurately?—Yes.

1288. Is there greater accuracy attainable by surface printing than there is by copper-plate engraving with the transferring process that is now made use of by Messrs. Bacon & Petch?—I think the accuracy in one case is as facile as in the other.

1289. *Mr. Geach.*] I think you stated that the difference was as 300 sheets to 9,000; is that correct?—Of the same size, yes.

1290. You have stated that they would be equally regular as far as the copper-plate in the one instance, and the letter-press in the other went; which would be the most likely to distribute the ink regularly through a long process of printing?—That must entirely depend upon the workman; the printing machine when once put right goes on right; but in copper-plate every one of them has to depend upon the workman's hand when he puts the ink on.

1291. *Chairman.*] In the copper-plate engraving the ink is put on, and then cleaned off, except the sunken part?—Yes.

1292. In the other case the ink is merely put in contact with the surface?—Yes.

1293. Taking the two principles together, then, which would disperse the ink most regularly?—The copper-plate is done by hand, and the other by machinery.

1294. *Mr. J. Greene.*] Which would give the most perfect printing in appearance?—I think if I produced anything I had printed, I should be ashamed to print it like that (*pointing to a sheet of stamps*).

1295. *Mr. Geach.*] Sometimes it might be well distributed, and at another it might not be so, but which would produce the greatest regularity?—That I cannot say; it must depend in the

the one case upon the man's hands, and in the other case upon the man managing the machine; bad and good work may be done in both.

*E. Cowper,*  
*Esq.*

2 April 1852.

1296. You think that with ordinary care greater regularity as to the distribution of ink may be obtained in the letter-press printing, equally well as in copper-plate printing?—In both of them.

1297. *Mr. J. Greene.*] What number of impressions would you strike off from one of your plates, the surface plates you propose?—Those from stereotype I think are bad; I think the best material for printing from surface is electrotype. A little while ago, the "Times" newspaper required the King's arms to be put at the top of the paper for this new machine, and they applied to Mr. Branston to engrave a steel coat of arms. He said that it would take some little time. He said, "I will engrave you one in wood, and I will electrotype it; it will give me time to engrave the steel." They put the electrotyped one to the printing machine, only intending it to be temporary, and they worked it for 18 months, printing 13,000,000 of impressions, and it was not worn out then.

1298. How many impressions would the copper-plate engraving be calculated to give, retaining its perfect appearance?—In the first place, the copper is altogether of a different material in texture to the electrotype.

1299. Take it they are transferred upon steel plates?—It lasts a great deal longer than copper; I am not aware how long it will last.

1300. You mentioned that you had suggested the putting types outside the cylinder prior to Mr. Applegath's having carried it out in this country; why was not it brought to perfection by you?—Those were curved stereotype plates we used, and Mr. Applegath has put types upon the cylinder.

1301. There were difficulties in the way of placing types upon the cylinder at that time?—Yes, at that time.

1302. Those difficulties are removed now?—Yes.

1303. Do you get a perfect surface of types placed outside the cylinder?—Not unless the type is curved to suit the periphery of the cylinder.

1304. Then can they obtain a perfect surface?—Yes; the type must be cast on purpose for it. The simplest way would be to electrotype the stamps, and to pass them under one of those simple cylinder machines with a flat reciprocal surface, and having two; if one broke down, the other would be ready. It might be worked in the Stamp Office with great ease.

1305. *Mr.*

*E. Cowper,*  
Esq.

2 April 1852.

1305. *Mr. Grogan.*] You have mentioned something in regard to working at the Stamp Office; would that be any advantage in security to the revenue?—It would seem to be a better thing that the stamps should be made in the Stamp Office; they have Sir William Congreve's machines that print those that are coloured. I think they might be done there. I am not speaking of one of my own machines, because I have given up the manufacturing of the machines to my brother, and I have nothing more to do with that; but either one of those, or with Sir William Congreve's machines, or Mr. Napier's machine, or any of my rivals, will do the thing well.

1306. Are you aware that when they introduced the postage-label system into France, the French Commissioners came over here to investigate our mode of doing it?—No.

1307. *Mr. Rich.*] You have said that there is greater economy upon the surface printing than the engraving?—Generally so.

1308. You are not prepared to say what the per-centage would be of the economy with regard to postage labels?—I said that the ink, paper, and printing would be about  $1\frac{1}{2}d.$  a thousand by the printing machine, and  $1\frac{1}{2}d.$  or  $2d.$  by the common press.

1309. You have stated there is no greater security against forgery with the engraving than the printing?—I think they are quite upon a par in that respect.

1310. Your plan that was presented to the public was for printing?—Printing bank-notes.

1311. The Bank did not adopt it?—They did to a certain extent.

1312. What number did they print, did you say?—Four millions.

1313. The Bank did not adopt it?—No.

1314. Your model was imitated, I think you said, but not so successfully but that you could detect the difference?—Not so successfully but what I could detect the difference, and throw them out on the table before us.

1315. The Bank directors thought the imitation so good as to render the adoption of your plan dangerous?—That comes to what I was just now referring to; that it was an official way of getting rid of the notes.

1316. Your answer was that the Bank said to you that your note could be so nearly imitated, or had been so nearly imitated, that they were afraid to adopt it?—Yes.

1317. And do you think that that objection might be more valid

valid than the supposition that at that time the Bank might have desired to get rid of a certain quantity of gold?—*E. Cowper, Esq.*  
I do not think that was the real objection; I think the real objection was that they were contemplating the introduction of gold. 2 April 1852.

1318. You think that was a mere excuse?—That is rather hard to say; we went there to give the best thing we could with respect to paper, and we never made any quarrel in any way; we said, “We are not going to dictate to you; if you have 10,000,000 *l.* of gold, and want to issue it, by all means do so; we have come to offer you the best thing we can as to paper.”

1319. Was the machinery that was constructed for the printing of those notes constructed at the expense of the Bank?—Yes.

1320. They had the machinery then in their own possession?—Yes.

1321. Would it have been capable of being converted into the printing of five-pound notes?—Quite so.

1322. At a very trifling expense?—At no expense at all.

1323. The Bank did not print any five-pound notes?—No.

1324. And then, subsequently, they continued to issue notes of all kinds printed by other machinery?—Yes.

1325. All the notes that have been issued from the time that your machine was in the possession of the Bank have been issued from engravings, and not from your machine?—Yes.

1326. In point of fact, the Bank have never used your machine?—No.

1327. Can you attribute any reason for that?—Only the reason I gave just now, and that I merely submitted as my own conviction, and without giving an official statement; my own belief is, that it was a question of gold and paper; and in fact, there were two parties in the Bank on that subject.

1328. The Bank have never used your machine in printing the notes which they have issued since 1819?—No.

1329. I ask you then, to what reason do you attribute the Bank people neglecting to make use of the machinery in their possession, and which, from your statement, would print notes much cheaper than the machine they employ for engraving?—They stated that they considered that their own notes had a peculiar character, that everybody knew them, and that it was not desirable to alter them.

1330. You think that the fear of a more easy forging may not have operated upon them?—It did not operate.

1331. Are you sure of that?—Yes.

1332. Then how do you reconcile the declaration on the part

*E. Cowper,*  
*Esq.*

2 April 1852.

part of the managers of the Bank that your note was so capable of imitation as to make them fear to issue it?—They considered the imitation was sufficiently near to deceive the public.

1333. Did not that necessarily make them fear that the note might be forged?—No, I do not think so.

1334. You see no connexion between those two assertions?—I believe a copper-plate engraver's apprentice might engrave their own note in two or three days, and I am sure they could not engrave ours.

1335. You stated as to Sir William Congreve, that he was a competitor?—Yes.

1336. Was this at the time the Commission sat?—Yes, he was one of the Commissioners, and a competitor.

1337. And his proposal was for surface printing?—Yes, for surface printing.

1338. His report was against engraving?—He trod upon our heels as fast as we went on. As soon as we proposed surface printing, he proposed it; and as soon as we proposed two colours, he proposed it.

1339. You were an unsuccessful candidate in the year 1837 for the postage labels?—No, I do not like the term candidate; mine was only a suggestion to Rowland Hill to carry it out. I made no offer of doing the thing. Mr. Rowland Hill had a small machine, and I said, take it and turn it to account, if possible.

1340. You know nothing whatever of this perforating machine?—No.

1341. *Mr. J. Greene.*] Mr. Rowland Hill's machine was for putting type outside the cylinder?—Yes.

1342. What was the peculiarity of it?—The machine consisted of a cylinder on which the type was to be placed; and he intended to put the types entirely round the cylinder. My system of distribution of the ink was partly round the cylinder; and the plates were also on the cylinder; and therefore I got perfect distribution. In his, the inking rollers were apart from the type cylinder, and the distribution was so imperfect, it could not be used.

1343. *Mr. Grogan.*] Were the types which your attention has been called to, for surface printing?—For surface printing; and Mr. Rowland Hill had very ingeniously contrived a type mould, to cast type like the stones of an arch, on the segment of a circle.

1344. *Mr. J. Greene.*] Which would require to vary according

according to the size of the cylinder?—That was one technicality against it. E. Cowper,  
Esq.

1345. *Chairman.*] You were asked just now what the reason was that the Bank of England did not use your surface printing for notes; did they not, in fact, use it, or else why should they strike off so many millions of notes; was not that a use of it?—It was a use of it, but none were issued. 2 April 1852.

1346. And was not it the intention of the Bank to issue those notes if the circumstances of the Bank had allowed of it?—Yes; and the Royal Commissioners came round and gave their sanction to the issue of the notes.

1347. And the result was, that they were not issued, because the circumstances in which the Bank stood rendered the use of them not necessary?—That was my belief.

1348. *Mr. J. Greene.*] With respect to the transfer of these stamps, it has been represented to me that they are very capable of transfer; supposing this ink to be evanescent, the question is, whether those stamps made from the steel plates as now made are capable of being transferred either to wood or copper or paper?—I do not know the nature of this ink, and I have never tried any experiment with it. I cannot speak to it.

1349. Supposing the ink to be transferable, and that one of those heads were made as now made from steel plates, and one were also made from surface printing, would the transfer in each case be as easy, the one as the other?—Just the same; it would make no difference if this ink is at all transferable, so the letter-press would be in the same way exactly.

1350. *Mr. Rich.*] I think you said you never had a forged five-pound note?—No.

1351. Have you ever heard of a Bank of England note declared to be a forgery by the Bank, and afterwards declared to be a good note?—I have heard of such cases; I have never had one myself.

1352. *Mr. J. Greene.*] Can you take from a copper-plate engraving an electrotype as well as from the surface-printing?—That has been attempted, but not very successfully.

1353. *Sir J. Tyrrell.*] I understood you to say the "Times" newspaper have adopted the electrotype system for the Royal arms; supposing that was adopted in this case, would it be equally liable to be forged. I understand you to say you have no respect, from your experience, spread over a great number of years, for that present mode of doing the heads, and that you would consider that it is equally easy to

*E. Cowper,*  
Esq.

2 April 1852.

be forged as that done on surface printing?—Exactly. I think they are actually on a par.

1354. You think that a very imperfect means on the whole, and that the present official persons at the Post-office have not availed themselves of the new modes of invention that have been brought to bear in this matter?—I should be very sorry to say that. I do not know what improvements you refer to, unless you refer to the electrotype.

1355. I do refer to electrotype?—That would be electrotyping in copper, and not in steel; and I apprehend the steel-plate would last as long as the electrotype copper-plate.

1356. From your experience in those various modes of doing those things, is it possible to adopt the electrotype system in making those stamps?—I think their present system is very good; if you determine upon having copper or steel plates, I do not see any objection to it, because they can roll them in from a steel roller.

1357. You have no great respect for that as a mode of art; you think that it is equally as easy of being forged as any other mode?—Yes; even if you take a powerful glass you cannot trace the lines there at all.

1358. *Mr. J. Greene.*] Would not Mr. Archer's plan of perforating the stamps be a guarantee against forgery?—I do not see how that is to operate at all. With respect to the perforation, that must be done after the printing, because the sheet of paper is damped at the time; and the sheet of paper being damp, would not take the perforation.

1359. Is there any objection to printing with dry paper?—Yes, certainly, if the experience of ages is to be taken; we always print with damp paper; all newspapers print with damp paper, and they would be glad to get rid of that if they could.

1360. If a particular description of paper is used, cannot they print from dry paper as well as from damp?—I would not say they could print as well. Printing has been done with dry paper in France, I think, but not in this country; I do not recollect any instance of it, except in the case of posting-bills for lost articles.

1361. *Mr. Spooner.*] Have you any practical knowledge of printing upon dry paper?—None at all.

1362. *Mr. Grogan.*] In the early part of your examination, you stated that the lines on the postage heads were so intricate and confused, if I understood you, that it did not afford that security that the other species of printing would afford?—

If

If this engraving was not so confused, it would be more difficult to imitate.

*E. Cowper,*  
*Esq.*

1363. Do I understand you by that, that the great number of lines, and the intricacy of the lines, render it less secure than if the lines were more distinct?—Yes.

2 April 1852.

1364. Are you very clear upon that?—Quite clear.

1365. Then if the lines were further asunder than they are, then with regard to the postage stamp you conceive that would increase the difficulty of forgery?—Yes, I do.

*Mr. Joseph Addenbrooke*, called in; and Examined.

1366. *Chairman.*] YOU are a mechanist?—Yes.

1367. That being the case, you are conversant with almost all kinds of machines?—Yes.

*Mr. J.*  
*Addenbrooke.*

1368. Were you employed to make alterations in Mr. Archer's perforating machine?—Yes, I was.

1369. By Mr. Archer?—Yes, by Mr. Archer.

1370. The one now at Somerset House?—Yes.

1371. You are aware that was the same that was tried at Messrs. Bacon & Petch's previously to being delivered to you?—I believe so. It was always acknowledged as such by Mr. Hill.

1372. What alterations did you make in it at first?—We found the machine in a very bad state when it came into my possession, and many things were lost of that machine, and all those things had to be put to rights; and then there were some alterations and additions, and so forth, to be made to the machinery; one was when the machine travelled up to a certain distance, and had finished perforating a sheet of stamps, it was necessary that the machine should be thrown out of action; that part of it was done. Another alteration or addition was, that the tympan that was made use of should be set in a particular place in the machine in order that the perforation should fall exactly in the lines between the stamps; that was also done, and there were other tympan made in order to increase the quantity of stamps that were to be done, to enable us to perforate more sheets of stamps than we could otherwise have done, and there were other matters.

1373. Do you recollect what time it was you first made those alterations?—It was in April 1849.

1374. Did you then discover that the alterations you had made were likely to prove useless in consequence of the model sheet delivered to you being different from the size of the one you had had before?—It was found that the original sheet that

Mr. J. Addenbrooke. was put into my hands was in a very crumpled and dirty state, and I received another sheet in place of that.

2 April 1852. 1375. Mr. Grogan.] From whom?—From Mr. Archer. I mentioned it to Mr. Archer that the original sheet was in a very bad state, and he procured another sheet in the place of that and delivered it to me.

1376. *Chairman.*] Did you write to Mr. Archer upon that subject?—I forget whether I did.

1377. See whether you wrote him that note (*handing a letter to the Witness*); is that your writing?—This is my writing.

1378. Read it, will you?—"101, Hatton Garden, July 5, 1849. Sir,—Immediately on your leaving me this morning I discovered you had unknowingly led me into a great error, and into a great loss of time, by having given me at first a sheet of labels that did not at all correspond with the one you brought me to-day; the one you brought to-day is the same as the machine, and it places me in an uncertainty as to how I had better proceed; but till I see you I shall go on with the new ratchet, suitable to the first sheet you brought. It quite surprises me to find these sheets of labels do not correspond, and don't know how far it may interfere with your plan. If this had not occurred, your machine would have been completed this month back, which is much to be deplored. Shall I see you to-morrow? Respectfully, J. Addenbrooke."

1379. After you had seen Mr. Archer upon that subject, did you go to Messrs. Bacon & Petch's upon it?—I did.

1380. Did you make any further alteration in the machine in consequence of the new sheet so delivered to you by Messrs. Bacon & Petch?—I did. The new ratchet that had been added, and some other alterations that had been made in the machine, were rendered entirely useless in consequence of being different from the new sheet that was delivered to me by Messrs. Bacon & Petch.

1381. Mr. O. Gore.] When you called at Messrs. Bacon & Petch's did they exchange the sheet?—They did: in calling to show them that the sheet I had had delivered to me by Mr. Archer was not true and conformable to the first sheet delivered to me, they took that sheet from me and gave me another sheet, of which I informed Mr. Archer, and he was very angry with me for having done so; it was very innocent on my part.

1382. *Chairman.*] Before you had completed those alterations referred to, did you write again to Mr. Archer upon the subject?—I saw Mr. Archer that day.

1383. Are those two notes your handwriting (*handing two letters to the Witness*)?—Yes.

Mr. J.  
Addenbrooke.  
2 April 1852.

1384. They are dated the 18th and 20th of July 1849?—Yes.

1385. Just read them through?—"July 18, 1849. Sir,—I enclose you two sheets that have been perforated since the plates have been altered; you will perceive they are cut cleaner and in every way you would wish, but I find there is still a very great drag or strain on the paper as it passes through the press or perforating tools, but this is now very much lessened, and will not form any obstacle to your success when the whole of the sheets are fastened together. Since you were here to-day I believe I have hit upon a very simple and effective mode of putting and fastening the sheets on the tympan, and which will do away with the expense of having more than one; I shall try to make one in the morning, before I see you. I should point out to Messrs. Bacon & Perkins where to put the pin mark on the sheet, but cannot do so unless I have a sheet. Respectfully, *J. Addenbrooke.*" This is the letter of July 20, 1849: Sir,—I saw Mr. Mordan at one o'clock; he informs me that he has given up the manufacture of the paper clips, as it was found they rusted so much with the warmth of the hand; I suspect they were always made in Birmingham, and only sold by him; he declined to assist me; I must therefore make them myself, which, in two or three days, I shall do. I think it most important we should perforate a quantity of sheets prepared with gum like the sheets of labels, in order to put at rest any idea as to their sticking together or of clogging up the holes, as hinted at by Mr. Hill; this shall be done at once; I shall not neglect you. I am, Sir, respectfully, *J. Addenbrooke.*"

1386. It appears from that that Mr. Hill was afraid of the clogging with the gum?—Yes.

1387. When you had altered the machine to suit the model, did you invite Mr. Hill to see it?—He was informed it was finished, and he was invited to see it.

1388. That was immediately after?—Yes.

1389. Did the trial prove successful?—It was not successful.

1390. What was the cause of the failure; you then discovered for the first time that scarcely any of the sheets so tried were of similar size to the model sheet last delivered to you?—It was found that the sheets varied so much, either from shrinkage, or from the unequal size of the plates, that the machine was not adopted for perforating them, and they were perforated therefore very untruly indeed; many of the

Mr. J.  
Addenbrooke.  
2 April 1852.

holes went on to the postage labels, and many out at the sides; while one line missed the middle of the plate, the other line would be true on the side of the sheet, and another out the eighth of an inch.

1391. And Mr. Hill determined if the adjusting power could not be applied it could not be worked?—Yes.

1392. Did he contrive any plan to get over that?—There were several suggestions from himself and his sons.

1393. Did he deliver any order from the Commissioners to you in consequence of that?—Yes, he did.

1394. Have you got that order?—Yes, this is it (*producing the same*). “Postage Stamps, September 3d, 1849. Wanted for the use of this department. Alter the guiding apparatus to Mr. Archer’s piercing machine, according to Mr. Hill’s instructions. (signed) *E. Hill, C. P. Rushworth*. To Mr. Addenbrooke.”

1395. In consequence of that order, did you tell Mr. Archer that you no longer considered him responsible to you for expenses subsequently incurred?—I told him I considered the Commissioners really adopted the machine in consequence of Mr. Hill’s interfering so much with it, and that I thought it was very certain they would see him remunerated, and that I thought all expenses would be taken out of his hands for the future.

1396. What portion of your account of 750*l.* was incurred after that time?—I should think two-thirds of that account, or more.

1397. Did Mr. Hill afterwards direct you to make a new set of punching tools?—Yes.

1398. Had you any order for that?—I had an order for a new set of punching tools, but that was after the machine was finished.

1399. What is the date of that?—This is it (*producing the same*); that was for a second set. “Somerset House, May the 7th, 1850. Wanted, for the use of the stamping department, a new set of piercing tools for Mr. Archer’s machine, with a new bottom plate to receive the perforating plate; permanent slides for putting the tympan into the machine. (signed) *E. Hill, Alfred Montgomery*. To Mr. Addenbrooke.”

1400. Was that when it was completed?—Yes.

1401. And the adjusting process added to it?—Yes, and everything pronounced to be finished.

1402. Sir *J. Tyrrell*.] At what point and at what period did Mr. Archer cease to act in harmony with Mr. Edwin Hill and

and the Post-office authorities?—I cannot tell you; I am not acquainted with that part.

Mr. J.  
Addenbrooke.

1403. You brought in that account for the perfect machine?—Yes, for the perfect machine.

2 April 1852.

1404. Then were you under the impression that Mr. Archer was answerable to you for the machine, or the Commissioners, or the joint-stock party as it were, or whom did you look to for the payment of your bill?—I considered Mr. Archer was legally bound to pay me the amount of that bill, because he had put originally the machine into my hands, and had given me orders to proceed with it; but I considered Government, in consequence of interfering with the affair, were morally responsible to me for the payment of my account; that is, either to pay me or see me paid; and I always represented that to Mr. Hill and to his sons, and to other parties I was concerned with at Somerset House.

1405. Mr. *Spooner*.] When you made those representations, did Mr. Edwin Hill make any, and if so, what remark?—He made remarks of this kind, that he should be extremely sorry to have led me into any error.

1406. *Chairman*.] What charge did you make for that new set of punching tools?—I charged 75 *l.* for that second set.

1407. Sir *J. Tyrrell*.] You considered that you were not only looking to Mr. Archer for the payment of your account, but as Mr. Hill continued to advise and give you orders and directions, you thought you were really working for the Government as well as Mr. Archer?—I did most positively.

1408. Then at what point were you undeceived; did Mr. Hill refuse to pay you, or Mr. Archer refuse to pay you?—Mr. Archer told me to deliver in his account.

1409. To whom?—To himself. I had had previous communications with Mr. Hill, and he had told me they were not responsible.

1410. Mr. *Rich*.] Did Mr. Hill give any orders independent of Mr. Archer, or in Mr. Archer's absence?—He did.

1411. Mr. *O. Gore*.] In reference again to the question I put before, you say they changed the sheet that they gave you; what constituted the difference between the two?—The one was larger than the other.

1412. It was only in size different?—It was only in size different; but the first sheet was very untrue; much more untrue than the second one was.

1413. Mr. *Rich*.] You say Mr. Hill gave you those orders

Mr. J.  
Addenbrooke.

2 April 1852.

during the absence of Mr. Archer; is Mr. Archer a mechanist himself?—Not that I know of.

1414. Do you conceive that Mr. Hill's suggestions and orders contributed to the perfection of the machine?—Very much so.

1415. Do you think that without Mr. Hill's assistance, or some other such assistance, the machine could have been perfected by Mr. Archer?—Not by his own hands.

1416. By his own instructions?—By his own instructions, I should expect it could.

1417. Do you conceive he had sufficient mechanical knowledge to have given instructions that you could have carried out?—There were so many difficulties arising with the machine, that it is very doubtful in my mind whether without some really practical party he could have carried it out.

1418. Mr. Hill's position at Somerset House gave him knowledge of the requirements, on the one hand, and his knowledge as a mechanist fitted him, on the other hand, peculiarly to assist the perfection of Mr. Archer's machine?—It did, very much so.

1419. Do you conceive that a friendly party giving instructions, such as those given by Mr. Hill, thereby became the responsible party?—When I find that a party is the representative, as I always took Mr. Hill to be, of the Government, in that affair, he delivering to me orders, both verbally and written, I concluded that when they adopted the machine, and that therefore it was in Government hands, they would see me righted.

1420. Was Mr. Archer well acquainted with the orders you received from Mr. Hill?—Yes, he was.

1421. Did he ever demur to such orders?—Never.

1422. If instead of belonging to the Government, Mr. Hill had been employed in some establishment, to which establishment some machinery fitted to facilitate the perfecting of that machinery had been submitted, and he had been permitted by such establishment to communicate with the mechanician who was perfecting the machine, do you imagine such establishment would thereby have become liable?—As their servant, I should have considered that the party employed by the house would have considered the house responsible.

1423. Although such person was not giving directions to you, except such directions as were acquiesced in by the inventor, he being the friend and aider of the inventor in perfecting his inventions?—That alters the case, certainly; the house then would not have been responsible.

1424. Neither

1424. Neither legally nor morally?—Not legally, certainly.

1425. Do you conceive that the friendly hints given by a person most capable of giving such hints would induce a moral liability?—I think it would, and for this reason, that the party, giving instructions of that kind ought to have known the position in which affairs stood between the parties themselves.

1426. Do you bear in mind your previous answer, that without such instructions it would have been very difficult for the inventor to have carried out the perfection of his machine?—I do bear in mind that.

1427. And yet you think that that advice so given for that perfection of the machine would incur such liability?—I think it would, morally.

1428. Sir *J. Tyrrell*.] But in point of fact these were not merely hints and suggestions, but positive orders given by the Government officially, and the work positively done and completed, and placed in the Government office?—Exactly so.

1429. Mr. *O. Gore*.] Will you allow me to ask you whether you ever received any orders from the Commissioners?—Those orders I believe are from the Commissioners.

1430. Did you ever receive any signed by the Commissioners?—I believe those orders are signed by a Commissioner, and I have another here, which I believe is also signed by a Commissioner; it bears one of the Commissioners' initials.

1431. Were the orders handed to you by Mr. Archer, signed by the Commissioners?—They were handed to me by Mr. Edwin Hill.

1432. And signed by the Commissioners?—They are signed by himself; and they are signed by a Commissioner also.

1433. Each of those orders?—Each of those orders.

1434. Now will you allow me to ask you this question: that is a copy of one of the orders, I believe (*handing a paper to the Witness*)?—This appears to be a copy of an order.

1435. That is the sort of order you received?—Yes.

1436. Signed by one of the Commissioners and by Mr. Hill?—It is so, as a copy.

1437. Now allow me to ask you, is that your handwriting?—Yes, it is; that is my handwriting.

1438. Will you be kind enough to read it to the Committee?—"101, Hatton Garden, May 27th, 1850. Sir,—I have been expecting to see you, or should have sent you the enclosed account before. I hope and trust you will get the  
affair

Mr. *J. Addenbrooke*.  
—  
2 April 1852.

Mr. J.  
Addenbrooke  
2 April 1852.

affair arranged with the Government as early as possible, as I have almost exhausted my funds with the long draw of your machine upon them. I am, Sir, respectfully, *J. Addenbrooke.*"

1439. Who is that addressed to?—To Mr. Archer.

1440. And did you send that in consequence of its having cost you so much money?—Exactly so.

1441. And being run short of funds?—And being run short of funds.

1442. That was calling upon Mr. Archer to press the Government for a settlement of this remuneration, in order to pay you, as I understand it?—Exactly so; as I had had the machine in my hands so long, and had never received a single farthing of remuneration or payment on account of it, I considered it was quite time I should be paid something; I therefore pressed Mr. Archer to get the affair settled as soon as possible, that he might give me, and very naturally, something on account, or pay me the amount of my claim.

1443. Was there any money received by you?—None whatever, upon that account that was delivered; but I received money for work that was done for that machine after Mr. Archer had done with it, as it was delivered into the hands of the Government and was completed.

1444. Whom did you receive that money from?—From the Office of the Inland Revenue, Somerset House.

1445. Marquis of Chandos.] It was in payment of that order, the 75 *l.*?—Yes.

1446. Mr. O. Gore.] That had no reference to the work you had done under Mr. Archer's orders?—None whatever.

1447. It had no reference to any order that you received from Mr. Archer?—None whatever. I believe, after the machine was finished, and pronounced to be capable of doing the work, it was found that there should be duplicate parts of the machine, and those orders were given me to make the second part, or duplicate part, of the machine.

1448. And those orders were given you by whom?—Mr. Hill.

1449. By Mr. Hill alone?—By Mr. Hill, signed by one of the Commissioners.

1450. And subsequently to your sending in the account?—Subsequently to my sending in the account.

1451. To Mr. Archer?—Yes; subsequently to my sending in the account to Mr. Archer.

1452. Mr. J. Greene.] When the machine was sent to you from Messrs. Bacon & Petch's office, would it have perforated

rated the stamps had they all been of a similar size to the model sheet?—Before there was any adjusting power?

Mr. J.  
Addenbrooke.

1453. Was the adjusting apparatus required on account of the irregularity of the stamps?—Exactly so; if the sheets of postage stamps had been all exactly of one size, and perfectly correct and true, the machine would have perforated them without any adjusting power.

2 April 1852.

1454. Mr. O. Gore.] Without the subsequent expense incurred for the adjusting power?—Not exactly; there were some other alterations and additions made in the machine, arising from some other difficulties we found to turn up.

1455. Marquis of Chandos.] I hold in my hand an order that was put in a short time back, directing you to alter the guiding apparatus to Mr. Archer's piercing machine according to Mr. Hill's instructions; how much did that cost you?—I can really scarcely tell at the present moment.

1456. Was that the work for which you stated that two-thirds of the 750*l.* were incurred?—No; there were a variety of other things attending the alterations; difficulties that turned up one after another, that incurred a considerable amount of that expense.

1457. And after this date?—After that date.

1458. Had you any orders from the Government for those other alterations?—I had not any written orders, but Mr. Hill gave me verbal orders for making alterations in the machine.

1459. You had no order from the Commissioners:—No.

1460. Did you ever make any demand from the Government for the amount of them?—No.

1461. How came you then to make application for the payment of one order, and not the other?—I concluded, after the machine was finished, that I must look to the Government for the whole of my expenses upon that machine.

1462. Did you send in a bill to the Government?—I did, for those alterations that were made after the machine was finished.

1463. The order was in the same form?—Yes.

1464. But you made no application for the amount?—No, I did not.

1465. Mr. Grogan.] At the time this machine was brought to your office to be re-arranged, in point of fact, you state that it was in a very bad condition?—Yes.

1466. Do you consider that arose from neglect in working, or from the original construction of the machine?—There were some defects in the original construction of the machine; the machinery was in a dreadful state, a great number of the screws

Mr. J.  
Addenbrooke.  
2 April 1852.

screws were lost that held the machine together, and it was in a very bad and rusty state. In order to carry out the thing, there were necessarily some alterations made for the better perforating the lines truly.

1467. When you describe the machine as being in a bad state, do you consider that that bad state, loss of screws and damage done, arose in your judgment from fair wear and tear, or any other cause?—I concluded the screws had been lost, from its having been removed from wherever it was brought to my establishment; carelessly lost, not wilfully destroyed.

1468. Mr. *Rich.*] Was there any indication that the machine had undergone unfair treatment?—No.

1469. Mr. *Grogan.*] Was any part of it clogged?—The plates were all clogged up, the perforating plates; we had to clean them.

1470. Do you consider that arose from neglect?—I cannot say that; I should think not.

1471. The machine when it came to you was at least in very dirty order?—Very bad indeed.

1472. Do you know whence the machine came from?—I was told from another party's, and not Messrs. Bacon & Petch's.

1473. Do you know whence it came to you?—I do not know it personally myself; I only heard it.

1474. Mr. *O. Gore.*] Did the man who brought it not tell you where he brought it from?—No.

1475. Mr. *Grogan.*] When the machine was perfected by you, where was it delivered to?—To Somerset House.

1476. Was that at any suggestion of yours?—It was from Mr. Archer's suggestion.

1477. To whom did you make the suggestion?—To Mr. Hill.

1478. Did you assign any reason for proposing its being placed in Somerset House?—Mr. Archer met Mr. Hill with me at Somerset House by appointment, and we made a representation that we thought the machine had better go into Somerset House, rather than go into the hands of the partners who had shown such an opposition to the carrying out of the thing.

1479. You stated that to Mr. Hill?—We did.

1480. Who were the partners; do you mean Messrs. Bacon & Petch?—Messrs. Bacon & Petch.

1481. Your reason was, that you thought difficulties had been thrown in the way of yourself and the patentee in perfecting the machine?—Yes.

1482. What

1482. What do you refer to?—Some conversations I had with them myself. When I had to go to Messrs. Bacon & Petch's they were extremely independent, and extremely careless as to giving any assistance in any shape or way, and once particularly when I went I was told that it was no business of theirs to interfere with the affair, or have anything to do with it; I then gave Mr. Hill to understand the same day, or the next day afterwards, I should decline having any further communication with them, I found them so extremely disagreeable; and it was in consequence of those representations made to Mr. Hill, that I believe the machine was taken to Somerset House.

Mr. J.  
*Addenbrooke.*  
2 April 1852.

1483. And subsequently to that the machine worked regularly and well?—It did.

1484. I want to call your attention to the subject of the sheets; you have given us an account of the first sheet according to which you were to alter the machine; was that handed to you by Mr. Archer?—It was.

1485. The second sheet, where did you get that?—I got that from Messrs. Bacon & Petch.

1486. Yourself?—Yes.

1487. Did that correspond with the preceding sheet?—It did not.

1488. Was there a third sheet?—There was a third sheet.

1489. Did you alter the machine to adapt the machine to the second sheet?—I did.

1490. Did that work well?—We did not try it then; but it was found that that sheet was untrue; we did not try that.

1491. Then you got a third sheet?—Yes.

1492. By whom was that handed to you?—By a party; a young man in Messrs. Bacon & Petch's counting-house.

1493. In the establishment?—In the establishment.

1494. Was this machine adapted to that third sheet?—It was re-altered to that third sheet; parts that we had added to make it conformable to the second sheet were taken away, and the old parts were replaced; and other parts were also altered back again to make it suitable to the third sheet.

1495. In this stage of the machine how often, in fact, had you to alter it by reason of the variations in the sheets?—Twice.

1496. And those two sheets you received at the office of Messrs. Bacon & Petch?—One I received from Mr. Archer, and the other I received myself from Messrs. Bacon & Petch, in exchange for the one I got from Mr. Archer.

1497. If it were stated that obstructions had been placed in

Mr. J.  
Audenbrooke.  
2 April 1852.

in the patentee's way by the partners, the Messrs. Bacon & Petch, in the perfecting of the machine, would you consider that those statements were correct, or incorrect?—I should consider them to be correct.

1498. Will you explain why?—In consequence of the difficulties they had thrown in my way. I should conclude if such a representation as that had been communicated to me, namely, that they had thrown difficulties in the way of the patentee, that such was the case, that it was correct; indeed I had a conversation with a party this morning about it.

1499. Who was the party you had the conversation with?—A mechanist.

1500. Mr. O. Gore.] Did you go with Mr. Hill to Mr. Keogh?—I did.

1501. Did Mr. Hill then state, or did he not, that you had gone to him in consequence of difficulties thrown in the way by Messrs. Bacon & Petch?—He did so state.

1502. And did he state that he believed that representation?—Yes, or tantamount to it.

1503. That he did believe that difficulties were thrown in the way he stated to Mr. Keogh?—That he believed Messrs. Bacon & Petch were awkward people to deal with, and that they had thrown some difficulties in the way, and he thought it would be better to have the machine in Somerset House, to give it a fair trial; that was before Mr. Keogh.

1504. Marquis of Chandos.] Can you define a little more accurately what those difficulties were to which you refer, that were thrown either in the your way, or Mr. Archer's way, by Messrs. Bacon & Petch?—In requiring Messrs. Bacon & Petch to favour me with sheets and so forth, I found them extremely independent and careless, and as I said before, they told me plainly it was not any business of theirs, and I must not trouble them upon the matter; difficulties attached to the machine, we found, arose from the untruth of the sheets, but that had nothing to do with the difficulties I had to contend with, with Messrs. Bacon & Petch, that is all; coolness and indifference.

1505. Sir J. Tyrrell.] They had no interest in the machine?—They appeared not to have. "I am surprised," I said, "gentlemen, that you should be averse to this invention." "Oh, that is no business of ours." This is a conversation I am relating. "Well, but you will have to use the machine, and therefore it is your interest to do what you can to carry out the thing." "Oh, I do not know that we shall have to use it; we have nothing to do with it."

