

(No Model.)

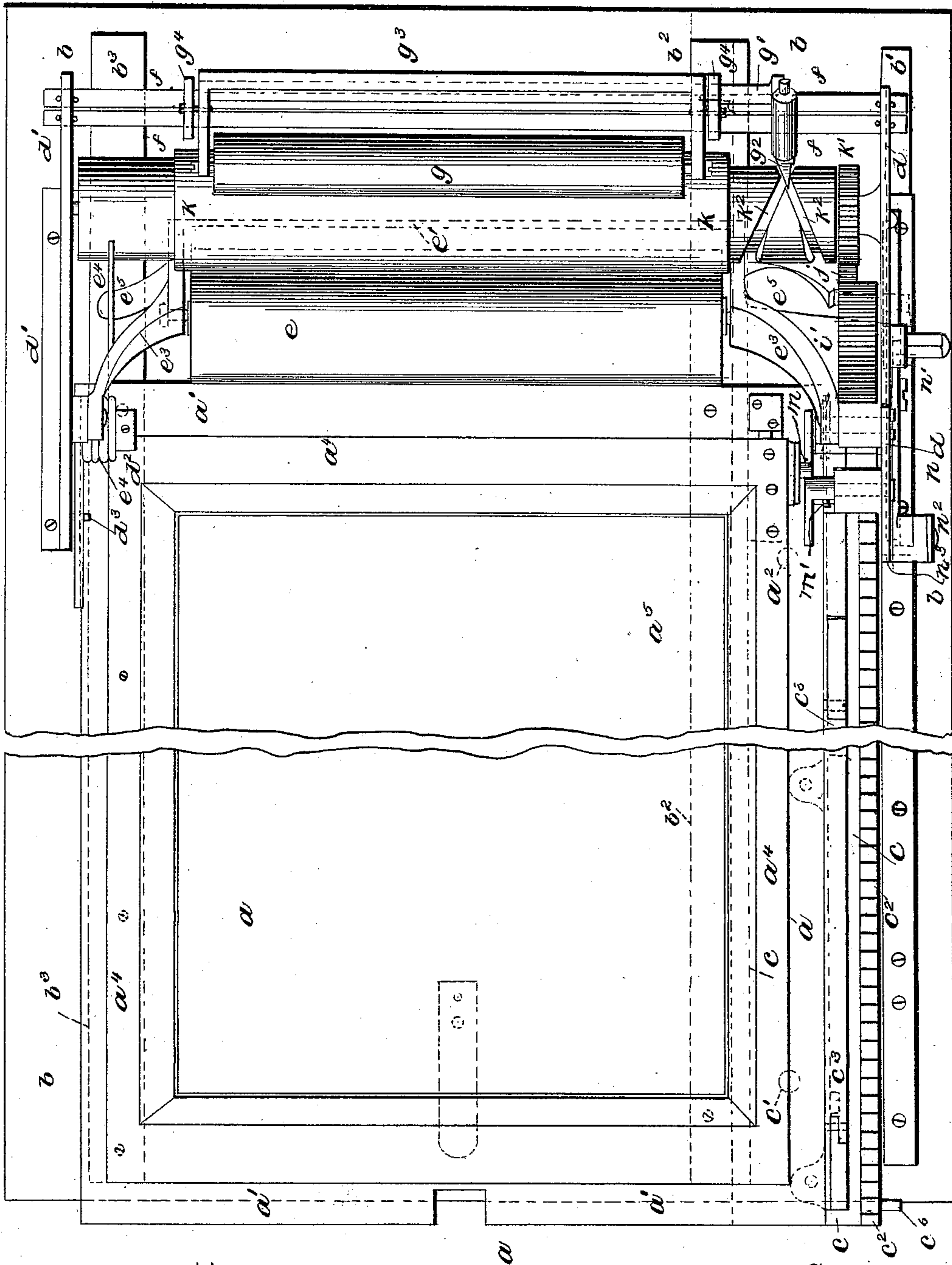
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D. GESTETNER.

APPARATUS EMPLOYED IN PRINTING FROM STENCILS.

No. 536,720.

Patented Apr. 2, 1895.



Witnesses  
John J. Smith  
W. E. Hathaway

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David Gestetner  
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Attorneys

(No Model.)

