

## **Specification of William Howarth and Ambrose Howarth : dental lathes.**

### **Contributors**

Howarth, William.  
Howarth, Ambrose.

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A.D. 1875, 28th JANUARY. N° 322.

SPECIFICATION

OF

WILLIAM HOWARTH  
AND  
AMBROSE HOWARTH.

DENTAL LATHES.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

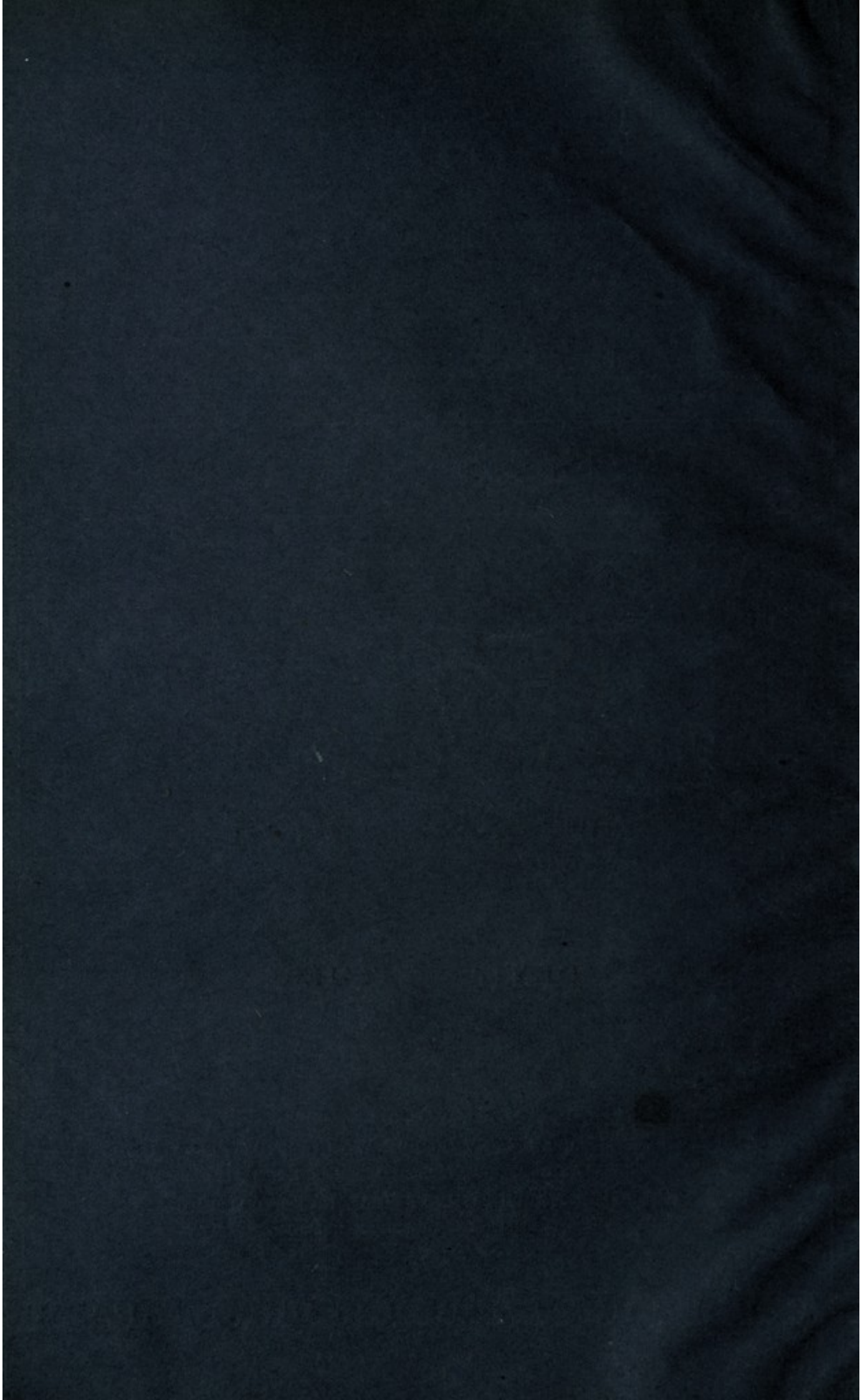
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PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

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Price 1s.

1875.





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A.D. 1875, 28th JANUARY. N° 322.

