

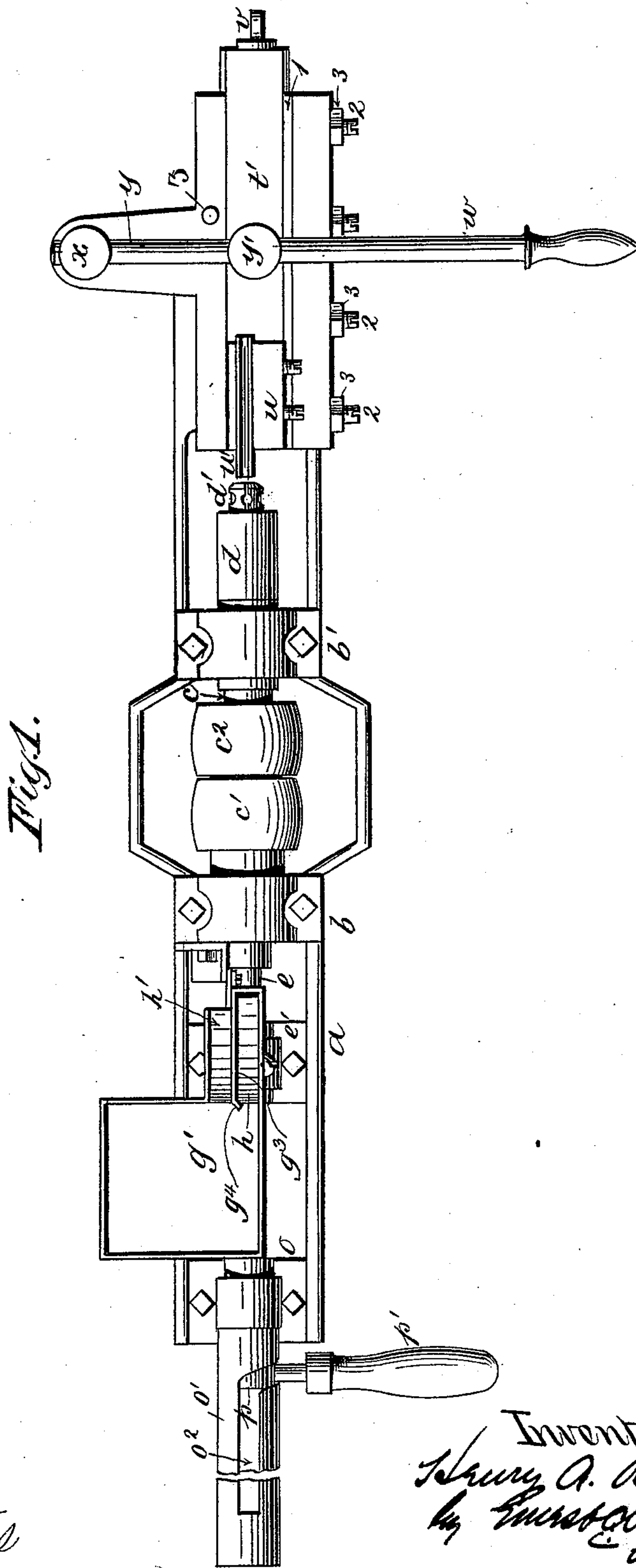
(No Model.)

3 Sheets—Sheet 1.

H. A. BERGER.  
BUTTON FINISHING MACHINE.

No. 518,340.

Patented Apr. 17, 1894.



Witnesses:  
D. W. Gardner,  
Charles C. Peters

Inventor:  
Henry A. Berger  
by Ernest G. Clark  
Att'y.

(No Model.)