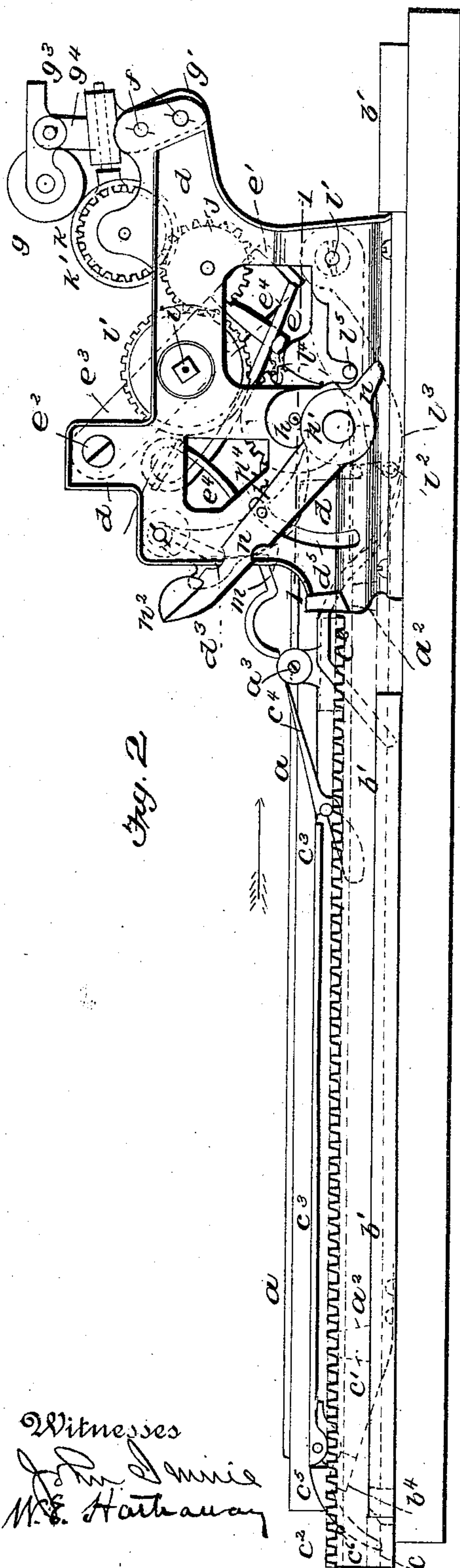
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D. GESTETNER.