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**Dental Lathes.**

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**LETTERS PATENT** to William Howarth and Ambrose Howarth, both of Bradford, in the County of York, Dentists, for the Invention of "IMPROVEMENTS IN LATHES FOR DENTAL AND OTHER PURPOSES."

Sealed the 23rd April 1875, and dated the 28th January 1875.

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**PROVISIONAL SPECIFICATION** left by the said William Howarth and Ambrose Howarth at the Office of the Commissioners of Patents, with their Petition, on the 28th January 1875.

We, WILLIAM HOWARTH and AMBROSE HOWARTH, both of Bradford, in  
5 the County of York, Dentists, do hereby declare the nature of the said  
Invention for "IMPROVEMENTS IN LATHES FOR DENTAL AND OTHER PURPOSES,"  
to be as follows:—

The object of this Invention is to enable ten or other convenient  
number of tools used by dentists, bone, ivory, and jet workers to be put  
10 in operation at the same time, thereby economising time and labour in  
finishing dental and other work.

*W. & A. Howarth's Improvements in Dental Lathes.*

The headstock of our improved lathe consists of a spindle with a toothed wheel at each end; these pinions gear into other pinions fixed on short axles, each set of axles being supported in a box with a face plate. These short axles have taper sockets in which the different tools are fixed, and the articles of dentistry or other articles to be operated upon are presented to the different tools in succession. 5

Our Invention may be modified by making the driving pulley with an internal toothed wheel on each side, and these internal wheels gear into the pinions of two sets of short axles, passing through stationary face plates. These short axles have sockets to receive the tools, as above 10 described.

Our Invention may be further modified by driving the short axles by friction instead of toothed gearing, as described.

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**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said William Howarth and Ambrose Howarth in the 15 Great Seal Patent Office on the 22nd July 1875.

**TO ALL TO WHOM THESE PRESENTS SHALL COME**, we, **WILLIAM HOWARTH** and **AMBROSE HOWARTH**, both of Bradford, in the County of York, Dentists, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her 20 Letters Patent, bearing date the Twenty-eighth day of January, in the year of our Lord One thousand eight hundred and seventy-five, in the thirty-eighth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto us, the said William Howarth and Ambrose Howarth, Her special licence, that we, the said William 25 Howarth and Ambrose Howarth, our executors, administrators, and assigns, or such others as we, the said William Howarth and Ambrose Howarth, our executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, 30 use, exercise, and vend, within the United Kingdom of Great Britain

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*W. & A. Howarth's Improvements in Dental Lathes.*

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and Ireland, the Channel Islands, and Isle of Man, an Invention for  
"IMPROVEMENTS IN LATHES FOR DENTAL AND OTHER PURPOSES," upon the  
condition (amongst others) that we, the said William Howarth and  
Ambrose Howarth, our executors or administrators, by an instrument  
5 in writing under our, or their, or one of our or their hands and seals,  
should particularly describe and ascertain the nature of the said Inven-  
tion, and in what manner the same was to be performed, and cause the  
same to be filed in the Great Seal Patent Office within six calendar  
months next and immediately after the date of the said Letters Patent.

10 NOW KNOW YE, that we, the said William Howarth and Ambrose  
Howarth, do hereby declare the nature of our said Invention, and in  
what manner the same is to be performed, to be particularly described  
and ascertained in and by the following statement (that is to say):—

The object of this Invention is to enable ten or other convenient  
15 number of tools used by dentists, or bone, ivory, and jet workers to be  
put in operation at the same time, thereby economising time and labour  
in finishing dental and other work.

The headstock of our improved lathe consists of a spindle with a  
toothed wheel at each end; these wheels gear into pinions fixed on  
20 short axles, each set being supported in a box with a face plate. These  
short axles have taper sockets in which the different tools are fixed, and  
the articles of dentistry or other articles to be operated upon are presented  
to the different tools in succession.

Our Invention may be modified by making the driving pulley with an  
25 internal toothed wheel on each side, and these internal wheels gear into  
the pinions of two sets of short axles, passing through stationary face  
plates. These short axles have sockets to receive the tools, as above  
described.

Our Invention may be further modified by driving the short axles by  
30 friction, instead of toothed gearing, as described.

And in order that our Invention may be fully understood and readily  
carried into operation we will proceed to describe the accompanying  
Sheet of Drawings, reference being had to the figures and letters marked  
thereon.