3 Sheets—Sheet 2.

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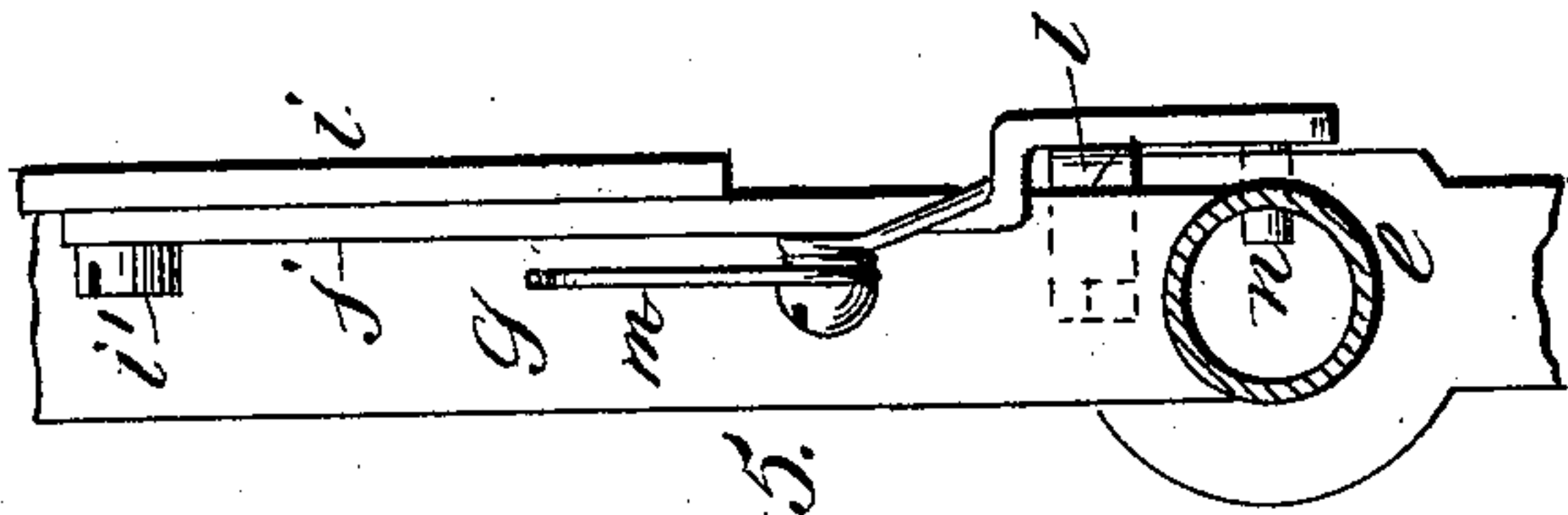


Fig. 5.