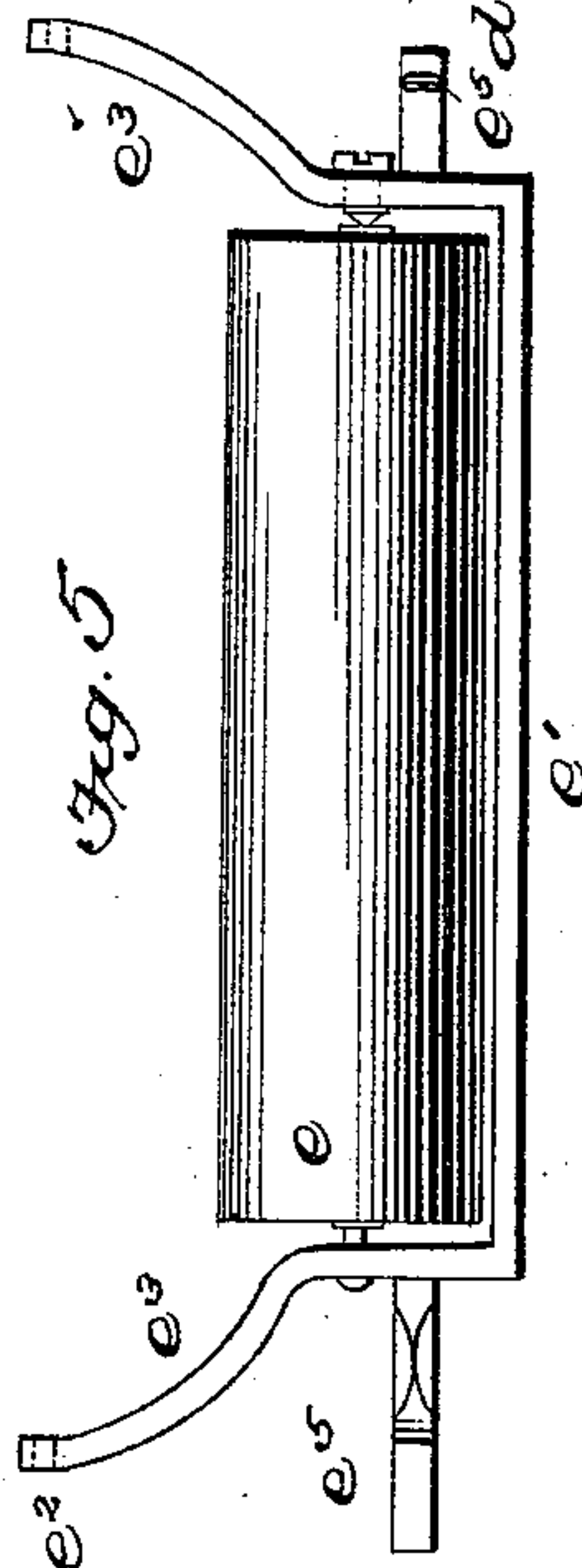
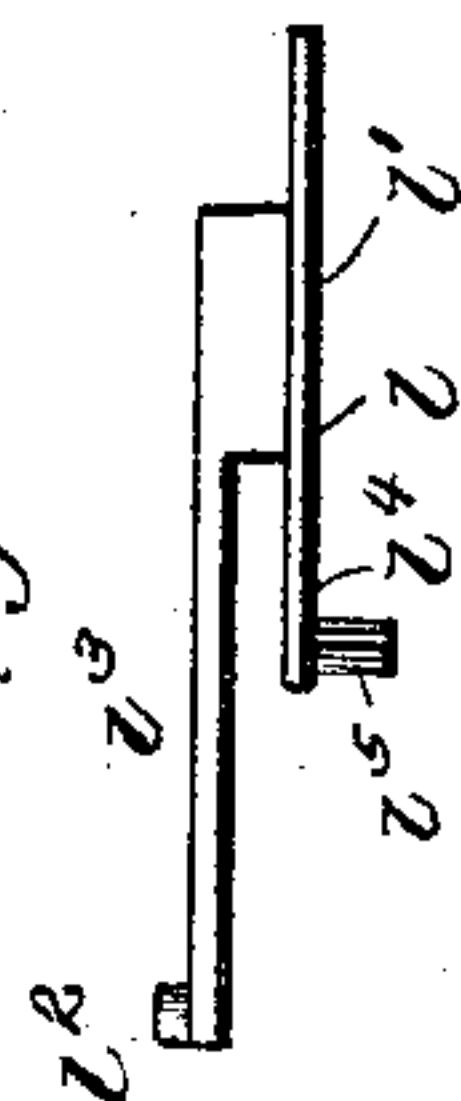
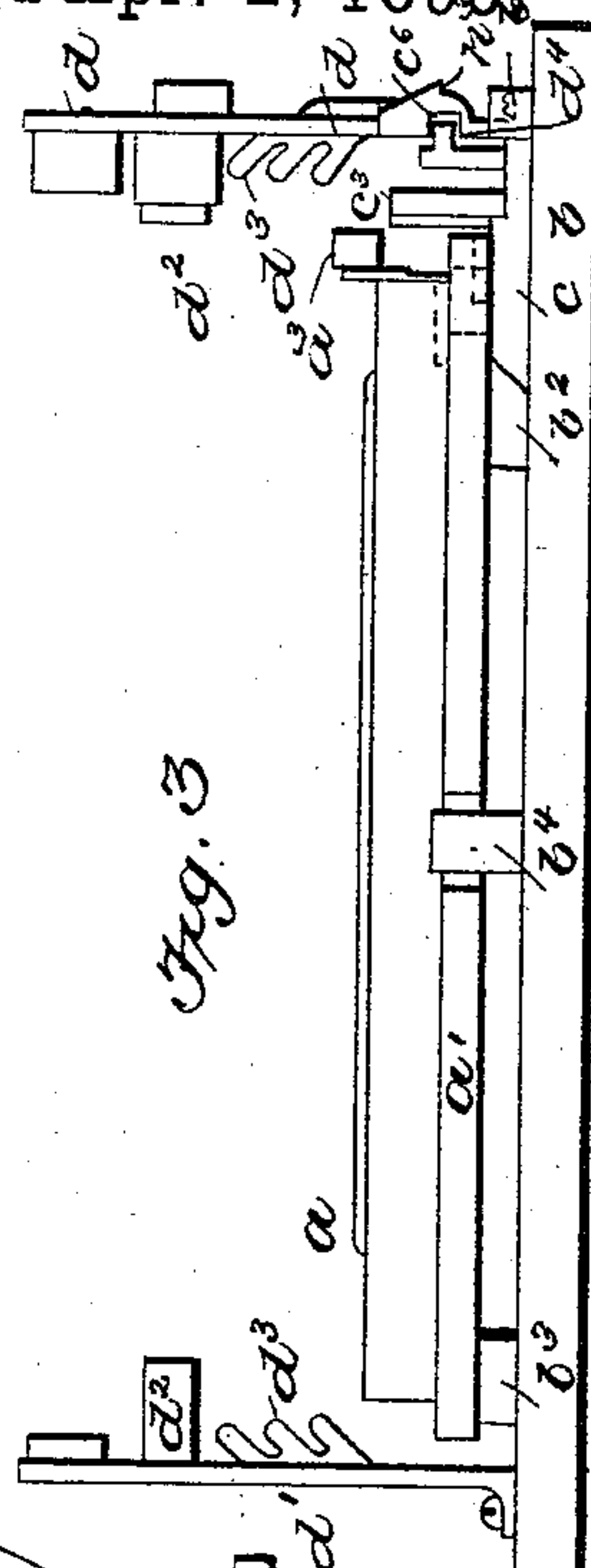
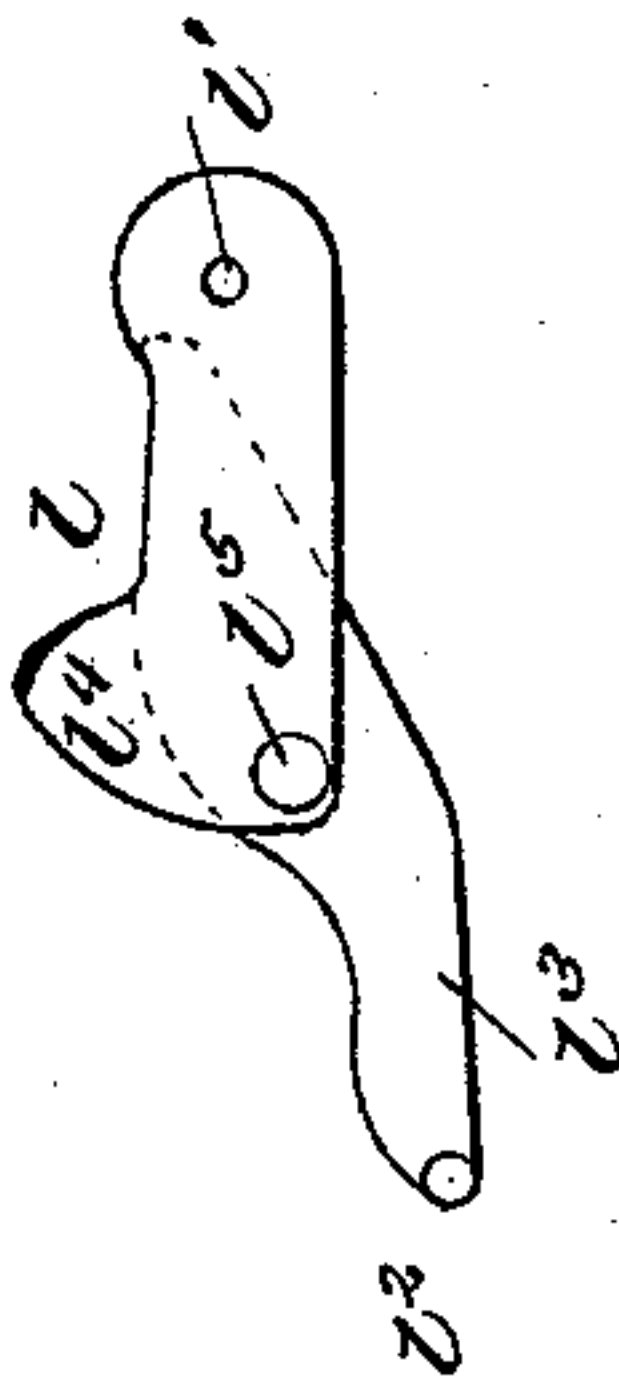