1506. Chairman.]

1506. *Chairman.*] Did they interfere, or any of their people interfere, with the machine at all?—Not while it was in my hands.

Mr. J.  
Addenbrooke.

2 April 1852.

1507. While it was in their hands?—I cannot say.

1508. Mr. *O. Gore.*] Did you not ask Mr. Hill for liberty to measure the sheets?—I did.

1509. In consequence of your conceiving that they sent them purposely of different sizes?—Not exactly.

1510. Mr. *Rich.*] Did you say at any time that they purposely sent them of different sizes?—No.

1511. But in answer to the question of the Honourable Member, you have just said they did so?—No, that was not the case; we found the sheets were of different sizes; I will explain in a few words how it was: it was found that certain plates numbered, or certain sheets which should be numbered, were very untrue, and this was represented to Mr. Hill; the others were more true, but all, more or less, were shorter or longer, and so forth, than others, and I represented to him that I should like to measure the original plates that the sheets were taken from; he gave me then a note directed to Messrs. Bacon & Petch, and I went and measured the plates, and found them untrue in themselves; the plates untrue; and I wrote or made a memorandum at that time of how far they were untrue, and that memorandum of mine, in our operations of working the machine, was always referred to, to know which plates were true and which were untrue, or at least which was most true and which was most untrue.

1512. *Chairman.*] In selecting them?—Yes, in selecting them: we found, to our surprise, that the original plates were untrue, and the shrinkage of the sheets rendered it more so.

1513. Mr. *Rich.*] When you speak of the irregularity in the sizes of the sheets, you attributed the cause of that to the irregularity in the size of the plates?—In a great measure, but not wholly so.

1514. Do you in any degree attribute that to design on the part of Messrs. Bacon & Petch?—No; it arose from the imperfect method, I concluded, of producing these plates.

1515. Therefore when you state that difficulties were thrown in the way by Messrs. Bacon & Petch, you do not mean that they purposely sent sheets varying in size to create confusion?—I do not.

1516. Sir *J. Tyrell.*] With reference to the dates of those circumstances which you have spoken of, when did those occurrences take place; I understand you to say that this harmonious action between Mr. Archer and the Post-office ceased

Mr. J.  
Addenbrooke.

2 April 1852.

ceased from the moment when your bill was to be paid; or claimed to be paid, and from that moment afterwards, even up to this time, there has never been any harmonious action between Mr. Archer and the Post-office officials; now about what period was that, so that we may know when you met with these supposed interruptions from Messrs. Bacon & Petch?—The machine was delivered in the first instance about the commencement of January 1850 into the hands of the Government at Somerset House.

1517. When did you send your bill in for that; was it about Christmas?—There were a variety of experiments with the machine, and the experiments and alterations and additions, and so forth, carried it over to Midsummer 1850; but after it was all completed and pronounced capable of doing the work, I was then requested by Mr. Archer to send in my account.

1518. Marquis of Chandos.] That would be in the autumn?—That would be about Midsummer. I was also requested by Mr. Hill to send to him an historical account of my proceedings with the machine, which I furnished; that was in about June or July 1850, I cannot tell to a day.

1519. Then no difficulty was thrown in your way by Messrs. Bacon & Petch, in measuring the plates, or supplying you with sheets?—None whatever. The materials were supplied by Mr. Hill's orders, I understood; whatever Mr. Hill ordered them to send to me.

1520. The only difficulty then that was thrown in your way was what you termed their independent manner?—Exactly so.

1521. What difficulty did they throw in Mr. Archer's way?—I cannot say.

1522. Do you know of any difficulty thrown in the way of working the machine by them?—I do not. I know very little of the connexion between them and Mr. Archer.

1523. Do you think their mere independence of manner would justify you in saying they had thrown impediments in the way of the machine?—I thought they were averse to it.

1524. I ask you distinctly this question; do you think that independence of manner would justify you in saying they threw impediments in the way of this machine?—I do not think it would justify me, in the full extent of the words.

1525. Mr. Rich.] You meant rather that they did not render assistance?—Rather, that they discouraged the thing.

1526. Chairman.] They threw cold water upon it?—They threw cold water upon it.

1527. Mr. Grogan.] Was that independence of manner such as to induce you to represent to Mr. Hill or to Mr. Keogh that

that you would have no further communication with them?—  
Exactly so; I told Mr. Hill decidedly I would have no further  
connexion with them. Mr. J.  
Addenbrooke.

1528. Mr. *O. Gore.*] You say that the sheets were of different sizes?—Yes. 2 April 1852.

1529. Will you tell me in what proportion as to numbers?—There were not more than one-third true, exactly true, and even those from the shrinkage of the sheets had to be sorted.

1530. Let me ask you what remedy you proposed for that; how to control it?—In the machine?

1531. Yes; did you propose some remedy?—We proposed to have an adjusting power applied to the machine, so that it would accommodate itself to any length of the sheet.

1532. Then that being the case, what additional expense did that entail upon you?—I can scarcely say what additional expense that entailed.

1533. Whereabouts; was there no alteration proposed by Mr. Hill?—Yes.

1534. Did you not work in consequence of that suggestion?—No, the suggestion or means of lengthening the machine to accommodate itself to the sheets was my own proposition; at least there were many plans proposed; at last I proposed a scheme, and Mr. Hill said, "That will do; go on with it;" but the amount of the cost of that alteration I cannot tell now.

1535. Did it amount to 50 *l.*?—It might be more.

1536. Mr. *Rich.*] You say this arose from the shrinkage of the paper?—In a great measure.

1537. That was a consideration which would have suggested itself to a practical man, is not it?—Yes.

1538. Consequently, in the original instructions for the formation of the machine, a practical man would have told his engineer to guard against this shrinking?—And when Mr. Archer came to me in the first instance I made a representation to him that such would be the case; he said, "Oh, you have nothing to do with that; we are fully satisfied upon that point; there will be no difficulty of that kind to contend with; we have had all that arranged."

1539. If he had had more practical experience he would not have been so satisfied?—I understood that he had had a representation made to him by the partners; that those sheets, although they shrunk, shrunk all alike.

1540. Should you, as a practical man, think that all sheets subject to pressure, applied to a different pressure, would shrink alike?—No, I should not think so.

Mr. J. Addenbrooke. 1541. The expense therefore resulting from the alteration of the machine, in consequence of the discovery of the dissimilarity of the sizes of the sheets, arose from no act on the part of Messrs. Bacon & Petch?—I do not think that, but still their representation in the first instance might have gone some distance in preventing the party originally making the machine to adapt itself to the various lengths of the sheets.

2 April 1852.

1542. Have you any reason to believe that representation was made with a nefarious intent?—I have no reason to believe so.

1543. Mr. J. Greene.] Were Mr. Archer's difficulties caused by the imperfection consequent upon the printing of the labels, or by the shrinking of the paper?—I have already said that the plates were very untrue themselves; originally they were much more untrue. I was told, and I believe that was the case, that they have constructed a new machine for the purpose of making the plates much truer, so as to print the sheets to accommodate themselves to the machine, and make them more in accordance with the machine.

1544. Chairman.] Did you not find, when the machine came to Somerset House, it worked very differently from what it had done at Messrs. Bacon & Petch's?—Yes; it did not work as at Bacon & Petch's.

1545. Did you work it at Somerset House?—Yes.

1546. Were the plates which were afterwards made by the Commissioners' directions more regular than those made before?—Yes, they were.

1547. What course did you take to see whether the alteration in the working was from the alteration in the plates?—I measured the plates myself, and I found there was an irregularity in the plates, and a still greater irregularity in the sheets.

1548. What alteration did you make in the machine afterwards, in the adjusting power?—Not any in the adjusting power.

1549. What other alterations did you make?—The old tympan that held the sheets were cast on one side, and new ones were made.

1550. Have you ascertained what quantity of sheets the machine would perforate in an hour?—Yes.

1551. What quantity will it perforate?—Six hundred or 700.

1552. What do you call a day; how many hours' work a day?—We should work 10 hours.

1553. You

1553. You would do 6,000 a day?—Six thousand or 8,000 a day.

1554. That is, sheets?—Yes.

1555. With 240 heads in each sheet?—I mean the sheets themselves.

1556. Your opinion is, that you are satisfied the machine is perfect, and competent to do the work required?—I am satisfied of that.

1557. Did Mr. Hill ever intimate to you that if the machine answered, Mr. Archer would be amply paid for it?—Yes, I understood so in conversation.

1558. What did he say to the charge of 75 *l.*?—He never said it was too much.

1559. Did he ever ask you what you could make another machine for?—Yes.

1560. What did you tell him?—£.400 to 500 *l.* complete.

1561. Mr. *Rich.*] Did Mr. Archer ever say he thought your charge too much?—He did.

1562. What sum did Mr. Archer put your remuneration at?—Mr. Archer said that he considered my charge was too much. He made me an offer of an amount; I believe that amount was 375 *l.*; but that was in consequence of my having commenced proceedings against him for the amount.

1563. Did he offer you 375 *l.* in full?—In full.

1564. In regard to those sheets, as far as your observation has gone, were they sufficiently regular in form and distinct in the lines for the purposes of subdivision, without reference to perforation?—They were.

1565. You are not prepared to make any complaint against the sheets, if they were merely to be divided by scissors, or otherwise?—None whatever; but I should explain, in reference to my charge for the machine, it had been held out by Mr. Archer that I should be recompensed, not only for the labour and expense bestowed upon the machine, but that I should be recompensed for planning and contriving, and bringing the thing to bear; that I should be rewarded for that.

1566. Did Mr. Archer offer you 500 *l.* at any time?—No.

1567. £.375 is the utmost offer he made you?—Yes.

1568. Mr. *Spooner.*] Was that 375 *l.*, which Mr. Archer offered to you, for the repairs that you had done to the machine?—It was for everything.

1569. Was it for the repairs?—It was for the repairs.

1570. And had no reference to the original cost of the machine?—No.

Mr. J.  
Addenbrooke.

2 April 1852.

1571. Mr. Archer had already paid that?—I believe he had already paid that.

1572. Mr. *Rich.*] You consider the machine now would work under careful provision with regard to the sheets being guarded against shrinking; that is, the sheets as printed by Messrs. Bacon & Petch?—I believe it would.

1573. And you consider it would be a useful improvement? No doubt of it; it has always been received as such by all parties when I have spoken of the affair.

1574. *Chairman.*] Did you ever tell Mr. Hill you expected the Commissioners would have to pay in consequence of the part they had taken?—I did, at least not legally; these were my words, “If Government are not legally bound to pay me, they are morally bound to pay me, or to see me paid.”

1575. Supposing in the first instance you had known there had been such a variation in the size of the sheets, and had to make a machine accordingly, what difference would that have made in the cost of the machine?—I have made an estimate for less than 500 *l.*, that I delivered to Mr. Hill.

1576. Mr. *Grogan.*] The additional expense was occasioned by the variations you afterwards found existed in the plates and sheets?—The constant variation, and additions and alterations, and so forth.

1577. *Chairman.*] What did you think of Mr. Archer's having 500 *l.* offered him, altogether?—I thought it was a joke by Mr. Archer, who told me of it; I could scarcely believe that that letter was genuine, and I asked Mr. Hill whether it was so; he assured me it was so.

1578. Mr. *Rich.*] Did you think Mr. Archer's offer of 375 *l.* as a sufficient discharge for 900 *l.* a joke also?—I did not.

1579. You looked upon it then, that if you were entitled to 900 *l.*, then Mr. Archer would be entitled to a larger reward than that they gave him?—My amount is not 900 *l.*, but 750 *l.*

1580. Sir *J. Tyrrell.*] And a portion of that 750 *l.* you considered was for suggesting, and planning, and making alterations in your mind as it were to improve the machine; it was not all merely for work done, for perfecting the machine in the state it was when it was delivered to you?—Exactly so; we worked at it night and day, Sundays and all times.

1581. About 200 *l.* of that was, in round numbers, a reward for your skill and science in devising plans, and so on?—Yes.

1582. Mr. *O. Gore.*] Had you any conversation with Mr. Hill about that sum that was offered?—Yes.

1583. What

1583. What did he say?—Mr. Hill, in speaking to him upon that subject, said, I do not regard that as anything; Mr. Archer will ultimately get paid.

Mr. J.  
Addenbrooke.

1584. Did he imply by that, that Mr. Archer was to get a much larger sum than that?—Yes.

2 April 1852.

1585. He considered that sum was very inadequate?—Very inadequate indeed.

1586. Repeat that, if you please; he said to you what?—He said to me that I must not regard, or pay any attention to the small amount that had been offered to Mr. Archer; that ultimately Mr. Archer would get paid, and I should get my bill paid.

1587. Would get paid a larger sum?—A larger sum.

1588. He said that he would be amply paid?—That he would be amply remunerated.

1589. That is a different expression?—It was that my bill would be paid, and Mr. Archer would be amply remunerated.

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*Martis, 20<sup>o</sup> die Aprilis, 1852.*

MEMBERS PRESENT.

Mr. George Frederick Muntz.	Marquis of Chandos.
Mr. Henry Drummond.	Sir John Tyrrell.
Mr. Rich.	Mr. Mostyn.
Mr. Cornwall Lewis.	Mr. Spooner.
Mr. Mowatt.	Mr. John Greene.

GEORGE FREDERICK MUNTZ, Esq.,  
IN THE CHAIR.

Mr. Joshua Butters Bacon, called in; and Examined.

1590. *Chairman.*] I BELIEVE that you have engraved and printed the postage stamps since the first commencement of that system?—We have.

Mr.  
J. B. Bacon  
20 April  
1852.

1591. What is the extent to which it is brought now; how many do you engrave per annum?—We began at a little short of 2,000 a week, but we have printed 5,400 a week during a considerable portion of the last year or 15 months. I believe

Mr.  
J. B. Bacon.  
—  
20 April  
1852.

this extraordinary year was much owing to the Exhibition, and and much more, perhaps, to the Government being determined to have a sufficient supply for such contingency; the average would not be that, but we have lately for several months printed 5,000.

1592. Mr. *Mostyn*.] Five thousand sheets per diem?—Yes.

1593. *Chairman*.] Has not a considerable increase taken place in consequence of the obligation throughout the country, except London, to put stamps upon the letters?—Yes; but not so as to increase the amount of 5,000.

1594. That must make a very considerable difference?—The Government or ourselves do not find so much difference as we anticipated, but no doubt it makes a difference. I can give you the average of three periods: the first nine years, the next three, and the last one, and that would give you a very fair idea.

1595. You said there had been so great an increase in the last year, therefore I thought it was fair to presume that the greater part of that increase you have named was in consequence of this obligatory order that letters should be not paid, but all stamped?—Undoubtedly much of it is owing to that.

1596. When did that order take place, do you know?—I should think about six months ago.

1597. Then there would be some considerable addition?—We are falling off now.

1598. Since when?—Within two months. The Government having anticipated great demands, poured down upon us for immense numbers, but having got enough to supply them, the increase not proving so much as was anticipated, now they are restraining us, and, therefore, 5,000 is not at present a fair average. But I can state that the first nine years the average was 1,993, the next three years 3,612, the last one 3,834, that is very far short of 5,000 a day. One thing I ought to observe, that when they require 5,000 a day, it is at starts. At one time Scotland sends for 20,000, and Ireland for 20,000, Glasgow and Edinburgh, and so on; then they drive us in a corner to print an immense number, and when that supply is furnished, these places do not call again for two or three months; so that though we have printed 5,000 a day for two months at a time, it would not be true to say the Government disposed of 5,000 per day.

1599. The demand is not regular?—It is perfectly irregular; and we are required to deliver just what they demand of us every week; they give us a week's notice.

1600. What

1600. What is the quantity you can print in 10 hours now?  
—5,400.

1601. Have you made any increase in your means of doing so?—We have been always increasing from the time we began with four presses; now we have 14.

1602. Do you give any sort of security to the Inland Revenue for the proper performance of this work?—I have a copy of our bond in the penalty of 5,000 *l.* in case anything is wrong; and in case a single sheet is missing, we have to pay a penalty of five times the amount; there is a Government officer and boxes for the plates and dies, and two locks and keys to each, one being kept by the officer and the other by ourselves; and, in fact, the bond is very specific as well as the agreement; the first agreement is voluminous.

1603-4. Sir *J. Tyrrell*.] If this scheme of Mr. Archer's had been adopted, your 14 presses could not have been applied to the same purpose?—Certainly they could; there is nothing on earth to prevent it, and two gentlemen of the Committee, Mr. Muntz and Mr. Greene, have seen evidence of the fact, and we shall be happy for all the Committee to see it. There were six plates made, one after the other, without our knowing anybody was coming, and Mr. Hill sent up for the key; we each have a key; the plates were measured, and the variation was most insignificant.

1605. What is your objection to the proposed plan for carrying out this perforated postage scheme?—We never had any objection on earth; we never felt it, we never entertained it, and never expressed it to any man.

1606. And you do not now entertain it?—No, on the contrary, we are in favour of it; we believe our interest is concerned in carrying it out, and that it is for the public interest also.

1607. You think it would be for the advantage of the public if it was carried out?—For the convenience of the public.

1608. For the convenience and comfort; whether great or small is another matter?—Yes, and I challenge any man breathing to show that any one of our firm ever opened their mouths to state one particle against this scheme. The only thing we did was, when Mr. Archer came to me at first, he showed a beautifully perforated sheet, and I asked him what is the expense this is to be done at; everything depends upon that. He said, "For 200 *l.* I can make a machine to print 3,000 or 4,000 a day." I said, "I very much fear you are wrong about the expense." "No," he said, "I am perfectly sure I can." I said, "I will take you to Mr. Hill; and I took him

Mr.  
*J. B. Bacon.*

20 April  
1852.

Mr.  
*J. B. Bacon.*  
 20 April  
 1852.

to Mr. Hill—to Somerset-house, and introduced him to Mr. Hill, who naturally asked him the same questions I had asked him; and after some conversation, he then said, "I will go with you both to Mr. Keogh, the secretary to the Commissioners." We went to Mr. Keogh, and he repeated the same things; and Mr. Hill and myself in his presence urged Mr. Keogh to adopt it.

1609. In fact, the Government and you rendered great assistance to Mr. Archer in what you call perfecting his machine?—Yes, as far as we were able to do it.

1610. And without your assistance he could not have done anything of the kind?—I would not say so.

1611. The probability is that he could not?—I do not know that. Of course he must have had stamps to go by.

1612. The Government have rendered him great assistance?—I believe every assistance in their power, and I have evidence here accidentally of the truth of one of my statements, and the falsity of his, in a letter from Mr. Keogh. Mr. Archer says we are interested against him. On that occasion I said to Mr. Keogh, so anxious were we, and so did we like it, that we would engage, if the Government would furnish the machine, to find the premises where there was room and everything to do the work, and we would further engage the men and charge them the exact money we paid; or if the Government would send the man, they might pay him themselves. Mr. Keogh said, what would that cost a year? I answered, probably about 50*l.*; and in this letter from Mr. Keogh, the Government took us upon what they say is a proviso to do it for 50*l.* a year. The letter is as follows:—"Stamps and Taxes. London, 17th January 1848. Gentlemen,—The Board having been authorised by the Treasury to bring into operation the machine invented by Mr. Henry Archer for separating the adhesive postage stamps, on which you have been consulted, and understanding that you are willing to work the machine, and charge the office only with the expense of such working, which they are informed will not exceed 50*l.* per annum, I am directed to authorise you to receive from Mr. Archer the machines when they are completed, and to bring them into use without delay, under the general direction of Mr. Edwin Hill. I am, gentlemen, your obedient servant, (signed) *Thomas Keogh*, Assistant Secretary. To Messrs. Bacon and Petch." Can it be supposed possible that we were inimical to him and his plan when we made that voluntary offer?

1613. *Chairman.*] Now with reference to the different agreements you have made with the Inland Revenue, there was

was

was an agreement made by you dated the 5th May 1843, I believe?—Yes.

1614. Was that for a term, or terminable at pleasure?—It was my impression that it was for six months' notice, but on examining the contract closely, I find it gives us power to retire at six months' notice; it is for the Committee to say whether the words "So long as the Commissioners shall require the delivery of any such stamps" morally binds them to us, so long as they use the stamps at all. It may be perhaps a legal question, whether such an agreement would be binding.

1615. The words of the agreement are these: "And it is lastly agreed that this agreement shall continue in force for the purposes aforesaid so long as the Commissioners of Stamps and Taxes for the time being shall require the delivery of any such stamps, or until the same shall be determined by the said Joshua Butters Bacon and Henry Petch, or the survivor of them, upon six months' notice thereof in writing, to be given by them or him to the said Commissioners. In witness whereof the said parties have hereunto set their hands and seals the day and year first above written"?—Yes, that is it; the first is for a term.

1616. You afterwards had an intimation given to you that the work could be done at a lower rate, and in consequence you were asked to reduce the rate of charge?—Yes.

1617. And you made a reduction in that charge?—Yes.

1618. Then you had a subsequent contract in consequence of that, and in assenting to the reduction, I believe that you expressed an opinion that you hoped it might be a five years' contract, did you not?—Certainly, we did not think it fair to do it without.

1619. That looks as if you thought the old contract was for a *bonâ fide* five years?—That is the only point upon which my partner would have been able to speak more correctly than myself; I cannot so correctly, because when that happened I was not then expected to live from hour to hour, and could have had nothing to do with it; whereas he was then well. Now, by the providence of God, I am about again, and he unfortunately is dangerously ill; but he states that he entered into the Excise contracts, which were both for a period of five years; and as I entered into the two postage contracts, he never troubled his head about them, and supposed these were for five years also. But he states what any man on earth would see to be reasonable, that if we are doing the business in a satisfactory manner, and an interested party comes forward and attempts to elbow us out of our business, it is not fair,  
if

Mr.  
J. B. Bacon.

20 April  
1852.

Mr.  
J. B. Bacon.

20 April  
1852.

if we make a reduction of 20 per cent., that we should be subject to an annual call of this kind.

1620. You did not think it was fair that any demand should be made upon you; you would rather be kept clear of it?—It might be fair to make a demand, and not fair, every year, that a man who does not know the business should undertake to do it cheaper.

1621. Nobody is finding fault with you for having asked for a five years' contract; the only question is relative to the original agreement, which you seem to express an opinion had been for five years; you explain that through Mr. Petch's belief?—Yes.

1622. You had a right to ask for a five years' contract of course?—Yes.

1623. You really obtained a five years' contract at last?—Certainly; and we had a one year's contract at first.

1624. When was that last five years' contract made?—On the 27th day of May 1851; long before you made any motion, notwithstanding Mr. Archer's assertion to the contrary. This contract was made on the 27th of May; when I say the contract, I mean the agreement, because I call the agreement the contract; when the Government wrote us a letter acknowledging they would accept the terms; that was on the 27th of May, and there it is.

1625. The contract itself is not dated till August, is it?—Yes, in July.

1626. Sir J. Tyrrell.] You did not make the discovery, did you, that this contract was not *bonâ fide* for five years until Mr. Archer came in competition with you, as it were, or those people by whom he was advised; you then found out your contract was not binding for five years?—Which, the second one?

1627. Yes?—We never alluded to the second; we alluded to the general one; the first contract was for a period.

1628. And your partner and you were under the impression that it was to be continuous?—Yes.

1629. And that it was to be renewed; and when you found the Government had not made a continuous contract, that was when Mr. Archer came in competition with you?—Yes, after Mr. Archer had offered to do the work at a penny less per thousand than we did it; we then were led, or rather Mr. Petch was led, to investigate and consider the subject, and thought that for so a large an amount of business it seemed a very small amount of profit; but that even that was better than abandoning it; and he probably within himself came to this resolution,

resolution, "I had better submit to this reduction, though it is a very large one, provided that I can be secured from being continually attacked (as indeed all trades are now every day by people trying to underbid each other) every year; if I can secure five years' period, it may be worth while to make the reduction."

1630. In fact, that offer was accepted?—Yes.

1631. Mr. Spooner.] You stated just now your first contract was for one year?—Yes.

1632. Can you state the date of that contract?—Yes, here it is; the 13th April 1840.

1633. Will you read the terms of it?—Yes; it says, "And it is agreed that this contract and agreement shall be and remain in force for the printing and delivering of such stamps, for the term of one year from the day of the first delivery of any such stamps, provided the powers and authorities of the said Commissioners herein shall so long continue under and by virtue of the said act, or any other act.

1634. Your second contract which you have now described was so long as the Commissioners should require?—Require stamps.

1635. Did any correspondence or communication take place at the time the terms of the second contract were varied from those of the first contract?—Only two letters, one from the Commissioners to us; it is a letter stating that they had an offer at 5 *d.*

1636. I am speaking of the second contract?—There were no letters.

1637. Nor any communication whatever?—None, except that the one year expired, and I think nearly a year more, without anything having been done, and then they said we ought to have a new agreement, and they drew it up in this way; and I must state, if I was on my oath, that I did not think of the subject at that time, and I did not know whether that was in or out.

1638. Then, in fact, your attention was not called to that variation between contract number one and contract number two, with regard to the duration of that contract?—It was not.

1639. What communication or correspondence took place when the third contract was entered into, relative to the terms, and five years, being inserted?—There was no conversation on earth, but there were two letters.

1640. Have you got those letters?—Yes, the one from Mr. Keogh, saying that they had an offer at 5 *d.*, and wishing to know

Mr.  
J. B. Bacon.  
—  
20 April  
1852.

Mr.  
J. B. Bacon.  
—  
20 April  
1852.

know whether we would furnish them at the same price, and our answer, which you have been reading, stating that on the whole, as we wished to continue working for the Government, we would do it for 5*d.*, but we trusted it might be for five years.

1641. Was there any positive acceptance of that stipulation of yours?—Certainly. “Inland Revenue, Somerset-house, 27th May 1851. Gentlemen,—I have laid before the Board your letter of the 20th instant. In reply, I am directed to inform you that the Board have accepted your offer to print the postage labels for the term of five years, at the rate of 5*d.* per 1,000, it being understood that the period is to commence from the 5th of July next, and have given directions that a contract be prepared accordingly.” Signed, *Thomas Keogh*, and addressed to Messrs. Perkins, Bacon & Petch. That I consider a contract.

1642. *Chairman.*] That was the agreement, in fact?—Yes.

1643. The *bona fide* contract afterwards is dated in August, I believe?—Yes; but I will explain, that, as we requested it should be dated the 1st of July, they would not make up the contract until after that time.

1644. *Mr. Rich.*] The proceedings were anterior to that?—The 27th of May.

1645. It has been alleged that you had interfered with the perfect trial of the machine, by having the stamps wetted with gum, so as to make the machine stick?—In the first place, to assert that we did it at any time, is most perfectly destitute of all foundation; and Mr. Hill can prove it as well as ourselves. But in regard to the third machine, so called—(I presume there was never but one),—we never, none of our firm or concern, had anything whatever to do with that machine in any way on earth.

1646. In the same way it has been asserted that you gave irregularly shaped sheets of the stamped heads, by which to lead the workman astray, and to throw impediments in the construction of the machine that was intended to perforate the stamps; what do you say in reply to that?—My answer is this; that when the first machine was under operation—(I call it three machines, although it might be said there was only one)—when the machine was first going on, Mr. Archer came to us in its progress, and asked if the plates and the sheets were all equal. We told him no. He said, “Cannot you make them so?” We said, “No, it is not possible; it is not in the power of man to make them perfect: if you mean to make them nearly so, it is; but to make them perfectly so, any paper maker or printer will

will tell you, in making two papers intended to be alike, at two different periods, there will be some slight difference owing to variations in the rag, size, &c., but we can make them nearly equal." He examined several sheets and saw the inequalities; I then offered him this. I said, "Mr. Archer, there is one way to accomplish what you want, by throwing the work more into the ends of the sheets, and giving more white surface between every head; that will give you a liberty, if you want any, so as to perforate without any difficulty." That is all that passed at that time. He afterwards brought the machines, or that machine was brought to our place after he had lodged the money in my hands to pay his man, his machinist, because there were some differences between them; that did not indicate that he thought we were his enemies then by a great deal. The machine was brought and tried; and if he states—(he does not do it in the printed correspondence)—that then we gave improperly gummed sheets, it is perfectly untrue; the Commissioners or ten people could prove that at our place. The machine went away to another machinist, and then came again. If it should be stated that at that time it was done, we have plenty of proofs to the contrary; but Mr. Archer does not say either; he says that to the machine, the third machine which went to Somerset-house, we gave him improper sheets in order to produce inconvenience and difficulty, and that we put him to great expense in consequence. Now, my answer is this; that the two first machines he gave out to the universe as failures under his own hand; he acknowledges they were imperfect, and would not do. As to that third machine, I declare solemnly we never gave him a sheet for it; he never got a sheet from our office for it; we never saw it, and we were never consulted about it—the Somerset-house machine I mean—and that his statement is one of the most gratuitous untruths that ever came from the lips of man. The way he got them was this: at Somerset-house, having the machine there, he wanted sheets, and they, instead of sending to us for sheets, sent to the storekeeper. Now, the storekeeper keeps a stock of 60,000 or 80,000 sheets at a time. I presume, but it is not my business, he can tell you himself. I presume he is not particular when they are called for, what pile he takes them from; and on his sending up for some sheets, they might give some of the old sheets that were printed before the improvement was made, and then when the complaint was made, perhaps they took care to give the best sheets; but we had nothing to do with that.

Mr.  
J. B. Bacon.

20 April  
1852.

Mr.  
J. B. Bacon,  
20 April  
1852.

1647. *Chairman.*] At what time did you make your last-improved machine to make the sheets all regular?—There were two made; of the first we made the improvement several years ago, I think.

1648. When was the last improvement made?—I should think six or eight months ago.

1649. Was that last improvement made in consequence of the difficulty experienced in the irregularity of those sheets?—We knew nothing about it until after the question of perforating arose: we knew it was desirable to make the size as accurate as possible; if the sheets varied a little previously, that was of no consequence at all.

1650. You know that there were irregularities found on the first trial of the machine, whatever was the cause?—That, we know, had nothing to do with it; at that time the irregularities were more in consequence of the pins not striking right, and not being placed right; in producing this new machine, the paper was so fixed, that if it went astray a hair's-breadth when it first touched the machine, it kept getting more and more astray.

1651. You are speaking of Mr. Archer's machine?—Yes.

1652. Was it the fact that some of the impressions from your plates were not so regular as you wished them on that first trial?—They were regular in every other respect except the distances between; but that we had not provided for, because there was no occasion for it before that; we did not dream of perforating machines when we contracted.

1653. *Mr. Rich.*] Had you previously given warning of that to Mr. Archer?—Yes, certainly.

1654. Are you acquainted with Mr. Addenbrooke, the machinist?—I know him by sight very well.

1655. Had you any dealings with him with reference to the construction of this machine?—My son had.

1656. It has been stated by Mr. Addenbrooke that your manner was so far repulsive, and that it was the case with the members of your house, as to lead him to feel you were throwing impediments in the way of the construction or perfection of the machine?—In answer to that, I would state there was nothing of the kind; as to repulsiveness, he did come over frequently for stamps, and he came in a very imperious manner; he absolutely said to my son, that it was our duty to see that the machine answered; and I fear they did not treat each other as politely as ladies might; my son being irritated, perhaps might have said, "I do not see why we should give ourselves any trouble about the machine; it is no benefit to us."

That

That was all that passed of any description, and that was not by any member of our firm.

Mr.  
J. B. Bacon.

1657. Had you reduced your charges at any previous time to the late reduction?—Yes; that was the cause of the second contract.

20 April  
1852.

1658. Did that arise from the more extended sale?—Yes; they stated when it began that it was an experiment; we might have lost money by the operation if it had not been continued beyond the first year; if it had not been, we should certainly have lost money by the transaction.

1659. Then is the present contract for five years, from the 1st of July last?—Yes, from the 5th July last.

1660. You before stated that the perforating machine, as now devised by Mr. Archer, and perfected, is a useful machine?—We did not state that, but we have no doubt of it, because other people tell us so; we never saw it in the world; we have never seen that machine.

1661. You consider that if it would answer for perforating in the manner proposed, it would then be a useful machine?—Yes.

1662. And worked at no great expense?—I very much fear it would be worked at an enormous expense, but that is only from information from the Stamp-office; I know nothing of it myself.

1663. *Chairman.*] What do you mean by an enormous expense?—When Mr. Archer said one person would be able to do the work, and that is the reason of the 50*l.* we contracted for, as they say he also said it would do 3,000 sheets a day; Mr. Hill has informed me that it would take at least two machines, and two boys and one man for each machine; and a steam-engine to do the work.

1664. What sort of a steam-engine; did he tell you that?—No.

1665. Have you not seen the machine at work?—No; and nobody in our place has seen it, except my son, two or three days ago.

1666. *Mr. Rich.*] Are you acquainted with any previous proposals having been made for perforating the stamps, in the method subsequently proposed by Mr. Archer?—No; but I have been inundated with them since. I made an answer which I hope will not be mistaken, when I was asked if we had seen the third machine; when I say we have not seen the third machine, I mean we have not seen that which is called the third, supposing one machine is all that was ever made,  
and

Mr.  
J. B. Bacon.  
20 April  
1852.

and which has been altered repeatedly; we have seen the first and second certainly.

1667. Do you mean by that to imply, what is now called the third machine is still the first and second?—It is of no importance to my testimony. If there were not three machines, there was one which was exhibited in three very different stages.

1668. *Chairman.*] Have you seen the last machine?—No.

1669. *Sir J. Tyrrell.*] The two first machines were imperfect, and the third a perfect machine; that you have not seen?—No.

1670. *Mr. J. Greene.*] Was not the third machine, before the adjusting apparatus was put to it, in your establishment?—No.

1671. The present machine at Somerset-house, previous to its having the adjusting apparatus attached to it, was at your establishment, was not it?—My answer is this, that we believe it was, because we believe that there was never but one machine made; that is a belief of ours; but we cannot swear that Mr. Archer has not had twenty machines. Mr. Archer says three machines, first and second, and that at Somerset-house. We do not like to contradict him—we have not the power of contradicting him—therefore I speak with reserve as to the question “Was there one machine, or were there three machines?” It does not affect my answer at all. I have an opinion as to the matter, but I dare not commit myself by saying the machine at Somerset-house never came to our place. If there was only one machine, it came in a very different and imperfect state; it came in a state that the machinist himself said, “I can do nothing to put it right without I take it away.”

1672. You mentioned that you had made an improvement in your establishment; was that the machine for transferring the engraving?—Yes.

1673. Was not it called for in consequence of the irregularities between the different heads on one of the sheets?—I would never have been called for had it not been for the perforating process coming forward; but that coming forward, we then saw the utility of making it as accurate as possible; there was no inducement to make it so very accurate before.

1674. *Chairman.*] I presume you cannot superintend this work while you are in a state of infirm health, and while Mr. Petch is so too, he cannot; who does superintend it?—My son superintends it, and he has done it from the first hour, that is,

is, of course, I used to go occasionally to see it, but the general superintendence and management he has had.

1675. And all the security to the public depends upon your son?—No.

1676. Upon whom then?—Upon the whole establishment.

1677. You mean as far as regards your firm; but has not the Stamp-office some party superintending?—They have an officer every minute.

1678. What does he do?—He watches the plates and dies, which are locked up in boxes having two locks and keys, he having the control of one and we the other when not at work.

1679. Sometimes you find it necessary to work over-time?—Sometimes.

1680. And in case you work over-time, does this superintendent remain all the time?—Yes, or else a substitute they send; I never knew to the contrary.

1681. Mr. *J. Greene.*] The Post-office stamps are printed on a very peculiar paper?—Yes.

1682. That is issued from the Stamp-office?—Yes.

1683. You are obliged to account for the number of sheets issued as perfect stamps or sheets spoilt, consequently the value of that person's attention is not very great there; his surveillance over that establishment is not very great?—The Government conceive they ought to watch as well as us, or our workmen might carry away sheets; and if he was not there, and we shut our eyes and went to sleep, they might print some sheets, and put them into their pockets.

1684. Would not you have to account for all the sheets?—Yes, but the workmen might bring in plain paper, and get them printed, and then they would have nothing to do with the account of the Stamp-office.

1685. On going over your establishment some short time since, I saw your transferring apparatus?—Yes.

1686. That is not in the charge of the public officer?—It is not steadily.

1687. It is in another part of your establishment, and the transferring is one of very great facility; and would not it be necessary that that part of the establishment should be under the public officer as well as the stamps?—We have not the least objection.