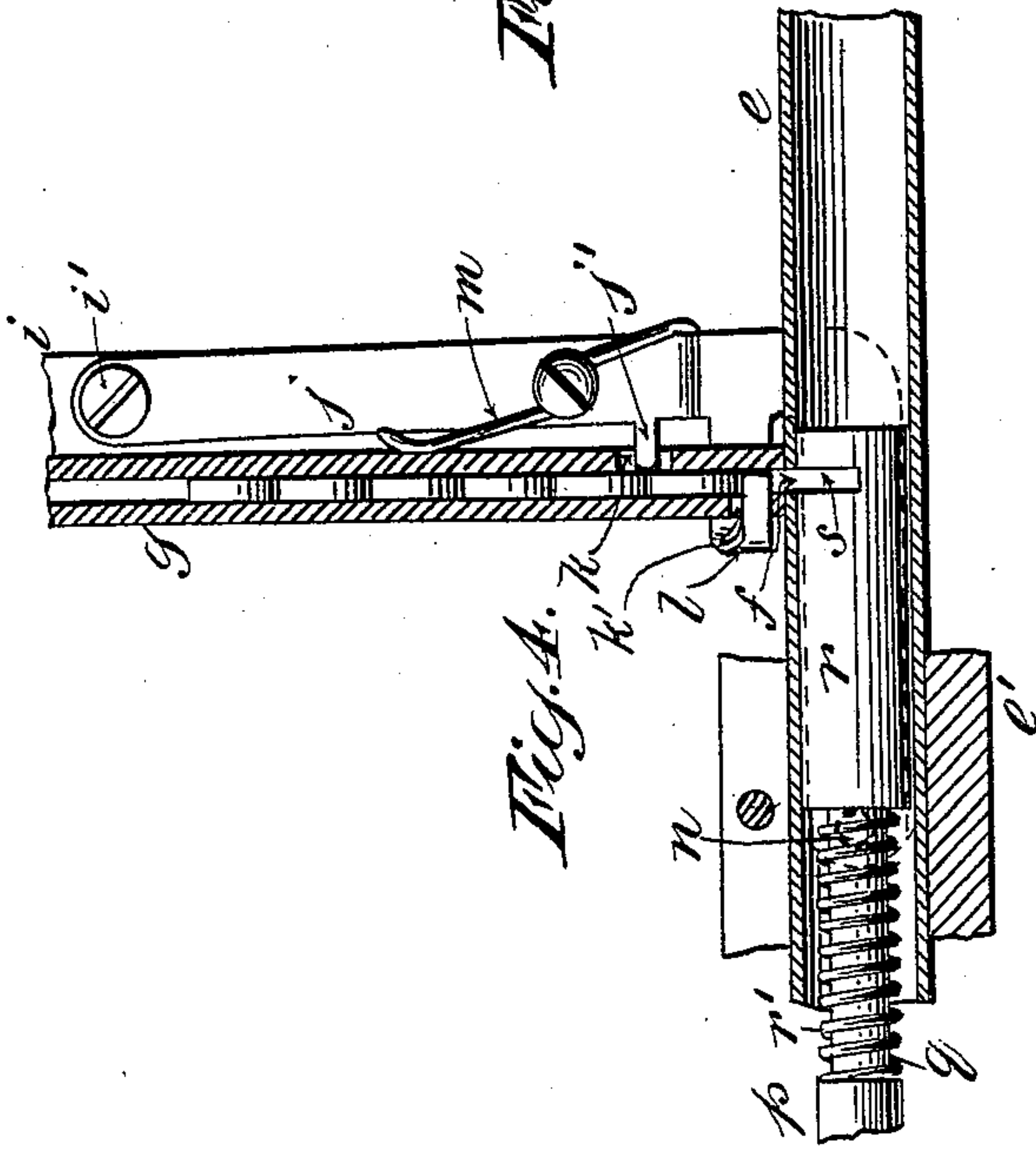


Fig. 4.