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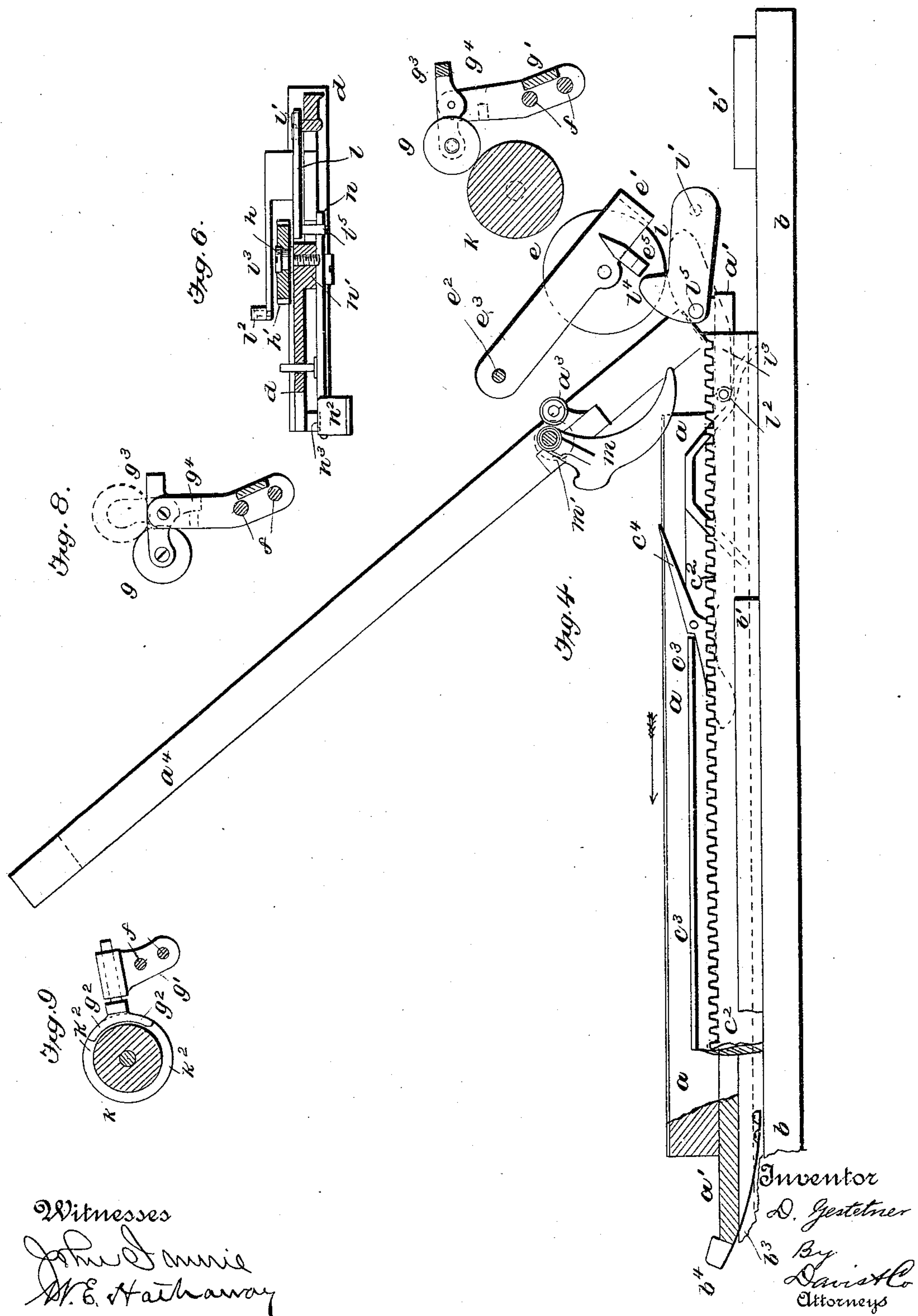
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D. GESTETNER.