1688. Is not it absolutely necessary that it should be so?—I think not.

1689. *Chairman.*] You lock up the dies under two keys?—Yes, we cannot move an inch without the officer.

1690. Are you conversant with all kinds of printing?—I have

Mr.  
*J. B. Bacon.*

20 April  
1852.

Mr.  
J. B. Bacon.

20 April  
1852.

have a general knowledge, not that intimate knowledge of other branches than our own that a man accustomed to them might have.

1691. Your own professional business is that of a copper-plate engraver?—Engraver and printer.

1692. Being first-rate copper-plate engravers, you came in contact with this business first, when it was first introduced?—I will tell you how; we were not among any of the 200 or 300 applicants for the prizes, and for the work of the Government. So far from favouritism towards us, we did not even apply, and never had dreamt of having the work to do; but after the whole of the plans had been investigated, and, from some cause or other, not being found to answer, then a gentleman, Mr. Cole, came to us, and he said, "Why did you not put in for this contract?" I answered, "We cannot put in; the probability is the Government want some cheap kind of thing that copper-plate cannot compete with, and your size is too large. I said, "You want envelopes, and steel-plates could not be made at the price the Government would give." He said, "Oh, you are quite deceived; an inch would do for us." Then I replied, "We can compete," and we took a little time, when we promised to give him everything he wanted. We made drawings that were approved of, and from that hour to this, we have done everything that we pledged ourselves to do.

1693. What gave you the opinion that the Government wanted something so common that it was not worth your while to compete at first?—We knew that Mr. Mulready's was the envelope size, and supposed the others were also.

1694. You said you believed the Government wanted something so common that it was not worth your attention; why was that?—Because the size and commonness have a great deal to do with each other: a very small article can be engraved and printed in copper-plate at nearly the price of surface printing; but when you come to a large article, that is a very different affair; the cost of engraving and the cost of printing alters the case entirely, and for that reason we did not attempt to compete.

1695. Was it your opinion that it was necessary to have so clear a piece of work as yours to prevent forgery?—Yes.

1696. Was that your opinion, or the opinion of other parties?—It was our opinion unquestionably, and remains so to this hour, and we think that the past 10 years has proved the opinion to be correct. We have never seen but one attempt at forgery, and that was so diabolically bad, it would not pass for a second.

1697. You

1697. You still remain of opinion that the copper-plate engraving alone can give security?—I believe it is the best security there is. Mr.  
J. B. Bacon.

1698. Mr. J. Greene.] Is that specimen done by the same machinery that yours is (*handing a specimen to the Witness*)?—Whether it is or not, it is very immaterial; that is a very different kind of thing from ours; we never had anything to do with that. 20 April  
1852.

1699. Have you never done anything of that sort?—Yes.

1700. Is that copper-plate engraving?—I do not believe it is, but it is so coarse and the ink so black that I cannot tell whether it is or not. I can give you a coarse wood-cut that you cannot tell from copper-plate; it is when you come to delicate fine work that wood-cuts cannot stand.

1701. Still that description of engraving would deceive a party with facility, except those very conversant with the subject?—The very general character made me know.

1702. Do you know whether anastatic printing can be taken off a copper-plate engraving?—It cannot do the fine work of copper-plate engraving; it has never done so yet.

1703. If it were found, upon examination, that that is so, the security from copper-plate engraving would be very soon done away with?—No, for we are ready in half an hour to guard against it; we have got a plan ready, but we will not put our customers to the expense, though it is not much, until we see it necessary.

1704. *Chairman.*] Do you know the expense per thousand, and what the difference of expense is when done in copper-plate and when done in surface printing?—No; but I know the surface printers competed with us for the Excise work; and if I do not mistake—I do not wish to state anything incorrect—Mr. Branston himself was one of those, and we got the contract; it was surface printing in both cases.

1705. Then your answer would not apply. I asked you this: supposing this work could be considered safe for the postage labels, if done by surface printing, can you inform me the difference of cost as compared with engraving?—I cannot; Mr. Archer undertakes to tell, but I cannot.

1706. I want to know your opinion?—I cannot give it you.

1707. You have told us, as regards the Excise labels, you have done surface printing?—Yes.

1708. Then I thought you could have given us the difference of the cost between the surface printing and the copper-plate engraving?—Then the answer occurs in a moment, that the Excise labels are large sheets twice the size of the envelope, and therefore copper-plate printing could not have competed

Mr.  
J. B. Bacon.

20 April  
1852.

there for a second; whereas, when you come to small work, it can.

1709. I should have thought, as you had done that work in surface printing, you could have made a calculation of that sort of work done in surface printing and copper-plate printing?—I have given you a reason why I cannot; if a few thousands of a work were printed, it is cheaper in copper than in surface, because their first expense is greater than copper-plate; but if a very large number were printed, they will have probably nominally more advantage.

1710. What quantity will one of your steel plates take off without damaging the plate?—Fifty thousand sheets is a fair average.

1711. After that average you have to renew the plates?—We sometimes do 30,000 and 25,000; I speak of the average.

1712. That depends upon the quality of the steel?—The original steel and the hardening; you cannot possibly always get it exactly alike. We suffer from one great inconvenience, and that is, there are 240 heads, and the loss of one head is the loss of all; the moment they begin to wear, although perhaps three-fourths of them may be fit to continue printing, that is an expense we are put to. I have been asked about the difference of size; here is a sheet taken at first, and here is one of the last sheets taken (*producing specimens*), so that the Committee can see the variation; there is the extreme variation.

1713. Why is there a difference in the colour of the two?—One is 10 years old, and the other is fresh.

1714. Does the colour alter by being old?—Yes, all colours.

1715. Does it affect the back in the same manner as it is apparent here?—It begins to go; one of those sheets has never been gummed.

1716. Do they not alter sometimes after gumming from being kept a long while?—Yes, sometimes they grow fainter.

1717. The gum gets darker?—I do not think the gum alters.

1718. There is a sheet behind you that has got green?—I have put before you an old sheet gummed.

1719. Is that merely from the age of it?—It is only from the age; that might go green, that light sheet might.

1720. Is there any alteration in the ink?—Not that I am aware; but fugitive will fail, for it is made on purpose to give way.

1721. Would it have the same effect if the gum were of a better quality?—We say it is of good quality.

1722. For

1722. For what it is; but it is not first-rate quality we all know?—We know that within five months the contractors for the United States' postage came over here on purpose to get our gum; they said they had had all the difficulties it was possible to conceive, and they could find none that would answer but ours; they got a letter to the very man who supplies us, and then employed him.

1723. That might not altogether arise from their wishing to have that, because it was the best gum, but because it was the cheapest?—We have tried every project that has been ever offered us of gum.

1724. Mr. *J. Greene.*] What is your gum composed of?—There is a great deal of nonsense in speaking about the injury to health in our gum; our gum is composed of potato-starch, wheat-starch, and gum.

1725. Supposing you had a large number of them in store, has that gum any effect upon their keeping quality?—None whatever.

1726. If it were found desirable to print the postage labels on dry paper, for the benefit of perforating them, what would that be?—It would not do for copper-plate printing.

1727. Not with any description of paper?—No; fine work I presume you mean.

1728. Mr. *G. C. Lewis.*] You stated that when Mr. Archer's machine was in your possession that it underwent a certain number of changes and improvements; is not that the case?—It was first made and then brought to our place; nothing was done at our place, but before the Commissioners and Mr. Hill and some of our people who saw it tried. Mr. Archer and his man were convinced it was not fit for use, and it was taken away; then it was improved again, and brought back, and then it did not answer; but no improvements were made on our premises.

1729. Did you examine the machine in the most improved state in which it was when in your possession?—Certainly.

1730. Do you consider yourself competent to form a judgment of a machine of that sort?—I should conceive a child would have been in the state it then was.

1731. What would you consider to be a fair value for the machine in the most approved state in which it was in your possession?—It is very difficult to fix a price upon a failure.

1732. Will you state the nearest estimate that you could make of a fair valuation for that machine in its then state?—After I had felt convinced that I could carry it out to perfection, I would have given the second time 200 *l.* for it; after

Mr.  
*J. B. Bacon.*

20 April  
1852.

Mr.  
J. B. Bacon.  
20 April  
1852.

I felt that I could go on by adding more work to it to complete it; but I would not have given 50 *l.* if I did not feel confident I could bring it to perfection.

1733. Do you think any body else would have given more than 200 *l.* for it?—No, I do not think so.

1734. *Chairman.*] Suppose a man invents a thing, and gives me the machine to carry it out, ought he not to have any thing for his invention beyond the cost of the machine?—That depends entirely upon the agreement. If a man came and told me that he thought he could accomplish a certain thing for me, and wished me to allow him to try, I should say, “Very well, I will give you a fair price if you succeed.” I should then say, I ought to be quite liberal as to his expenses and his profits, because he has promised nothing if the machine proves expensive when ready for work; but if he came and said, “I can for 200 *l.* make you a machine, and for a labour and annual expense of 50 *l.*, work it and produce all you require;” and after the thing was completed, I found it cost 900 *l.* instead of 200 *l.*, and that it would require one man and two boys for each machine, and a steam-engine for the two, then I should have said to him, “Why, sir, you have broken down in every thing; you have shown ingenuity, you have shown talent, and you have spent a great deal of money, and I regret it; but as I am obliged to be at this immense annual outlay that I never dreamed of, I cannot pay you the profit for your invention; I could have paid you if you had kept your promises.”

1735. I suppose you know the Board of Inland Revenue approved of Mr. Archer’s machine, and expressed their satisfaction as answering all the purpose intended?—Eventually.

1736. That being the case, it is not quite in the position you put it; I am asking you under the circumstances?—I cannot answer for the Inland Revenue.

1737. *Mr. Spooner.*] You say if you were certain you could carry it out to perfection, you would have given 200 *l.* for it?—Yes.

1738. Have you come to that conclusion with reference to what such a machine ought to cost, without taking into calculation what the various expenses before it was brought to that state must have been to the inventor?—I come to that conclusion from this data: I know the first machine did not cost 100 *l.* when it came; I assume (though I may be wrong) that it probably cost another 100 *l.* to bring it to its second state, and therefore I should have said it is but fair to pay all that it cost him if he still carried it to perfection; then I should have

have assumed about another 100 *l.*, possibly 200 *l.*, to bring it to perfection myself, and I should have said, very well, 400 *l.* will not kill me, if I want such a machine, to pay for it.

Mr.  
J. B. Bacon.

20 April  
1852.

1739. Mr. *Rich.*] If the idea had struck you or any one else of perforating the spaces between the heads in the sheets of those postage stamps, and if you had gone to Messrs. Maudslay's, or any other experienced machinists, and submitted it to them to construct it as a problem, at what price would they have been capable of constructing such a machine to answer your purpose?—If Mr. Maudslay had been called upon to invent the machine, and make it, he would probably have charged 500 *l.* or 600 *l.*

1740. And that, you think, would have been the value of the machine?—Certainly, if Mr. Maudslay's brains had made the machine.

1741. Then there would be the invention of the idea and the adaptation of the machine?—That I was not speaking of; the Committee is quite as competent to judge of that as I am.

1742. Mr. *Mowatt.*] You did not mean to include that in the answer you gave?—No; if I had had the sheets of perforated stamps done with great care, as I should have done it, I should have said to Messrs. Maudslay, I should think a machine could be made to do this perforation which I want doing; Messrs. Maudslay would say, "Well, sir, you are asking us to make a machine, therefore we must charge for the ingenuity and the machine."

1743. The question I ask you is this; in putting that value upon the machine, did you take into consideration at all the invention as a valuable consideration?—I did not; that ought to be added.

1744. Sir *J. Tyrrell.*] I understood you distinctly on more than one occasion to say, that, added to the two machines which were imperfect, there was a last machine which was perfect?—Yes we believe so.

1745. The third machine was perfect, or nearly so, and might be carried into execution for the performing of the work?—My answer has been from the first, that we have never seen that machine.

1746. You have stated so distinctly?—Yes.

1747. I understood you to say, over and over again, this, that the two first machines were not perfect?—Certainly.

1748. But you believe from what you have seen of those two first imperfect machines, that a third machine could be constructed, and you believed had been constructed, so that

Mr.  
J. B. Bacon.

20 April  
1852.

the work would have the advantage of the gumming and the perforating?—Yes.

1749. And it is clear, as far as you are concerned, you have no data upon which you can estimate the value of the perfect machine, because Mr. Archer's machine was imperfect until he was assisted by the Government in carrying it out?—Certainly.

1750. *Chairman.*] If you have never seen the machine, how are you competent to give an opinion of the value of it?—I have given no opinion of the last machine. I said I had been informed that it would work; I do not know it personally, but I have no doubt of it. I state distinctly that I merely believed the last machine would answer, because I have been told so by proper authority, but I cannot say from my own knowledge. I did not say what the value of that machine was; it was impossible.

1751. Mr. *Spooner.*] You have told the Committee you knew that the first machine cost 100*l.*?—Yes, less.

1752. Will you state to the Committee the grounds of that impression?—Mr. Archer had a difference with his machinist. My opinion is that he was dissatisfied with the machinist, and he wanted the machine away, and he wanted it brought to us. I believe that is the reason, but Mr. Archer is a better judge than I am of the reason; the fact I know, that the man refused to let the machine stir an inch. Mr. Archer then came to me and handed me the bank notes, and requested I would hold them, and pledge myself to the man that he should be fairly paid if he would allow the machine to come to our office; I believe that is the reason; but whether that is the reason or not, the fact is that it was less than 100*l.* I did pay him that sum, and took a stamped receipt, and I handed it to Mr. Archer.

1753. In that calculation of 100*l.*, have you taken at all into account the time and the trouble, and the expense to which Mr. Archer had been put, beyond that of the mere machine-maker?—Not one penny of it; there had not been much time wasted at that period.

1754. Sir *J. Tyrrell.*] From the information that you have received from practical men, do you distinctly believe that this new machine could be carried out in a working manner, and supposing this present contract burnt and destroyed, do you think that you, as a practical man of business, would have any hesitation, if you, yourself, had time to make, or if you could get the proper calculations made for you, in undertaking a new contract, in fact, to carry out this new machine in the gumming and perforating way?—None whatever.

1755. Mr.

1755. Mr. *Mowatt.*] Meaning the machine of the inventor?—The machine of the inventor; then in that calculation everything would depend upon the annual expense almost.

Mr.  
J. B. Bacon.  
—  
20 April  
1852.

1756. Sir *J. Tyrrell.*] Are there not men of business you could apply to, that would furnish all that?—Yes; only if 50*l.* a year would have done it, it would not have been worth thinking of for a second.

1757. Could you assist the Committee in telling them what you believe would be the difference in the price of the contract, as you say the machine could be perfected; in your opinion what would be the increased expense, or the lessened expense, as the case may be, to the public?—I hardly like to answer that; but if I am correctly informed, I should say it would be 300*l.* or 400*l.* a year difference of expense.

1758. *Chairman.*] What is your opinion upon the application of the pierced postage stamp; do you think it would be to the public convenience to have the stamps all pierced?—I have thought so ever since it was first introduced, and never was inimical to the plan; in fact, my interest is concerned in it.

1759. Referring to my former question, can you give me now an opinion as to the comparative cost of surface printing as compared with the present mode of printing and engraving?—I confined myself just now to answering the question as to the cost. I conceive that in theory it can be proved with the greatest ease, that surface printing never can stand alongside of copper-plate printing; for security in practice, I conceive it is capable of irrefragable proof that it cannot. In the first place, as to the theory; if you look to our heads, it not being fair to judge our work by what you see on letters. There is what the work is (*producing specimens*).

1760. Mr. *J. Greene.*] The Queen's head is done by machinery in your establishment?—Yes.

1761. Have other parties in London similar machinery?—I believe, within a short time, one party has.

1762. Any person who has machinery of that description can of course copy that?—They cannot; they can do many things we do, and we can do many they can do, but if we had a die taken, that die, for instance, which contains the machine-work around the Queen's head, and we were asked which we would prefer, to reproduce that same die again, unless we had kept all the calculations and divisions upon all the wheels, or to make a thousand fresh ones, but not like that, we would prefer making a thousand; we could do it quicker; it is self-acting

Mr.  
*J. B. Bacon.*  
 20 April  
 1852.

acting machinery. We cannot dictate to the machine; we can cause it to make an oval, or a circular, or a straight line, but as to the particular pattern it is going to produce, we know nothing of it until it is done.

1763. Mr. *G. C. Lewis.*] Has the forgery of postage stamps ever led to any practical inconvenience?—I never knew but of one wretched thing; obliterations are a very different thing.

1764. Mr. *Mostyn.*] That was the case of the schoolmaster in Ireland?—Yes, and a most miserable thing it was. If the Committee will look at that work—that is true copper-plate work; that is printed in rational colours; we began in black, and it ought always to have been black; but though the rogues could not forge our work, which is said to be so easily done, they could take the obliteration off, and use the stamps over and over again, and therefore the Government set us to try and get an ink to obliterate, which would also destroy our work; but if we took the other course, we could accomplish nothing without such an acid as would eat through the letter, and then we might destroy important documents. Then Mr. Rowland Hill said, “I cannot help it; we must abandon beauty for safety; and we must adopt a fugitive colour;” and that is the ground on which the postage stamps are fugitive; it is a washing kind of ink, purposely so, that if the obliteration is attempted to be taken away, our ink will go first. But now I would ask the Committee just to consider this: I have spoken of theory; if they examine the machine work of that postage-label (for the head takes up nearly all the room; we have hardly any space for security), they will see there is all that the space would allow; but if any surface printer, upon any surface plan in the universe, were to attempt to produce the pattern, got up by thousands of lines, as that is, running over each other zigzag, the ink would sink down into the interstices, and would be a mass of confusion; and I defy them to produce that sort of thing.

1765. *Chairman.*] Will you just look at that head that lies there, and tell me if you ever saw more utter confusion than that?—I will defy them to produce that.

1766. Mr. *Spooner.*] You do not admit there is any confusion?—It is not so well printed as some others, but I do say they cannot produce the solid parts, and leaving the whites as we have left them there.

1767. If you will look at that new one first, and then at your own, you will see the relationship between them is very small?—First of all, it is not fair to compare black printing with  
 with

with colour, or fugitive with mineral colour; but that is little injury to the security of the stamps, because the rogues must commence their forgery from our impression in fugitive colour, and when printed they must lose as much from their starting point as we do from ours.

1768. Do you think any man who would have to go through all those stamps would detect that?—I have seen some of the coloured ones as nearly as possible as perfect as the black ones.

1769. Those original ones are as perfect as possible, but those others are as confused as possible?—I have stated, that in theory the copper-plate is superior, and I have stated the reason, when you come to intricate work, the attempt to do it will fail.

1770. But my question is, whether you thought any one who has to pass the postage stamps could see the relationship between the original stamp we have here, and those I have just shown you?—I mean to say they would never see the original, but they see between the good one and the other; it is not fair to speak of their seeing what they never look at.

1771. Suppose they were to be done by surface printing and fairly done, do you think that any man could ever forge those stamps and dispose of them to answer his purpose?—Yes.

1772. How would he get rid of them?—By selling a few at a time.

1773. How could he get rid of such a quantity as to make it worth his while to forge them?—Then there is no need of any kind of security in that case.

1774. Does not the fact of their being only penny postage stamps make them secure in themselves?—There is some security in that, and some more security in stationers who have a licence to sell being subject to be examined.

1775. That is one of the difficulties?—Yes.

1776. How would he get rid of so many as to make it worth his while?—There are two ways; one by getting a stationer who has not character enough to prevent his dealing in them, and the other is to cut the sheets into small pieces and sell 3 s. or 4 s. worth at a time.

1777. Would anything like selling 3 s. or 4 s. worth indemnify the man for the risk?—I have not seen a forgery yet. In addition to the theory about the surface printing and the engraving, I ask to appeal to practice; 30 years ago Sir William Congreve came out and we together, within six months of each other. He came out with the surface printing in its  
highest

Mr.  
J. B. Bacon.  
20 April  
1852.

Mr.  
J. B. Bacon.  
20 April  
1852.

highest state of perfection, as he considered ; we were employed at that time by some of the country bankers, who allowed us to make secure the backs to their notes, but they would not allow us to make secure fronts ; they said they would keep up the old face which was known to their customers. The Government adopted the Congreve stamp, and, before they issued them, we got hold of one of them and sent it to the Commissioners of Stamps and Taxes, in a few days, imitated in wood, stone, and copper ; and here are the imitations. The Bank of Hindostan approved of it, and here it is ; we imitated part of it ; they used it, and then came to us. But few banks, some seven or eight, ever adopted it in the world ; hundreds and hundreds and hundreds of the banks have adopted our system.

1778. Did you ever hear that any of those banks that did adopt the surface printing were forged upon?—Yes, in abundance ; here is one—(*handing one to the Committee*) ; here is another ; great were the forgeries or imitations, I will not call them forgeries, that was issued (*pointing to one*).

1779. Can you give me the comparative cost of your principle of surface printing, supposing it were applied to these particular things?—I cannot.

1780. Mr. J. Greene.] It would be considerably less than copper-plate engraving?—It would be less if it could be accomplished ; I do not think it would be considerably less.

1781. You are aware that the French postage-stamps are printed by surface printing?—Yes.

1782. And that, after considerable examination in this country upon the subject, they adopted it?—I never knew the French to adopt a really good thing in the arts.

1783. They are better lithographers than we are?—Look at their notes.

*Martis, 27<sup>o</sup> die Aprilis, 1852.*

## MEMBERS PRESENT.

Mr. Muntz.	Sir John Tyrrell.
Mr. Grogan.	Mr. Cornwall Lewis.
Mr. Mcstyn.	Mr. John Greene.
Marquis of Chandos.	Mr. Spooner.
Mr. Ormsby Gore.	Mr. Mowatt.
Mr. Geach.	Mr. Rich.

GEORGE FREDERICK MUNTZ, Esq., IN THE CHAIR.

*Henry Lewis Wickham, Esq., called in; and Examined.*

1784. *Chairman.*] I BELIEVE you were formerly in the Stamps and Taxes?—Yes, I was Chairman of the Board of Stamps and Taxes before the consolidation with Excise.

*H. L.  
Wickham,  
Esq.*

1785. Do you remember an application being made to you by a person of the name of Clayton, in Dublin, in the year 1844, respecting a proposal for making postage stamps?—Mr. Clayton has written to me since that period, which has brought it to my recollection, otherwise I should not have remembered it.

27 April  
1852.

1786. This is a letter of 1844 of yours to Mr. Clayton?—He referred to that in his last letter to me.

1787. Will you look at the letter (*a Letter being handed to the Witness*)?—That is my handwriting, but I do not remember any of the particulars. These are the letters I sent. “Stamps and Taxes, 1 April. Sir, I have received your letter of the 1st, with the stamps, and I will in due time, and after inquiry, inform you whether the Board considers it desirable to adopt your suggestion. I remain, &c. (signed) *H. L. Wickham.*” “15, Chesterfield-street, May Fair, 18 February 1852. Sir, I have received your letter of the 15th instant, which I will forward to the Board of Inland Revenue, to whom you had better apply for any further information. I recollect some communications respecting the perforation of postage stamps, but my impression is that we did not consider it advisable to adopt any plans for effecting this purpose, so that it was not necessary to give an opinion upon the merits of your invention. This impression is confirmed by the statement contained in your letter. I remain, &c. (signed) *H. L. Wickham.*”

H. L.  
Wickham,  
Esq.  
—  
27 April  
1852.

H. L. Wickham." That letter of the 18th of February is addressed to Mr. Clayton, but it refers, I have no doubt, to an application of Mr. Archer's. I say in it, "I recollect some communications respecting the perforation of postage stamps."

1788. Have you any recollection of what the nature of the application of Mr. Clayton was?—I do not remember on the instant. There was some application made to us respecting the perforation of stamps. I do not remember two applications; my impression is that there was only one application upon the subject.

1789. It is evident that you had this application?—Yes; and I must have confounded that with Mr. Archer's application; all that I recollect is, that one application was made, but my impression was that not more than one application was made; and when I received the letter from Mr. Clayton my impression was that only one application had been made, and I referred to that original application, not recollecting the difference between the two, Mr. Clayton's and Mr. Archer's.

1790. I believe you signed a report to the Lords of the Treasury in 1847, recommending the adoption of Mr. Archer's principle?—Yes, I signed that report.

1791. Are you aware that after Mr. Archer had made a machine at his own expense, in the first instance, it was found that the plan he had proposed, for various reasons, was not calculated to effect the purpose desired?—I see that that comes out in the correspondence, but I cannot say, from my own recollection, that that was so.

1792. I suppose you are aware that he made another machine?—Yes, from the correspondence I am aware of it, but I was taken ill in April 1848, and not able to attend to my duty after that time, and I resigned shortly after.

1793. You are only so far conversant with it as to know that the principle was approved?—The principle was approved by the Post Office, and it was on their strong recommendation, as far as I recollect, that we recommended the adoption of it.

1794. Mr. C. Lewis.] You were a member of the Board of Stamps before its consolidation with the Inland Revenue Board at the time the penny postage was introduced?—Yes.

1795. Do you happen to know whether the mechanical arrangements with reference to the postage stamps were carefully considered?—I should say that they were most carefully considered; I was myself, I believe, chiefly employed in the operation, and I was constantly with Mr. Baring (now Sir Francis

Francis Baring) on the subject, and the whole thing was gone into with the utmost care and attention.

1796. Is it your belief that the present arrangements with regard to the engraving and gumming of postage stamps are such as it would be desirable to retain unchanged?—I should say so, certainly; we worked them from the time they were first adopted with great convenience, and with great advantage to the public revenue; and with respect to forgery, during the whole time I was in office we had only one case of forgery, and that was so ill done that it was discovered immediately.

1797. Is not the manner in which the sellers of stamps are supplied by Government such as to afford considerable security against forgery?—Decidedly; and there is a greater security against forging postage stamps than against forging stamps generally; viz., the difficulty of disposing of them.

1798. It would not be worth while for any individual to forge stamps for his own use?—Certainly not.

1799. The forgery of postage stamps could only be practised profitably if they were sold to the public?—Yes, only if it was in the power of any person to get rid of them by sale.

1800. Mr. *Grogan*.] You state that the general security to the revenue against the adoption of forged postage stamps arises from the sellers of stamps being licensed by Government; would you say that that was the chief security?—No, I should not say that it was the chief security; I should say it was an important part, but not the chief; you must take the whole together.

1801. Will you state what you consider the chief security?—I think the chief security is the beautiful engraving of the instrument; it is extremely difficult to imitate that; that is the first security.

1802. Have you ever seen, not postage stamps, but other works equally difficult to imitate, imitated by the letter-press system?—I have seen beautiful imitations, but they have been effected with great trouble and great expense.

1803. You said that you took an active part in investigating the subject of the mode of engraving and printing at the time the penny postage stamps were introduced; was your attention drawn to the mode of printing by a peculiar machine adopted by the Bank, at the time the forgeries on the Bank took place?—Yes, our attention was called to every possible mode of engraving.

1804. And you are still of opinion that it is more difficult to make a fac-simile, or imitation of the present mode of engraving than it would be if it were done by letter-press?—

Decidedly.

H. L.  
Wickham,  
Esq.

27 April  
1852.

W. L.  
Wickham,  
Esq.  
27 April  
1852.

Decidedly. We had letter-press particularly under our consideration.

1805. Mr. *C. Lewis*.] Is it your belief that the mode of printing from copper-plate is considerably more expensive than letter-press for the purpose of postage stamps?—I do not think that it is considerably more expensive; I should say that it was more expensive, but not very much so; but I do not speak with any degree of certainty, for it is so long since the investigation took place.

1806. Mr. *Spooner*.] In answer to a question which Mr. Lewis put to you, you stated that, in your opinion, it would be wise to continue the present plan adopted at the Stamp Office, with regard to postage stamps?—Yes, that is my opinion.

1807. Have you ever had your attention called to the plan which has been submitted to the Post Office by Mr. Archer?—Only in reference to what he proposed, of perforating the stamps; I know nothing further.

1808. Do you think it would be right to adopt that plan of Mr. Archer, so far as the perforation goes?—I think there is a little convenience in it, but I do not think it is of any importance as regards forgery.

1809. Would it be for the benefit of the public?—In these cases one is desirous to accommodate the public; and it has this advantage, that it sticks on better than the plain stamp, as far as I recollect.

1810. Are not perforated stamps more convenient for general use?—Perhaps they may be. I should not say that they are much more convenient; I do not think the advantage is very great.

1811. You have not given much attention to the matter?—No; but I remember having at the time gone into it, as far as one usually does, with papers that come before the Board, and I was of opinion that it was an accommodation.

*John Coe, Esq.*, called in; and Examined.

*J. Coe, Esq.*

1812. *Chairman*.] I BELIEVE you have an appointment at the Bank of England?—Yes.

1813. What is the particular nature of your appointment?—I am superintendent of the letter-press department.

1814. You are aware of the mode which has been adopted of engraving the postage stamps by Messrs. Bacon & Petch since the commencement?—Yes.

1815. And of course you are well acquainted with letter-press printing from the nature of your appointment?—Yes.

1816. Which

J. Coe, Esq.

27 April  
1852.

1816. Which do you consider the more eligible mode, under all the circumstances, of making the postage stamps, looking to security from forgery, economy and other circumstances?—With reference to security, I am of opinion that the two systems are upon a par; that there is as much security in the one as in the other; for there is hardly anything that one man can do under either system that another cannot imitate. But with regard to economy, there can be no question that surface printing is very much cheaper than plate printing, especially when you take it in a large bulk.

1817. In what proportion is it cheaper?—Mr. Hensman, who is engineer to the Bank of England, and myself went into the subject, and the conclusion we came to was, that about  $2\frac{1}{2}d.$  per 1,000 heads would be the actual cost of surface printing, and  $3\frac{1}{2}d.$  per 1,000 heads the cost of plate printing.

1818. What does the  $2\frac{1}{2}d.$  include?—It includes paper, printing, gumming, pressing, drying, and engraving; in fact the whole expense.

1819. That is the absolute cost?—Yes.

1820. Without leaving a profit?—Yes.

1821. That would include the same sort of paper?—Yes; it includes a better gum than is now used; we are using a better gum.

1822. Not gum made of potato starch?—No.

1823. You think it would be more useful and more permanent?—Certainly.

1824. Will you be so kind as to tell us what is the cause of the copper-plate printing being more expensive than surface printing?—Because in surface printing you can print a much greater number in the same time than in plate printing.

1825. Has the wear and tear of the plates anything to do with it?—The surface plates will last much longer than the copper-plates.

1826. Because the surface is not so liable to rub off?—Yes.

1827. Supposing the mode proposed by Mr. Archer of perforating the sheets to be adopted, do you consider it would facilitate the operation if the printing were on dry paper instead of wet?—I think it would be hardly possible to carry it out without printing on dry paper.

1828. The printing on dry paper would be more regular?—Yes.

1829. Is printing on dry paper carried to any extent?—It is, especially for fine printing; I have a specimen here of surface printing on dry paper; this is another specimen of dry surface printing; and here is a third specimen; it does not

J. Coe, Esq.

27 April  
1852.

show it perfectly, for we are only now introducing it; it is from the electro-type.

1830. This used to be done in copper-plate?—Yes; this specimen is printed dry, from surface.

1831. Can that be done by electrotype with greater economy?—Yes.

1832. You think there would be no difficulty whatever in printing these labels on dry paper?—No, not at all; I have also tried one or two on gummed paper.

1833. Have you ever seen any of the Excise labels?—Yes.

1834. Those are done on dry paper?—Yes.

1835. And on very thin paper?—Yes.

1836. Is there any difficulty in printing on dry paper when it is thin, more than on strong paper?—I should say for postage stamps the paper should be prepared in a particular way; paper that this is printed on would not serve for postage stamps; this is highly glazed paper.

1837. This is thin paper?—Whether it is thick or thin does not matter; one great advantage from the electrotype is the perfect identity that you can secure.

1838. Do you think the identity is as complete as the identity now obtained from steel plates?—Quite so; I might illustrate it to the Committee, by showing this specimen; this is the master plate; this master plate is never disturbed at all, except to form the matrices; you may take as many matrices as you please, and the master plate always remains the same.

1839. Do you think it would facilitate the perforation of the labels if the holes for registering the sheets were made at the same time as the labels were printed?—Yes.

1840. They would be more regular?—I think they would; but decidedly the saving would be considerable.

1841. Can the holes for registering the sheets be made at the same time as the sheets are printed, in the present mode?—It has never been adopted, I think.

1842. Do you think it could be done?—That is rather a question for a mechanical person than for myself; it appears to me that if I found a necessity for it, I should attempt some method, but I am not prepared to say that it could be done.

1843. But you are of opinion that the printing of postage label stamps could be securely carried out by the surface mode of printing?—There is not the least doubt about that; with a less complex stamp than the present.

1844. Mr. Mowatt.] You do not think that the present stamp

stamp could be carried out with surface printing?—I do not think it would be desirable. On looking at the plates, it will be seen that there is a great deal of elaborate work on the background of the head which never appears on the stamp itself. I have no doubt that on the proof it would look very pretty, but when you print in large numbers and rapidly, by having such elaborate work as that you facilitate the opportunities for imitation.

J. Coc, Esq.

27 April  
1852.

1845. *Chairman.*] On comparing these two plates, you will see that the stamps are very irregular in their distance one from the other; by what is that occasioned?—By the irregular mode of placing the die upon the plate, and probably also by the shrinkage of the paper.

1846. That being the case, it must, as compared with its being done by machinery, be very inferior?—Yes; here we have what we were speaking of, want of identity.

1847. *Mr. Grogan.*] You alluded to want of identity in that sheet; will you explain what you mean by that?—In one case there is a total want of colour, whilst in the other there is a superabundance of colour, probably arising in the one case from its being an old plate, and in the other partly from the want of care of the man in wiping the ink; plate printing is subject to that, particularly when printed rapidly.

1848. Is there any other circumstance in the appearance of the head that you conceive shows a want of identity?—I think not; as I stated before, this elaborate background prevents the heads being so identical one with the other as they would be if it were less complicated; the same artistic effect, with less work, could be produced.

1849. *Chairman.*] In plain terms, you would call that overdone?—Yes.

1850. *Mr. Grogan.*] And that want of identity would facilitate forgery?—Yes, it would.

1851. *Chairman.*] I asked you the cause of the difference which is to be observed in the colour of the sheets, whether you look at the surface or look through them; are you aware what the cause is?—It must be something connected with the gum, I think.

1852. How long have you been in the employment of the Bank of England?—Fifteen years.

1853. You were not in the employment of the Bank of England at the time they printed a large quantity of one-pound notes by surface printing, which were not afterwards used?—No, it was before my time.

1854. You may have heard a report about it?—I have

*J. Coe, Esq.* never heard anything which will enable me to give satisfactory evidence upon the subject.

27 April  
1852.

1855. *Mr. C. Lewis.*] You are thoroughly conversant with the difference between copper-plate printing and typographical printing?—Quite so.

1856. Is it possible to print with fugitive ink from types?—I should say so.

1857. Is that a point to which you have ever turned your attention?—I do not know that I have, but I should think there would be no difficulty whatever about it.

1858. Are you aware that the present postage stamps are printed with fugitive ink?—I was not aware of that fact.

1859. Do you know that there is an advantage in printing with fugitive ink?—Decidedly there is.

1860. Is it necessary for the purpose of security to the revenue that the postage stamps should be printed with fugitive ink?—I should think not. I cannot imagine it likely that any man would attempt to forge postage stamps.

1861. Is not the security that the revenue have against parties using a postage stamp twice over, that they cannot wash off the black mark put on in the Post-office?—I should doubt whether the black mark could be washed off ordinary ink without damaging the other part.

1862. Your opinion is, that there is no difference between fugitive ink and other ink with respect to the difficulty of washing off the black mark which is put upon letters when they pass through the Post-office?—No, I think not.

1863. *Mr. J. Greene.*] Are you cognizant of anastatic printing?—Yes.

1864. Can you by the anastatic process take off fine copper-plate printing?—Yes.

1865. Under that process there would be a possibility of forging postage stamps?—I should imagine so.

1866. (To *Mr. Hensman.*) Are you of the same opinion?—In my view, parties would not be able to do it in any case by this process.