*W. & A. Howarth's Improvements in Dental Lathes.*

Fig. 1 is a front view, and Fig. 2 a side view partly in section of a lathe constructed according to our Invention. *a* is the headstock supporting the spindle *b*, which is driven by a band passing around the grooved pulley *c*; at each end of the headstock is screwed the box *d*, furnished with a lid or face plate *e*, and at each end of the spindle is 5 keyed the spur wheel *f*. These wheels gear into the pinions *g*, one of which is shewn detached in Fig. 3, and these pinions are fixed on the hollow axles *h*, which revolve in holes in the face plates *e* and boxes *d*. The axles *h* have taper sockets in which the different tools are fixed; the ends of the spindle *b* are also provided with sockets for other 10 tools.

In the lathe above described and illustrated we have shewn ten tools, but the number may be increased or reduced, and the various articles of dentistry or other articles of bone, ivory, jet, or other substances to be operated upon can be presented in succession to the different tools, 15 thereby effecting a great saving in time and labour, and avoiding to a great extent the necessity of changing the tools.

Fig. 4 is a front view, and Fig. 5 a side view partly in section of another of our improved lathes. In this case the headstock *a* supports the spindle *b*, which is driven by a band passing around the grooved 20 pulley *c*. This groove is formed in the circumference of the double internal toothed wheel *i*, keyed on the spindle *b*. Each internal wheel gears into four or other convenient number of spur pinions *g* fixed on the hollow axles *h*, in which the various tools are held, as before described. These hollow axles revolve partly in the face plates *e*, which 25 are screwed to the headstock *a* and partly in the plates *j*, which are screwed to the face plates. At each end of the spindle *b* is screwed a socket *k* for supporting the emery discs *l* or other tools.

Our Invention may be further modified by driving the short axles *h* by friction, instead of toothed gearing, as shewn. 30

Having thus stated the nature of our Invention, and described the manner of performing the same, we wish it to be understood that we do not intend to limit ourselves to the details given, nor to the number of tools employed, as the same may be varied, and we claim the improved lathes for dental and other purposes, as shewn and described, in which 35

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*W. & A. Howarth's Improvements in Dental Lathes.*

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ten or other convenient number of tools are driven simultaneously and by one driving band.

In witness whereof, we, the said William Howarth and Ambrose Howarth, have hereto set our hands and seals, this Twentieth  
5 day of July, One thousand eight hundred and seventy-five.

WILLIAM HOWARTH. (L.S.)

AMBROSE HOWARTH. (L.S.)

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LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1875.