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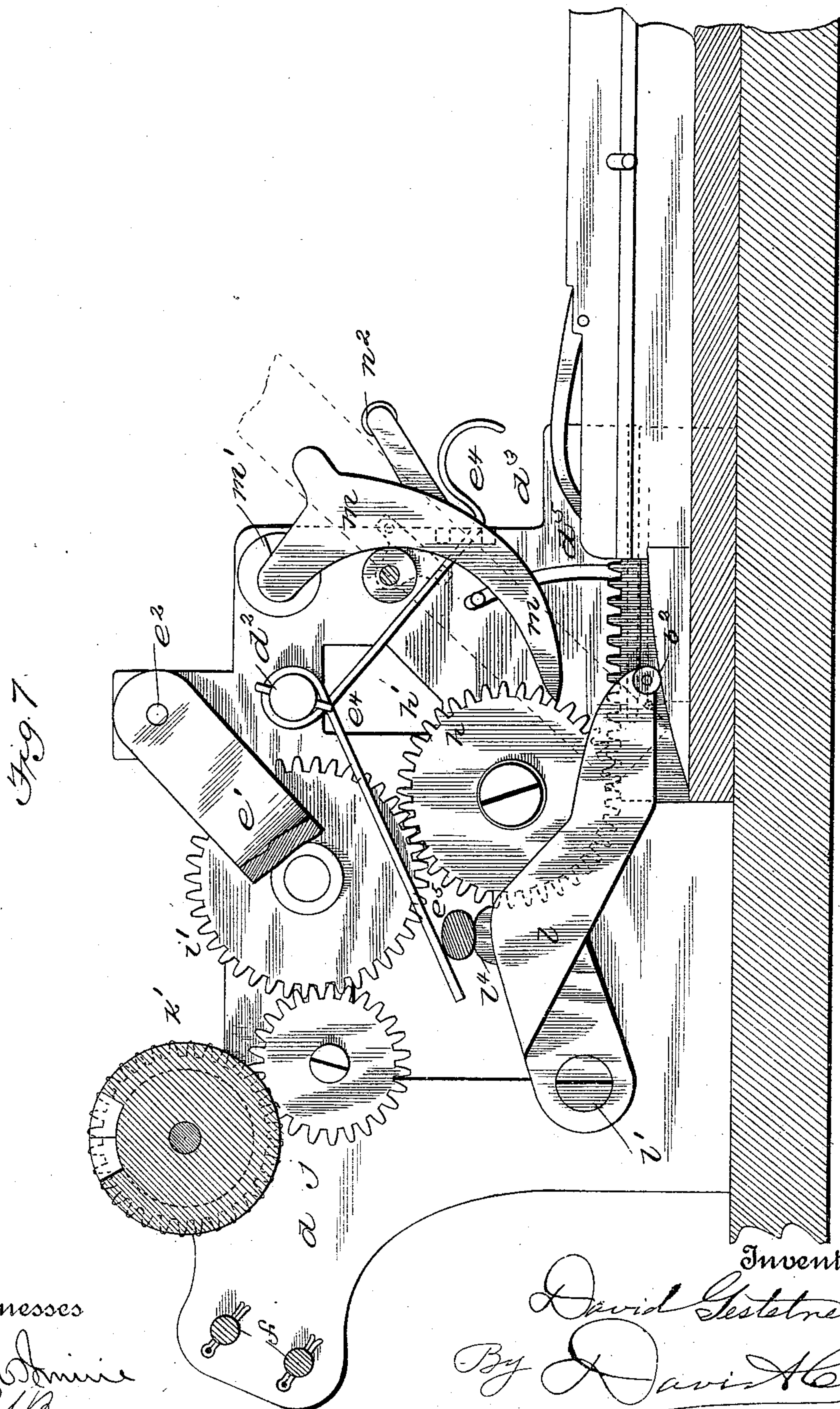
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## APPARATUS EMPLOYED IN PRINTING FROM STENCILS.