1867. If practically you find that the anastatic process does enable you to take off fine copper-plate printing, do you think there is any security in the way in which the postage stamps are now printed?—I do not think that that makes any difference.

1868. *Chairman.*] (To *Mr. Coe.*) Supposing this principle of printing were to be adopted, do you think, as a practical man, that the printing and perforation ought to be done by the same

same parties?—It would be rather more secure if it were done by different parties. J. Coe, Esq.

1869. Would not the necessity of having them correctly done for the purpose of the perforation ensure greater attention, on the part of the printer, if he had both the printing and the perforation under his charge?—He would of course take a deeper interest in the correctness of the printing to ensure a complete perforation. 27 April  
1852.

1870. Mr. Grogan.] You are of opinion that the duplicate obtained by the electrotype is so perfectly identical with the original plate, that no engraver could tell the distinction between the two when placed before him?—Yes, I believe so.

1871. But you conceive that a duplicate plate, obtained by Mr. Perkins's process, is not so identical but that an engraver might distinguish between the one and the other; that is what Mr. Smee says in his work?—If it is necessary to touch the plate, you destroy the identity at once; Mr. Smee implies in his book that the plates are touched after being transferred by the machine, but I imagine that if the plates are not touched, there must be a perfect identity between the one and the other.

*Henry Hensman, Esq.*, called in; and Examined.

1872. Chairman.] I BELIEVE you hold the appointment of Engineer to the Bank of England?—Yes. H. Hensman,  
Esq.

1873. How long have you been in the employment of the Bank of England?—About five months.

1874. Have you seen the machine which was made by Mr. Archer for piercing the postage stamps?—Yes.

1875. What is your opinion of the efficiency of that machine?—I do not think it is quite perfect; I think with a few alterations it might be made to act in a perfect manner.

1876. You think the machine is suitable to the object, but it wants perfecting?—Yes.

1877. I presume all machines, when first made, want perfecting?—Yes.

1878. According to your experience and knowledge, do you consider that it must have been a troublesome and expensive thing for him to make?—I think Mr. Archer has gone to a great deal of trouble and expense on it, but there have been parties who have invented piercing machines for perforating paper, who, if they had turned their attention to it, might have carried it out with less expense.

1879. Had you ever, before Mr. Archer's invention, heard

*H. Hensman*, of any proposal for piercing postage stamps in this manner?—  
 Esq. No.

27 April  
 1852.

1880. What is your opinion of it?—That it is an excellent thing, and a convenience to the public.

1881. You consider it a security against forgery?—Yes; it is some additional security.

1882. Do you subscribe to Mr. Coe's opinion with respect to the advantages and disadvantages of copper-plate printing, as compared with surface-plate printing?—I do not know that I do altogether; for the general class of work, I should say that one is as good as the other, but for work such as our bank-notes, the copper-plate affords some advantages over the surface-plate printing; for landscapes or figures, I think the two are equal; but for a flowing style of writing surface printing cannot approach copper-plate.

1883. For printing these heads which should you say was preferable?—The one is as good as the other.

1884. There is not a greater security against forgery in steel-plate printing than in surface printing?—No; of the two, I should say that for these heads the plate printing would be more easily forged than the surface printing; perhaps I should qualify that by saying that there is a greater facility for forgery, from the very cloudy appearance; it is not distinct enough.

1885. Your belief is, that to obtain security against forgery, the postage stamps should be on the principle of bank-notes, and that there should not be too much work in them?—Yes.

1886. What is your opinion of the danger of their being forged?—My opinion is that it is not worth while to forge them; a man could not get rid of the stamps if he forged them; they do not forge shilling stamps which are made by surface printing. These are specimens of surface printing.—(*Producing the same.*)

1887. Mr. *Mowatt.*] It is only lately that those 1 s. stamps have come into use?—No; they are also bringing out 10 d. postage stamps for foreign postage.

1888. Mr. *Rich.*] Those are all done by surface printing?—Yes.

1889. *Chairman.*] Your opinion is that surface printing is quite sufficient for the purpose of making these postage stamps?—I think it is as good as the present system of printing the other stamps; I do not think there is any difference between the two as to security.

1890. What is the difference of cost?—The surface printing would cost less by a penny a thousand, or a farthing a sheet.

1891. Mr.

1891. Mr. Rich.] Are those 1 s. stamps printed by Messrs. Bacon & Petch?—They are printed at the Stamp Office, both the shilling and the tenpenny stamps are printed there.

1892. Not by Messrs. Bacon & Petch?—No.

1893. *Chairman.*] Questions have been asked of Mr. Coe, as to the irregularities that are to be observed in the lines or plates; from what, in your opinion, does that irregularity arise?—The irregularity arises very much more from the shrinkage of the paper, than from the difference in the plates.

1894. Are you of opinion that these heads may be printed dry?—Yes.

1895. And that they may be made perfect?—Yes, quite as perfect; and made as fine as is shown in the sample produced by Mr. Coe; that is as fine as you could wish for any postage labels.

1896. You are of opinion, with Mr. Coe, that the elaborate work there is more easy to imitate?—Yes, it is more easy to imitate the general effect, though it would be more difficult to imitate the effect as shown by a microscope glass.

1897. Have you seen the impression taken off when the plate is considerably worn?—Yes.

1898. In that case the elaborate work disappears from the impression?—It disappears from the impression, but not from the plate; the plates appear to have much finer work in them than the representation would give you.

1899. But does not it appear on the heads, which are the important part?—No.

1900. Then there can be no security against forgery?—A very little.

1901. Mr. J. Greene.] Is it in consequence of the nature of the ink that the elaborate work does not show?—No, the ink does not make any difference; the work is too fine for rapid printing.

1902. Mr. C. Lewis.] Did I understand you to state, that the tenpenny and shilling stamps are specimens of surface printing?—Yes.

1903. Will you have the kindness to look at them, and see whether there is any printing upon them?—Yes, there are the words, “Postage—one shilling.”

1904. Is the stamp anything more than an embossed stamp?—It is surface printing besides that.

1905. Is there any ink in it?—Yes, colour is used; the technical name among printers is colour, not ink; but it is red instead of black.

*H. Hensman,*  
Esq.

1906. You still adhere to the opinion that that is printing?  
—Yes; it is printing and embossing combined.

27 April  
1852.

1907. *Mr. Grogan.*] You stated that part of the irregularity in those sheets arose from the shrinkage of the paper that shrinkage is inevitable in the mode in which the printing is carried on?—Yes.

1908. If it were printed on dry paper that shrinkage would not arise?—No.

1909. Do you see any difficulty in printing on dry paper?  
—No; I think it might be done; the printing and perforating might be done together.

1910. And in that case the irregularity in the lines would be avoided?—Yes.

1911. *Mr. Rich.*] Are you aware of any other cause which might produce irregularity?—The gumming ought to be laid on before the paper leaves the paper machine.

1912. *Chairman.*] That is not done now?—No.

1913. *Mr. Rich.*] If the gum is put on subsequently it is likely to produce irregularity?—Yes.

1914. *Mr. G. C. Lewis.*] Are not the tenpenny and the shilling stamps produced in the same manner as a coin struck from a die?—Yes.

1915. Is not the process wholly different in its nature from typographical printing?—No, it is exactly the same.

1916. *Mr. J. Greene.*] Those stamps are printed in the ordinary process?—Yes; the surface is inked by a roller just as in an ordinary printing press, the only difference being that that is inked by hand and worked by hand.

1917. *Mr. G. C. Lewis.*] In the case of these two stamps, is not the process different from printing?—There is embossing in addition to printing.

1918. Is not that process essentially dearer than copper-plate printing?—No, I think not; they are done singly; but I think there is no reason why several should not be done together; the embossing and printing might be done on a surface 50 times as large as these shilling stamps.

1919. *Chairman.*] Are you aware of the manner in which the postage stamps are executed in the different countries in Europe where they have adopted them?—Only by report. These heads I procured from Belgium and America; these were given me by Mr. Coe.

1920. Those are all plate printed?—Yes.

1921. The French are surface printed?—Yes.

1922. *Mr. J. Greene.*] If surface printing were adopted, a  
less

less number of machines for printing would be requisite?—  
Yes.

*H. Hensman,*  
Esq.

1923. At present these postage labels are struck off in a printing establishment, under the control of a public officer?—  
Yes.

27 April  
1852.

1924. If surface printing machines were employed, the printing of these postage labels could be done at the Stamp Office?—Yes.

1925. From your knowledge of the arrangements of the Bank, would that, in your opinion, be desirable?—Yes.

1926. It might be done at the Post Office, or at Somerset House; but it should be done in a public office?—Yes. Messrs. Bacon & Petch, who print the postage labels, also print, by surface printing, Excise papers, for the authorities.

1927. How long has the Post Office been in the habit of printing these shilling stamps?—I think for a year and a half; this label, which is compound surface printing, they also do at Somerset House.

1928. *Chairman.*] Do you think the printing of all these postage stamps might be done at Somerset House?—Yes, it might; but if they can get it securely done out of doors, I do not think there is any objection to its being done out of doors.

1929. *Mr. J. Greene.*] If the cylinders by which the Queen's head is transferred to the plate are not at present under the public control, do you think it is desirable that they should be under their control?—I suppose that they are under their control; I imagine that there is a Queen's officer present to superintend the operation.

1930. If you found that the Queen's officer had no control over the cylinder by which the Queen's head was transferred to the plate, would you not think it desirable that a controlling power should be placed over the party having the cylinder in his charge?—Yes, it would be as well.

1931. *Chairman.*] I went to see the manufactory at Messrs. Bacon & Petch's, and I found the machine by which they transfer the Queen's heads to the plate in the lower room, whilst the Government officer was in the upper room?—So I saw.

1932. Would it not be possible for any officer having charge of that machine, if he were dishonest enough to do so, to take an impression off without any parties being aware that he had done so?—Yes, he would have the power of doing so.

1933. *Mr. J. Greene.*] He might take an impression in a moment?—

H. Hensman,  
Esq.

27 April  
1852.

a moment?—Not in a moment; it would occupy him half a day to get a complete plate.

1934. But to get a Queen's head or two to use as postage stamps would occupy only a few minutes?—Yes.

1935. *Chairman.*] If he took one impression he might take others from that?—Every impression of that kind that is taken deteriorates from that given by the original cylinder.

1936. But not to such an extent as to be discovered in stamping several of the heads?—No.

1937. *Mr. Grogan.*] In these tenpenny and shilling stamps there is printing and embossing, but the fact of there being embossing does not make any difference in regard to their being printed?—No.

1938. The addition of the embossing would still leave it a printed head?—The effect of the printing is given out in the colour, and then, if embossed, it is surface printing combined with embossing.

1939. But as you use the phrase "printing" in the trade, it is printing?—Yes.

1940. *Mr. C. Lewis.*] Is not the process precisely similar to that of coining from a die?—No; there is no colour in a die.

1941. Is it not precisely similar, with the single difference that there is colour here to the impression from a die?—All printing is more or less an impression from a die; this is a much heavier impression than ordinarily.

1942. Do you mean to say that ordinary typographical printing creates any difference of surface?—Not to any extent.

1943. That is a defect in printing which is removed by subsequent pressure?—Yes, to a certain extent.

1944. Printing is a contrivance by which characters are impressed on paper by difference of colour without any difference in the surface; is not that the correct description?—Certainly.

1945. But in this case a difference of surface is essential to the process?—No; it is an addition, but it is not an essential one; if you were to make a light impression you would have very little, if any, difference of surface; it is not so much the difference of surface as the coloured impression which distinguishes it; by giving it a harder impression, you emboss it in addition to printing it.

1946. *Mr. Grogan.*] It is an addition designedly made?—Yes.

1947. *Mr. G. C. Lewis.*] If there were no difference of surface the

the effect would be wholly different?—A small machine, costing perhaps 30s., such as you see used for stamping books, gives a very slight pressure, and raises the surface as much as this; and if I had the die I could do it at a common printing press.

*H. Hensman,*  
Esq.  
27 April  
1852.

1948. *Mr. Spooner.*] You have stated that the difference of expense between copper-plate printing and surface printing is about a penny a thousand?—Yes.

1949. What is the difference between the expense of this embossed printing and copper-plate printing?—It is only by printing them in large numbers of 200 or 300 at a time that you could get cheapness; at present they do not print several of these tenpenny and eightpenny stamps together; it is all done singly.

1950. What would be the comparative expense if it was done in sheets?—The expense would be a tenth of what they now cost.

1951. You have told us that there is a difference of a penny a thousand between copper-plate and surface printing; I wish to know what would be the expense of doing this with embossed surface printing as compared with copper-plate printing?—I do not know the expense at which they produce the embossed impression.

1952. *Mr. J. Greene.*] The embossed printing is more expensive?—Yes, as it is now done singly.

1953. Do you think there is any advantage in that mode?—There is a finish about the printing; there are two things instead of one.

1954. Is there any greater security to the public against forgery?—Yes, I think there is.

1955. If it were not more expensive you would recommend it?—Yes.

1956. *Mr. Mowatt.*] Inasmuch as if it were done in sheets you say the expense would not be one-tenth of what it is now; do you think the additional security that is obtained is sufficient to counterbalance that additional outlay?—There is no additional security by printing them singly instead of printing 100 together.

1957. Why then do they print them singly?—A small machine will do all they had to do.

1958. That is because there is no great demand for these stamps?—Yes.

1959. *Mr. Rich.*] When you say that the expense of printing these stamps in the sheet would be a 10th part of the expense of printing them singly, do you take into account the cost of the machinery?—

H. Hensman,  
Esq.  
27 April  
1852.

machinery?—The machinery for making 100 stamps would not cost 100 times as much as the machinery for making one stamp.

1960. What proportion would it be?—Perhaps it would cost 20 or 30 times as much as a machine for making single stamps.

1961. That would increase the comparative price?—Yes; but if you can print 100 instead of 1, you reduce the expense from 10 to 1.

1962. Do you mean that that would be the gross profit, from which you must deduct the expense of the additional machinery?—I think I leave a margin large enough when I say the expense would be only one-tenth.

1963. Mr. Mowatt.] Would the machines wear out so rapidly that it would form an appreciable item; is a machine for striking off 100 of those stamps more expensive than a machine for striking off only one?—No; and the more you do at once, the smaller the proportion of the expense.

1964. Mr. J. Greene.] Would there be any difficulty in striking off 100 at a time?—Not if the pressure were sufficiently heavy.

1965. Chairman.] You are aware that these embossed heads are all pressed upon separate envelopes?—Yes.

1966. Is not that a reason why it is necessary to have embossed heads struck separately?—Yes, those on envelopes, but not those done in sheets; all envelopes must be done singly, and that makes them very expensive compared with the others.

*Thomas Keogh, Esq., called in; and Examined.*

T. Keogh,  
Esq.

1967. Mr. G. C. Lewis.] WILL you have the kindness to refer to the Return made to the House of Commons on the 14th of July 1851, and signed by yourself?—I have a copy of it.

1968. Will you read the letter signed by yourself, and addressed to Messrs. Perkins, Bacon & Petch, dated the 27th of May 1851?—“Gentlemen,—I have laid before the Board your letter of the 20th instant. In reply, I am directed to inform you that the Board have accepted your offer to print the postage labels for the term of five years, at the rate of 5 *d.* per 1,000, it being understood that the period is to commence from the 5th of July next, and have given directions that a contract be prepared accordingly. I am, &c. (signed) *Thomas Keogh.*”

1969. It

1969. It appears from that letter that the contract to be entered into with Messrs. Perkins, Bacon & Petch in the year 1851 was to be for a term of five years?—Yes.

T. Keogh,  
Esq.

27 April  
1852.

1970. Will you turn to page 17, and read the note at the bottom of the agreement between the Commissioners of Stamps and Taxes and Messrs. Bacon & Petch?—"The agreement to take effect from 5 July 1851, will be the same as the foregoing one" (it not having been then prepared), "except in the alteration of terms from 6*d.* to 5*d.* per 1,000."

1971. Can it be inferred from that note that the new agreement would differ from the former agreement as to terms?—In the same return, in the preceding page, the letter from me to Messrs. Perkins, Bacon & Petch showed that the new agreement was to be for five years, and therefore no inference by anybody who had read that letter could be drawn but that the new contract was to be for the same period.

1972. Mr. *Grogan*.] You hold an office in the department of Stamps and Taxes?—Yes.

1973. What office?—Assistant secretary.

1974. The whole of these engagements and contracts passed officially through your hands?—They did.

1975. Mr. Lewis has called your attention to the letter dated 27 May 1851; that letter was in answer to one from Messrs. Bacon & Petch?—It was.

1976. On the 16th of May 1851, you addressed a letter to them?—Yes.

1977. What induced you to write that letter to Messrs. Bacon & Petch?—The inducement to me was the order of the Board to write it. Perhaps it may be necessary to explain the way in which papers are brought before a public Board. I act as secretary in regard to all business transacted at Somerset House; viz. the stamps, the land and assessed taxes, the property tax, this affair of the Post Office stamps, and a variety of smaller matters. Every letter which is addressed to the Board is brought by me before the Board, and an order is made upon the particular papers so brought before them, which it is my duty afterwards to carry into effect by corresponding with the party, or doing some other act.

1978. When a letter is submitted by you to the Board, the Board take it into consideration, and make an order accordingly?—Yes.

1979. And you carry out that order?—Yes.

1980. This letter of the 16th of May was written in pursuance of an order of the Board?—Yes.

1981. How often does the Board meet?—Every day.

1982. On

T. Keogh,  
Esq.

27 April  
1852.

1982. On that occasion had the offer from Messrs. Henry Archer and Robert Branston come under the consideration of the Board?—I presume it had from the date of the correspondence; I mean the letter of Mr. Archer only; the letter of Mr. Archer, in which he offered to print these postage stamps by surface printing, as we understood it, or if we should not approve of surface printing, by the mode in which it was at present done, was addressed to the Board on the 30th of April 1851.

1983. Then was it in reference to the letter so addressed to you on the 30th April 1851 by Mr. Archer that the letter of the 16th of May was written by you to Messrs. Bacon & Petch?—No; the letter that I wrote on the 27th May 1851 was in answer to a letter which Messrs. Bacon & Petch had addressed to the Board on the 20th of May.

1984. That is no answer to my question; there is a letter of yours of the 16th of May to Messrs. Bacon & Petch; was that letter written in reference to the preceding letter, in the same paper of the 30th of April 1851, from Mr. Archer, or any other letter of his?—It had been for months before under the Board's consideration whether some effort should not be made to negotiate with Messrs. Bacon & Petch for an alteration of the terms which had been come to four or five years before, in consequence of the great increase of the number of postage stamps printed; it so happened that this proposal of Mr. Archer did precipitate, if I may say so, the intention to ask Messrs. Bacon & Petch for a reduction of their terms; but so strong was the impression of our deputy chairman the other day, when this subject was mentioned at the Board,—and he attends very closely to what passes at the Board,—that Mr. Archer's offer had no connexion whatever with the arrangement which was made at this period with Messrs. Bacon & Petch, that he could not be persuaded till I produced the papers to him that it occurred at the same date, or had any reference to Mr. Archer's proposal. We distinctly say in our letter, "an offer has been made," but we do not say from whom; but that observation in that letter of 16th May 1851 had reference to Mr. Archer's letter of the 30th of April.

1985. Who were present at the meeting of the Board at which this order or minute was made, which induced you to write this letter of the 16th of May 1851?—I cannot pretend to say; I should say there were three or four Commissioners present.

1986. Mr. Spooner.] The minutes of the Board would show that?—

that?—Yes, they would; if it were material, I could show that; there are always two or three or four Commissioners present.

1987. Mr. *Grogan*.] Were any offers made to the Board for printing these postage stamps at 5*d.* per 1,000, except Mr. Archer's?—We have had frequent offers made to the Board; in fact we are inundated with applications from speculators and projectors of all kinds; there had been one or two applications from individuals to print and perforate the postage stamps; there is another Mr. Archer, who has offered to perforate these postage stamps by a much simpler process than the present process.

1988. Has any offer been made to the Board to print those postage stamps at 5*d.* per 1,000?—Not in distinct terms.

1989. This letter of the 16th of May 1851 was written to Messrs. Bacon & Petch with reference to the proposal made to you by Mr. Archer?—It had that degree of connexion with Mr. Archer's proposal; but we had had in contemplation for a considerable time before to request Messrs. Bacon & Petch to make a reduction in their terms; I admit that Mr. Archer's letter had that degree of connexion with the communication to Messrs. Bacon & Petch; in my communication to them, perhaps it was unnecessary to mention that an offer has been made to print these at 5*d.* per 1,000, but the offer referred to Mr. Archer's proposal.

1990. Did the offer therein referred to apply to Mr. Archer's offer, and to nothing else?—I have stated that it did refer to Mr. Archer's proposal.

1991. Mr. *Rich*.] But you have stated that it did not originate that letter?—Certainly not.

1992. Mr. *Grogan*.] Will you be kind enough to look at the letter of Messrs. Archer & Branston of the 16th of May, which appears in the same page; was your letter to Messrs. Bacon & Petch written previously, or subsequently to the receipt of that letter of Messrs. Archer & Branston?—It must have been written previously; the letter written on the 16th of May to Messrs. Bacon & Petch must have been sent before the letter from Messrs. Archer & Branston, dated on the same day, arrived at Somerset House.

1993. Is it not possible that that letter of Messrs. Archer & Branston was submitted to the Board on the 16th of May 1851; might it not have been delivered early in the morning, and have come before the Board on the same day?—Certainly not. All the papers we receive undergo the process of registration, without which we could not get through the business; and in the ordinary

*T. Keogh,*  
Esq.

27 April  
1852.

*T. Keogh,*  
Esq.

27 April  
1852.

ordinary course of business a letter would not be submitted to the Board till two days after it came to Somerset House.

1994. That is the routine of the office?—Yes, unless it was something very urgent.

1995. *Mr. G. C. Lewis.*] And the minute of the Board would, in all probability, be come to a day or two before the date of the letter?—Yes; but I observe that the letter of Messrs. Archer & Branston, dated the 16th May, was enclosed in one of Mr. Archer's, dated the 17th.

1996. *Chairman.*] Then there would be four days intervening?—Yes; the letter of the 16th of May from Messrs. Archer & Branston would be laid before the Board two or three days after that date, but I could ascertain the exact dates. If I had known that such inquiries were about to be made I would have brought the papers; but I am sure that, according to the course of business, the order of the Board to write that letter was made a day or two before it was written.

1997. *Mr. Rich.*] You said that there was another Mr. Archer, who made a proposal to print and perforate postage stamps; was that subsequently?—Yes, it was; the original proposal to perforate the postage stamps was in 1847.

1998. Have you any knowledge of any proposal prior to Mr. Archer's?—No.

1999. How long have you been at the Board?—I was at the Board long prior to the introduction of the postage stamps.

2000. *Mr. Grogan.*] I wish to call your attention to the letter of the 27th of May 1851, at page 14; it is written by you to Mr. Henry Archer; to what is it in answer?—It is in answer to two letters, one signed by Mr. Archer himself, in which he proposes two things; to print according to surface printing at a certain rate, and to print according to the present mode at another rate; and then the second letter is that which Messrs. Archer & Branston signed, proposing to print, as we understood it, at the first rate according to surface printing.

2001. You state in this letter that communications have been entered into with Messrs. Bacon & Petch relative to the reduction of terms, and that they have consented to a reduction of terms; was the reduction of the terms which they consented to equivalent to  $4\frac{1}{2}d.$  per 1,000, which was proposed by Mr. Archer?—The proposal of  $4\frac{1}{2}d.$  per 1,000 related solely to surface printing, and, according to the papers, Mr. Branston never proposed to us to undertake the printing according to the mode in which it is now done; that was solely a proposal of Mr. Archer himself.

2002. Is it customary in all cases of contract where a  
second

second proposal is made, to immediately communicate to the party executing the work the sum at which another party proposes to do that work?—Certainly not; in ordinary cases of tender it would be wholly improper to do so; but this is not the case of a tender, but the case of a person who, having ascertained the terms on which we dealt with a tradesman, comes and underbids that tradesman, offering to do the work on lower terms; in such a case there is no necessity for any concealment.

2003. *Chairman.*] Supposing a man comes to the Board and offers to do work at lower terms than it has been done by another, is it the usual practice of the Board to communicate that to the first parties, and allow them to make what alterations in price they think fit?—When you ask whether it is the practice of the Board, I must acknowledge that I do not know another instance of anything of this kind having occurred; but it certainly ought not to be the practice, if anything is the subject of a tender to the lowest bidder; and we never in fact communicate to a person who is tendering what another party has tendered, for coals, and other matters of that kind, upon which we receive tenders; but if a man, who comes with a perfect knowledge of the terms upon which we are dealing with another person, says, “I am ready to do it for less than that person does it for,” there is no occasion for concealing from the person with whom we are dealing a matter of that kind. I put the ordinary case of a butcher, or any case of that kind; a person comes and says, “I understand that you are supplied with meat at 8 *d.* a pound; I can supply it to you at 7 *d.* a pound.” Is it improper for you to say to the butcher with whom you have been dealing for many years, “I have had an offer from A. B. to supply me with meat at 7 *d.* a pound; I have the highest satisfaction in dealing with you; you have supplied me with the best quality of meat during the time I have been dealing with you, but having had this offer, I wish to know whether you will supply me on the same terms as the other party offers to supply me at?”

2004. *Mr. Grogan.*] In point of fact, this is an exceptional case to the practice of the office?—Yes.

2005. You state that because the party making the offer had made himself acquainted with the duty to be performed, and the price at which it was done, it was an exception to the ordinary case?—I must say that the idea of putting up the business of stamping these postage labels to the lowest bidder appears to me perfectly preposterous; it seems to me that stamping these labels is a very confidential and important affair,

*T. Keogh,*  
*Esq.*  
 27 April  
 1852.

and which could not be entrusted to any person whose character and station and position we were not perfectly assured of. We had been dealing for a great number of years with Messrs. Bacon & Petch for other matters than postage stamps; they had engraved our card stamps, and other things for us; and we were perfectly satisfied with them after they had been employed for eight years in stamping these postage stamps; the work had been exceedingly well done, and with the greatest regularity, and no complaints of any kind had arisen; under those circumstances we thought that it would be very inexpedient, even if we could not effect any reduction of the expense, to change the contractors; and I doubt very much whether if Messrs. Bacon & Petch had said "We will not reduce our terms," we should have deemed it expedient, for the sake of economy, to remove it out of their hands; but when we found that they were willing to reduce the terms to what the other party offered to us, it appeared to us that the consideration of the question fell to the ground.

2006. You stated that the reasons why you had broken the rule of the office, and communicated to one party an offer made by another party, was because you were not acquainted with the social position and character of the person who made that offer?—I have not said that we broke the rule of the office; I say that there is no rule which bears upon the circumstances of the case; the case of a tender to the lowest bidder is a case which has no bearing at all upon this particular case. Mr. Archer chooses, as any person might do, to come to us and say, "You pay a certain sum to a particular artificer for work he performs for you; I am ready to undertake to do that work for a lower sum;" that is a case having no connexion with tenders.

2007. You consider that in the department under your control, if the work of the public can be done equally well and with equal security by the existing contractor, he should have the preference, and a contract at a cheaper rate should be entered into with him?—I think if he were supplying to us coal or wood, or paper, or anything which could be as well supplied by one person as another, that might not be so; but the business of stamping postage labels is of a very peculiar description; supposing a man came to us and said, "The present mode of stamping with engraved dies, and the whole mode of proceeding, is objectionable, and I could substitute a better mode, and you must employ me, for I can do it cheaper," that must be a matter for the Executive Government, who are entrusted by law with the arrangements as regards the stamps,  
 and

and all the other matters respecting them. I certainly would not allow such a thing as stamping the postage labels to be the subject of tender to the lowest bidder.

2008. You are acquainted with Mr. Branston, the engraver ?  
—I have heard of him.

2009. Has he done any work for the office ?—No, not that I know of.

2010. Has he done any work for other Government offices ?  
—I do not know that he has ; I am sure he has not done any thing for us.

2011. You know his character ?—Yes.

2012. Have you any reason to doubt his competence to perform the work of printing ?—Not to perform the work of printing by surface printing, which would not answer our purpose ; I do not doubt his competence to do what he offered to do.

2013. His offer was to furnish printed heads for the use of the Government equally efficient and good, and safe from forgery, as those now in use, at a considerably cheaper rate ; Mr. Branston made a tender to you, in conjunction with Mr. Archer, to prepare and print postage label stamps by his mode equally secure from forgery as those now in use, and at a much reduced price ?—Yes, as he described it ; but of that we were to be the judges.

2014. For that he offered you ample security ?—Yes ; but the mode in which he offered to print them we would not have accepted on any terms, because all the arrangements on the subject of postage stamps were deliberately canvassed by the Treasury at the time they determined to adopt copper-plate printing ; the Treasury had given us express directions upon the subject, being better advised than we were upon the superiority of this kind of printing to surface printing ; therefore we were not at liberty to entertain a proposal for a mode of printing different from that which the Treasury had sanctioned and directed ; we could not receive any proposal for surface printing.

2015. Are we to understand that there was a Treasury Minute that these postage stamps were to be prepared on copper-plate ?—It was by the Treasury and not by us that all these arrangements with reference to postage stamps were made.

2016. And you found the Board of Stamps controlled accordingly ?—Yes.

2017. It was not competent to you, in your view of your duty, to entertain the proposal of surface printing ?—Certainly

T. Keogh,  
Esq.  
—  
27 April  
1852.

not ; we understood that the plan of surface printing had been advisedly rejected at the time this arrangement was adopted ; the whole matter had been inquired into, and authorities of considerable weight had been consulted upon it ; there were certain reports of Sir William Congreve and others upon the subject, and after the fullest investigation surface printing was deemed inexpedient for the object in view, and copper-plate printing was adopted.

2018. Was there a Treasury Minute to that effect ?—I do not believe there is any minute to that effect, because all these arrangements were made by Mr. Wickham, our then chairman, who was examined here this morning, in consultation with Sir Francis Baring, who was then Chancellor of the Exchequer, and the other authorities of the Treasury. They had communications with Mr. Hill, who was most interested in the success of the arrangements then about to be adopted ; he was very anxiously inquiring as to every security that was likely to be available to prevent forging and other irregularities ; and between Sir Francis Baring and Mr. Hill, and the then Lords of the Treasury and Mr. Wickham, our chairman, the plan of adopting surface printing was advisedly rejected, and copper-plate printing was preferred.

2019. Mr. *Mowatt*.] That occurred years ago ?—Yes ; in the year 1840, when the postage stamps were first introduced.

2020. Mr. *Grogan*.] Your Board declined to entertain the proposition of surface printing, because it was restricted by the Treasury order from entertaining such a proposition ?—I consider it tantamount to a restriction when the Treasury had desired us to adopt the plan of copper-plate printing, and no other.

2021. Mr. *Mowatt*.] Did you consider the understanding to apply to all time ?—If we had seen any satisfactory reason for thinking that an alteration of the mode of printing these postage stamps was desirable, it would have been our duty to submit it to the Treasury.

2022. Mr. *Rich*.] But in this case you did not think it necessary ?—No.

2023. Mr. *Grogan*.] In this case you did not see any reason for doing so, and you did not submit the plan to the Treasury ?—No.

2024. Considering that Mr. Archer and Mr. Branston submitted a plan to you for the engraving and printing and sufficiently perforating of postage labels, part of which plan the Post Office had recommended as a convenience to the public, and affording security to the revenue, and also con-

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sidering that the proposal of those two gentlemen to do the whole was expressly at a reduction from 6*d.* to 4½*d.* per 1,000, did it occur to you that that would be such an alteration of system that it would be desirable for you to submit it to the Treasury?—Certainly not; the perforation is a very trifling incident in the making of these postage stamps. It seems as if Mr. Archer thought that the engraving of the stamps was a minor consideration, and the perforating them the important one; we just reversed the order of things; we did not consider the perforating machine as of any consequence, though it may conduce, in some degree, to the convenience of the public, and to a certain extent afford an additional security of the adhesiveness of the stamps; those are all the advantages that belong to it. But as to its being of any use to the revenue, I do not see that it would be, for nobody would buy more stamps than he wanted, whether they were perforated or not.

205. Mr. *Rich.*] It was put to you, that the offer would lead to a reduction of 1*d.* a thousand, but in fact it led to that?—It preceded it in order of time, but I am certain that that reduction would have been made if we had never heard of Mr. Archer.

206. You distinctly affirm that his offer did not cause it?—Certainly it did not.

207. Mr. *Spooner.*] Had you made any previous communication to Messrs. Bacon & Petch, complaining of their charge?—We had done so upon previous occasions; in 1840 the first contract was entered into with Messrs. Bacon & Petch, and I think in 1843 we called upon them, in consequence of the increased number that were printed, for a reduction of their terms; they assented to a reduction; and when we found in 1851 that the number of postage stamps that were printed was nearly double what it had been, we then, as I stated before, came to the determination to make a proposal to them for a further reduction of their terms, and the circumstance of Mr. Archer coming in with his proposal at the time was the merest accident in the world, and had no more effect upon the Board's determination in that respect than if it had never occurred.

208. If I rightly understand what you mean to say, it is, that you had come to the determination, but you had not communicated that determination till you received Mr. Archer's offer?—That is the state of the case.

209. Mr. *Grogan.*] Will you turn to page 8 of the Return; there is a remark there upon Mr. Archer's invention; you

T. Keogh,  
Esq.

27 April  
1852.

T. Keogh,  
Esq.

27 April  
1852.

speak of the value of the invention?—I drew up that Report myself, and therefore I am quite familiar with it.

2030. The Report which the Commissioners of Inland Revenue have signed with reference to Mr. Archer's invention, states, "The value of it may be considered in two lights; first, as it relates to the advantage of the revenue; and secondly, as it tends to promote the convenience of the public;" and, without going through the details of the reasons, you say, "The foregoing are the grounds on which the plan has been adopted, and the advantages which are expected to result from it." Consequently Mr. Archer's invention was considered by you, who drew this Report, and by the Commissioners who signed it, in both those points of view, a desirable thing?—To that extent it was.

2031. The use of this machine, and the security to the revenue thence derived, and the convenience to the public thence derived, were part of the proposal made to you, coupled with the reduction of the terms, and yet you did not think it of sufficient importance to submit it to the Treasury?—Certainly not; we considered the perforating the stamps a mere trifling thing, and Messrs. Bacon & Petch were willing to introduce that, and apply it to the label stamps at some very little additional expense; therefore the question was of very little importance.

2032. You do not call a reduction from 6 *d.* to 5 *d.* a matter of very little importance?—Mr. Archer's proposal was with reference to copper-plate printing; then, when he made that proposal, the question was whether, supposing we were able to effect a reduction of the terms to what he offered to do it for, we should leave the persons who had fitted up an establishment eight years ago for the purpose of making these stamps, who had been our contractors for that length of time without the slightest complaint, and who were persons of very high and well-known character. The only question was, whether we might not be reproached by its being said that an offer had been made to us which, if we had accepted, would have saved the public so much money; but when we found that Messrs. Bacon & Petch were ready to print for the same amount as Mr. Archer stated in his proposal, there was no question before us. It would have been a question whether we should leave them if they did not consent to reduce the expense, but when they consented to do it, there was no question for us.

2033. Mr. Mowatt.] You are leaving the perforation out of the question?—Because Messrs. Bacon & Petch had offered to do that at a very slight expense.

2034. Mr.

2034. Mr. *Grogan*.] You are aware that Messrs. Bacon & Petch offered to charge only the expense of the men in using the machine, but that did not include Mr. Archer's patent right?—Such a thing was never adverted to. Mr. Archer had proposed to furnish us with a machine, for which he was to be paid when it was completed; when it was completed it was sent to Messrs. Bacon & Petch to be used; we had nothing more to do with Mr. Archer's rights. You say "patent right;" I am not aware that Mr. Archer has a patent.

2035. We will assume it?—I believe it is only assumption.

2036. Mr. *Mowatt*.] Is it a condition of the new contract that you entered into with these gentlemen that they should perforate the stamps at an additional expense, which should be quite trifling?—No, I do not think it is; the contract entered into with them was a copy of the preceding contract.