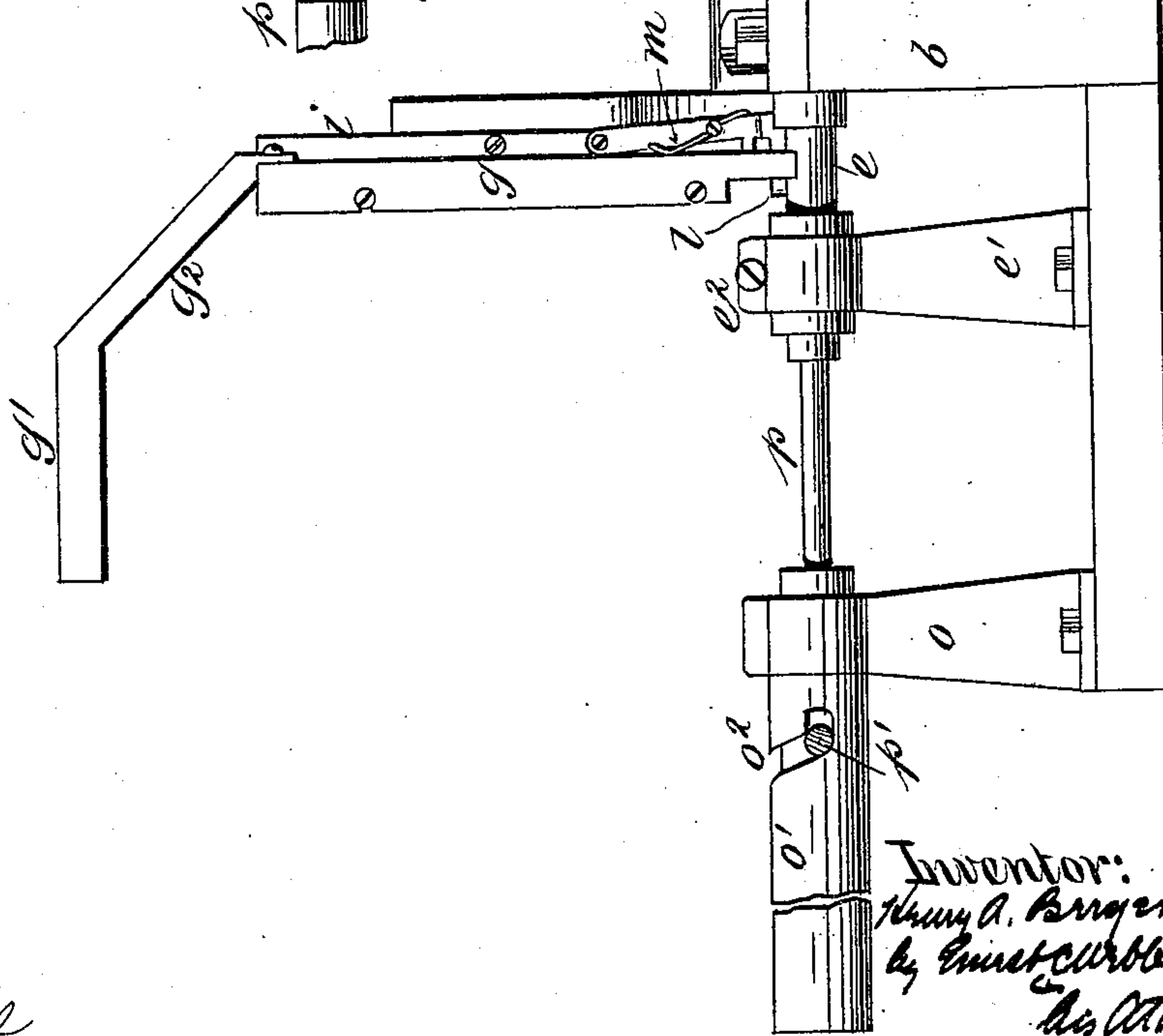


Fig. 2.

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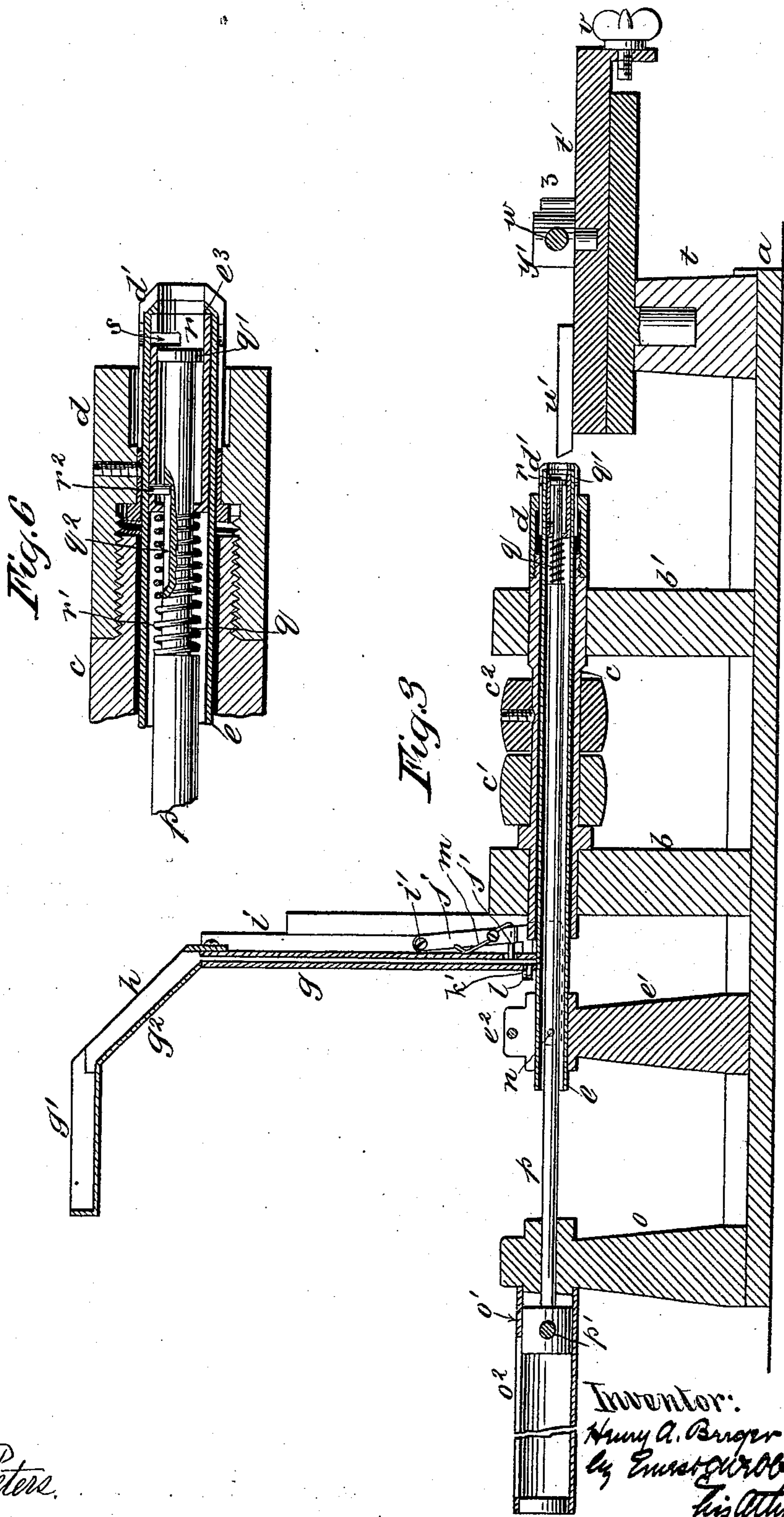
(No Model.)