No. 536,720.

Patented Apr. 2, 1895.



Witnesses

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(No Model.)

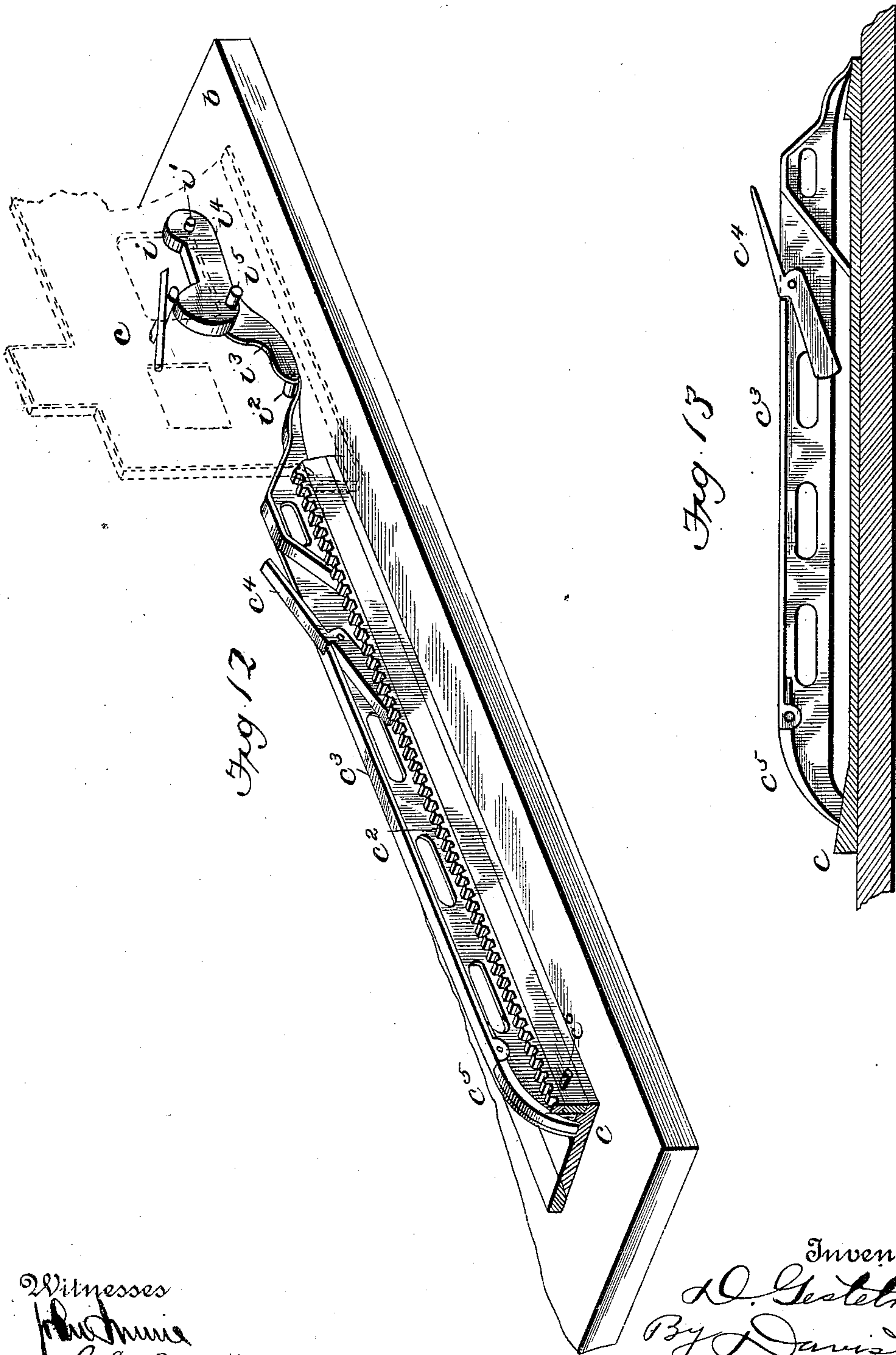
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D. GESTETNER.

APPARATUS EMPLOYED IN PRINTING FROM STENCILS.

No. 536,720.

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# UNITED STATES PATENT OFFICE.

DAVID GESTETNER, OF LONDON, ENGLAND.

## APPARATUS EMPLOYED IN PRINTING FROM STENCILS.

SPECIFICATION forming part of Letters Patent No. 536,720, dated April 2, 1895.

Application filed March 17, 1893. Serial No. 466,429. (No model.) Patented in England October 1, 1892, No. 19,438.

*To all whom it may concern:*

Be it known that I, DAVID GESTETNER, a subject of the Queen of Great Britain, and a resident of London, England, have invented a certain new and useful Improvement in Stencil-Printing Apparatus, (for which I have obtained a patent in Great Britain, No. 19,438, bearing date October 1, 1892,) of which the following is a full, clear, and exact description.

10 This invention relates to an improvement in stencil printing apparatus.

The invention has for its object the combination with a paper stencil stretching and printing frame, of means for passing the said frame to and fro under a printing roller, of means for automatically lowering such printing roller on to the stencil for printing and for raising the said roller off the stencil after the printing has been effected, of means for supplying and properly distributing the ink to such printing roller, of means for automatically raising the stencil stretching frame and stencil above the printing table to enable a sheet of paper to be laid on such table for printing and to enable a printed sheet to be removed therefrom, of means for automatically pushing or throwing off the printed sheet from the printing table, of means for enabling the printing table and stencil stretching frame to be readily removed out of action, and of means for enabling the inking and printing rollers to be placed in contact with each other for the purpose of effectually distributing a fresh supply of ink before allowing the stencil stretching and printing frame to pass in contact with the printing roller.

40 In order that my said invention may be clearly understood and readily carried into effect, I will proceed, aided by the accompanying drawings, fully to describe the same.

Figure 1, is a plan, Fig. 2, is a side view, and Fig. 3, is an end view of a stencil printing apparatus constructed according to my invention. Fig. 4, is a side elevation of parts showing some of the parts in section and some in a different position from that shown in Fig. 2. Fig. 5, is a plan of the printing roller and of its lever frame separately. Fig. 6, is a horizontal section drawn on the line, 1, 1, of Fig. 2. Fig. 7, is an internal view of the gear standard showing some parts in section. Fig. 8, is a sectional elevation of the parts carrying the ink

distributing roller. Fig. 9, is a sectional elevation of parts for giving the to and fro motion to the ink distributing roller. Figs. 10 and 11 are respectively a side elevation and a plan of one of the levers separately. Fig. 12 is a perspective view, and Fig. 13 is a side view, of the mechanism for raising and lowering the printing roller.