2037. Will you explain how it was that if you considered it of any importance, you did not require them to include that particular condition in the contract?—We had ascertained from them that they were quite ready to do this perforating work, and we considered them persons of such character and respectability that we had not the least doubt it would be done, but we did not consider it of such importance as to introduce it into the contract; in short, I do not know that the matter was ever considered at all.

2038. Mr. *Rich*.] You feel a perfect assurance now, that were the machine acquired by the Government, there is that understanding between you and the contractors that they would work the perforating machine at the low price you have named?—Most decidedly.

2039. Mr. *Mowatt*.] If the parties had the means of perforating the stamps, should you have the power of calling upon them to do it?—If they had the machine, of course we could call upon them to do it.

2040. Mr. *Rich*.] Could you have made a contract with them that they should perforate stamps by a machine which they had no power to acquire?—Certainly not. The only thing which occurred was this, when Mr. Archer's machine was first offered to us, and it underwent a trial in Messrs. Bacon & Petch's establishment, we ascertained from them that they would perforate, if this machine were brought to a complete state; they were ready to use it upon the label stamps with an increase of expense so insignificant that it was not worth notice.

2041. Mr. *Mowatt*.] They did not take into consideration the price they were to pay for the use of the machine?—The

T. Keogh,  
Esq.

27 April  
1852.

understanding was, that when Mr. Archer completed the machine he should be paid by the Government.

2042. Mr. Grogan.] I wish to call your attention to a letter which appears in Mr. Bacon's evidence the last examination; "Stamps and Taxes, London, 17 January 1848. Gentlemen,—The Board having been authorised by the Treasury to bring into operation the machine invented by Mr. Henry Archer for separating the adhesive postage stamps, on which you have been consulted, and understanding that you are willing to work the machine, and charge the office only with the expense of such working, which they are informed will not exceed 50*l.* per annum, I am directed to authorise you to receive from Mr. Archer the machines when they are completed, and to bring them into use without delay, under the general direction of Mr. Edwin Hill. I am, &c. (signed) *Thomas Keogh*, Assistant Secretary. Messrs. Bacon & Petch." In that letter how came it that no arrangement was made for the working of the machine?—Such a thing was never thought of; all we thought it necessary to do was to renew the contract which Messrs. Bacon & Petch had been previously under, at the rate of 5*d.* instead of 6*d.* At that time Mr. Archer's machine was not known to be capable of effecting the object which it was designed for.

2043. Mr. Rich.] The machine was *in posse*, not *in esse*?—Exactly.

2044. Mr. Grogan.] I understood you to say that your Board were controlled by the direction of the Treasury?—Yes.

2045. Here is a specific order from the Treasury, that when Mr. Archer's machine shall be perfect, it shall be brought into use; have you any doubt that Mr. Archer's machine has been tested and approved of, and is ready to do its work?—It has now, but it had not at the time of that letter.

2046. Prior to your recent contract it had?—Yes; but the reason we never used it was, because Mr. Archer did not acquiesce in the terms which the Treasury had settled for his remuneration.

2047. I wish to call your attention to this: your Board, I understand you to say, is controlled by the orders of the Treasury; with the knowledge you had that the machine had been perfected, and was recommended as being convenient to the public and the revenue, when you had authority from the Treasury, why was no such arrangement made under the contract?—We did not think it at all necessary; we had ascertained from the contractors that they would do this work  
without

without any additional expense, except the manual labour; in fact the circumstance was not adverted to; the mere fact which occurred was this, that we reduced the terms of our contractors from  $6\frac{1}{2}d.$  to  $5d.$ , renewing the previous contract without any alteration.

T. Keogh,  
Esq.

27 April  
1852.

2048. So you have stated; but I wish to know the reason why so important an order as this was not adverted to?—We did not think it important.

2049. Was it not your business to bring under the notice of the Board this letter of the 17th of January 1848, referring to the Treasury Order?—No; I did not think of the thing, nor did the Board think of it. The plan of perforating the stamps was one which we thought we could adopt the moment we acquired the power of using this machine, and when the Treasury was satisfied upon the point.

2050. Is there any passage in the new contract whereby you can compel Messrs. Bacon & Petch to work it?—Certainly not.

2051. And yet you received an order from the Treasury, directing the use of this machine?—Certainly.

2052. So that it was altogether overlooked?—No; we had previously ascertained from Messrs. Bacon & Petch that they could do it without any great expense, and having assured ourselves of that, we were quite ready to put the machine into their hands to use when we got it as our property.

2053. Are you sure that you could compel them to use it?—We did not advert to that, but we had no doubt that they would use it.

2054. *Chairman.*] You are aware that Mr. Archer had offered to engrave, print, gum, and perforate those postage stamps at  $4\frac{1}{2}d.$  per 1,000?—Yes.

2055. Was it not only right that if Messrs. Bacon & Petch consented to a reduction, the perforating should form part of the operation?—I put out of the question Mr. Brans-ton's offer to print it ( $4\frac{1}{2}d.$  per 1,000), because that was an offer we could not accept at all, it being for surface printing, and therefore we must limit it to Mr. Archer's offer to do that. Now I consider that the perforation was provided for to our satisfaction whenever we should acquire the ownership of the machine.

2056. At the time of this proposal by Mr. Archer, did you or any one else connected with the Board make any inquiries as to whether there had been any improvements in surface printing, and how far surface printing was or was not applicable

T. Keogh,  
Esq.

27 April  
1852.

cable to those postage stamps?—No, certainly not; we considered surface printing out of the question.

2057. Still there was a further question. If Mr. Archer offered to engrave, print, gum, and perforate the stamps at a certain price, and for that price to give in themachines free of charge, ought it not to have been part of the consideration of the agreement with Messrs. Bacon & Petch that the remuneration to Mr. Archer should be considered in their charge, or with their charge?—Certainly not.

2058. Then in that case you would have to pay both Messrs. Bacon & Petch, and Mr. Archer?—No; what we considered would be this: that Mr. Archer would be fairly entitled to such reward as we should consider his invention worth whenever it was brought to perfection.

2059. Then the Government would have to pay Mr. Archer as well as Messrs. Bacon & Petch?—Yes. But we did not consider the perforating an element of any very great importance; having secured this, that it was to be done without any additional expense, we gave the matter no further consideration. But I observe that Mr. Archer in offering to provide the machines only referred to future machines, as by the letter of the 16th May he expressly excepted the present machine.

2060. You recommended the perforation as an important thing?—To a certain extent.

2061. Was it not generally known that notice had been given by me of my intention to bring this matter before the House?—I do not recollect how that was.

2062. Mr. Rich.] Was not the letter written before the notice?—All I can say is, that the notice of the chairman's motion had no more to do with the adoption of that contract than it has to do with anything that is passing in China at this moment.

2063. The matter had been before the Board long before the notice had been given?—Yes.

2064. Mr. Grogan.] If the Board, in the exercise of their discretion, communicate the terms of any new tender made to them on any subject whatever, for instance, these postage stamps, how can they expect that a tender will be made by a third party to improve the system after what has occurred?—We never considered the making of postage stamps a matter of tender; such a thing never occurred to us as putting up the service of making postage stamps to the lowest bidder. It seems a preposterous thing that operations which are guarded  
by

by the highest penalties of forgery should be put out to anybody who would offer to undertake them.

2065. Mr. Rich.] Had any reductions taken place in the charges made by Messrs. Bacon & Petch previously?—Yes; the terms were, I think, 7 *d.* in 1840, when the system was first introduced; they were then reduced upon our motion, when the number of stamps materially increased, to 6  $\frac{1}{2}$  *d.*, and so they remained until this reduction to 5 *d.*

2066. You in fact exercise your discretion, and, as was the case in the previous agreements that had been made with Messrs. Bacon & Petch, where circumstances seem to demand more advantageous terms you call upon the contractors to reduce their terms?—Yes.

2067. And you do so independently of casual offers coming in from other persons?—We never dreamed of such a thing as casual offers to do stamp work; this is an unprecedented affair.

2068. Mr. Spooner.] Will you look at the letter, signed by you, to Messrs. Bacon & Petch, dated the 27th of May 1851; you there state two alterations in the terms of the contract, namely, that that which had been at the pleasure of the Board before was to continue for five years, and that the price was to be reduced from 6 *d.* to 5 *d.* a thousand. These are the two alterations of the terms in the new contract from those which were in the old contract?—Yes.

2069. Will you now turn to page 17; you will find there is a note. "The agreement" (that is the new agreement which was to be entered into) "will be the same as the foregoing one, except in the alteration from 6 *d.* to 5 *d.* a thousand." You there specify one of those alterations, but you do not specify the other; can you state the reason why you thought it necessary in that note to specify the alteration as to the money terms, and not to specify the alteration relative to the duration of the contract?—At the time this order was made by the House of Commons, we were directed to give a copy of the agreements entered into with Messrs. Bacon & Petch, and as the solicitor had not actually prepared the new agreement at the time this return was made to the House in giving a copy of the contract just expired, we stated that the new one would be similar.

2070. Will you undertake to say why you specified one of the terms but omitted the other?—I cannot undertake to say now. We could not give a copy of a contract which had not been entered into, and the effect of this note was to inform the House that the new one would be just like it. With reference

T. Keogh,  
Esq.

27 April  
1852.

T. Keogh,  
Esq.  
27 April  
1852.

to our attempting to conceal that the new contract was for five years, that it was impossible to do, because in the same return is this letter stating that the term was taken for five years.

2071. But you did think it necessary to specify one alteration, and what I wish to know is, why you did not think it necessary to specify the other?—I cannot undertake to answer. This return was prepared by other persons than myself. I have a great mass of papers to attend to every day, and why it was that this note was worded in this way, and did not specify the other alteration, I cannot tell; but I am sure there was no intention of concealing it. Nor was it in fact concealed, because any one reading that Act who had read the letter of the 27th May in the preceding page of the same Return, must have understood the Act to refer to the contract therein described.

2072. Did you not consider it of importance to have the contract guaranteed to the contractors for a period of five years?—We considered it an element in the contract with them, in justice to them; they had reduced the terms from 6*d.* to 5*d.*, and it was only reasonable and right for us to assure them of the duration of the contract for five years.

2073. The omission could not have proceeded from your having attached no importance to their having the contract for five years?—Certainly not; the preceding contract, which was terminable at a short notice, did endure for more than five years.

2074. But you had the power to terminate it at any period you chose?—Certainly.

2075. Sir *J. Tyrrell.*] I understand you distinctly to say, that Mr. Archer not being a professional man, and qualified from his previous habits or his previous calling to perform this service, you, as being responsible for a great public department, never thought yourself at liberty to transfer this postage affair to him?—We should probably have so thought if we had been under the necessity of considering his proposal at all.

2076. And in the next place, you thought that you were at liberty to take advantage of this discovery of perforating these stamps, because you considered that it was a question of remuneration to Mr. Archer, and not a question of transfer of the contract, or any arrangement of that kind. Did I rightly understand you?—I think it desirable that the two subjects, which seem to me to have no connexion with each other, should be kept distinct; the matter of the perforating machine is one subject, and the matter of Mr. Archer's offer to do that which

Messrs.

Messrs. Bacon & Petch did for us is another subject, and I do not see any reason why they should be connected together.

2077. Mr. *Mowatt.*] The offer embraced both subjects?—  
Yes.

2078. Sir *J. Tyrrell.*] In point of fact, Mr. Archer's machine, when it was presented to your notice, was so imperfect, that you never contemplated using it for a moment; but there was a sufficient impression made upon your mind, in consequence of this offer, to lead you to ascertain whether Messrs. Bacon & Petch, who were not likely to consent to be underbidden by other competitors, would lower their terms; and you considered that upon Messrs. Bacon & Petch lowering their terms to the amount of 1*d.* per 1,000, you were at liberty to renew the contract with them on those terms, thereby giving the public department over which you presided a saving; and when this machine would be perfected and worked, it would, in point of fact, make so small a difference as to the expense which the public would be called upon to pay, that you never seriously contemplated a transfer; in fact, you thought you were at liberty to take advantage of Mr. Archer's perforation, it being a question for the Government or the parties to remunerate him, and you did not seriously contemplate a transfer of the contract from Messrs. Bacon & Petch to Mr. Archer?—If I rightly understand your question, I would say in reply, this machine that Mr. Archer made, which was proposed or produced to us, was totally inefficient for the purpose for which it was designed; the subsequent improvements in it, which have been made from time to time, were, I believe, mainly, I will not say altogether, the suggestion of Mr. Hill, an officer in our department, and I believe that without Mr. Hill's aid, and without his suggestions, Mr. Archer would never have been able to produce a machine that was workable at all. But this affair of the perforating machine is one matter, and the offer to print the stamps is quite another.

2079. Mr. *Mowatt.*] I think I understand you to state very distinctly that the Board, of which you are the executive officer, did not feel themselves at liberty to entertain any proposal, however advantageous it might be in other respects, that would have the effect of setting aside the system laid down, by an understanding with the Treasury; in general terms, I so understood you?—I stated that we saw no necessity for it, arising from this offer.

2080. And I understood you to go further than that?—  
Certainly; without some very strong and convincing reason, we  
never

*T. Keogh,*  
Esq.

27 April  
1852.

*T. Keogh,*  
*Esq.*

27 April  
1852.

never would have thought of going to the Treasury with a view to adopting any change in the arrangements which they had deliberately made in 1840.

2081. The mode of printing laid down by the instructions from the Treasury in 1840 you did not consider yourselves at liberty to disturb, except in the case of some proposal embracing some great and obvious advantage?—Yes, embracing something that would convince us that the system which the Treasury had adopted in 1840, and which we had followed for so many years, ought to be changed.

2082. At any rate you did not consider the proposal made by Mr. Archer, either individually or jointly with the gentleman with whom he was associated, of sufficient importance to justify you to make the proposal to the Treasury that the original plan should be set aside, and this mode substituted for it?—Certainly not.

2083. Will you be kind enough to refer to the letter which you wrote to Mr. Archer on the 8th of April 1851, and explain why you not only entered into communication with Messrs. Archer & Branston, but invited them to make themselves more intimately acquainted with the existing process and various arrangements for its working, and then, if they saw fit, to make a subsequent distinct proposal to you, founded upon that better information?—The answer I have to make to that question is this, that we are in the habit of dealing with projectors of every description, and it is our rule invariably to hear everything that those parties have to say; if a proposal is made to us, the Board always answer that they are prepared to consider any statement, in detail, of the object which the party has in view, and the mode in which he proposes to effect it; and this is nothing more than acting upon that general rule, to hear everything that parties have to say.

2084. Then it would appear to follow, from the correspondence that we have before us, that one of the next steps was to write to Messrs. Bacon & Petch, and state that you had had an offer made to you to print postage labels in the same manner as the service is now performed by them?—Yes; that refers to Mr. Archer's offer only.

2085. Some little time ago you stated, as an objection to this offer, that you were not sure that they were fitting parties; but as you state in this letter that you have had an offer, that offer must be understood to come from parties responsible and able to do the work as well as Messrs. Bacon & Petch, or it would not, in the ordinary meaning of terms, be an offer that could be available. You state to Messrs. Bacon & Petch that

that you have had an offer in all respects equal to theirs at the reduced rate of 5 *d.* per 1,000, and you then call upon them to know whether they are willing to do it at the same price. If you had no intention whatever of availing yourselves of that offer, as I gather from you you had not, would it not be a fair inference that the Board merely used the offer of Mr. Archer to induce Messrs. Bacon & Petch to make a reduction in their terms?—I have already said that the tender of 5 *d.* was a tender made by Mr. Archer alone, and my observation that the Board never had any intention of accepting the offer of Mr. Branston as to surface printing applied to that, because they had no discretion or any authority to accept any such offer.

2086. You say in your letter of the 16th of May, "I am directed to inform you that an offer has been made to the Board to print the postage labels in the same manner as that service is now performed by you at the rate of 5 *d.* per 1,000." Consequently, you must be supposed to have waived all objection as to the capacity and means of the parties making that offer?—I do not at all admit that; that is a most violent construction. You say "the parties," but there was but one party concerned.

2087. If you say, "I have had an offer from another party to do exactly what you do," I understand you to mean, that you consider the party offering to be as capable of doing the service as the other party, otherwise it would not be a *bonâ fide* offer; it would be the semblance of an offer, but defective in some essential points?—An offer is only an offer at best; if it ever became our duty to consider that offer, we would consider who the person who made it was, and his capacity to perform that which he had offered to do.

2088. Did you not consider that before writing this letter?—Certainly not.

2089. If a person made you an offer to do certain work at a reduced price, and you had no reason to believe that the party was capable of carrying out that offer in an efficient manner, would you state to the contractor that you had had an offer to do the work in the same manner as he was doing it?—I have already explained that the intention of applying to Messrs. Bacon & Petch for an abatement of the terms was existing in our minds for month sand months before this letter was written, and it was unnecessary for us to say that an offer had been made to us. I do not know why it was mentioned; we did not avail ourselves of the offer to propose to Messrs. Bacon & Petch a reduction of the terms, for we had that intention for months before. If you say that it necessarily

T. Keogh,  
Esq.

27 April  
1852.

T. Keogh,  
Esq.

27 April  
1852.

sarily implies, when we say that an offer has been made, that that is an offer which we consider worthy of acceptance, I do not think the expression bears that interpretation.

2090. You say that the writing of this letter, which you wrote on the 16th of May, had no reference whatever to the offer of Mr. Archer in point of fact, for the Board had previously determined to apply to Messrs. Bacon & Petch to reduce their terms?—Yes.

2091. But it comes before us in a very different form here: it would appear specifically to refer to a *bonâ fide* offer to perform the service in the same manner in which it had been performed, at a lower rate; and it would appear as though your attention had been influenced by this offer of Mr. Archer?—It had the effect of bringing it to a positive determination; there was an actual determination which the Board had previously made, but they were reminded of it by this offer.

2092. It would appear as though the Board had no such determination, but that this specific offer induced them to write that letter; I infer that from seeing it put prominently in the letter?—The inference may be made, but it is an incorrect one. The Board having ascertained that whether Messrs. Bacon & Petch would do the work for the same amount that Mr. Archer had proposed, were of opinion that they had nothing further to consider. The offer was made to them to do the work at a lower price, by a person of whom they knew nothing; and when they found that they could get that done by the person that they knew coming down to the same rate, there was nothing for them to consider.

2093. Do you consider it fair to write to contractors for the time being, upon the faith of an offer made by a person of whom you say you know nothing, as a means of inducing them to lower their terms?—I did not mention the offer of Mr. Archer for the purpose of inducing them to lower their terms. The letter states this: “Gentlemen,—I am directed to inform you, that an offer has been made to the Board to print the postage labels, in the same manner as that service is now performed by you, at the rate of 5 *d.* per 1,000; and the Board are desirous of knowing whether, considering the great increase (from 32,000,000 to upwards of 60,000,000) which has taken place in the quantity of stamps required since the agreement was made between the Board and you, you are willing to reduce the rate per 1,000 from 6 *d.* to 5 *d.*?” That latter part was the true and real reason for our writing the letter.

2094. Then the offer was not the true and real reason?—  
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The offer was an incident which I did not then, and do not now, consider of any importance.

2095. You enter into reasons for a reduction; the great increase of stamps is one reason; but it appears to me that this is prominently put forward as a motive to induce the contractors to lower the price, that you had an offer which appeared to be a *bona fide* offer from parties, respectable like themselves; notwithstanding, after hearing this letter read, you are of opinion that it was not the main cause which led to the reduction of the terms?—No, it was not, any more than it was the cause of the reduction in 1843. The same reason that was assigned in this letter for the reduction of terms was the cause which led to it in 1843.

2096. And not the offer of Mr. Archer?—Certainly not.

2097. You have stated, but without entering into a full explanation, that the case of the postage label stamps was of so exceptional a character, that you thought it did not come within the ordinary province of contracts and tenders?—Yes.

2098. Are there such peculiar circumstances in reference to the two parties having now the contract, as qualified them in some eminent degree for the performance of the contract; was it not possible to obtain other parties having the same qualifications?—I do not say that there is any impossibility in obtaining other parties equally respectable to do a work of this description; all I say is this, that we had ourselves a long connexion with Messrs. Bacon & Petch before postage stamps were introduced, and they had always performed the work which we engaged them to do in the most satisfactory manner to us. They are a firm of very high respectability. It was not by the Board alone, but with the concurrence of the Treasury in 1840, that they were selected to do this particular work, by a process, which I believe at that time was a patent process; and what I say is, that the stamping in this case is a matter which involves a certain degree of confidence and trust.

2099. In other words, that the public should be satisfied with their conduct?—Yes, and their respectability.

2100. That being so, the Board were, as a matter of course, unwilling to change them unless there was some reason to do so?—Yes.

2101. Do not the same circumstances that you have now stated apply to almost all large contracts, where the parties are of necessity respectable; they give the requisite guarantees, and a sort of confidence springs up between the Board under whose control they more immediately act and themselves;

T. Keogh,  
Esq.  
27 April  
1852.

are not those circumstances which you have explained of a general character applicable to almost all contracts?—No; I think there is an obvious and prominent distinction between the business of making stamps, a sheet of which is worth a pound in value, and business done under any other description of contract; you must have the highest confidence in the respectability and integrity of the individual entrusted; therefore, mere securities, such as are applicable to ordinary contracts for the supply of meat or other provisions, or goods of any description which are delivered according to sample, where, if the thing is of inferior quality, you have a remedy against the contractor, are totally inapplicable to the case of a person employed to print postage stamps, which represent money.

2102. Your argument goes so far as to indicate that those were the only two parties who were likely to enjoy the confidence of the public?—No, I do not think that; there may be other parties equally respectable, but I say the selection fell upon them by the Board and the Treasury in 1840, and there seemed to be no reason for abandoning it.

2103. Then you admit that other parties might readily have been found enjoying the qualifications that induced you to employ these parties originally?—I do not at all deny it.

2104. You laid great stress a little while ago upon one proposal of Mr. Archer, resting entirely upon himself, and as I understood you, you said it was one reason for your declining it that you had reason to believe that he was not in a condition to fulfil it?—What I said was this, that the conjoint offer of Mr. Branston and Mr. Archer related to surface printing only, and the individual offer of Mr. Archer related to copper-plate printing; that is to say, the same description of printing as that which is now used; and therefore we had only to consider the matter of price, and when we found that the contractors were willing to do that work for the same price as Mr. Archer had offered to do it at, we had nothing to consider.

2105. What I wished to learn was this, whether you had not stated that it was an objection to one of the offers of Mr. Archer that it was not accompanied also by the signature of Mr. Branston; in fact, that it rested upon his individual responsibility alone?—Yes; what I say is this, that we never had an offer from Mr. Branston to engrave by copper-plate printing; his offer was solely to execute the work by surface printing at  $4\frac{1}{2}d.$  a thousand; and Mr. Archer's letter, which stated that if that could not be accepted, he was ready to do  
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the work in the same manner as it was then done at 5*d.* a thousand, was the only thing we had to deal with.

2106. But I distinctly understood you several times to state, that one offer could not be entertained because it proceeded from Mr. Archer alone?—Certainly not.

2107. No objection was made to the proposal because it came from Mr. Archer alone; you alluded to the letter of the 30th of April from Mr. Archer to yourself, and I understood you to say that one objection to that was, that it was not the joint offer of Mr. Branston, who was a person cognizant with the subject, but came from Mr. Archer alone, and therefore was considered to be one that you could not entertain?—You misunderstood me; what I did say was this: these two letters, one from Mr. Archer alone, and the other subsequently from Messrs. Archer and Branston, jointly amounted in substance to this; they offered jointly to do, by surface printing at 4½*d.* a thousand, the work then done by Messrs. Bacon & Petch, and Mr. Archer offered individually to do the work as it is now done at 5*d.* per 1,000.

2108. Then you did not object then, and you do not now object, to one of the offers having come from Mr. Archer alone?—No, but we never knew that Mr. Archer had had anything to do with copper-plate printing, and any offer from Mr. Branston was not the question.

2109. Mr. Archer made a distinct proposal to the Board that he would do the work in the same manner in which the present contractors now do it, in addition to which he would add the perforation, and yet he would reduce the price from 6*d.* to 5*d.* per 1,000?—Yes, he said that he would do the work for 5*d.* per 1,000.

2110. Will you briefly recapitulate the reasons why you did not, in the letter which you wrote to the present contractors, stating the offer you had had, make any allusion to the additional offer of perforating the stamps?—We thought that so very much inferior a consideration that we did not attend to it at all.

2111. You considered it, in fact, no improvement, or quite a trifling improvement?—Yes.

2112. And you attached no importance to it at all?—I do not say that; we say we think it will conduce in a certain degree to the public convenience; at present some people do not like the trouble of cutting their stamps; but we do not think any solid advantage will be derived to the public from it.

2113. Do you think in was a fair description of the offer to Messrs. Bacon & Petch when you kept out of their view

T. Keogh,  
Esq.

27 April  
1852.

that part of the offer of Mr. Archer which related to the perforation?—I think so. I have already said that the introduction of the circumstance of the offer made by Mr. Archer into the letter to Messrs. Bacon & Petch was, I believe, a pure inadvertency. I do not think the introduction of it was made by the clerk who wrote the letter with any such object as is attributed to it; viz., for the purpose of beating down the terms of Messrs. Bacon & Petch. I believe the sole ground upon which the application was made to them for a reduction, and upon which they assented to it, was that assigned in the latter part of the letter; those being in fact the grounds upon which they reduced their terms in 1843.

2114. Then it would follow, either the Board considered that the offer of Mr. Archer was not *bonâ fide*, in the sense that he was not in a position to fulfil all he offered to do, or the Board considered of no importance at all a saving of 1,500*l.* a year, with the additional gain to the public of having the stamps perforated?—I have already said that the perforation of the stamps we did not think of at all; the real state of the case was this: when Mr. Archer's proposal was made, the Board felt that they would be relieved from the necessity of considering that proposal at all if Messrs. Bacon & Petch assented to the reduction which they had intended to ask them for; but if they had ultimately come to consider Mr. Archer's proposal, they would have to determine whether it was expedient and right to employ another person.

2115. That being so, I must ask you to explain what were the grounds which induced you to write to Mr. Archer, inviting him to make himself master of all the circumstances, and then to make a revised tender subsequently, the Board having made up their minds not to have anything to do with any tender he might make?—I did not say that; what I intended to express was this, that the Board, when they received Mr. Archer's offer, would be relieved from the necessity of considering the matter at all, if they found that the only motive for considering it, viz., the reduction of price, could be accomplished by making arrangements with Messrs. Bacon & Petch. That could be the only motive they could have for considering it; and if Messrs. Bacon & Petch had refused to reduce their terms, it might have been the duty of the Board then to consider whether Mr. Archer was a person who could accomplish what he had offered to do. He was not a copper-plate printer; he was not engaged in any description of art that I know of; and the effect of his proposal amounted to this, that he was to employ, or we were to employ, a corps of copper-plate printers,

printers, to be superintended by a gentleman who knew nothing about that art.

2116. You knew all that at the time you wrote to the present contractors that an offer had been made to the Board to do the work "in the same manner as that service is now performed by you"?—Yes.

2117. Mr. *Geach*.] I understand from you that the Treasury having originally adopted the plan which is now pursued, you did not consider the question of surface printing at all when that offer of Mr. Archer's was made to you?—Certainly not.

2118. You did not make any inquiry at that time whether there had been considerable improvements in surface printing; you did not go into the question at all?—Certainly not.

2119. If any such inquiry were to be gone into, would it be the duty of the Board, of which you are secretary, to go into it, or would it be the duty of the Treasury to go into it?—It would be the duty of the Board, if they were convinced by any evidence that was adduced before them that a change in the present mode of printing was desirable, to represent that circumstance to the Treasury. If anything was stated to them which would convince them that the mode of printing then pursued, and which had been in practice for some years, was, from the change of art or invention, or from any other cause, a thing which it was desirable to abandon, it would be their duty to represent that to the Treasury.

2120. Supposing it were my own case, and I had to employ copper-plate printing extensively, it might happen that I saw the same result might be obtained at a much less price, and yet efficiently; the inquiry in such a case would originate with me. Who would stand in my place in the Government, because some one ought to have these matters under their consideration; would it be your duty, as secretary, or the duty of the Commissioners of Stamps and Taxes, or of one of the Lords of the Treasury, to inquire into that?—I conceive the duty would originally devolve upon us; we are authorised by law to provide all stamps and other appliances for the purpose of stamping everything which is subject to stamp duty; therefore it is our province or business to make provision in that respect. But with regard to postage stamps, as I have before attempted to explain, all the arrangements were made in the first instance by the Treasury; the chairman of the Board was brought into consultation with the Treasury upon these arrangements, and when they were ultimately decided upon by the Treasury, we were directed to conform to what they had resolved upon, without any discretion on our part; so that these

T. Keogh,  
Esq.

27 April  
1852.

postage stamps differ from ordinary stamps, the provision of which, and all the arguments respecting them, rest entirely with us.

2121. If any inquiry were to take place upon which should result an alteration, that inquiry would originate with the Board of Stamps and Taxes?—Yes.

2122. In this case, although your attention was called to surface printing, your reliance upon the way in which the copper-plate printing was done indisposed you to inquire into it at all?—We were perfectly aware that the question of surface printing and copper-plate printing was deliberately considered by the Treasury upon the introduction of the system of postage stamps.

2123. Mr. *Mowatt*.] That was 12 years ago, in 1840?—Yes.

2124. Mr. *Geach*.] You have said that the printing of postage stamps is an exceptional matter, and that the manner in which it has been done by Messrs. Bacon & Petch, who are respectable people, takes them out of the range of matters which you would put up to public competition?—Yes.

2125. That being the case, and you not thinking it right to put it up to public competition, what means did you take to ascertain that Messrs. Bacon & Petch were only getting the fair profit which they would be allowed to get if they were subject to competition; you do away with competition; you give them a certain price which, in the first instance, was  $7\frac{1}{2}d.$ , you then reduce it to  $6d.$ , and you then have a further reduction, in consequence of the increased number of stamps, which you arbitrarily fix at  $5d.$ ; did you take any means to ascertain whether even  $5d.$ , with the increased quantity of stamps that were printed, was not a much larger price than ought to be paid?—Upon that I should say, that at the time the arrangement was originally entered into, when  $7\frac{1}{2}d.$  a thousand was allowed, it was well known that it was a liberal arrangement, and perhaps an excessive remuneration, but when afterwards the quantity of stamps printed justified us in asking for a reduction of that price, there were certain elements, of which I cannot pretend to speak at this moment, upon which  $6\frac{1}{2}d.$  was considered a fair price according to the usual payment for copper-plate printing. When this reduction to  $5d.$  took place, it had reference solely to the increased quantity; whether it was exactly measured by the lowest amount at which it could be done, I will not undertake to say.

2126. You made no inquiry of that sort, and did not think it necessary to do so?—No, we did not.

2127. Mr.

2127. Mr. *Mowatt*.] That being so, is it not possible that, with competition, it might be done for half the present price?—It might be so.

2128. Mr. *Geach*.] You made an arrangement with these gentlemen for 5 *d.* a thousand; what advantage did the Government get by giving them a five years' contract?—I am not aware that the Government got any advantage from it; but the contractors had the certainty, when they were reducing their terms at our suggestion, that they should have the performance of this work for five years, as they had previously had.

2129. Not by agreement?—What I mean is, that the agreement which had been entered into before this had lasted for five years.

2130. But at any time in the five years you could have altered it, and in fact you did alter it, but now you cannot alter it for five years?—Certainly not.

2131. Then the advantage in giving five years as the term of the contract, was entirely Bacon & Petch's?—If there be any advantage in the duration of the contract, it is an advantage to them.

2132. Mr. *J. Greene*.] How are your contracts upon any subject made; do you advertise for tenders; for instance, a contract for the supply of paper?—We get all our paper from the Stationery Office; we do not contract for that. The Stationery Office obtain it by contract; but all the paper, and everything else of that kind with which we are supplied, comes through the Stationery Office.

2133. Do not you think it would be desirable, as you find a necessity for having trustworthy persons with whom to contract, that the printing of postage labels should be carried out at Somerset House?—That was considered at the time, but we are very much cramped for room at Somerset House; there is no place at present in which that part of the work could be performed.

2134. It would be very desirable if it could be performed in Somerset House?—I think it would; I think we should have adopted some arrangements by which the printing would have been carried out at Somerset House, if we had had room.

2135. Mr. *O. Gore*.] What is your reason for thinking that the printing of the postage stamps should not be let by tender?—We might as well undertake to do the work of printing ordinary stamps by tender, as of printing postage stamps, a sheet of which denotes £. 1.

2136. Mr. *J. Greene*.] You print all the ordinary stamps at  
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*T. Keogh,*  
Esq.

27 April  
1852.

T. Keogh,  
Esq.

27 April  
1852.

Somerset House?—Yes; and we would do the others, if we had room to do them.

2137. *Chairman.*] Is it the practice of the Commissioners to sign all the contracts?—That is not necessary in point of law; an agreement having been come to between the Commissioners and a party, may be signed at any time, if it is in their possession.

2138. The last contract was signed by nobody?—It was signed by the contractor only, just as a lease is signed by the lessor, if it is in the hands of the lessee; and by the lessee, if it is in the hands of the lessor.

2139. The counterpart was the one signed by the Commissioners?—Yes.

2140. Have you not had communications with another Mr. Archer upon the subject of these stamps, a Mr. Charles Maybury Archer?—I have had personal communications, and some letters also.

2141. I believe that was not so much upon the perforating of the stamps as upon the question of the possibility of the stamps being copied?—Yes, I recollect that circumstance.

2142. Has anything been brought to you to show that that can be done?—Yes; it was a mere accident.

2143. Is it possible to make it more than an accident?—No, I should say not.

2144. *Mr. G. C. Lewis.*] In case the Government should purchase Mr. Archer's machine for perforating postage stamps, do you apprehend that there would be any difficulty in inducing Messrs. Bacon & Petch to use it?—So far from thinking that there would be any difficulty, I am quite sure that they would use it, as they offered to do, without any expense beyond that which they stated in their letter, 30 *l.* or 40 *l.* a year.

2145. *Mr. J. Greene.*] That is as long as the public are on good terms with the contractors, but if the contractors are not on good terms with the public, have you any means of compelling them to use the perforating machine?—I will not say that we have the means of compelling them, but I have not the least apprehension of any difficulty in that respect.

2146. Have you the power of compelling them to use it?—I will not say that we have, but I have not the slightest apprehension upon the subject.

2147. *Mr. Mowatt.*] Have you any idea that they would print the labels for the price you are now paying?—I am sure they would.

2148. But nevertheless] you thought it desirable to have a contract

contract in that case?—Yes; there are a great many details in contracts besides these which have been referred to.

2149. Why should it be necessary to have a contract at all, seeing that the same arrangement would apply to one part of the work as to another?—As I said before, we never considered this perforation as of any importance.

2150. Mr. *Grogan*.] You say in your letter, “an offer has been made to the Board to print the postage labels in the same manner as that service is now performed by you, at the rate of 5*d.* per 1,000;” I understood you to say that that offer, though referred to here, was not used as any inducement to Messrs. Bacon & Petch to reduce the price?—What I say is, that the mention of that offer in the letter to Messrs. Bacon & Petch was a mere matter of inadvertence, because I am sure that we should either at that time, or at some subsequent period not very far distant, have made the same proposal to Messrs. Bacon & Petch, without making any reference to the proposal of Mr. Archer, and the true ground which operated upon us to make the proposal to them would have operated upon us quite independently of Mr. Archer’s offer.

2151. The word “offer” was referred to by Mr. Mowatt as used in that letter as acting on Messrs. Bacon & Petch, and leading them to reduce their terms?—It is impossible that I can say what entered into the minds of Messrs. Bacon & Petch.

2152. I understood you to say that the Board had previously determined not to accept Mr. Archer’s offer, and Mr. Mowatt put it to you, whether the mention of that offer induced Messrs. Bacon & Petch to lower their terms; is it your impression that the word “offer,” as used in that letter, had or had not any effect whatever in leading them to reduce the charge from 6*d.* to 5*d.*?—It is impossible for me to know what passed in the minds of Messrs. Bacon & Petch, but my impression is that the real ground of the reduction was as I have stated before, the increase in the number of stamps printed, and that that reason would have operated upon them in an equal degree if no mention whatever had been made of the offer of Mr. Archer.