3 Sheets—Sheet 3.

H. A. BERGER.  
BUTTON FINISHING MACHINE.

No. 518,340.

Patented Apr. 17, 1894.



Witnesses:  
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 Charles C. Peters.

Inventor:  
Harry A. Berger  
by Ernest G. Rode  
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# UNITED STATES PATENT OFFICE.

HENRY A. BERGER, OF BROOKLYN, NEW YORK.

## BUTTON-FINISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 518,340, dated April 17, 1894.

Application filed July 13, 1893. Serial No. 480,333. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. BERGER, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Button-Finishing Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in button finishing machines, and is particularly designed to finish or "face" pearl buttons.

Heretofore, so far as I am aware, it has been customary to retain the buttons in a wooden chuck which is rapidly destroyed through contact with the operation tool, and has to be cut out or replaced upon finishing about every one or two dozen buttons.

It is the object of my invention, therefore, to provide a machine which will be simple and economical in construction, rapid and efficient in action, and in which the parts are not liable to derangement or breakage.

To these ends therefore, my said invention consists in the details of construction, and in the arrangement and combination of parts, all as hereinafter more fully set forth and pointed out in the claims.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1, is a top plan view of a machine embodying my invention. Fig. 2, is a side elevation. Fig. 3, is a vertical longitudinal sectional view thereof. Fig. 4, is an enlarged fragmentary side view, partly in section, of my automatic gate and cut off, showing the buttons in position to be fed. Fig. 5, is a similar end view; and Fig. 6, is an enlarged view of the chuck, and the forcing and ejecting mechanism shown in Fig. 3.

$a$ , is the bed plate provided with the standards  $b$ , and  $b'$ , in which is journaled the hollow shaft  $c$ , having mounted thereon the fast and loose pulleys  $c'$ ,  $c^2$ . The forward end of this shaft terminates in a thimble or sleeve  $d$ , screwed thereon, and rotatable therewith, and carrying a spring chuck  $d'$ . Passing through said shaft  $c$ , is the tube or channel  $e$ , the rearward end of which is supported by standard  $e'$ , and prevented from rotation by the clamping or binding head  $e^2$  thereof. This tube is provided on its upper face with the