60 In all the figures like parts are indicated by similar letters of reference.

$a$  is the stencil stretching and printing frame, which is generally constructed in the manner well understood, but with the additions or alterations hereinafter referred to.

70 In carrying my invention into effect I give a to and fro motion to the frame  $a$ , for which purpose it is mounted on a table  $b$  and is suitably guided to enable the same to work smoothly to and fro thereon, as hereinafter described.

The frame  $a$ , as shown in the drawings, has two dowel holes  $a^2$  formed in one side of its base  $a'$  to pass on to two dowel holes  $c'$  fixed in a slide or frame  $c$  carrying a toothed rack  $c^2$  and a cam surface  $c^3$  having switches  $c^4$ ,  $c^5$  for the purpose hereinafter referred to. This slide or frame  $c$  is formed with one edge square and the other beveled to work between correspondingly formed guides  $b'$   $b^2$  fixed on the table  $b$ , but it may be otherwise guided. The side of the frame  $a$  opposite to that connected with the slide or frame  $c$ , is supported on a smooth rail  $b^3$  fixed along that side of the table  $b$ . By this means the frame  $a$  is guided so as to be enabled to move smoothly to and fro on the table  $b$ .

90 It will be evident that instead of removably connecting the frame  $a$  with the slide or frame  $c$ , rack  $c^2$  and cam  $c^3$ ,  $c^4$ ,  $c^5$ , it may have the rack  $c^2$  and cam  $c^3$ ,  $c^4$ ,  $c^5$  permanently fixed thereto, but this latter arrangement is not so satisfactory as that previously described.

95 To the sides of one end of the table  $b$  are fixed standards  $d$   $d'$ , in which are formed bearings for the axles or trunnions  $e^2$  of the frame or cross bar  $e'$ , the arms or levers  $e^3$  of which carry the inking roller  $e$ . In each of the standards  $d$   $d'$  are fixed cross bars or rods  $f$   $f'$ , on which slides the bar or frame  $g'$  carrying the ink distributing or waver roller  $g$ , and a spring  $e^4$  is mounted on a stud  $d^2$  of each of such frames  $d$   $d'$ . One end of each of such



springs acts on a projection  $e^5$  from one of  
 the arms or levers  $e^3$ , while the other ends  
 thereof are capable of being placed in one or  
 other of the series of catches  $d^3$  on each of  
 the standards  $d$   $d'$  to regulate the strength of  
 such springs, which latter are for the purpose  
 of pressing the printing roller  $e$  firmly on to  
 the stencil when printing. The springs  $e^4$   
 may however be dispensed with and the print-  
 ing roller may be pressed onto the stencil sim-  
 ply by its own weight or by other suitable  
 means.

The standard  $d$  carries the axle  $h$  of a  
 toothed wheel  $h'$  gearing into the rack  $c^2$ , an  
 axle  $i$  having an operating handle (not shown)  
 mounted thereon, a toothed wheel  $i'$  on the  
 axle  $i$  gearing into the toothed wheel  $h'$ , the  
 axle of a toothed wheel  $j$  gearing into a toothed  
 wheel  $k'$  on the axle of the inking roller  $k$ , and  
 an axis  $l'$  carrying a double armed lever  $l$  hav-  
 ing a stud  $l^2$  at the free end of the arm  $l^3$ , which  
 works in connection with the before men-  
 tioned switched cam surface  $c^3$ , while the arm  
 $l^4$  acts on the under side of a projection  $e^5$  on  
 one of the arms  $e^3$  of the printing roller frame  
 $e'$  to raise said frame when required, for which  
 purpose the stud  $l^2$  is acted upon automati-  
 cally by the cam surface  $c^3$   $c^4$   $c^5$  when the ap-  
 paratus is being used for printing. The  
 standard  $d$  also carries the axis of a hinged  
 cam lever  $m$  and a stop  $m'$  acting with such  
 cam lever, which latter acts in connection with  
 a stud or projection  $a^3$  on the stencil stretch-  
 ing frame  $a^4$ , so that in the motion, in the di-  
 rection of the arrow Fig. 4, of the stencil  
 stretching and printing frame  $a$ , the stud  $a^3$   
 will run up said cam lever  $m$  and raise the  
 frame  $a^4$ , while in the motion in the contrary  
 direction, indicated by the arrow in Fig. 2,  
 when inserting the frame  $a$  into position, the  
 stud  $a^3$  will freely pass said cam lever  $m$ ,  
 merely turning the latter somewhat on its  
 axis. The standard  $d$  is also provided with  
 an axis  $n'$  carrying a lever  $n$ , one end of which  
 is in position to act upon a stud  $l^5$  carried by  
 the arm  $l^4$  of the lever  $l$ , while the other end  
 of such lever  $n$  has a thumb piece  $n^2$ , by means  
 of which the printing roller  $e$  can, when de-  
 sired, be raised by hand into contact with the  
 inking roller  $k$  or be permitted to fall away  
 therefrom. This lever  $n$  is employed when it  
 is desired to insure a proper supply of ink to  
 the printing roller  $e$  previous to placing the  
 stencil stretching and printing frame  $a$  in po-  
 sition in the apparatus, in which case the  
 thumb piece  $n^2$  of the lever  $n$  can be so far  
 depressed as to enable that end of the lever  
 $n$  to be passed underneath the stop or catch  
 $n^3$  on the standard  $d$ , by which means the  
 printing roller  $e$  can be retained in contact  
 with the inking roller  $k$  when, by means of  
 the operating handle (not shown), rotary mo-  
 tion can be given to the axle  $i$ , which, by the  
 gear wheels  $i'$ ,  $j$  and  $k'$ , will communicate ro-  
 tary motion to the inking roller  $k$  and, through  
 contact therewith, to the printing roller  $e$ .