2153. You have given the Committee your impression of what Messrs. Bacon & Petch were likely to do under certain circumstances; are you able to give the Committee your idea of the impression produced upon their minds by the use of the word “offer” in your letter?—It is impossible for me to do that.

2154. Has

T. Keogh,  
Esq.

27 April  
1852.

T. Keogh,  
Esq.

27 April  
1852.

2154. Has any information come to you subsequently with reference to the impression produced upon their mind? —No.

2155. Will you be kind enough to read the letter of the 20th of May 1851, addressed by Messrs. Perkins, Bacon & Petch to the Commissioners of Inland Revenue?—"69, Fleet-street, 20 May 1851.—Gentlemen,—We have the honour to acknowledge the receipt of a letter dated 16th instant, stating that 'an offer had been made to the Board to print the postage labels in the same manner as that service is now performed by you, at the rate of 5*d.* per 1,000; and the Board are desirous of knowing whether, considering the great increase (from 32,000,000 to upwards of 60,000,000) which has taken place in the quantity of stamps required since the agreement was made between the Board and you, you are willing to reduce the rate per 1,000 from 6*d.* to 5*d.*' In reply, we beg to say we have given the subject our best consideration, and although, from our great experience, we feel persuaded that no other house could at 5*d.* per 1,000 successfully produce postage labels with such beauty of design, perfect identity, uniformity of colour, adhesive properties, and lastly, what we conceive to be of paramount importance, security from forgery, as those we have had the honour of furnishing for now upwards of 10 years, still feeling particularly desirous of maintaining the honourable position of supplying Her Majesty's Government, at the same time bearing in mind the increased demand, we will at once agree to lower the price, as suggested, to 5*d.* per 1,000 labels. We presume that your Honourable Board will permit the alteration to date from the 5th July next, and we also trust the new contract may be for the term of five years as heretofore. We have, &c. (signed) *Perkins, Bacon & Petch.*"

2156. After reading that letter, can you have any doubt in your mind that the use of the word "offer" in your letter influenced them in their decision?—I can form no conclusion upon the subject, but my impression is that it did not.

2157. Mr. O. Gore.] At the commencement of that letter, as a reason for your applying to know whether Messrs. Bacon & Petch would print the stamps at a reduced price, you state plainly, "that an offer has been made to the Board to print the postage labels in the same manner as that service is now performed by you, at the rate of 5*d.* per 1,000, and the Board are desirous of knowing whether you are willing to reduce the rate per 1,000 from 6*d.* to 5*d.*?"—But you omit the intervening passage in this letter, "We have the honour to acknowledge the

the receipt of a letter, dated 16th instant, stating that 'an offer has been made to the Board to print the postage labels in the same manner as that service is now performed by you, at the rate of 5*d.* per 1,000;' and the Board are desirous of knowing whether, considering the great increase (from 32,000,000 to upwards of 60,000,000) which has taken place in the quantity of stamps required since the agreement was made between the Board and you, the Board are desirous," &c.

T. Keogh,  
Esq.  
27 April  
1852.

2158. Was not that an inducement to you to ask them to reduce their price?—Certainly not.

2159. What was the inducement, if that was not one of the reasons for your applying to them upon the subject; it is as much as saying, in consequence of this will you reduce your terms?—The question really addressed to Messrs. Bacon & Petch is this: "The Board are desirous of knowing whether, considering the great increase (from 32,000,000 to upwards of 60,000,000) which has taken place in the quantity of stamps required since the agreement was made between the Board and you, you are willing to reduce the rate per 1,000 from 6*d.* to 5*d.*."

2160. But you would not have asked them to reduce their terms if an offer had not been made by another party to do it at 5*d.*?—That is another matter.

2161. That is the matter upon which I wish to ask you what was the reason of your referring to the offer?—It was a mere statement of a fact; whether it was proper or right to introduce it into the letter I will not undertake to say; I wish it had not been introduced; but it was a mere accident.

2162. Mr. Mowatt.] It seems that this offer was not considered a *bonâ fide* one?—I have never said that; I have said that the Board considered that they would be relieved from the necessity of considering the offer at all, if the only question which could arise upon it, namely, that of another person having offered to do the work for less than the contractors, were adjusted.

2163. Mr. J. Greene.] If copper-plate printing were proved to be as easily forged as surface printing, and if by adopting surface printing you had space enough in Somerset House to print the postage labels, would it not be very desirable to do so?—If it were proved that forgery was as easy of copper-plate printing as of surface printing, and that surface printing was therefore as safe in that particular, and that could be done at Somerset House, it would be as you say. But there are other dangers to be guarded against besides forgery, against which surface printing would afford no protection.

2164. Mr.

T. Keogh,  
Esq.

27 April  
1852.

2164. Mr. Rich.] Are the Committee to gather from you that the reduction of price from 6*d.* to 5*d.* would have taken place if Mr. Archer's invention had never been heard of?—Most assuredly; so much so, that when our deputy chairman heard this subject discussed, he said that it had no reference to Mr. Archer, and he could not be persuaded that they had any connexion till he saw this correspondence; he had in his recollection the fact, that for some time before there had been a determination on the part of the Board to effect a reduction.

Mr. Charles Maybury Archer, called in; and Examined.

Mr.  
C.M. Archer,

2165. Chairman.] YOU have presented a petition to the House of Commons to be heard upon this subject, with reference to a mode of transferring or imitating postage stamps successfully?—I have.

2166. Have you any specimens to produce to the Committee, in order to show the success with which you have imitated those stamps?—I have specimens in my possession, but it would be a question whether I should produce those specimens in the first instance, or whether I should go into a statement of the transactions and correspondence that I have had with the Post Office and with Mr. Keogh, the Secretary of the Board of Inland Revenue.

2167. Mr. Keogh has admitted the correspondence that he had with you, but he has stated he thinks it cannot be done successfully, so that the question is whether the thing is practicable or not; will you produce the specimens?—I will produce the specimens without the slightest hesitation; I have three specimens, amongst many others, to exhibit. That has been made as long since as December last; this was made at the commencement of March; and that also was made in this month of April (*exhibiting the specimens to the Committee*). These are my own creations. Were I to place myself in communication with skilled persons, there is no doubt that they could be brought to greater perfection, so as to deceive the authorities themselves. The Committee ought to bear in mind that these specimens have been presented to them with a foreknowledge of the fact that they were imitations; had they not been told that they were imitations they would, very possibly, have inferred that they were real Government postage stamps.

2168. Mr. Geach.] In transferring them, do you make any impression upon the original stamp?—I decline altogether to particularize the process, unless as a *pas préliminaire* I go into

into a statement of the transactions and correspondence which have taken place with the Post Office and Inland Revenue people.

Mr.  
C.M. Archer.

27 April  
1852.

2169. *Chairman.*] Why do you object to going into the question of the way in which it is done?—Because I think there are preliminary matters that ought to be gone into first.

2170. *Mr. Geach.*] How do we know that you are not a forger yourself?—Simply, sir, because immediately I fortuitously and by accident, which the Committee have not gone into, discovered the means whereby a fraud might be committed, instead of making an improper use of it, I sought to place it in the hands of the Government authorities, whom I conceived it most concerned.

2171. But you come here and show us stamps which you say have been transferred; we do not know that those which you say have been transferred are not original stamps?—Exactly, but you may take my word to the contrary, if it is worth having. I say it is a successful imitation of the Government postage stamp, and that it can be easily done. I could, instead of buying them as I do, be my own postage stamp maker, and every man might make his own postage stamps. If I chose I could disseminate it, and anybody could be his own postage stamp maker.

2172. *Mr. Mowatt.*] You think in the case of a man who used six stamps a day, it would be worth his while to use this process?—Possibly; it is a matter of taste. We see every day the means people take to save pence and sixpences; indeed, many people in London make their money by that means; and if people became acquainted with a mode of defrauding the Post Office, those who were dishonest and mean enough to do so, might adopt it.

2173. *Chairman.*] What further do you propose; we know that you have communicated with the Board of Inland Revenue, and that they thought you had not succeeded, and you have now petitioned to be heard before the Committee?—Perhaps I have done all the Committee wish me to do.

2174. How are we to judge of the value of the plan unless you communicate to us the way in which it is done?—Certainly, I am prepared to disclose it to two Members of the Committee conditionally and in confidence, but not to make a more public disclosure of it, the practical effect of which would be that it would get bruited abroad.

2175. *Mr. J. Greene.*] Is it a process that is generally known now?—No, I believe not.

Mr.  
C. M. Archer.

27 April  
1852.

2176. Is it the subject of a patent?—It could not very well be for postage stamps, but it might be for other purposes. (Mr. *Geach*). The correspondence with the Post Office states, “You must use your own discretion as to communicating your secret.”

The Witness was directed to withdraw.

After some time the Witness was again called in.

2177. *Chairman.*] Having presented a petition requesting to be examined by the Committee, the Committee are willing to hear any communication you have to make upon your own responsibility on the matter; but if you have no communication to make, they can take no further step upon the subject?—I have a written communication to make upon the correspondence that has passed upon this discovery, and out of which, by remarkable accident, it all originated. I do not know whether it is before the Committee.

2178. The correspondence is before the Committee?—Then I have nothing to disclose beyond what is stated in that correspondence; if the Committee call upon me to confide to them the process in honour, I will do so, but certainly not without.

2179. The Committee cannot be supposed to have any other but an honourable object?—There is quite sufficient to justify all I have said, and all I have to say, in the fact, that the Post Office have, in consequence of my communication with them, altered or introduced devices into the postage stamps in the last month.

2180. That, in the correspondence, they deny?—I deny the denial. I am prepared to prove, on the competent authority of several persons and my own evidence, it is a falsehood.

2181. You decline then to inform us what the process is?—Certainly.

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I N D E X.

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## ANALYSIS OF INDEX.

ALPHABETICAL and CLASSIFIED LIST of the PRINCIPAL HEADINGS in the following INDEX, with the Paging at which they will be respectively found.

	PAGE		PAGE
<i>Adjusting power (Archers' invention)</i> - - - -	229	<b>CONTRACTS—continued.</b>	
<i>Dry printing</i> - - - -	242	3. <i>Evidence on the offers of Mr. Archer and Mr. Branston to take the contract at a reduced rate</i> - - - -	237
<i>Sheets of stamps, 2</i> - - - -	258	4. <i>How far these offers may be considered to have led to the reduction of Messrs. Bacon &amp; Petch's charges</i> - - - -	238
<i>Bacon &amp; Petch, Messrs.</i> - - - -	233	5. <i>Estimated saving which would have accrued to the public by accepting the offer of Mr. Archer and Mr. Branston</i> - - - -	239
<i>Contracts</i> - - - -	237	<i>Bacon &amp; Petch, Messrs.</i> - - - -	233
<i>Copper-plate engraving</i> - - - -	239	<i>Sureties of contractors</i> - - - -	259
<i>Experiments</i> - - - -	243	<i>Tenders</i> - - - -	259
<i>Government superintendence</i> - - - -	245		
<i>Inland Revenue Board, 2</i> - - - -	250	<b>COPPER-PLATE ENGRAVING :</b>	
<i>Letter-press printing, 2</i> - - - -	254	1. <i>Opinion that copper-plate printing is much more secure against forgery than surface-printing</i> - - - -	239
<i>Perforating machine, 1. 3. 4</i> - - - -	255	2. <i>Evidence showing that copper-plate engraving is more expensive than surface-printing, and is not more secure</i> - - - -	240
<i>Perforation of stamps</i> - - - -	256	<i>Anastatic printing</i> - - - -	229
<i>Supply of stamps</i> - - - -	259	<i>Bank notes</i> - - - -	234
<i>Working expenses</i> - - - -	260	<i>Contracts, 3</i> - - - -	237
<i>Bank notes</i> - - - -	234	<i>Dry printing</i> - - - -	242
<i>American notes</i> - - - -	229	<i>Electrotype</i> - - - -	242
<i>Letter-press printing</i> - - - -	253	<i>Forgery, 2</i> - - - -	244
<b>COMPENSATION :</b>		<i>Letter-press printing</i> - - - -	253
1. <i>Opinion as to the amount of compensation which should be made to Mr. Archer for his invention</i> - - - -	236	<i>Perforation of stamps</i> - - - -	256
2. <i>Evidence as to the offers made by the Treasury to Mr. Archer, and refusal of Mr. Archer to accept the amount offered</i> - - - -	236	<i>Plates</i> - - - -	257
<i>Contracts, 3</i> - - - -	237	<i>Sheets of stamps, 1</i> - - - -	258
<i>Inland Revenue Board, 1</i> - - - -	250	<i>Transferring machine</i> - - - -	259
<b>CONTRACTS :</b>			
1. <i>Generally</i> - - - -	237		
2. <i>Particulars relative to the contracts entered into with Messrs. Bacon &amp; Petch</i> - - - -	237		

	PAGE		PAGE
<i>Cost of construction (Archer's invention)</i>	240	<i>INLAND REVENUE BOARD—cont.</i>	
<i>Compensation, 2</i>	236	<i>Compensation, 2</i>	236
<i>Inland Revenue Board, 2</i>	250	<i>Contracts</i>	237
<i>Perforating machine, 2</i>	255	<i>Cost of construction</i>	240
<i>Dry printing</i>	242	<i>Perforating machine, 4</i>	256
<i>Electrotype</i>	242	<i>LETTER-PRESS PRINTING:</i>	
<i>Embossed envelope stamps</i>	243	1. <i>Opinions in favour of adopting surface or letter-press printing instead of copper-plate engraving</i>	253
<i>Experiments (Archer's machine)</i>	243	2. <i>Objections thereto</i>	254
<i>Inland Revenue Board, 2</i>	250	<i>Adjusting power</i>	229
<i>Perforating machine, 3</i>	256	<i>Bank notes</i>	234
<i>Treasury, The</i>	260	<i>Bank notes, Mr.</i>	235
<i>FORGERY:</i>		<i>Contracts, 3</i>	237
1. <i>Generally</i>	244	<i>Copper-plate engraving</i>	239
2. <i>Comparative merits of copper-plate engraving and letter-press printing as regards security from forgery</i>	244	<i>Dry printing</i>	242
3. <i>Further securities against the forgery of postage stamps besides the style of engraving</i>	244	<i>East India drafts</i>	242
<i>American notes</i>	229	<i>Electrotype</i>	242
<i>Anastatic printing</i>	229	<i>Embossed envelope stamps</i>	243
<i>Copper-plate engraving</i>	239	<i>Excise permits</i>	243
<i>Issue of stamps</i>	251	<i>Forgery, 2</i>	244
<i>Letter-press printing</i>	253	<i>France</i>	245
<i>Perforating machine, 2</i>	255	<i>Newspaper stamps</i>	254
<i>Perforation of stamps</i>	256	<i>Perforation of stamps</i>	256
<i>Gumming</i>	245	<i>Plates</i>	257
<i>Contracts, 3</i>	237	<i>Reynolds, Mr.</i>	257
<i>Hill, Mr. E.</i>	248	<i>Sheets of stamps, 1</i>	258
<i>Adjusting power (Archer's invention)</i>	229	<i>Shilling and tenpenny stamps</i>	258
<i>Compensation, 2</i>	236	<i>Supply of stamps</i>	259
<i>Cost of construction</i>	240	<i>Transferring machine</i>	259
<i>Experiments</i>	243	<i>Type mould</i>	260
<i>Inland Revenue Board, 1, 2</i>	250	<i>PERFORATING MACHINE:</i>	
<i>Perforating machine, 1</i>	255	1. <i>Evidence relative to the invention, construction, alterations, and improvement of Mr. Archer's machine</i>	255
<i>Type mould</i>	260	2. <i>Approval generally of the machine</i>	255
<i>INLAND REVENUE BOARD:</i>		3. <i>How far any impediments were thrown in the way of perfecting it by the present contractors</i>	256
1. <i>How far Mr. E. Hill, on the part of the Commissioners, superintended and controlled Mr. Archer's invention</i>	250	4. <i>Opinion that the present contractors would be willing to use it</i>	256
2. <i>Inference drawn from the interference of the Commissioners that the Government was responsible for the expense</i>	250		

<i>PERFORATING MACHINE—cont<sup>d</sup>.</i>	PAGE	<i>SHEETS OF STAMPS :</i>	PAGE
<i>Adjusting power</i> - - -	229	1. <i>Dissimilarity in the present sheets of postage stamps</i> - - -	258
<i>Alterations of the machine</i> - - -	229	2. <i>Difficulties experienced in the perforation from the irregularity in the size of the sheets</i> - - -	258
<i>Compensation</i> - - -	236	<i>Adjusting power (Archer's invention)</i> - - -	229
<i>Cost of construction</i> - - -	240	<i>Gumming</i> - - -	245
<i>Experiments</i> - - -	243	<i>Perforating machine, 1. 3</i> - - -	255
<i>Hill, Mr. E.</i> - - -	248	<i>Supply of stamps</i> - - -	259
<i>Inland Revenue Board</i> - - -	250	<i>Bacon &amp; Petch, Messrs.</i> - - -	233
<i>Post-office</i> - - -	257	<i>Perforation of stamps</i> - - -	256
<i>Sheets of stamps</i> - - -	258	<i>Tenders</i> - - -	259
<i>Transferring machine</i> - - -	259	<i>Contracts</i> - - -	237
<i>Treasury, The</i> - - -	260	<i>Transferring machine</i> - - -	259
<i>Working expenses</i> - - -	260	<i>Working expenses (Archer's invention)</i>	260
<i>Perforation of stamps</i> - - -	256	<i>Perforating machine, 2</i> - - -	255
<i>Contracts, 1. 3</i> - - -	237		
<i>Dry printing</i> - - -	242		
<i>Gumming</i> - - -	245		
<i>Inland Revenue Board, 1</i> - - -	250		
<i>Sheets of stamps</i> - - -	258		
<i>Post-office</i> - - -	257		

## I N D E X.

[*N.B.*—In this Index, the *Numerals* following *Rep.* refer to the page of the Report, and the *Figures* following the Names of the Witnesses refer to the Question of the Evidence.]

## A.

*Addenbrooke, Joseph.* (Analysis of his Evidence.)—Mechanist; is conversant with almost all kinds of machines, 1366, 1367—Was employed to make alterations in Mr. Archer's perforating machine; the same machine that is now at Somerset House; was employed by Mr. Archer, 1368-1370—Witness believes it is the same that was tried at Messrs. Bacon & Petch's, 1371—The machine was in a very bad and dirty state when it came into witness's possession; nature of the principal of the alterations and additions required, 1372. 1465-1474—Witness put in a new ratchet, which was found to be entirely useless, in consequence of a model sheet of stamps which he subsequently received from Messrs. Bacon & Petch being different from the sheet which he had originally received from Mr. Archer, and from which he had made the ratchet, 1374-1386. 1411, 1412—Observations made by witness to Mr. Archer in one of his letters to him on this subject, on the fear expressed by Mr. Edwin Hill as to the clogging of the perforators by the gum, 1385, 1386.

After witness had received the model sheet, he altered the machine to suit the model, and Mr. Hill was informed when it was finished, and was invited to see it; the trial then proved unsuccessful, 1387-1389—It failed from the size of the sheets varying so much, either from shrinkage or from the unequal size of the plates, 1390. 1411, 1412—Mr. Hill determined, if the adjusting power could not be applied, it could not be worked, 1390—There were several suggestions from Mr. Hill and his sons to get over this difficulty, 1392.

Order witness received from Mr. Hill, dated 3 Sept. 1849: "Postage Stamps. 3 Sept. 1849. Wanted for the use of this department. Alter the guiding apparatus to Mr. Archer's piercing machine, according to Mr Hill's instructions," (signed) *E. Hill; C. P. Rushworth,*" 1393, 1394—In consequence of this order, and of Mr. Hill's interfering so much with it, witness told Mr. Archer that he considered the Commissioners really adopted his

Report, 1852—*continued.**Addenbrooke, Joseph.* (Analysis of his Evidence)—*continued.*

machine, and he thought all his expenses would be taken out of his hands for the future, 1395—Subsequent order witness received from Mr. Hill for a new set of pinching tools, &c. ; this was after it was completed, the adjusting process added to it, and everything pronounced to be finished ; charge made for the new set of pinching tools, 1397-1401. 1406.

Witness brought in an account of 750 *l.* for the perfect machine, 1403—Witness considered Mr. Archer was legally bound to pay him the amount of this bill, 1404-1410—But witness considered Government, in consequence of interfering with the affair, were morally responsible to him for the payment of his account, 1404-1410. 1419-1437—Mr. Hill gave orders, independently of Mr. Archer, and in Mr. Archer's absence, 1410-1413—Witness considers that Mr. Hill's suggestions and orders contributed very much to the perfection of the machine, 1414-1418—Grounds on which witness looked to Mr. Hill as the representative of the Government in this affair, 1419-1437.

Letter witness wrote to Mr. Archer in May 1850, urging him to arrange the affair with the Government as early as possible ; witness had never received any remuneration on account of it, 1438-1443—After Mr. Archer had done with the machine, and it was delivered into the hands of the Government, witness received 75 *l.* from the office of the Inland Revenue in payment of the order for the new set of punches, 1443-1451—If the sheets of postage stamps had been all of one size, and perfectly true, the machine would have perforated them without any adjusting power, 1452-1454—This would not have saved the whole of the subsequent expense, as there were other alterations and additions required, 1454-1457—Witness did not receive any written orders from the Government for these alterations, but received verbal orders from Mr. Hill from time to time, 1455-1459.

Witness sent in a bill to Government for those alterations that were made after the machine was finished, but has made no application for the amount, 1460-1464—When the machine was brought into witness's office, there was no indication that it had undergone unfair treatment, 1465-1474—From witness's feeling that difficulties had been thrown in the way of the patentee and himself in perfecting the machine, by Messrs. Bacon & Petch, it was settled, with the concurrence of Mr. Hill, that when the machine was perfected, it should be sent to Somerset House ; it then worked regularly and well, 1475-1483. 1544-1546—Alterations which the machine underwent in order to adapt it to the different sized sheets that were received ; these sheets were received from Bacon & Petch, 1484 *et seq.*

Grounds which witness has for making the assertion that difficulties were thrown in the way by Messrs. Bacon & Petch, 1484-1527—The difference in the size of the sheets was no doubt attributable to the shrinkage of the paper, and the unequal size of the plates, 1528-1543. 1547—Further alterations rendered necessary in the machine from the unequal size of the plates, independently of the adjusting power, 1548-1549—Witness is quite satisfied the machine is perfect, and competent to do the work required ; number of sheets it would perforate in a day, 1550-1556.

Witness

## Report, 1852—continued.

*Addenbrooke, Joseph.* (Analysis of his Evidence)—continued.

Witness understood Mr. Hill to intimate, that if the machine answered, Mr. Archer would be amply paid for it; witness told him he could make another machine complete for 400 *l.* or 500 *l.*; 1557-1560—Mr. Archer has complained of witness's charge of 750 *l.* being too much, and has offered him 375 *l.* in full, 1561-1563. 1565-1571—Witness believes the machine would now work under careful provision with regard to the sheets being guarded against shrinking; there is no doubt it is a useful invention, 1572, 1573—Witness considers the 500 *l.* offered to Mr. Archer very inadequate; he considered it a joke on the part of Mr. Archer when he told witness of it, 1577-1589.

*Addenbrooke, Mr.* See *Cost of Construction.* *Inland Revenue Board, 2.*

*Adjusting Power* (Archer's Invention). Conclusion come to by Mr. Edwin Hill, in consequence of the failures of the perforating machine, that unless an adjusting power could be attached to the machine, to suit the various sizes of the sheets of stamps, it would not answer the object for which it was intended, *H. Archer, 13; Addenbrooke 1390-1392*—Mr. Hill had a notion of his own about overcoming the difficulty of the adjusting power; his idea failed, and witness was compelled to try his own, *H. Archer 30. 41-47. 80-85*—Introduction of an adjusting apparatus and other improvements in the machine; ultimately the machine worked satisfactorily, *E. Hill 646-648.*

See also *Dry Printing.* *Sheets of Stamps 2.*

*Alterations of the Machine.* Removal of the machine from Messrs. Bacon & Petch for the purpose of effecting the necessary alterations, *E. Hill, 638, 639*—Though Mr. Archer's machine might work practically well, it would still require improvements if brought into constant operation, *ib. 946, 947.*

See also *Cost of Construction.* *Perforating Machine.*

*American Notes.* Opinion that the American note is not prepared in the manner most calculated to prevent forgery; witness distrusts all complicated designs for notes, *R. Hill, 1058-1065.*—See also *Forgery, 2.*

*Anastatic Printing.* Anastatic printing cannot do the fine work of copper-plate engraving; if it could, witness has a plan ready to guard against it, *Bacon, 1702, 1703*—Possibility of forging postage stamps by the process of anastatic printing, *Coe 1863-1867.*

*Archer, Charles Maybury.* (Analysis of his Evidence.)—Witness is in possession of a plan for the successful imitation of postage stamps, but he declines to make the process public, 2165-2181—Witness has had communications with the Post-office and Inland Revenue Departments upon the subject, 2166-2178—The Post-office have, in consequence of witness's communication with them, altered the postage stamps in the last month, 2179, 2180.

*Archer, Henry.* (Analysis of his Evidence.)—Inventor and patentee of a plan for perforating the sheets of postage labels, so as to effect their instant separation without the aid of any cutting instrument, 1—Invented the plan and submitted it to the Postmaster-general in the autumn of 1847; 2, 3—The

## Report, 1852—continued.

*Archer, Henry.* (Analysis of his Evidence)—continued.

Postmaster-general referred the plan to the practical department of the Post-office, with the view of ascertaining whether it would, on public grounds, be desirable to adopt it, 4.—Favourable report of the officers of that department on the invention, 5, 6.—The Postmaster-general sent this report to the Commissioners of Inland Revenue, 7.—Letter witness addressed to the Commissioners of Inland Revenue, on 25th October 1847, stating that he was willing to furnish the machine, on the understanding that he was not to be remunerated or repaid the money it had cost him until the plan should have succeeded, 8.

Authorisation given by the Treasury to the Board of Inland Revenue to give a trial to the plan as an experimental measure, 9.—Letter received by witness on this subject, directing him to send two machines, when completed, to Messrs. Bacon & Petch, 9.—Further letter from the Board, dated 25th January 1848, recommending witness to communicate with Mr. Edwin Hill, and also that the machinists employed should be distinctly made to understand the precise purpose to which each machine was to be applied, 10.—Witness had not patented the machine at this time, but did so immediately afterwards, 11.

Evidence relative to the construction of two machines of rather different principles, one of them on the plan of puncturing the sheets by rollers, and the other with a puncturing machine, on the fly-press principle; failure of these machines, 11, 12.—Description of a further machine which witness invented; this machine, on the first trial at Somerset House, did not succeed, from the fact of nearly all the sheets which were tried being different in size, 12, 13. 66-80. 86-88.—Conclusion come to by Mr. Edwin Hill, that unless an adjusting power could be attached to the machine, to extend or contract the movements to suit the various sizes of the sheets, it would not answer, 13.—The Board of Inland Revenue was well acquainted with the various experiments witness was making, 14-26.

Decision come to by the Commissioners, on witness's application to have the machine tried at Somerset House under Mr. Hill's superintendence, 14-26. 48-65. 91-103.—It was witness's impression that Mr. Hill was acting under the orders of the Commissioners of Stamps and Taxes, 19 *et seq.*—Mr. Hill saw the difficulties witness had to contend with, and helped him to endeavour to overcome them, 27-36. 41.—Mr. Hill had a notion of his own about overcoming the difficulty of the adjusting power; his idea failed, and witness was compelled to try his own, 30. 41-47. 80-85.

The following official letter was sent to witness's machinist, Mr. Addenbrooke: "Postage Stamps. 3 September 1849. Alter the guiding apparatus to Mr. Archer's piercing machine, according to Mr. Hill's instructions, (signed) *E. Hill; C. P. Rushworth,*" 30.—After this letter witness considered all further expense would fall on the Government, 30. 37-40. 91.—The first trial of the machine was at Bacon & Petch's, when the machine was spoilt; it was then removed to Somerset House; way in which the machine was spoilt, 48-65. 91-103.—The use of the machine was officially approved of on the 27th August 1850; the plan had been approved of long previously, 104-120.—None of the perforated sheets were issued in London except to the Houses of Parliament;

## Report, 1852—continued.

*Archer, Henry.* (Analysis of his Evidence)—continued.

ment; they were, however, circulated in some of the provincial towns; the demand for them was afterwards so great that the issue was obliged to be stopped, 120-133.

About 5,000 sheets were perforated at Somerset House; there is no doubt 3,000 sheets might be perforated in a day; after striking off the 5,000 sheets, the machine was in as good working as at first, 136-153—The cost of the perfected machine, the one which was worked, comes to 900*l.*; this is exclusive of the expenditure upon the two former machines, 154-164—Witness was four years and a half perfecting the machine, and has been in daily expectation of a settlement, 165-175. 206-208—After the Commissioners of Inland Revenue had acknowledged the advantages of the invention, they offered witness 300*l.* towards paying for his expenses, and 200*l.* for his invention; witness refused this, and another 100*l.* was offered him, 176-181—Witness refused this, and at the same time said he would leave it to any engineer of rank, or any one that the Government thought proper to appoint, and witness would abide by his decision, 182. 184, 185. 209-211.

Witness submitted a statement of the expense of the 900*l.*, and showed the vouchers to Mr. Hill, and left a part of them with him, 183. 188-202—Grounds on which the Commissioners came to the conclusion that 500*l.* or 600*l.* was a sufficient remuneration for the machine and the invention thereof, 183. 186, 187—In the 900*l.* there is not a halfpenny allowance for witness's time, 203. 206-208—Evidence on the subject of the enormous bill sent in by Mr. Addenbrooke for repairs, 204-205—On the 24th January 1852, an offer of 2,000*l.* was made to witness, which he refused, 212-214. 218. 227-233.

Evidence in detail on the subject of witness's having, at the time he refused the offer of 600*l.*, in conjunction with Mr. Branston, offered to take the contract for engraving, printing, gumming, and perforating the postage labels, for 1*l.* 15*s.* a thousand less than is paid to the present contractors; particulars of a further tender made by witness and Mr. Branston to do them for 4½*d.* a thousand; refusal of this offer, 215-299. 320-331. 334-347—This tender was submitted previously to the offer of the 2,000*l.* to witness; had he got the contract at 5*d.* a thousand he would have considered it a full compensation for all his trouble, 220, 227-233—In the reduction of the offer from 5*d.* to 4½*d.*, witness contemplated a cheaper sort of printing; the one was copper-plate or steel-plate printing, and the other letter-press printing; witness believes the letter-press printing to be superior, and is more economical, 300. 303-319. 332, 333. 341.

Witness contemplated, in his tender, the engraving and printing, and also the gumming and perforating, and also contemplated the use of a superior paper; he also intended using the pure white gum, instead of the glutinous wash now used, 348-357. 359, 360—Witness is still ready, in connexion with Mr. Branston, to renew his tender, and enter into a contract, with adequate securities, if the Board of Inland Revenue were disposed to give it him, 358. 361, 362.—No doubts have ever been expressed as to witness's perfected machine answering the purpose for which it was intended, 363-370.

[Second Examination.] Evidence as to the payments, amounting to 0.39. P 4 150*l.*

Report, 1852—*continued.*

*Archer, Henry.* (Analysis of his Evidence.)—*continued.*

150 *l.*, made by witness on account of his machine, previously to its being sent to Mr. Addenbrooke's, 1122-1127. 1135-1143 — Witness's objection to pay Mr. Addenbrooke's bill for 750 *l.* is, that he considers the Commissioners are liable, and not himself; the Commissioners and Mr. Hill gave an undertaking to Mr. Addenbrooke to be responsible to him for all the repairs, 1128-1133. 1138. 1183, 1184 — Mr. Addenbrooke brought an action against witness for the amount of his bill, but stopped proceedings when he heard the Government had only offered 500 *l.* for the invention, 1133, 1134 — Opinion that 500 *l.* would be sufficient to remunerate Mr. Addenbrooke, 1141. 1144, 1145 — Witness has submitted Mr. Addenbrooke's bill to Mr. Hill, but he did not express any opinion upon it, 1146-1148 — How far witness gave up any profession or remuneration on taking up his residence in London with a view to perfecting this machine, 1149-1182 — From October 1847, witness's whole time was given up to perfecting this machine, 1185-1187.

*Archer, Mr.* See *Compensation. Contracts, 3, 4, 5. Hill, Mr. E. Inland Revenue Board, 1. Letter-press Printing, 2. Perforating Machine.*

## B.

*Bacon, Joshua Butters.* (Analysis of his Evidence.)—Witness's firm have engraved and printed the postage stamps from the commencement of the system, 1590 — Number of stamps printed per week; increase of the demand which took place last year in consequence of the obligation throughout the country to put stamps upon the letters, 1591-1601 — Witness has always been able to supply the demands of Government, 1593-1601 — Security for 5,000 *l.* entered into for the proper performance of the work, 1602 — Witness never had any objection to Mr. Archer's plan of perforating the stamps; on the contrary, was in favour of it, and afforded Mr. Archer every assistance in perfecting his machine, 1608-1612.

Reference to the agreement entered into with the Inland Revenue Commissioners for supplying the postage stamps, dated 5th May 1843; this was the second contract, and binds the Government as long as they use the stamps, 1613-1615 — In consequence of intimation being given that the work could be done at a lower rate, witness's firm agreed to reduce their charges, 1616, 1617 — On witness's firm agreeing to a reduction of charge, they stipulated for a five years' contract; this offer was accepted; the contract was signed the 1st July, 1618-1630. 1639-1644. 1659 — No communication or letters took place as to the terms of the second contract; these terms of the contract are so long as the Commissioners should require stamps, 1634-1638.

The assertion that witness interfered with the perfect trial of the machine is perfectly destitute of all foundation, 1645, 1646 — Denial of the statement that irregularly shaped sheets of stamps were given out for perforation, 1646-1652 — Notice given to Mr. Archer as to the impossibility of making the sheets of stamps perfectly uniform, 1646-1653 — No impediments whatever were thrown in the way of the working and perfecting of Mr. Archer's machine

## Report, 1852—continued.

*Bacon, Joshua Butters.* (Analysis of his Evidence)—continued.

chine whilst in witness's establishment, 1654-1656—On the second contract being entered into a reduction of the charges took place, arising from the more extended sale, 1657, 1658.

If the machine would answer for perforating in the manner proposed, it would be a useful machine, 1660-1665—No proposals had been made for perforating the stamps previous to Mr. Archer's invention, but witness has been inundated with them since, 1666—The present machine at Somerset House never was in witness's establishment, for it has been much altered since it left witness's house, 1666-1671—Improvements made by the introduction of the machine for transferring the engraving, 1672, 1673—The whole of witness's establishment is under the superintendence of a Government officer, 1674-1689—Copper-plate engraving gives the greatest security against forgery, 1690-1701. 1759-1762. 1764-1777—Anastatic printing cannot do the fine work of copper-plate engraving, 1702, 1703.

Average number of sheets which a plate will print without being renewed, 1710-1712—Remarks relative to the gumming of the labels, 1713-1725—If it were found desirable to print the postage labels on dry paper, for the benefit of perforating them, it would not do for copper-plate printing with any description of paper, 1726, 1727—Opinion that 400 *l.* or 500 *l.* would be sufficient remuneration for Mr. Archer's machine, 1728-1753—If witness, as contractor for the supply of postage stamps, was compelled to perforate the stamps, the working of the machine would make a difference of 300 *l.* or 400 *l.* per annum in the expense, 1754-1757—It would be to the public convenience to have the stamps perforated, 1758.

There has been but one case of forgery of postage stamps, which was immediately detected, 1763, 1764—Circumstances which led to a fugitive colour being used for postage stamps, 1763, 1764—Impossibility of forging the present postage stamp, in all its details, by means of surface printing, 1764-1770—But very few banks or bankers have adopted surface printing for their checks and notes, 1777, 1778—There would not be a considerable difference between the cost of copper-plate engraving and surface printing, 1779, 1780—The French postage stamps are printed by surface printing, 1781-1783.