slot  $f$ , of a size to admit the passage of the buttons, and above said tube and coinciding with the slot  $f$ , therein is arranged the feeding chute  $g$ , leading from the table  $g'$ , and the incline  $g^2$ , which latter is divided by a partition  $g^3$  (Fig. 1), into two guideways  $h$  and  $h'$ , the said partition being formed with a bend or angle  $g^4$  at the entrance to guideway  $h$ , permitting only the passage of buttons of a size within the capacity of the machine. As shown, guideway  $h$ , communicates directly with the feeding chute  $g$ , while guideway  $h'$ , leads outside of the operating parts of the machine and constitutes a passage for the larger and temporarily discarded buttons. The lower end of chute  $g$ , is provided with a gate and cut-off arranged to feed one button at a time to the interior of the machine, and said construction is illustrated in Figs. 4 and 5, in which  $i$ , is a flange on the chute  $g$ , to which is pivoted at  $i'$ , the right angled arm  $j$ , provided with a pin or lug  $j'$ , entering said chute through hole  $k$ , therein, while below said lug  $j'$ , is a larger projecting strip  $l$ , on the arm  $j$ , bent or curved to enter, and play in, hole  $k'$ , at the opposite side of the chute. The arm  $j$ , is normally held in the position shown by spring  $m$ , and the angular portion of said arm (shown in dotted lines in Fig. 4.), is provided with a projecting pin  $n$ , entering and working in a slot in the side of the tube or channel  $e$ , and at or near the rearward end thereof.

To a standard  $o$ , mounted upon bed plate  $a$ , is secured the long tube  $o'$ , provided with the bayonet cut or slot  $o^2$ , as shown in Figs. 1 and 2, and passing through a bearing in standard  $o$ , is the rod  $p$ , to which motion is imparted by the handle  $p'$ , working in the bayonet slot  $o^2$ . This rod  $p$ , as shown, is adapted to enter and work in, the tube or channel  $e$ , and has its front end formed with the reduced stem  $q$ , bearing the piston-head or ejector  $q'$ , and surrounding and extending beyond said stem, and head, is the sleeve  $r$ , normally held in the position shown by the spring  $r'$ . This sleeve is prevented from independent rotation by the pin  $r^2$ , entering the groove or slot  $q^2$  of the stem  $q$ , and in front of head  $q'$ , said sleeve is provided with the vertical opening or button slot  $s$ , adapted to register with the slot  $f$ , in tube  $e$ , as presently explained.



To a standard  $t$ , mounted upon the bed plate  $a$ , is the dove-tailed slide  $t'$ , provided at one end with the tool holder  $u$ , and any suitable or desirable tool  $u'$ , and at the opposite end, with the adjustable stop  $v$ . A handle  $w$ , pivoted at  $x$ , to a projection  $y$ , on one of the walls of the slide, and also swiveled to said slide at  $y'$ , imparts a reciprocating motion thereto, which is limited in one direction by the pin  $z$ .

The operation of my machine is as follows:—The buttons to be cut and finished are placed upon table  $g'$ , with the face to be treated uppermost. The operator then slides the buttons to the incline  $g^2$ , and into guideway  $h$ , thereof, through the gage formed by the angle of the partition wall, as described. The buttons which are too large to pass, said gage, are fed to guideway  $h'$ , and are thrown out, to be reground, while the smaller sizes drop into the feeding chute  $g$ , where they are held by the lug or gate  $l$ , on arm  $j$ , as shown in Fig. 4. When the chute  $g$ , has been filled with buttons, the operator grasps the handle  $p'$ , of rod  $p$ , and moves the same backward along bayonet slot  $o^2$ , of tube  $o'$ . By this movement, the rear end of sleeve  $r$ , is brought in contact with the pin  $n$ , on arm  $j$ , protruding within tube  $e$ , thereby swinging said arm on the pivot  $i'$ , moving the lug or gate  $l$ , out of the hole  $k'$ , in chute  $g$ , and moving the lug or cut-off  $j'$ , into its hole  $k$ , therein, permitting the lower button to drop, but cutting off the others. The freed button now falls from chute  $g$ , through slot  $f$ , in tube or channel  $e$ , and through the slot  $s$ , into sleeve  $r$ . Said sleeve is then moved forwardly by rod  $p$ , and handle  $p'$ , and upon the extreme forward movement of said handle in the straight or upper portion of slot  $o^2$ , the parts are brought to the position shown in Fig. 6, and with the outer end of sleeve  $r$ , impinging against the shoulders  $e^3$ , of tube  $e$ . As the handle  $p'$  is moved downwardly through the vertical portion of slot  $o^2$ , it forces the stem  $q$ , and head  $q'$ , through the now stationary sleeve  $r$ , and said head coming in contact with the button carries it forward, and within the grasp of spring chuck  $d'$ , the outer face of the button projecting beyond the end of said chuck, and the head  $q'$ , is held against the back of the button during the finishing operation, to prevent the same from slipping backward and entirely within the chuck. With the other hand the operator grasps handle  $w$ , and moves the slide  $t'$ , tool holder  $u$ , and tool  $u'$ , toward the button, and cuts, rounds, dresses and finishes the same as described. When this operation is completed, the tool is moved away by the handle  $w$ , and the handle  $p'$ , is moved forwardly a slight distance in the second or lower horizontal portion of slot  $o^2$  (Fig. 2), thereby forcing the head  $q'$ , through, and slightly beyond, chuck  $d'$ , and dropping or ejecting the finished button.