The inking roller  $k$  has on one end thereof,

a cam groove  $k^2$  in the form of two screw  
 threads crossing each other and joining at  
 their ends, in combination with which acts a  
 swiveling projection  $g^2$  carried by the bar  $g'$   
 of the distributing or waver roller  $g$  to give a  
 to and fro motion to the latter. The ink dis-  
 tributing or "waver" roller  $g$  is mounted in  
 a frame  $g^3$  centered in the arms  $g^4$  of the bar or  
 frame  $g'$  to enable the roller  $g$  to be separated  
 from the roller  $k$  when the apparatus is at  
 rest, which separation is effected by acting  
 upon the frame  $g^3$  by hand or by a projection  
 from a cover (not shown) which is placed  
 over the apparatus when the latter is not in  
 use. The printing roller  $e$  also, automati-  
 cally, falls out of contact with the inking  
 roller  $k$  when the stencil stretching and print-  
 ing frame  $a$  is drawn out against the spring  
 stop  $b^4$  with the frame  $a^4$  in its lowered po-  
 sition when the apparatus is out of use and is  
 to be put away with its cover on.

A stop  $c^6$  fixed to the rack  $c^2$  acts to limit  
 the motion of the frames  $a$  and  $c$  to the rear  
 by traveling to the inner end of the groove  
 $d^4$  in the frame  $d$ , while a spring stop  $b^4$  acts  
 to limit the forward motion of such frames.  
 By depressing the stop  $b^4$  the frames  $a$  and  $c$   
 can be readily removed from the rest of the  
 apparatus.

The lever  $n$  is provided with a stud stop  
 $n^4$  which passes through a curved slot  $d^5$  of  
 the frame or standard  $d$ , so that when the  
 frames  $a$  and  $c$  are removed out of their  
 working positions with the rack  $c^2$  to the left  
 of the stop  $n^4$ , and the lever  $n$  is held in its  
 depressed position, the frame  $a$  cannot be  
 passed underneath the printing roller  $e$  until,  
 by raising the lever  $n$ , the stop  $n^4$  is removed  
 out of the way of the rack  $c^2$  and the roller  $e$  is  
 liberated, so as to render it capable of print-  
 ing.

The action of the apparatus is as follows:  
 Supposing a sheet of paper to be printed upon  
 has been placed in position below the stencil,  
 the axle  $i$  is rotated. The gearing is thereby  
 set in motion so as to pass the stencil stretch-  
 ing and printing frame  $a$  underneath the  
 printing roller  $e$  for printing. In the motion  
 of such frame  $a$  in such direction, the print-  
 ing roller  $e$  is at first raised by the right end  
 of the cam surface  $c^3$ , then the switch  $c^4$ , by  
 enabling the projection  $l^2$  of the lever  $l$  to  
 pass below the cam surface  $c^3$ , permits the  
 printing roller  $e$  to fall on to the stencil, where  
 it continues to act until the projection  $l^2$  of  
 the lever  $l$  reaches the left end of the cam  $c^3$ ,  
 when it will pass from underneath such cam  
 past the switch  $c^5$ . Then, on reversing the mo-  
 tion of the gearing, the frame  $a$  will be caused  
 to travel to the left, the projection  $l^2$  will rise  
 up the outside of the switch  $c^5$  and will then  
 travel on the upper side of the cam  $c^3$  and  
 switch  $c^4$ , and in such position the lever  $l$  will  
 raise the printing roller  $e$  from off the stencil  
 and carry it against the inking roller  $k$  to re-  
 ceive a fresh supply of ink. The other parts  
 of the apparatus will act as hereinbefore de-



scribed to distribute the ink, to raise and lower the stencil stretching frame, and to eject the printed sheet. A fresh sheet of paper is then placed on the printing table when the operations will be repeated.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In stencil-printing apparatus having a movable stencil-carrying frame, a printing-roller, an inking-roller and an ink-distributing roller operated as herein described, the combination therewith of means whereby, when it is desired to supply and distribute the ink to the printing roller previous to placing the stencil carrying frame in action, the printing

roller can be raised into contact with the inking-roller and the said printing-roller, inking-roller and distributing roller continuously rotated in one direction in contact with each other, and a stop to prevent the stencil-carrying frame from being pushed forward with its rack into gear with the toothed wheel driving the same, substantially as herein shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID GESTETNER.

Witnesses:

S. N. TYRRELL,  
WALTER E. ROCHE.