*Bacon & Petch, Messrs.* The transactions between the Stamp Office and Messrs Bacon & Petch have been highly satisfactory, *E. Hill* 850-853; *R. Hill* 1034; *Keogh* 2005-2007—Government and the public are mainly indebted to Messrs. Bacon & Petch for the present stamp; they were the proposers of the plan in its detail, *R. Hill* 1008, 1009—Messrs. Bacon & Petch having always given satisfaction, it was thought very inexpedient to change the contractors, even if a reduction of the expense could have been effected, *Keogh* 2005-2007.

See also *Contracts. Copper-plate Engraving. Experiments. Government Superintendence. Inland Revenue Board, 2. Letter-press Printing, 2. Perforating Machine, 1. 3. 4. Perforation of Stamps. Supply of Stamps. Working Expenses.*

*Bank*

Report, 1852—*continued.*

*Bank Notes.* The Bank of England, and with few exceptions, the banking interest of the three kingdoms, employ copper-plate in preference to letter-press in the issue of their notes, *Branston* 533-543. 609, 610; *Bacon* 1777, 1778—Adoption of letter-press engraving for the 1 l. notes by the Bank of England, *Branston* 544-553—Reason for the Bank of England not adopting the machine for surface printing, patented by witness for printing bank notes, *Couper* 1310-1338. 1345-1347.

See also *American Notes.* *Letter-press Printing.*

*Branston, Robert Edward.* (Analysis of his Evidence.)—Witness was employed in 1819 and 1820 by the Commissioners employed by Government to inquire into the best means of preventing the forgery of Bank of England notes, 373—Amongst the plans brought under notice, was the American system, since adopted for the postage stamps; this is a costly mode of arriving at the object to be attained, and does not afford greater security than the relief mode of engraving and letter-press printing, 374-379—The mode now practised is not more secure than the surface printing, and is more expensive, 380-388. 415—Appointment of witness's father as engraver to the Government for the prevention of forgery; nature of the office; stamps engraved for the Stamp Office; satisfaction given to the authorities, 389-402. 474-477.

Proposal of witness with Mr. Archer to produce postage labels of a more secure description than those at present in use, at a lower rate, 406-414—The surface mode of printing is cheaper than the other mode of printing, 416-429—In the report of the Commissioners for inquiry in the Bank forgeries, the mode of printing now in use for postage labels was condemned and the system of letter-press printing recommended, 430-463. 478-480—Ease with which witness and his father imitated the intricate styles of copper-plate engraving and original designs suggested for preventing forgeries, by means of letter-press, 452-463.

In the tender put in by witness, in conjunction with Mr. Archer, the tender was for letter-press printing, and the price specified was  $4\frac{1}{2}d.$ ; 465-472. 519-523. 554-556. 582-587.—If an opportunity presented itself of making a tender for the execution of that work, witness would be disposed to renew that tender on the same terms, 473—Under the existing system, the contractors are able to produce about 5,000 sheets of labels per day, 481-486. 492, 493—Witness's mode of printing would afford very great facilities in point of rapid execution of work; the machine would produce 30,000 sheets per day, 487-497.

Under the present system there are no two sheets of labels alike, if worked from two different plates; it would be very difficult to identify an imitation, 501—Difficulties experienced by Mr. Archer in adjusting his machine to the perforating of the sheets as at present printed; under witness's proposed system there would be no difficulty whatever, as there would be no shrinking of the paper, as they would be printed dry, 502-515. 565-572—Remarks relative to the gumming of the labels, 509-513—Specimens of postage stamp heads by letter-press printing produced, 516-518—By the plan of surface printing there would be point holes for adjusting and regulating the perforating of the stamps, 524, 525.

With

## Report, 1852—continued.

*Branston, Robert Edward.* (Analysis of his Evidence.)—continued.

With regard to the register letters on the labels, they must be all engraved as at present, 526-532—The Bank of England, and with few exceptions, the banking interest of the three kingdoms, employ copper-plate in preference to letter-press in the issue of their notes, 533-543—Adoption of letter-press engraving for the 1*l.* notes by the Bank of England, 544-553—Power of Messrs. Bacon & Petch to increase the number of presses and plates to meet any increased demand for labels, 560-564.

Adoption of postage labels in France; they are printed by letter-press, 573-577—There would be no difficulty in getting good impressions on dry paper; the patent medicine labels are printed on dry paper, 578-581. 588-598. 611-616—Witness and his father prepared the plates for the permits of the Excise; in letter-press this mode is still continued in use, 599-603—The East India drafts were engraved by witness, for letter-press printing, 604-608—Letter-press printing is very commonly used abroad for bank notes and various purposes, 609, 610.

*Branston, Mr.* Witness does not doubt Mr. Branston's competence to do what he offered to do, but his offer was to do the work by surface printing, which would not have answered the purpose, *Keogh* 2008-2014.

See also *Contracts*, 3. 4. 5. *Gumming.* *Letter-press Printing*, 2.

## C.

*Clayton, Mr.* Application made by a Mr. Clayton of Dublin, in 1844, respecting the making of postage stamps; how far witness may have confounded this application with Mr. Archer's proposal for perforating them, *Wickham* 1785-1789.

*Coe, John.* (Analysis of his Evidence.)—Superintendent of letter-press department at the Bank of England, 1812-1815—With reference to security from forgery, the two systems of copper-plate engraving and letter-press printing are about on a par, 1816—With regard to economy there can be no question that surface printing is very much cheaper than plate printing, 1816-1826—If Mr. Archer's plan of perforating the postage stamps be adopted, it is very desirable that the stamps should be printed on dry paper; evidence showing that this might easily be done, 1827-1837—Witness is greatly in favour of printing by electrotype, 1829-1831. 1837, 1838. 1870, 1871—It would facilitate the perforation of the labels if the holes for registering the sheets were made at the same time as the labels are printed, 1839-1842.

The printing of postage label stamps could be securely carried out by the surface mode of printing, 1843, 1844—Great want of identity in the present sheets of stamps; this would facilitate forgery, 1845-1850—Possibility of printing with fugitive ink from types, 1855-1862—Possibility of forging postage stamps by the process of anastatic printing, 1863-1867—Greater security would be obtained by the printing of labels and the perforation being done by different parties, 1868, 1869.

*Commissioners of Stamps and Taxes.* See *Contracts*, 1. *Inland Revenue Board.*

COMPENSATION:

Report, 1852—continued.

COMPENSATION :

1. *Opinion as to the Amount of Compensation which should be made to Mr. Archer for his Invention.*
2. *Evidence as to the Offers made by the Treasury to Mr. Archer, and Refusal of Mr. Archer to accept the Amount offered.*

1. *Opinion as to the Amount of Compensation which should be made to Mr. Archer for his Invention :*

Recommendation of the Committee that the machine constructed by Mr. Archer should be purchased for the use of the public; suggestion as to the mode in which compensation should be made him, *Rep.* iii—In witness's report to the Commissioners he recommended that Mr. Archer should be paid so much for his invention, and so much for his machine, *E. Hill* 653-657—Recommendation that compensation should be given to Mr. Archer for his invention, *R. Hill* 1040-1042. 1091-1095—Objections to Mr. Archer being allowed a per centage per thousand upon the work done; paying him a certain sum for his invention would be much the best course, *ib.* 1120, 1121—Opinion that 400 *l.* or 500 *l.* would be sufficient remuneration for the machine, *Bacon* 1728-1753.

2. *Evidence as to the Offers made by the Treasury to Mr. Archer, and Refusal of Mr. Archer to accept the Amount offered :*

Letter witness addressed to the Commissioners of Inland Revenue on 25th October 1847, stating that he was willing to furnish the machine on the understanding that he was not to be remunerated or repaid the money it had cost him until the plan should have succeeded, *H. Archer* 8—Witness was four years and a half perfecting the machine, and has been in daily expectation of a settlement, *ib.* 165-175. 206-208. 1149-1182. 1185-1187—The Commissioners of Inland Revenue offered witness 300 *l.* towards paying for his expenses, and 200 *l.* for his invention; witness refused this, and another 100 *l.* was offered him, *ib.* 176-181—Witness refused this, and at the same time said he would leave it to any engineer of rank, or any one that the Government thought proper to appoint, and witness would abide by his decision, *ib.* 182-184, 185. 209-211—Grounds on which the Commissioners came to the conclusion that 500 *l.* or 600 *l.* was a sufficient remuneration for the machine and the invention thereof, *ib.* 183. 186-187—On the 24th January 1852, an offer of 2,000 *l.* was made to witness, which he refused, *ib.* 212-214. 218. 227-233.

The sum of 2,000 *l.* offered by the Treasury to Mr. Archer may be considered as a liberal compensation, *R. Hill* 1105-1119—Witness understood Mr. Hill to intimate that if the machine answered, Mr. Archer would be amply paid for it, *Addenbrooke* 1557-1560—Witness considers the 500 *l.* offered to Mr. Archer very inadequate, *ib.* 1577-1589—The reason the machine was not used was because Mr. Archer did not acquiesce in the terms which the Treasury had settled for his remuneration, *Keogh* 2046—It was always considered that Mr. Archer would be fairly entitled to such a reward from the Government as his invention might be considered worth when brought to perfection, *ib.* 2058-2059.

See also *Contracts*, 3. *Inland Revenue Board*, 1.

*Competition.*

## Report, 1852—continued.

*Competition.* See *Contracts*, 5.

*Complaints.* Very few complaints have ever been made as to the execution of the stamps or their gumming, *R. Hill* 1032, 1033.

**CONTRACTS:**

1. *Generally.*
2. *Particulars relative to the Contracts entered into with Messrs. Bacon & Petch.*
3. *Evidence on the Offers of Mr. Archer and Mr. Branston to take the Contract at a Reduced Rate.*
4. *How far these Offers may be considered to have led to the Reduction of Messrs. Bacon & Petch's Charges.*
5. *Estimated Saving which would have accrued to the Public by accepting the Offer of Mr. Archer and Mr. Branston.*

1. *Generally:*

Reasons why in the last contract entered into with Bacon & Petch no allusion was made to the additional offer of perforating the stamps; it was considered so very much inferior a consideration that it was not attended to at all, *Keogh* 2110-2113—The advantage of having the contract for five years is rather on the side of the contractors than on that of the Government, *ib.* 2128-2132—Practice of the Commissioners of Stamps and Taxes with respect to signing contracts, *ib.* 2137-2139.

2. *Particulars relative to the Contracts entered into with Messrs. Bacon & Petch:*

Observations of the Committee on the inaccuracy which appears to have occurred in granting the last contract to Messrs. Bacon & Petch for a term of five years from July 1851; *Rep.* iv—In the contract lately made with Messrs. Bacon & Petch it was not necessary to make it for a term of five years; neither the interest nor the convenience of the public was thereby secured, *ib.*—Agreement entered into with the Inland Revenue Commissioners by witness's firm, for supplying the postage stamps, dated 5th May 1843; this was the second contract and binds the Government as long as they use the stamps, *Bacon* 1613-1615. 1634-1638—In consequence of intimation being given that the work could be done at a lower rate, witness's firm agreed to reduce the rate of charge, *ib.* 1616, 1617—On witness's firm agreeing to a reduction of charge they stipulated for a five years' contract; this offer was accepted; the contract was signed the 1st July 1851, *ib.* 1618-1630. 1639-1644. 1659—On the second contract being entered into a reduction of the charges took place, arising from the more extended sale, *ib.* 1657, 1658.

3. *Evidence on the Offers of Mr. Archer and Mr. Branston to take the Contract at a reduced Rate:*

Evidence in detail on the subject of witness's having, at the time he refused the offer of 600 *l.*, for his perforating machine, in conjunction with Mr. Branston, offered to take the contract for engraving, printing, and perforating the postage labels for 1 *l.* 15 *s.* a thousand less than is paid to the present contractors;

## Report, 1852—continued.

## CONTRACTS--continued.

3. *Evidence on the Offers of Mr. Archer and Mr. Branston, &c.*—continued, contractors; this would amount to 5*d.* per thousand, the present price paid being 6*d.*; particulars of a further tender made by witness and Mr. Branston to do them for 4½*d.* a thousand; refusal of this offer, *H. Archer* 215-299. 320-331. 334-360—This tender was submitted previously to the offer of the 2,000*l.* to witness; had he got the contract at 5*d.* a thousand, he would have considered it a full compensation for all his trouble, *ib.* 220. 227-233.

In the reduction of the offer from 5*d.* to 4½*d.*, a cheaper sort of printing was contemplated; the one was copper-plate or steel-plate printing, and the other letter-press printing; opinions that the letter-press printing is superior, and more economical, *H. Archer* 300. 303-319. 332, 333-341; *Branston* 465-472. 519-523—Witness is still ready, in connexion with Mr. Branston, to renew his tender and enter into a contract with adequate securities, if the Board of Inland Revenue were disposed to give it him, *H. Archer* 358. 361, 362; *Branston* 473—Proposal of witness, with Mr. Archer, to produce postage labels of a more secure description than those at present in use, at a lower rate than at present, and also to add the perforating plan for separating the labels, *Branston* 406-414. 554-556. 582-587.

4. *How far these Offers may be considered to have led to the Reduction of Messrs. Bacon & Petch's Charges:*

Opinion of the Committee that it was inexpedient to have communicated the offer of Mr. Archer to print, gum, and perforate the stamps for a smaller sum than was being paid, to the persons who were contractors, or proposed to become contractors, for such work, *Rep.* iv.—Witness does not attribute the reduction of Messrs. Bacon & Petch's contract from 6*d.* to 5*d.* to the application and offer of Mr. Archer, although it might not have been effected so soon; the offer of Mr. Archer was communicated to Messrs. Bacon & Petch, *E. Hill* 870-880. 902—Witness does not consider this was treating Mr. Archer in an unfair manner; ground on which witness comes to this conclusion, *ib.* 903-911.

Evidence in detail relative to the contract entered into in July 1851, to print postage labels for the term of five years at 5*d.* per thousand; this was after the offer made by Mr. Archer and Mr. Branston to do it for that sum; the previous price paid to Messrs. Bacon & Petch had been 6*d.* a thousand; and how far the lowering of the contract with Messrs. Bacon & Petch was consequent upon the offer of Messrs. Archer and Branston, *Keogh* 1967-2000. 2075-2109. 2150-2162. 2164—The subsequent offer of Messrs. Archer and Branston at 4½*d.* related solely to surface printing, *ib.* 2000-2001.

Witness is certain the reduction in Messrs. Bacon & Petch's charge would have been made if Mr. Archer had never been heard of; communications had been made to them upon previous occasions complaining of their charge, *Keogh* 2027, 2028. 2061-2063—Reductions which had taken place in the charges of Bacon & Petch since they have had the contracts; alterations which were made in the last contract as compared with the former contracts, *ib.* 2065-2074—When Mr. Archer's proposal was made, the Board felt that they

## Report, 1852—continued.

## CONTRACTS—continued.

4. *How far these Offers may be considered, &c.*—continued.

they would be relieved from the necessity of considering the proposal at all if Messrs. Bacon & Petch assented to the reduction which they intended to ask them for, *Keogh* 2114-2116.

5. *Estimated Saving which would have accrued to the Public by accepting the Offer of Mr. Archer and Mr. Branston :*

The amount of saving per annum by the difference of  $\frac{1}{2}d.$  per thousand between Messrs. Bacon & Petch's contract and Messrs. Archer & Branston's tender, would be about 1,200*l.* per annum, *E. Hill* 855—Previous to the offer on the part of Mr. Archer to execute the stamps at  $5d.$  per thousand, Messrs. Bacon & Petch were being paid  $6d.$  per thousand; explanation relative to the reduction of Messrs. Bacon & Petch's contract from  $6d.$  to  $5d.$ , *ib.* 862-881—No steps have been taken to ascertain whether even  $5d.$ , with the increased quantity of stamps that are printed, is not a much larger price than ought to be paid, *Keogh*, 2124-2127.

See also *Bacon & Petch*, MESSRS. *Sureties of Contractors. Tenders.*

## COPPER-PLATE ENGRAVING :

1. *Opinion that Copper-plate Printing is much more secure against Forgery than Surface Printing.*
2. *Evidence showing that Copper-plate Engraving is more expensive than Surface Printing, and is not more secure.*

1. *Opinion that Copper-plate Printing is much more secure against Forgery than Surface Printing :*

Grounds for the opinion that copper-plate printing is much more secure against counterfeits than surface printing, *E. Hill* 666-685—It would be a most hazardous experiment to make the change from the present system of printing labels, by the adoption of surface printing, *E. Hill* 684, 685. 691, 692. 751, 752. 769; *Wickham* 1796-1803—Great care and labour bestowed in deciding the question of the most beneficial mode of printing postage labels in 1840, when copper-plate printing was decided on, *E. Hill* 699-702. 708, 709; *R. Hill* 964-972. 992-995. 1045-1053—The same perfect similarity could not be so well secured by letter-press as by copper-plate printing, *E. Hill* 724-733.

Opinion that nothing could answer the purpose for which designed better than the postage labels at present in use, *E. Hill* 854; *Wickham* 1796-1803—Surface printing is much cheaper than engraving, and can be executed with greater rapidity, but it was thought advisable to sacrifice something in the cost of the stamps for the sake of the greater security which copper-plate printing affords, *R. Hill* 1001, 1002. 1024-1029. 1086-1089—Copper-plate engraving gives the greatest security against forgery, *Bacon* 1690-1701. 1759-1762. 1764-1770—It is more difficult to make a fac-simile, or imitation of the present mode of engraving, than it would be if it were done by letter-press, *Wickham* 1804.

2. *Evidence*

## Report, 1852—continued.

## COPPER-PLATE ENGRAVING—continued.

## 2. Evidence showing that Copper-plate Engraving is more expensive than Surface Printing, and is not more secure :

The mode now practised is not more secure than surface printing, and is more expensive, *Branston* 380-388. 415—The plates for copper-plate engraving printing are less permanent in use than in the letter-press printing style, *ib.* 464—Witness is aware of the mode that is adopted for printing the postage labels, that is by copper-plate printing; and the way in which the original engraving is carried out by Perkins's rolling press, *Cowper* 1263, 1264—By this process every postage stamp is alike; there is no variation except from the greater or less quantity of ink, *ib.* 1265, 1266.

The same identity and the same regularity could be got equally by letter-press as by copper-plate printing, *Cowper* 1268—There would not be any considerable difference between the cost of copper-plate engraving and surface printing, supposing it was applied to the postage labels, *Bacon* 1779, 1780; *Wickham* 1805; *Hensman* 1890—There can be no question that surface printing is very much cheaper than copper-plate printing, *Coe* 1816-1826.

See also *Anastatic Printing.* *Bank Notes* *Contracts*, 3. *Dry Printing.* *Electrotype.* *Forgery*, 2. *Letter-press Printing.* *Perforation of Stamps.* *Plates.* *Sheets of Stamps*, 1. *Transferring Machine.*

*Cost of Construction (Archer's Invention).* The cost of the perfected machine, the one which was worked, comes to 900 *l.*: this is exclusive of the expenditure upon the two former machines, *H. Archer* 154-164—Witness submitted a statement of the expense of the 900 *l.*, and showed the vouchers to Mr. Hill, and left a part of them with him, *ib.* 183. 188-202. 1146-1148—In the 900 *l.* there is not a halfpenny allowance for witness's time, *ib.* 203. 206-208—Evidence on the subject of the enormous bill sent in by Mr. Addenbrooke for repairs, *ib.* 204, 205.

Expense of constructing the machine; no doubt heavy expenses were incurred in alterations; witness has not any of the vouchers in his possession, *E. Hill* 809-812. 836-846—Impossibility of making an estimate of what will be the cost of constructing a machine which is to answer a new purpose, *ib.* 847, 848—Evidence relative to the payments, amounting to 150 *l.*, made by witness on account of his machine, previously to its being sent to Mr. Addenbrooke, *ib.* 1122-1127. 1135-1143.

Witness has Mr. Addenbrooke's bill, which is for 750 *l.*, but his objection to pay it is, that he considers the Commissioners are liable, and not himself; the Commissioners and Mr. Hill gave an undertaking to Mr. Addenbrooke to be responsible to him for all the repairs, *H. Archer* 1128-1133. 1138. 1183, 1184—Mr. Addenbrooke brought an action against witness for the amount of his bill, but stopped proceedings when he heard the Government had only offered witness 500 *l.* for his invention, *ib.* 1133, 1134—Witness considers 500 *l.* would be sufficient to remunerate Mr. Addenbrooke, *ib.* 1141. 1144, 1145—Mr. Archer has complained of witness's charge of 750 *l.* being too much

## Report, 1852—continued.

*Cost of Construction (Archer's Invention)—continued.*

much, and has offered him 375*l.* in full, *Addenbrooke* 1561-1563. 1565-1571.

*See also Compensation.* 2. *Inland Revenue Board,* 2. *Perforating Machine,* 2.

*Cowper, Edward.* (Analysis of his Evidence.)—Professor of manufacturing arts and machinery in King's College, 1188—Evidence showing that, looking to economy, letter-press printing, as regards the postage labels, would be very considerably cheaper than copper-plate printing, 1191-1192. 1228-1232. 1240 *et seq.* 1269-1277. 1307-1309—Reference to witness's having proposed this plan to the committee or commission appointed to carry out Mr. Rowland Hill's system; determination came to to adopt copper-plate printing, 1192-1194—As regards forgery, the security of the two principles is about on a par; the more elaborate the impression, the easier it is to forge, 1195-1227. 1362-1365.

The security against forgery of postage stamps entirely depends upon the very nature of the thing, and the persons who sell the stamps, and particularly the difficulty there is in the way of printing them singly, 1228-1232—The great difficulty of putting them into circulation would also operate against the forgery 1228—When the Bank adopted surface printing, they did so with the idea that it was more secure than engraving, 1232-1239—Grounds for forming the opinion that in printing the postage labels it would not be practicable to introduce a number of printing cylinders, as is the case in a machine patented by witness many years ago, and also in Applegarth's machine, 1240-1261.

Witness is aware of the mode that is adopted for printing the postage labels, that is by copper-plate printing, and the way in which the original engraving is carried out by Perkins' rolling press, 1263-1264—By this process, every postage stamp is alike, 1265, 1266.—The mode that witness proposed when the postage stamp was first instituted was to insure identity, not by stereotype, but by actual stamping, after the manner of a medal; way in which this would insure identity in every case; identity being the most important thing, 1267—The same identity and the same regularity could be got equally by letter-press as by copper-plate printing, 1268.

The transferring presses, such as are used in Messrs. Bacon & Petch's establishment, are not general throughout the trade, 1278-1283—Witness concludes that in any machine for perforating postage labels, the accuracy of the white lines on the sheets is indispensable, 1284-1287—There is no greater accuracy attainable by surface printing than there is by copper-plate engraving, with the transferring process that is now made use of by Messrs. Bacon & Petch, 1288-1296.

The best material for printing from surface is electrotype, 1297-1299—The simplest way would be to electrotype the stamps and to pass them under the simple cylinder machine with a flat reciprocal surface, and having two, in case of one breaking down, 1300-1304—It might be worked at the Stamp Office with great ease, 1304—As regards security to the revenue, it would seem

## Report, 1852—continued.

*Cowper, Edward* (Analysis of his Evidence)—continued.

to be a better thing that the stamps should be made in the Stamp Office, 1305.

Particulars as to the reason for the Bank of England not adopting the machine for surface printing patented by witness for printing bank notes, 1310-1338. 1345-1347—Witness cannot be said to have been a competitor for the postage labels in 1837; his was merely a suggestion to Mr. Rowland Hill, to carry it out, 1339—Reference to an ingenious type mould, contrived by Mr. Hill for surface printing, 1339-1344—If the ink in either case were transferable, the transfer from copper-plate or steel-plate would be equally as easy as from surface printing, 1348, 1349—Attempts have been made to take an electrotype from copper-plate engraving, but not very successfully, 1352-1357—Witness cannot see that Mr. Archer's plan of perforating the stamps can be any guarantee against forgery, 1358—The perforation must be done after the printing; the printing could not be done on dry paper, 1358-1361.

## D.

*Dry Printing.* Difficulties experienced by Mr. Archer in adjusting his machine to the perforating of the sheets as at present printed; under witness's proposed system there would be no difficulty whatever, as there would be no shrinking of the paper, as they would be printed dry, *Branston* 502-515, 565-572—There would be no difficulty in getting good impressions on dry paper; the patent medicine labels are printed on dry paper, *Branston* 578-581, 588-598; *Coe* 1827-1837; *Hensman* 1894, 1895, 1908-1910—The paper being gummed would not make any difference in the practicability of dry letter-press printing, *Branston* 611-616.

The perforation must be done after the printing; opinion that the printing could not be done on dry paper, *Cowper* 1358-1361—If it were found desirable to print the postage labels on dry paper for the benefit of perforating them, it would not do for copper-plate printing with any description of paper, *Bacon* 1726, 1727.

## E.

*East India Drafts.* The East India drafts were engraved by witness, for letter-press printing; the East India Company have continued to use them from the time of their first preparation, *Branston* 604-608.

*Economy.* See *Letter-press Printing*.

*Electrotype.* The best material for printing from surface is electrotype, *Cowper* 1297-1299—The simplest way would be to electrotype the stamps, and to pass them under the simple cylinder machine, with a flat reciprocal surface, and having two, in case of one breaking down, *ib.* 1300-1304—It might be worked at the Stamp Office with great ease, *ib.* 1304—Attempts have been made to take an electrotype from copper-plate engraving, but not very successfully, *ib.* 1352-1357—Witness is greatly in favour of printing by electrotype

## Report, 1852—continued.

*Electrotype*—continued.

trotype, *Coe* 1829-1831. 1837, 1838—The duplicate obtained by the electrotype is so perfectly identical with the original plate, that no engraver could tell the distinction between the two when placed before him, *ib.* 1870, 1871.

*Embossed Envelope Stamps.* Remarks relative to the embossed envelope stamps; this is a species of letter-press printing, but it is a process of embossing rather than printing, *E. Hill* 710-721—The mode that witness proposed when the postage stamp was first instituted was to insure identity, not by stereotype, but by actual stamping, after the manner of a medal; way in which this would insure identity in every case; identity being the most important thing, *Cowper* 1267—The embossed heads on the envelopes are done singly, which makes them very expensive, compared with the others, *Hensman* 1965, 1966.

*Engraving.* Statement of the process now adopted for engraving the plates for postage labels, *E. Hill* 724.

*Excise Permits.* Witness and his father prepared the plates for the permits of the Excise; that was done in the letter-press manner; this mode is still continued in use, *Branston* 599-603—Use of compound letter-press printing in the Excise for permits, &c.; this is essentially different from the simple letter-press printing, as proposed for the postage stamps, and much more secure, *E. Hill* 753-758.

*Experiments (Archer's Machine).* The first trial of Mr. Archer's machine was at Bacon & Petch's, where the machine was spoilt, it was then removed to Somerset House; way in which the machine was spoilt; the trials at Somerset House were under the superintendence of Mr. E. Hill, *H. Archer* 48-65. 91-103—Experiments made with the machine; the operation of perforation was successfully effected, but the provision for holding the sheets in their places, so that the perforation might correspond with the impressions, was incomplete and insufficient, *E. Hill* 631-637—Experiments tried with Mr. Archer's machine; Messrs. Bacon & Petch gave every facility for the fair trial of the machine, *ib.* 791-796. 920-938—Cause of the removal of the machine from Messrs. Bacon & Petch's establishment to Somerset House, *ib.* 791-796.

Grounds which witness has for making the assertion that difficulties were thrown in the way of Messrs. Bacon & Petch, *Addenbrooke* 1484-1527—When the machine came to Somerset House, it worked very differently from what it had worked at Bacon & Petch's, *ib.* 1544-1546.

See also *Inland Revenue Board*, 2. *Perforating Machine*, 3. *Treasury*, The.

## Report, 1852—continued.

## F.

## FORGERY :

1. *Generally.*
2. *Comparative Merits of Copper-plate Engraving and Letter-press Printing, as regards Security from Forgery.*
3. *Further Securities against the Forgery of Postage Stamps besides the Style of Engraving.*

1. *Generally :*

Reference to the report of the Commissioners of Inland Revenue, dated 27th August 1850, that the application of the perforating machine would afford additional security against forgery, *Rep.* iii, iv—Forgeries and imitations of postage stamps which have been detected, *E. Hill* 830-835. 849; *R. Hill* 973-977. 1015. 1030. 1090; *Bacon*, 1763, 1764—Witness has not had any plan submitted to him by which the present stamp might be imitated so as to escape detection, *R. Hill* 978-980—Witness is in possession of a plan for the successful imitation of postage stamps, but he declines to make the process public, *C. M. Archer* 2165-2181—Witness has had communications with the Post-office and Inland Revenue departments upon the subject, *ib.* 2166-2178—The Post-office have, in consequence of witness's communication with them, altered the postage stamps lately, *ib.* 2179, 2180.

2. *Comparative Merits of Copper-plate Engraving and Letter-press Printing, as regards Security from Forgery :*

Witness was employed in 1819 and 1820 by the Commissioners appointed by Government to inquire into the best means of preventing the forgery of Bank of England notes, *Branston* 373—Amongst the plans brought under notice was the American system, since adopted for the postage stamps; this is a costly mode of arriving at the object to be attained, and does not afford greater security than the relief mode of engraving and letter-press printing, *ib.* 374-379—Ease with which witness and his father imitated the intricate styles of copper-plate engraving and original designs suggested for preventing forgeries, by means of letter-press, *ib.* 452-463.

If by any arrangement the head for surface printing could be made moveable, as a permuting lock, it would not afford any security against forgery, *R. Hill* 1003—With reference to security from forgery, the systems of copper-plate and of letter-press printing are about on a par, *Cowper* 1195-1227; *Coe* 1816—The elaborate work forming the background of the present labels renders them more easy to imitate, *Cowper* 1195-1227. 1362-1365; *Hensman* 1896-1901—Impossibility of forging the present postage stamp in all its details by means of surface printing, *Bacon* 1764-1770—Great want of identity in the present sheets of stamps; this want of identity would facilitate forgery, *Coe* 1845-1850.

3. *Further Securities against the Forgery of Postage Stamps besides the Style of Engraving :*

The extreme difficulty of transferring the stamps, and then printing from the transfer, is the great preventive of forgery, *R. Hill* 1004, 1005—There is

## Report, 1852—continued.

## FORGERY—continued.

3. *Further Securities against Forgery of Postage Stamps, &c.*—continued.

no doubt that the facility which the Post Office authorities possess of tracing forgery affords great security, *R. Hill* 1043—The security against forgery of postage stamps entirely depends upon the very nature of the thing, and the persons who sell the stamps, and particularly the difficulty there is in the way of printing them singly, *Cowper* 1228-1232—The great difficulty of putting them into circulation would also operate against the forgery, *ib.* 1228.

See also *American Notes.*      *Anastatic Printing.*      *Copper-plate*  
*Engraving.*      *Issue of Stamps.*      *Letter-press Printing.*      *Perforating*  
*Machine, 2.*      *Perforation of Stamps.*

*France.* Adoption of postage labels in France; they are printed by letter-press, *Branston* 573-577; *Bacon* 1781-1783—The French and Belgian Governments having adopted surface printing for their postage labels would not shake witness's opinion that such a system is unwise and dangerous, *E. Hill* 764-767.—See also *Letter-press Printing.*

*Fugitive Colour.* The circumstance which led to a fugitive colour being used for postage stamps, was the removal of the obliterations; now if the obliteration is attempted to be taken away, the ink will go first, *Bacon* 1763, 1764—Possibility of printing with fugitive ink from types, *Coe* 1855-1859—There is no difference between fugitive ink and other ink with respect to the difficulty of washing off the obliterated stamp; it could not be taken off either, *ib.* 1860-1862.

## G.

*Government Superintendence.* Nature of the superintendence exercised over the printing of the postage labels at the establishment of Messrs. Bacon & Petch, *E. Hill* 772-790; *Bacon* 1674-1689; *Hensman* 1929-1936—There would be no greater security to the public if this branch of the service were performed in some Government office, *E. Hill* 772-790—The cylinders by which the Queen's head is transferred to the plate should be under the contract of the Government officer, *Hensman* 1929-1936.

*Gumming.* Remarks relative to the gumming of the labels; they must be gummed previously to the perforation, *Branston* 509-513—The gumming is as good as it can be unless a more expensive gum be adopted; the gumming as proposed by Mr. Branston is not more likely to be adhesive than the present system, *E. Hill* 743, 744—No change has taken place in the mode of gumming postage labels for probably four years; quality of the gum used, *ib.* 891-899—Observations made by witness to Mr. Archer, in one of his letters to him on this subject, on the fear expressed by Mr. Edwin Hill as to the clogging of the perforators by the gum, *Addenbrooke* 1385, 1386—Good quality of the gum used for gumming the labels; the gum has no effect upon the keeping quality of the stamps, *Bacon* 1713-1725—The

## Report, 1852—continued.

*Gumming*--continued.

gumming ought to be put on before the paper leaves the paper machine ; if the gum is put on subsequently it is likely to produce irregularity, *Hensman* 1911-1913.—See also *Contracts*, 3.

## H.

*Hensman, Henry.* (Analysis of his Evidence.)—Engineer to the Bank of England, 1872, 1873—Remarks as to Mr. Archer's perforating machine ; it is not quite perfect, but, with a few alterations, might be made to act in a perfect manner, 1874-1879—The perforation would be a convenience to the public, and some additional security against forgery, 1880, 1881—Surface printing is quite sufficient for the purpose of making postage stamps, 1882-1892. 1902-1906. 1937-1966—Difference between the cost of postage labels by surface printing and by the present mode of engraving, 1890—Causes of the irregularities in the sheets of stamps, 1893. 1907—The postage stamps might be printed dry, 1894, 1895. 1908-1910—The elaborate work forming the background of the present labels renders them more easy to imitate, 1896-1901.

The gumming ought to be put on before the paper leaves the paper machine, 1911-1913—The process of printing the tenpenny and shilling stamps is exactly of the same nature as typographical printing, 1914-1918. 1937-1946—The French postage stamps are produced by surface printing, 1919-1921—If surface printing were adopted, a less number of machines for printing would be requisite ; the printing could then be done at the Stamp Office, or some other public office, 1922-1928—Superintendence of Messrs. Bacon & Petch's establishment, 1929-1936—Expense of printing the shilling and tenpenny postage stamps, 1947-1966.

*Hill, Edwin.* (Analysis of his Evidence.)—Inspector of postage stamps, 617-619—Proposal of Mr. Archer for perforating the postage labels, 620-622—Instructions received by witness to consider Mr. Archer's suggestion ; report made to the Commissioners in favour of perforating the labels, 623, 624. 651, 652. 736-742—The present machine is not the same as the first plan proposed ; improvements effected by Mr. Archer, 625-630—Experiments made with the machine, and result, 631-637—Removal of the machine from Messrs. Bacon & Petch's for the purpose of effecting the necessary alterations, 638, 639.

Difficulties experienced in the perforation from the irregularity in the lengths of the sheets of stamps, arising from the shrinkage of the damp paper, 640-642—Since that time greater care has been taken to make the plates all the same in length, 643-645—Introduction of an adjusting apparatus, and other improvements in the machine, and ultimately the machine worked satisfactorily, 646-648—Opinion that the machine will accomplish the purpose and be useful to the public, 649, 650—Witness recommended that Mr. Archer should be paid so much for his invention, and so much for his machine, 653-657. 736-742—Necessity for the complete remodelling of the machine upon more just principles, 658-664. 797-808.

Report, 1852—*continued.*

*Hill, Edwin.* (Analysis of his Evidence)—*continued.*

The present mode adopted by Messrs. Bacon & Petch might be done so correctly as to answer the purpose for the piercing machine, 665—Copper-plate printing is much more secure against counterfeits than surface printing, 666-685. 694-699. 724-733—It would be a most hazardous experiment to make the change from the present system of printing labels to that of surface printing, 684, 685. 691-692. 724-733. 751, 752. 764-767. 769. 856-860. 885—Witness still maintains his opinion that Mr. Archer's is a useful invention, 690.

Great care and labour bestowed in deciding the question of the most beneficial mode of printing postage labels, in 1840, when copper-plate printing was decided on, 699-702. 708, 709—Remarks relative to the embossed envelope stamps, 710-721—There is a wide distinction between the mode of printing proposed by Messrs. Archer & Branston from that now used at the factory of Messrs. Bacon & Petch; one is engraving, the other printing, 722, 723—Process adopted for engraving the plates for postage labels, 724—Witness considers that the perforation of the stamps, as proposed by Mr. Archer, would be a check upon forgery, 734, 735.