To regulate the freedom of movement of the dove-tailed slide  $t'$  between its walls, I

provide the gib 1, (Fig. 1) constituting the actual bearing or wall for said slide, and I adjust this gib to bind more or less tightly upon the slide through the set screws and jam nuts 2, and 3, as shown.

It is obvious that many changes and alterations may be made in the construction and arrangement of this machine, and without departing from the principle and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a button finishing machine, a button table, a button delivery chute to which the buttons are supplied from said table, an automatic gate and cut-off at the delivery end of said chute, a tube into which said chute delivers, a button-carrying sleeve in said tube, means to move said sleeve longitudinally in said tube, and a button-holding chuck to which the button is delivered from the sleeve, substantially as described.

2. In a button finishing machine, a button table, a button delivery chute to which the buttons are supplied from said table, an automatic gate and cut-off at the delivery end of said chute, a tube into which said chute delivers, a button-carrying sleeve in said tube, means to move said sleeve longitudinally in said tube, and a button-holding chuck to which the button is delivered from the sleeve, combined with a button ejector, substantially as described.

3. In a button finishing machine, a button table, a button delivery chute to which the buttons are supplied from said table, an automatic gate and cut-off at the delivery end of said chute, a tube into which said chute delivers, a button-carrying sleeve in said tube, means to move said sleeve longitudinally in said tube, and a button-holding chuck to which the button is delivered from the sleeve, combined with a reciprocating rod arranged in said tube and having a head adapted to deliver the button to the chuck and eject it therefrom, substantially as described.

4. In a button finishing machine, a button table, a button delivery chute to which the buttons are supplied from said table, an automatic gate and cut-off at the delivery end of said chute, a tube into which said chute delivers, a button-carrying sleeve in said tube, means to move said sleeve longitudinally in said tube, and a button-holding chuck to which the button is delivered from the sleeve, combined with a stop to limit the forward motion of said sleeve, substantially as described.

5. In a button finishing machine, a button table, a button delivery chute to which the buttons are supplied from said table, an automatic gate and cut-off at the delivery end of said chute, a tube into which said chute delivers, a button-carrying sleeve in said tube, a reciprocating headed rod in said tube to move said sleeve and actuate said gate and cut-off, substantially as described.



6. In a button finishing machine, a button table, a gage and a chute; an automatic gate and cut off working in said chute to admit the buttons one at a time to the machine, in  
5 combination with a rotary chuck a tubular passage, and a headed rod working therein and adapted to carry the button therethrough and deliver it to said rotary chuck, substantially as described.

10 7. In a button finishing machine, a button chute, and a gate and cut-off applied thereto and comprising a pivoted arm provided with projections or lugs arranged upon opposite  
15 sides of the chute and adapted to enter such sides alternately at different altitudes, com-

bined with a button holding device, a tube leading thereto from the chute, and a reciprocating rod for actuating said gate and cut-off, and a sleeve on said rod for conveying the button from the delivery end of the chute 20 to the button-holding device, substantially as described.

Signed at New York, in the county of New York and State of New York, this 27th day of June, A. D. 1893.

HENRY A. BERGER.

Witnesses:

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CHARLES C. PETERS.