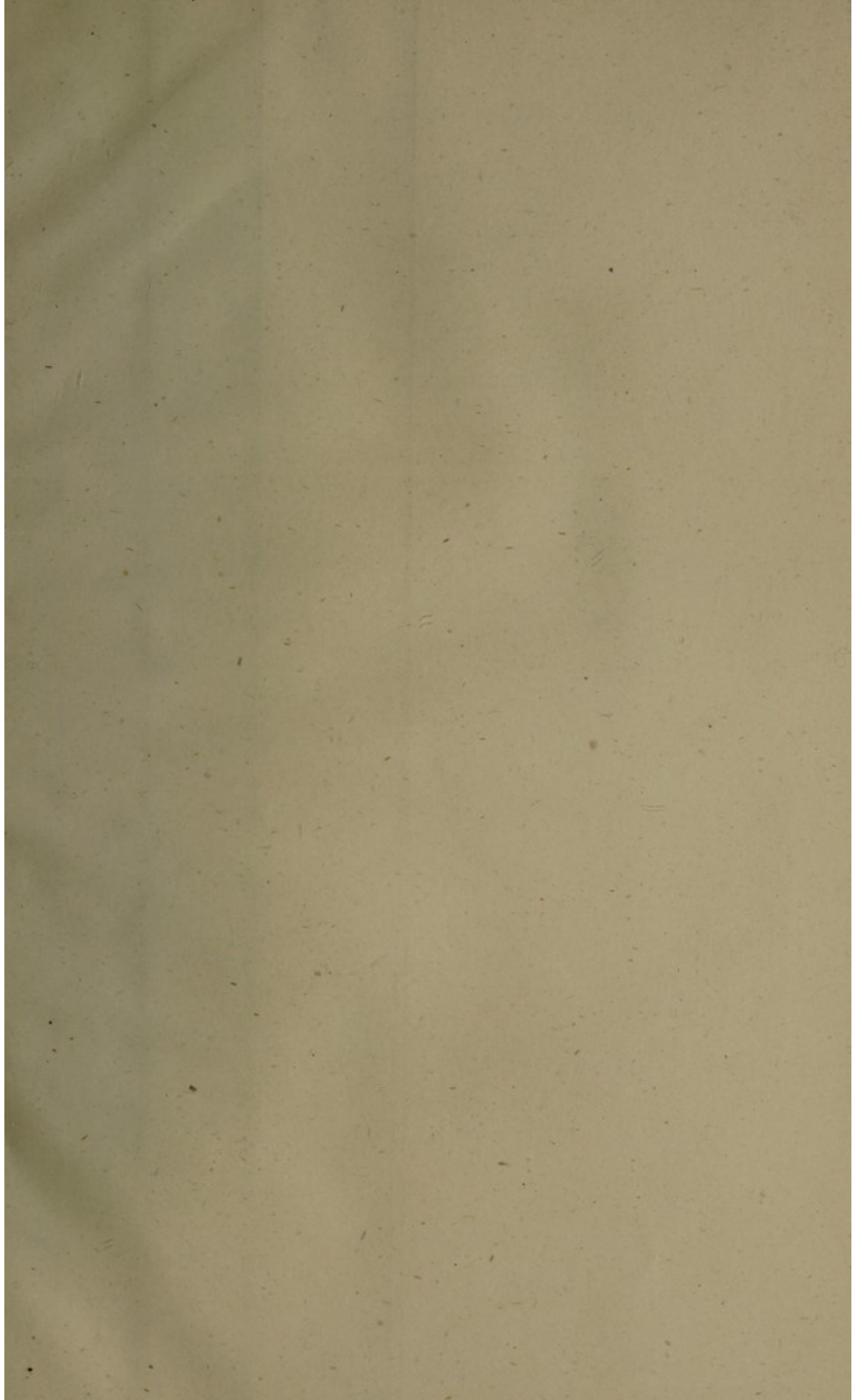


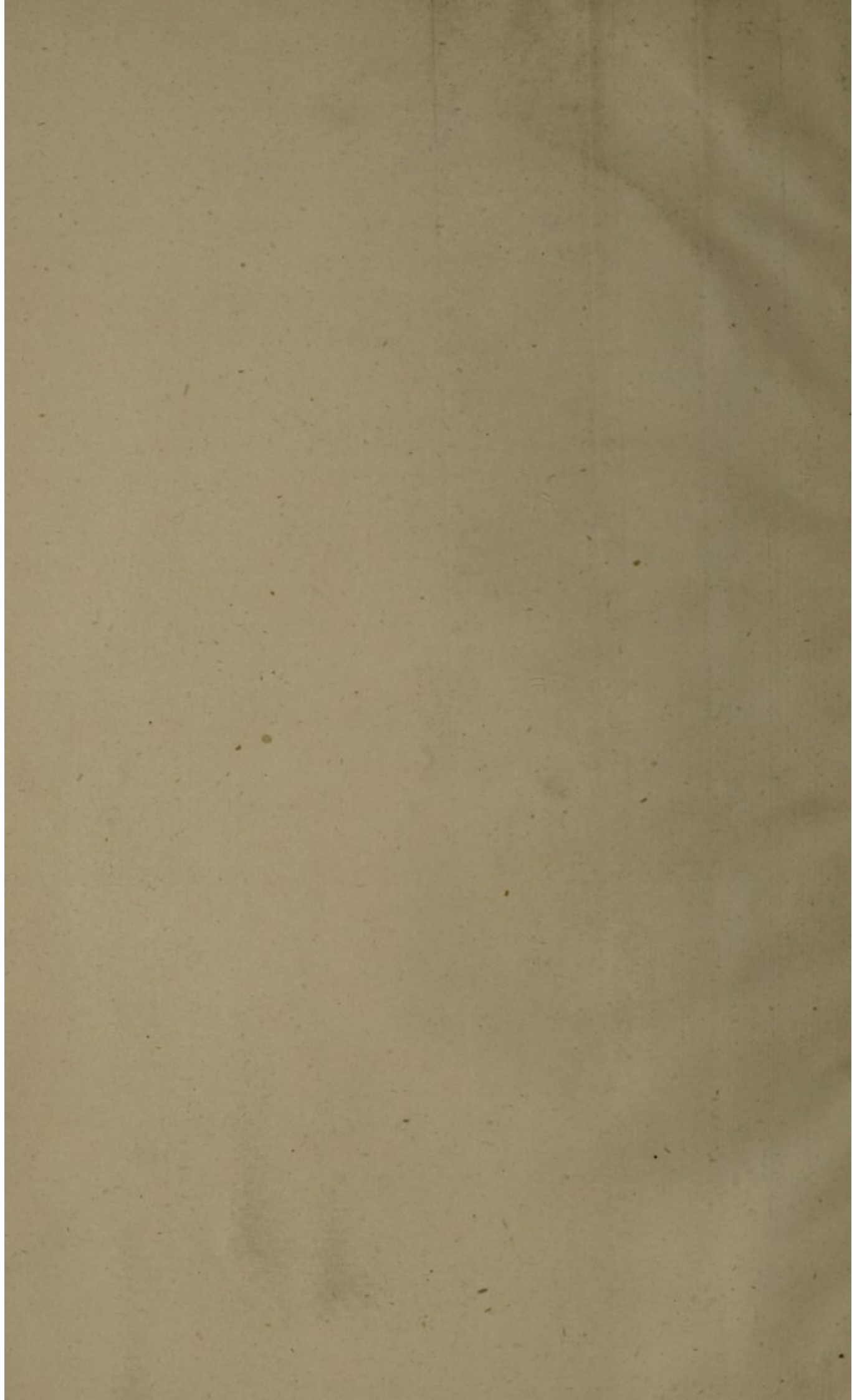
ten or other convenient number of tubes are driven simultaneously in  
by one driving hand.