The gumming is as good as it can be unless a more expensive gum be adopted, 743, 744—The system of perforation is equally applicable under the copper-plate printing as under the letter-press printing, 748-750—Use of compound letter-press printing in the Excise, for permits, &c.; this is much more secure than simple letter-press printing, 753-758—Letter-press printing can be executed with much greater rapidity than copper-plate printing, 759, 760—In the new newspaper stamp machine at present in use surface printing is employed, 762, 763—Number of stamps made annually, 770—Number of penny and twopenny postage labels sold in each year, from 1840 to 1851 inclusive, 771.

Superintendence exercised over the establishment of Messrs. Bacon & Petch; there would be no greater security to the public if this branch of the service were performed in some Government office, 772-790—During the experiments with Mr. Archer's machine no obstacle was thrown in the way by Messrs. Bacon & Petch; cause of the removal of the machine from their establishment to Somerset House, 791-796—Expense of constructing the machine; no doubt heavy expenses were incurred in alterations; witness has not any of the vouchers in his possession, 809-812. 836-846—Experiments made by Mr. Reynolds in printing labels by letter-press, 813-817—There is no difficulty in printing postage labels by letter-press, but the impressions are very inferior to the existing mode, 818-820.

Variations in the appearance of the sheets of postage labels; causes to which attributable, 820-829—Forgeries and imitations of postage stamps which have been detected; no forgeries have taken place within the last seven years, 830-835. 849—Impossibility of making an estimate of what will be the cost of constructing a machine which is to answer a new purpose; great number of errors to be gone through and corrected, 847, 848—The transactions between the Stamp Office and Messrs. Bacon & Petch have been highly satisfactory, 850-853—Nothing could answer the purpose for which designed better than the postage labels at present in use, 854—The amount of saving per

## Report, 1852—continued.

*Hill, Edwin.* (Analysis of his Evidence)—continued.

per annum by the difference of  $\frac{1}{2}d.$  per thousand, between Messrs. Bacon & Petch's contract and Messrs. Archer & Branston's tender, would be about 2,500*l.*; 855—On account of the liability to forgery of letter-press printing, and other evils, witness considers that the saving of 2,500*l.* would be a very costly economy, 861.

Explanation relative to the reduction of Messrs. Bacon & Petch's contract from 6*d.* to 5*d.*; 862-881, 902-911—Witness does not attribute the reduction to the application and offer of Mr. Archer, although it might not have been effected so soon; the saving to the public is about 5,000*l.* a year, 870-880—It would not have been judicious to have accepted Mr. Archer's offer, and made trial of the surface printing, 882-885—The patent medicine labels are printed by compound letter-press printing, in two colours at once, 886-890—No change has taken place in the mode of gumming postage labels for probably four years, 891-899—Witness has no doubt that Mr. Archer's machine might be made to perforate 3,000 sheets per day, 900, 901.

[Second Examination.]—Correction of former evidence with respect to the reduction of Messrs. Bacon & Petch's price from 6*d.* to 5*d.*; the calculation on which the saving of 5,000*l.* was founded was incorrect; the saving is only 1,200*l.* per annum, 912-919—Experiments tried with Mr. Archer's machine; Messrs. Bacon & Petch gave every facility for the fair trial of the machine, 920-938—Capabilities of the machine for perforating large numbers of stamps, 938-942—Witness's impression is that the perforation of all the sheets can be accomplished as at present printed, 943-945—Mr. Archer's machine, though it would work practically well, would still require improvements, if brought into constant operation, 946, 947.

Construction of a press by Messrs. Bacon & Petch for transferring impressions, so that the plates might be of uniform size, for the purpose of assisting the perforating machine, 948-950—One of the great reasons for recommending the perforating machine was, that witness conceived the use of it would tend to do away with paid letters, 951-956—The expense of working the perforating machine might be reasonably expected to be borne by Messrs. Bacon & Petch, considering the greatly increased quantity of stamps they were producing, 957-961.

*Hill, Mr. E.* Witness considers that Mr. Hill's suggestions and orders contributed very much to the perfection of the machine; it is very doubtful whether Mr. Archer, without the assistance of some practical man, could have carried it out, *Addenbrooke* 1414-1418.

See also *Adjusting Power* (Archer's Invention). *Compensation*, 2. *Cost of Construction*. *Experiments*. *Inland Revenue Board*, 1. 2. *Perforating Machine*, 1. *Type Mould*.

*Hill, Rowland.* (Analysis of his Evidence.)—Original proposer of the penny postage stamp; the system was first introduced in the early part of 1840; 962, 963—Investigation which took place as to the best mode of manufacturing the stamps, so that they should not be subject to forgery or fraud, 964, 965. 992-995. 1045-1053—After long examination and deliberation, it

Report, 1852—*continued.**Hill, Rowland.* (Analysis of his Evidence)—*continued.*

it was determined that the present mode was the only safe mode of doing it, 966-968. 992-1018—The surface printing was considered to be less secure from fraud than the copper-plate printing, 968-972—There have been but one or two attempts at forgery of postage stamps, and they were detected immediately, 973-977. 1015. 1030. 1090—The perforation of the stamps would be useful and acceptable to the public, but no extra charge should be placed on the stamps for covering the expense of perforation, 981-989. 1041. 1098-1101—Surface printing is much cheaper than engraving, and can be executed with greater rapidity; but it was thought advisable to sacrifice something in the cost of the stamps for the sake of the greater security which copper-plate printing affords, 1001-1003. 1024-1029.

The extreme difficulty of transferring the stamps, and then printing from the transfer, is the great preventive of forgery, 1004, 1005—The Government and the public are mainly indebted to Messrs. Bacon & Petch for the present stamp; they were the proposers of the plan in its detail, 1008, 1009—The present arrangement for the issue of stamps is one security against forgery, 1018-1022—Sufficiency of the present supply of stamps to meet the demand, 1031—Very few complaints have ever been made as to the execution of the stamps, or their gumming, 1032, 1033—Upon the whole, witness considers that the system, as at present organized, for the printing and gumming the stamps by the present contractors, has always worked in a satisfactory manner, 1034-1039—The substitution of surface printing for engraving would be injurious to the revenue, by the substitution of forged for genuine stamps, 1035-1038.

The machine of Mr. Archer seems to be applicable to the purpose of perforation; recommendation that compensation should be given to the inventor, 1040-1042. 1091-1095. 1097-1104—The facility which the Post-office authorities possess of tracing forgery affords great security, 1043—Witness carefully investigated the mode of printing recommended by Sir William Congreve, and arrived at the result that it would be exceedingly hazardous to adopt it for the purpose of postage stamps, 1054-1057—Witness does not consider that the American note is prepared in the manner most calculated to avoid forgery; witness distrusts all complicated designs for notes, 1058-1065—The copper-plate engraving now in use in the postage label stamps would be very difficult to imitate, 1066-1089—Opinion that the sum of 2,000*l.* offered by the Treasury to Mr. Archer may be considered as a liberal compensation, 1105-1119—Objections to Mr. Archer being allowed to perforate the stamps, and allowing him a per centage, per thousand, upon the work done, 1120, 1121.

## I.

*Illegal Sale of Stamps.* See *Issue of Stamps.*

*Imitations of Postage Labels.* See *Forgery.*

Report, 1852—continued.

INLAND REVENUE BOARD:

1. *How far Mr. E. Hill, on the part of the Commissioners, superintended and controlled Mr. Archer's Invention.*
2. *Inference drawn from the Interference of the Commissioners that the Government was responsible for the Expense.*

1. *How far Mr. E. Hill, on the part of the Commissioners, superintended and controlled Mr. Archer's Invention:*

It was witness's impression that Mr. Hill was acting under the orders of the Commissioners of Stamps and Taxes to superintend what witness was doing, *H. Archer* 19 *et seq.*—Mr. Hill saw the difficulties witness had to contend with, and helped him to endeavour to overcome them, *ib.* 27-36. 41—How far Mr. Hill had directions to join himself with witness in perfecting the machine, *ib.* 28—Instructions received by witness to consider Mr. Archer's suggestion; report made by witness to the Commissioners in favour of perforating the labels by the proposed machine, *E. Hill* 623, 624. 651, 652—Grounds on which witness reported in favour of the adoption of Mr. Archer's proposal; copy of witness's report to the Commissioners, and of his observations relating to Mr. Archer's remuneration, *ib.* 736-742.

Grounds on which witness looked to Mr. Hill as the representative of the Government in this affair; positive orders were given by the Government officially, and the work completed and placed in the Government office, *Addenbrooke* 1410. 1413. 1419-1437—Witness did not receive any written orders from the Government for these alterations, but received verbal orders from Mr. Hill from time to time, *ib.* 1455-1459—Witness sent in a bill to Government for those alterations that were made after the machine was finished, but has made no application for the amount, *ib.* 1460-1464—The Government have rendered Mr. Archer every assistance in their power, *Bacon* 1612.

2. *Inference drawn from the Interference of the Commissioners that the Government was responsible for the Expense:*

Letter received by witness from the Board of Inland Revenue, directing him to send two machines, when completed, to Messrs. Bacon & Petch, *H. Archer* 9—Further letter from the Board, dated 25th January 1848, recommending witness to communicate with Mr. Edwin Hill, and also that the machinists employed should be distinctly made to understand the precise purpose to which each machine was to be applied, *ib.* 10—The Board of Inland Revenue was well acquainted with the various experiments witness was making, *ib.* 14-26—Decision come to by the Commissioners, on witness's application, to have the machine tried at Somerset House, under Mr. Hill's superintendance, *ib.*

Order received by Mr. Addenbrooke from Mr. Hill, dated 3d September 1849. "Postage Stamps, 3 September 1849. Wanted for the use of this department. Alter the guiding apparatus to Mr. Archer's piercing machine, according to Mr. Hill's instructions, (signed) *E. Hill. C. P. Rushworth,*" *H. Archer* 30; *Addenbrooke* 1393, 1394—After this letter witness considered all further expense should fall on the Government, *H. Archer* 30. 37-40. 91—In

## Report, 1852—continued.

## INLAND REVENUE BOARD—continued.

2. *Inference drawn from the Interference of the Commissioners, &c.*—continued.

—In consequence of this order, and of Mr. Hill's interfering so much with it, witness told Mr. Archer that he considered the Commissioners really adopted his machine, and he thought all his expenses would be taken out of his hands for the future, *Addenbrooke* 1395—About two-thirds of witness's account of 750 *l.* was incurred after this time, *ib.* 1396—Subsequent order received from Mr. Hill for a new set of punching tools, &c.; this was after it was completed, the adjusting process added to it, and everything pronounced to be finished; charge made for the new set of punching tools, *ib.* 1397-1401. 1406.

Witness considered Mr. Archer was legally bound to pay him the amount of his bill, as he had originally put the machine into his hands, and had given him orders to proceed with it, *Addenbrooke* 1404-1410—But witness considered Government, in consequence of interfering with the affair, were morally responsible to him for the payment of his account; witness had mentioned this to Mr. Hill, and he had told witness Government were not responsible, *ib.* 1404-1410. 1419-1437—Letter witness wrote to Mr. Archer in May 1850, urging him to arrange the affair with the Government as early as possible; witness had never received any remuneration on account of it, and was running short of funds, *ib.* 1438-1443—After Mr. Archer had done with the machine, and it was delivered into the hands of the Government, witness received 75 *l.* from the office of the Inland Revenue, in payment of the order for the new set of punches; it had no reference whatever to the work witness had done under Mr. Archer's orders, *ib.* 1443-1451.

See also *Compensation*, 2. *Contracts*. *Cost of Construction*. *Perforating Machine*, 4.

*Issue of Stamps.* The present arrangement for the issue of stamps is one security against forgery; great extent to which genuine stamps are sold illegally, *R. Hill* 1018-1022.—See also *Perforation of Stamps*.

## K.

*Keogh, Thomas.* (Analysis of his Evidence.)—Assistant Secretary in the department of Stamps and Taxes; evidence in detail relative to the contract entered into in July 1851, to print the postage labels for the term of five years, at 5 *d.* per thousand; this was after the offer made by Mr. Archer and Mr. Branston to do it for that sum; how far the lowering of the contract with Messrs. Bacon & Petch was consequent upon the offer of Messrs. Archer & Branston, 1967-2000. 2027, 2028. 2061-2063. 2075 *et seq.*—The subsequent offer of Messrs. Archer & Branston at 4½ *d.* related solely to surface printing, 2000, 2001—In cases of tender it is certainly not the practice to communicate to the party executing the work the sum at which another party proposes to do that work; but this was not the case of a tender; it was merely the case of a person, having learnt at what price the work was done, coming and offering to do it at a less price, 2002-2005.

The

Report, 1852—*continued.*

*Keogh, Thomas.* (Analysis of his Evidence)—*continued.*

The idea of putting up the business of stamping the postage labels to the lowest bidder is perfectly preposterous, 2005, 2064—The office of Stamps and Taxes had been dealing for a great number of years for other matters than postage stamps, and they had been employed for eight years in stamping the postage labels, and the office was perfectly satisfied with them, 2005-2007. 2097-2109—Under these circumstances it was thought very inexpedient to change the contractors, even if no reduction of the expense could have been effected, 2005-2007. 2097-2109—Witness does not doubt Mr. Branston's competence to do what he offered to do, but his offer was to do the work by surface printing, which would not have answered the purpose, 2008-2014. 2104-2109.

Grounds on which witness forms the opinion that no proposition for surface printing could have been received, as the Treasury had deliberately come to the conclusion to adopt copper-plate printing and no other, and express directions had been given on the subject accordingly, 2014-2021. 2054-2056. 2117-2123—The offer of Messrs. Archer & Branston was not considered of sufficient importance to be submitted to the Treasury, 2020-2024. 2075-2096.

Witness is quite aware that the Commissioners of Inland Revenue signed a report approving of Mr. Archer's invention, and that the Treasury ordered that a trial should be made of it when perfected, but very little was thought of the perforation, as Messrs. Bacon & Petch had offered to do it, when they got the machine, at a very trifling additional cost, 2029-2053. 2110-2113—Messrs. Bacon & Petch offered to charge only the expense of the men in using the machine, but this did not include Mr. Archer's patent right; such a thing was never adverted to; witness is not aware that Mr. Archer has a patent, 2033-2035—Mr. Archer had proposed to furnish the machine, for which, when completed, he was to be paid; when completed it was sent to Messrs. Bacon & Petch to be used, 2034-2042.

The reason the machine was not used, was because Mr. Archer did not acquiesce in the terms which the Treasury had settled for his remuneration, 2046—Although Mr. Archer had offered to engrave, print, gum, and perforate the stamps at a certain price, and for that price to give in the machines free of charge, witness did not consider that it ought to have been a consideration of the agreement with Bacon & Petch that the remuneration to Mr. Archer should be considered in their charge, or with their charge, 2057, 2058—It was considered that Mr. Archer would be fairly entitled to such a reward from the Government as his invention might be considered worth when brought to perfection, 2058, 2059—The perforation was not considered an element of any very great importance, although to a certain extent it might be an advantage, 2059, 2060.

Reductions which have taken place in the charges of Bacon & Petch since they have had the contracts; alterations which were made in the last contract as compared with the former contracts, 2065-2074—Reasons why witness and the gentleman with whom he is associated did not consider the proposal of Mr. Archer of sufficient importance to set aside the contract with Messrs. Bacon & Petch, 2075-2109. 2150-2162. 2164—When Mr. Archer's proposal

## Report, 1852—continued.

*Keogh, Thomas.* (Analysis of his Evidence)—continued.

proposal was made, the Board felt that they would be relieved from the necessity of considering the proposal at all if Messrs. Bacon & Petch assented to the reduction which they intended to ask them for, 2114-2116—No steps have been taken to ascertain whether even 5*d.*, with the increased quantity of stamps that are printed, is not a much larger price than ought to be paid, 2124-2127.

The advantage of having the contract for five years is rather on the side of Messrs. Bacon & Petch than on that of the Government, 2128-2132—It would be desirable that the work of stamping should be carried out at Somerset House, 2133-2136. 2163—Practice of the Commissioners with respect to signing contracts, 2137-2139—In case the Government should purchase Mr. Archer's machine for perforating the postage stamps, witness has no doubt Messrs. Bacon & Petch would use it, 2144-2149.

## L.

## LETTER-PRESS PRINTING :

1. *Opinions in favour of adopting Surface or Letter-press Printing instead of Copper-plate Engraving.*
2. *Objections thereto.*

1. *Opinions in favour of adopting Surface or Letter-press Printing instead of Copper-plate Engraving :*

Opinion of the Committee, that as it has been shown by the evidence taken before them that a considerable saving might be effected by the adoption of surface printing, the subject appears worthy of consideration, *Rep. iv*—The surface mode of printing is cheaper than the other mode of printing, *Branston* 416-429—In the report of the Commissioners for Inquiry in the bank forgeries the mode of printing now in use for postage labels was condemned, and the system of letter-press printing recommended, *ib.* 430-463. 478-480—Specimens of postage-stamp heads by letter-press printing produced, *ib.* 516-518.

Looking to economy, letter-press printing, as regards the postage labels, would be very considerably cheaper than copper-plate printing, *Cowper* 1191, 1192. 1228-1232. 1240 *et seq.* 1269-1277. 1307-1309—Reference to witness's having proposed this plan to the committee or commission appointed to carry out Mr. Rowland Hill's system; determination come to to adopt copper-plate printing, *ib.* 1192-1194—When the Bank adopted surface printing they did so with the idea that it was more secure than engraving, *ib.* 1232-1239—Grounds for forming the opinion that in printing the postage labels it would not be practicable to introduce a number of printing cylinders, as is the case in a machine patented by witness many years ago, and also in Applegarth's machine, *ib.* 1240-1261.

The printing of postage label stamps could be securely carried out by the surface mode of printing, *Coe* 1843-1844—The French postage stamps are produced by surface printing, *Hensman* 1919-1921—If surface printing were

## Report, 1852—continued.

## LETTER-PRESS PRINTING—continued.

1. *Opinion in favour of adopting, &c.*—continued.

were adopted, a less number of machines for printing would be requisite; the printing could then be done at the Stamp Office, or some other public office, *Hensman* 1922-1928.

2. *Objections thereto:*

There is a wide distinction between the mode of printing proposed by Messrs. Archer & Branston from that now used at the factory of Messrs. Bacon & Petch; one is engraving, the other printing, *E. Hill* 722, 723—There is no difficulty in printing postage labels by letter-press, but the impressions are very inferior to the existing mode; letter-press printing can be executed with much greater rapidity than copper-plate engraving, *ib.* 759, 760. 818-820—Resorting to the method of preparing the stamps by surface printing would be more liable to forgery than that which now exists, *E. Hill* 856-861. 885; *R. Hill* 1035-1038. 1054-1057—It would not have been judicious to have accepted Mr. Archer's offer, and made trial of the surface printing, *E. Hill* 882-885.

If the postage stamps were done by surface printing, persons could forge these stamps and dispose of them to answer their purpose, the fact of their being only penny stamps adds something to their security from forgery, *Bacon* 1771-1777—Grounds on which witness forms the opinion that no proposition for surface printing could have been received, as the Treasury had deliberately come to the conclusion to adopt copper-plate printing and no other, and express directions had been given on the subject accordingly, *Keogh* 2014-2021. 2054-2056—The Treasury having originally adopted the plan which is now pursued, the question of surface printing was not considered at all when the offer of Mr. Archer was made, *ib.* 2117-2123.

See also *Adjusting Power. Bank Notes. Branston, Mr. Contracts, 3. Copper-plate Engraving. Dry Printing. East India Drafts. Electrotype. Embossed Envelope Stamps. Excise Permits. Forgery, 2. France. Newspaper Stamps. Perforation of Stamps. Plates. Reynolds, Mr. Sheets of Stamps, 1. Shilling and Tenpenny Stamps. Supply of Stamps. Transferring Machine. Type Mould.*

## M.

*Medicine Labels.* The patent medicine labels are not printed by copper-plate, but by compound letter-press printing, in two colours at once, *E. Hill* 886-890.

## N.

*Newspaper Stamps.* In the newspaper stamp machine at present in use in the Stamp Office surface printing is used, *E. Hill* 762, 763.

## Report, 1852—continued.

## P.

## PERFORATING MACHINE:

1. Evidence relative to the Invention, Construction, Alterations, and Improvement of Mr. Archer's Machine.
  2. Approval generally of the Machine.
  3. How far any Impediments were thrown in the way of perfecting it by the present Contractors.
  4. Opinion that the present Contractors would be willing to use it.
1. Evidence relative to the Invention, Construction, Alterations, and Improvement of Mr. Archer's Machine:

Witness is inventor and patentee of a plan for perforating the sheets of postage labels, so as to effect their instant separation without the aid of any cutting instrument, *H. Archer* 1—Evidence relative to the construction of two machines of rather different principles, one of them on the plan of punching the sheets by rollers, and the other with a puncturing machine, on the fly-press principle; failure of these machines, *ib.* 11, 12—Witness had one double machine at Somerset House, which was, in fact, two; ten sheets could be perforated at a time, five in each wing; about 5,000 sheets were perforated; there is no doubt 3,000 sheets might be perforated in a day; after striking off the 5,000 sheets the machine was in as good working order as at first, *ib.* 136-153—The present machine is not the same as the first plan proposed; improvements effected by Mr. Archer, *E. Hill* 625-630—Necessity for the complete remodelling of the machine upon more just principles; this is the case with all new machines, *ib.* 658-664—Remarks relative to the construction of the perforating machine; alterations and improvements made therein; it is still capable of improvement, *ib.* 797-808.

Witness was employed to make alterations in Mr. Archer's perforating machine, the same machine that is now at Somerset House; was employed by Mr. Archer, *Addenbrooke* 1368-1370—Witness believes it is the same that was tried at Messrs. Bacon & Petch's, previously to its being delivered to him, *ib.* 1371—The machine was in a very bad state when it came into witness's possession; many things were lost, and all the things had to be put to rights; and there were some alterations and additions to be made to the machinery; nature of the principal of these alterations and additions, *ib.* 1372. 1465-1474—After witness had received the model sheet he altered the machine to suit the model, and Mr. Hill was informed when it was finished, and was invited to see it; the trial then proved unsuccessful, *ib.* 1387-1389.

## 2. Approval generally of the Machine:

Opinion of the committee that it would be for the general benefit that the machine for perforating postage label stamps should be purchased for the use of the public, *Rep.* iii—The use of the machine was officially approved of on the 27th August 1850; the plan approved of long previously, *H. Archer*, 104-120—No doubts have ever been expressed as to witness's perfected machine answering the purpose for which it was intended, *ib.* 363-370—Opinion that the machine will accomplish the purpose and be useful to the public, *E. Hill*, 649, 650; *Addenbrooke*, 1550-1556. 1572-1573; *Bacon* 1660-1665—Remarks as to Mr. Archer's perforating machine; it is not quite perfect, but, with a few alterations, might be made to act in a perfect manner,

*Hensman*

## Report, 1852—continued.

*PERFORATING MACHINE*—continued.2. *Approval generally of the Machine*—continued.

*Hensman* 1874-1877—No doubt Mr. Archer has been at great trouble and expense in bringing out his machine, *ib.* 1878, 1879.

3. *How far any Impediments were thrown in the way of perfecting it by the present Contractors:*

From witness's feeling that difficulties had been thrown in the way of the patentee and himself in perfecting the machine by Messrs. Bacon and Petch, it was settled, with the concurrence of Mr. Hill, that when the machine was perfected it should be sent to Somerset House; it then worked regularly and well, *Addenbrooke* 1475-1483—Alterations which the machine underwent in order to adapt it to the different sized sheets that were received; these sheets were received from Bacon & Petch's, *ib.* 1484 *et seq.* 1548, 1549—No impediments whatever were thrown in the way of the working or perfecting of Mr. Archer's machine whilst in witness's establishment, *Bacon* 1608-1612, 1645-1652, 1654-1656—The present machine at Somerset House never was in witness's establishment, or it has been much altered since it left witness's house, *ib.* 1666-1671.

4. *Opinion that the present Contractors would be willing to use it:*

Witness is quite aware that the Commissioners of Inland Revenue signed a report approving of Mr. Archer's invention, and that the Treasury ordered that a trial should be made of it when perfected, but very little was thought of the perforation, as Messrs. Bacon & Petch had offered to do it, when they got the machine, at a very trifling additional cost, *Keogh* 2029-2053—Messrs. Bacon & Petch offered to charge only the expense of the men in using the machine; but this did not include Mr. Archer's patent right, *ib.* 2033-2035—Mr. Archer had proposed to furnish the machine, for which, when completed, he was to be paid; when completed it was sent to Messrs. Bacon & Petch to be used, *ib.* 2034-2042.

*See also Adjusting Power. Alterations of the Machine. Compensation. Cost of Construction. Experiments. Hill, Mr. E. Inland Revenue Board. Post Office. Sheets of Stamps. Transferring Machine. Treasury, The. Working Expenses.*

*Perforation of Stamps.* Unanimous opinion of the Committee that the perforating of the postage stamps would be a great convenience and advantage to the public, *Rep.* iii—None of the perforated sheets were issued in London, except to the Houses of Parliament; they were, however, circulated in some of the provincial towns; the demand for them was afterwards so great that the issue was obliged to be stopped, *H. Archer* 120-133—The present mode used by Messrs. Bacon & Petch might be done so correctly as to answer the purpose for the piercing machine, *E. Hill*, 665—It would be to the public convenience to have the stamps all perforated, *E. Hill* 690; *R. Hill* 981-989, 1041, 1098-1104; *Bacon* 1758; *Wickham* 1806-1811; *Hensman* 1880, 1881; *Keogh* 2065-2074—The perforation of the stamps, as proposed by Mr. Archer, would be a check upon forgery, *E. Hill* 734, 735; *Hensman* 1880, 1881—The system is equally applicable under the copper-plate printing as under the letter-press printing, *E. Hill* 748-750—Capabilities of the machine for perforating

## Report, 1852—continued.

*Perforation of Stamps*—continued.

forating large numbers of stamps; doubts as to whether one machine would be sufficient to meet the present demand, *E. Hill* 900, 901. 938-942.

Witness's impression is that the perforation of all the sheets can be accomplished as at present printed; giving larger spaces between the stamps would involve a great deal of trouble, *E. Hill* 943-945—Witness signed a report to the Lords of the Treasury in 1847, recommending the adoption of Mr. Archer's principle; the principle was approved by the Post-office, and it was on their recommendation that the Board of Stamps and Taxes recommended the adoption of it, *Wickham* 1790-1793—In case the Government should purchase Mr. Archer's machine for perforating the postage stamps, witness has no doubt Messrs. Bacon & Petch would use it, *Keogh* 2144-2149.

See also *Contracts*, 1. 3. *Dry Printing*. *Gumming*. *Inland Revenue Board* 1. *Sheets of Stamps*.

*Plates*. There would be no wear of the plates under witness's system; the plates used by present contractors would produce about 25,000 impressions, *Branston* 498-501—Average number of sheets which a plate will print without being renewed, *Bacon* 1710-1712.

*Post Office*. Witness invented the plan of perforating the stamps, and submitted it to the Postmaster-general in the autumn of 1847, *H. Archer* 2, 3—The Postmaster-general referred the plan to the practical department of the Post-office, with the view of ascertaining whether it would, on public grounds, be desirable to adopt it, *ib.* 4—Favourable report of the officers of that department, *ib.* 5, 6—The Postmaster-general sent this report to the Commissioners of Inland Revenue, *ib.* 7.

*Printing Postage Labels*. See *Anastatic Printing*. *Copper-plate Engraving*.  
*Dry Printing*. *Letter-press Printing*. *Plates*. *Typographical Printing*.

## R.

*Reduction of Charges*. See *Bacon & Petch*, Messrs. *Contracts*, 2. 4.

*Register Letters*. With regard to the register letters on the labels they must be all engraved as at present, even under witness's proposed mode of letter-press, *Branston* 526-532.

*Relief Engraving*. See *Forgery*, 2.

*Remuneration*. See *Compensation*.

*Reynolds, Mr.* Experiments made by Mr. Reynolds in printing labels by letter-press, *E. Hill* 813-817.

## S.

*Sale of Stamps*. Statement of the number of penny and twopenny postage labels sold in each year, from 1840 to 1851 inclusive, *E. Hill* 771.

See also *Contracts*, 2. *Issues of Stamps*.

## Report, 1852—continued.

## SHEETS OF STAMPS :

1. *Dissimilarity in the present Sheets of Postage Stamps.*
2. *Difficulties experienced in the Perforation from the irregularity in the Size of the Sheets.*

1. *Dissimilarity in the present Sheets of Postage Stamps :*

Under the present system there are no two sheets of labels alike if worked from two different plates ; it would be very difficult to identify an imitation, *Branston* 501—Variations in the appearance of the sheets of postage labels ; causes to which attributable ; very great variation in letter-press, as also in copper-plate printing, *E. Hill* 820-829—Notice given to Mr. Archer as to the impossibility of making the sheets of stamps perfectly uniform ; every endeavour was made by witness's firm to produce uniformity in all the sheets, *Bacon* 1646-1653—The irregularities in the sheets of stamps arises much more from the shrinkage of the paper than from the difference in the plates, *Hensman* 1893-1907.

2. *Difficulties experienced in the Perforation from the irregularity in the size of the Sheets :*

Description of a third machine which witness invented ; this machine, on the first trial at Somerset House, did not succeed, from the fact of nearly all the sheets which were tried being different in size, owing to the plates from which they were printed not being alike, *H. Archer* 12. 66-80. 86-88—Most of the sheets that were passed through the machine were perforated so much beyond the white lines as to spoil the stamps, *ib.* 12, 13—Difficulties experienced in the perforation from the irregularity in the lengths of the sheets of paper, arising from the shrinkage of the damp paper, *E. Hill* 640-642—Since that time greater care has been taken to make the plates all the same in length, *ib.* 643-645.

Witness concludes that in any machine for perforating postage labels the accuracy of the white lines in the sheets is indispensable, *Cowper* 1284-1287—The machine failed from the size of the sheets varying so much, either from shrinkage, or from the the unequal size of the plates, that the machine was not adapted for perforating them, and they were perforated therefore very untruly indeed, *Addenbrooke* 1374-1386. 1390. 1411, 1412. 1528-1543. 1547—If the sheets of postage stamps had been all of one size, and perfectly true, the machine would have perforated them without any adjusting power, *ib.* 1452-1454—This would not have saved the whole of the subsequent expense of altering the machine, as there were other alterations and additions required, *ib.* 1454-1457.

See also *Adjusting Power* (Archer's Invention). *Gumming. Perforating Machine, 1. 3.*

*Shilling and Tenpenny Stamps.* Surface printing is quite sufficient for the purpose of making postage stamps ; the shilling and tenpenny stamps lately introduced are done by surface printing, *Hensman*, 1882-1892. 1902-1906. 1937-1966—Expense of printing the shilling and the tenpenny postage stamps ; there would be no difficulty in printing them in larger quantities if required, *ib.* 1947-1964.

## Report, 1852—continued. \*

*Somerset House.* It would be desirable that the work of stamping should be carried out at Somerset House; the subject has been considered, but there is not room at Somerset House to carry out the work, *Keogh* 2133-2136. 2163.

See also *Experiments.* *Inland Revenue Board, 2. Perforating Machine, 1. 3.*

*Stamp Office.* As regards security to the revenue, it would seem to be a better thing that the stamps should be made in the Stamp Office, *Cowper* 1305.

See also *Bacon & Petch, Messrs. Contracts, 1. Letter-press Printing.*

*Stamped Envelopes.* See *Embossed Envelope Stamps.*

*Supply of Stamps.* Under the existing system the contractors are able to produce about 5,000 sheets of labels per day, *Branston* 481-486. 492, 493—Witness's mode of printing would afford very great facilities in point of rapid execution of work; the machine would produce 30,000 sheets per day, *ib.* 487-497—Power of Messrs. Bacon & Petch to increase the number of presses and plates to meet any increased demand for labels; there is no danger of a deficiency, *ib.* 560-564—Statement of the number of stamps made annually, *E. Hill* 770—Sufficiency of the present supply of stamps to meet the demand, *R. Hill* 1031; *Bacon* 1598-1601—Statement as to the number of stamps printed per week; increase of the demand which took place last year in consequence of the obligation throughout the country to put stamps upon the letters, *Bacon* 1591-1601.

See also *Bacon & Petch, Messrs. Perforation of Stamps.*

*Sureties of Contractors.* Security for 5,000 l. entered into by witness with the Inland Revenue for the proper performance of the work, *Bacon* 1602.

See also *Contracts, 3.*

*Surface Printing.* See *Letter-press Printing.*

## T.

*Tenders.* In cases of tender it is certainly not the practice to communicate to the party executing the work the sum at which another party proposes to do the work; but this was not the case of a tender; it was merely the case of a person having learnt at what price the work was done, and coming and offering to do it at a less price, *Keogh* 2002-2005—The idea of putting up the business of stamping the postage labels to the lowest bidder is perfectly preposterous, *ib.* 2005. 2064.—See also *Contracts.*

*Transferring Machine.* Construction of a press by Messrs. Bacon & Petch for transferring impressions, so that the plates might be of uniform size, for the purpose of assisting the perforating machine, *E. Hill* 948-950; *Bacon* 1672, 1673—The transferring presses such as are used in Messrs. Bacon & Petch's establishment are not general throughout the trade, *Cowper* 1278—This transferring machine is confined to Messrs. Bacon & Petch's office and the Bank of England; something similar is used in the calico printing, *ib.* 1279-1283—There is no greater accuracy attainable by surface printing than there is by copper-plate engraving with the transferring process that is now made use of by Messrs. Bacon & Petch; the accuracy in the one case is as facile as in  
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 Report 1852—continued.
 

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*Transferring Machine*—continued.

the other; a great deal depends on the parties managing the machine, *Cowper* 1288-1296—If the ink in either case were transferable, the transfer from copper-plate or steel-plate would be equally as easy as from surface printing, *ib.* 1348, 1349.

*Treasury, The.* Authorisation given by the Treasury to the Board of Inland Revenue, to give a trial to the plan as an experimental measure, *H. Archer* 9—The offer of Messrs. Archer & Branston was not considered of sufficient importance to be submitted to the Treasury, *Keogh* 2020-2024.  
See also *Compensation*, 2.

*Type Mould.* Reference to an ingenious type mould contrived by Mr. Hill for surface printing; the plan was for putting the type outside the cylinder, *Cowper*, 1339-1344.

*Typographical Printing.* The process of printing the tenpenny and shilling stamps is exactly of the same nature as typographical printing, *Hensman*, 1914-1918. 1937-1946.

## W.

*Wickham, Henry Lewis.* (Analysis of his Evidence.)—Was Chairman of the Board of Stamps and Taxes before the consolidation, 1784—Application made by a Mr. Clayton of Dublin, in 1844, respecting the making of postage stamps; how far witness may have confounded this application with Mr. Archer's proposal for perforating them 1785-1789—Witness signed a report to the Lords of the Treasury in 1847, recommending the adoption of Mr. Archer's principle; the principle was approved by the Post-office, and it was on their recommendation that the Board of Stamps and Taxes recommended the adoption of it, 1790-1793—Witness was a member of the Board of Stamps at the time the penny postage was introduced, 1794.

The mechanical arrangements with reference to the postage stamps were most carefully considered; witness was chiefly employed in the operation, 1795—The present arrangements with regard to the engraving and gumming of postage stamps are such as it is most desirable to retain, 1796-1803—It is more difficult to make a fac-simile, or imitation of the present mode of engraving, than it would be if it were done by letter-press, 1804—The mode of printing from copper-plate is more expensive than letter-press for the purpose of postage stamps, but not very much so, 1805—Mr. Archer's plan might perhaps be of some little advantage to the public, but the advantage would not be very great, 1806-1811.

*Working Expenses (Archer's Invention).* In witness's report he stated that the expense of working the perforating machine might be reasonably expected to be borne by Messrs. Bacon & Petch, considering the greatly increased quantity of stamps they were producing, *E. Hill* 957-961—If witness, as contractor for the supply of postage stamps, was compelled to perforate the stamps, the working of the machine would make a difference of 300*l.* or 400*l.* per annum in the expense, *Bacon* 1754-1757.

See also *Perforating Machine*, 2.

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