In places where, as the said William Howard and Arthur  
Howard, have been set on hand and call the Twentieth  
day of July, One thousand eight hundred and seventy-five.

WILLIAM HOWARD. (L.S.)  
ARTHUR HOWARD. (L.S.)

LONDON:  
Printed by George Murray Bryan and William Spottiswoode,  
Printers to the Queen's most Excellent Majesty. 1875.





AD. 1875, JAN. 28, N° 322.  
W & A. HOWARTH'S SPECIFICATION.

FIG. 1.

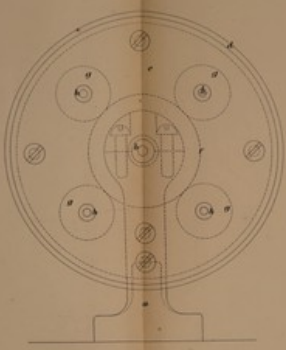


FIG. 2.

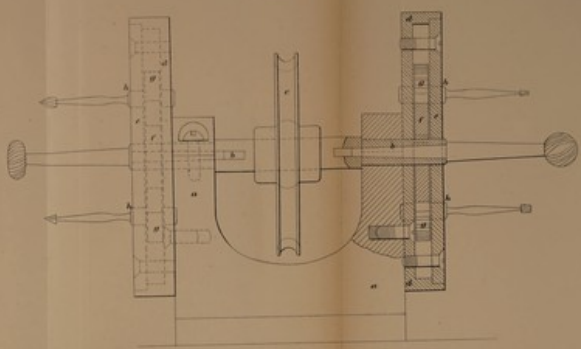


FIG. 3.

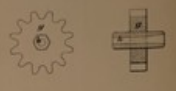


FIG. 4.

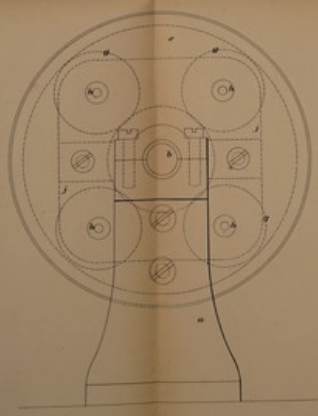
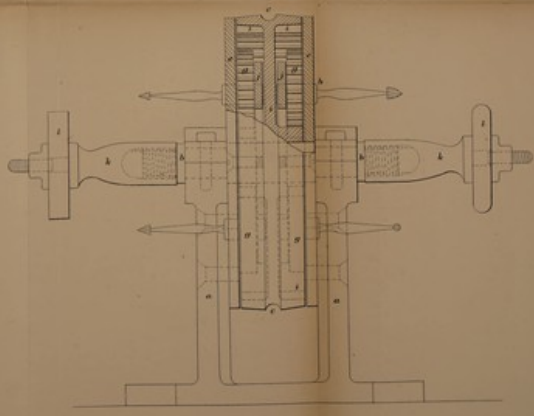


FIG. 5.



Full Size.

The 1881 drawing is not altered.

LONDON: Printed by George Edwardes and Messrs. Spence and Co., 25, Abchurch Lane, in the Strand, W.C.

Drawn on Stone by W. H. P. Jones.

