

(No Model.)

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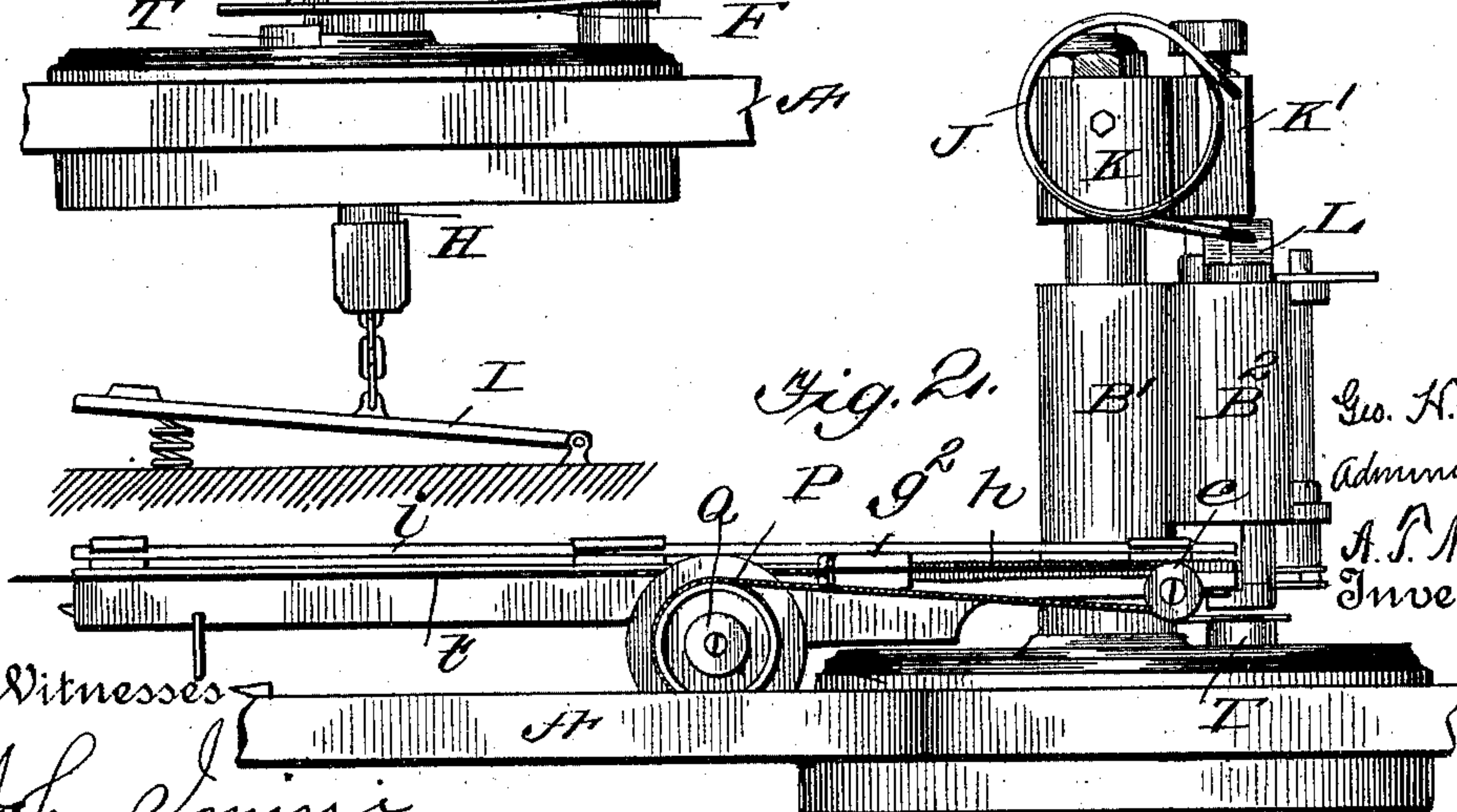
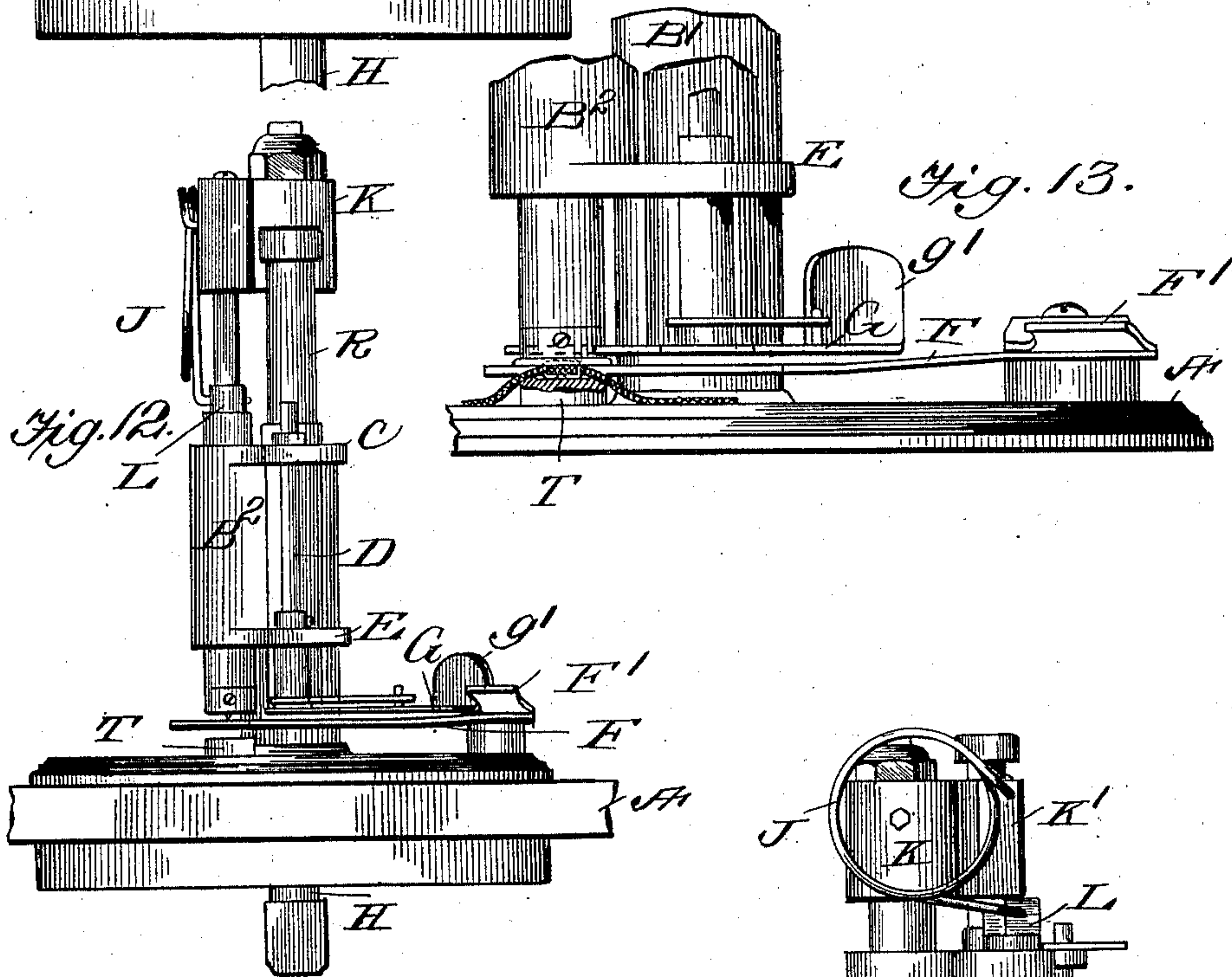
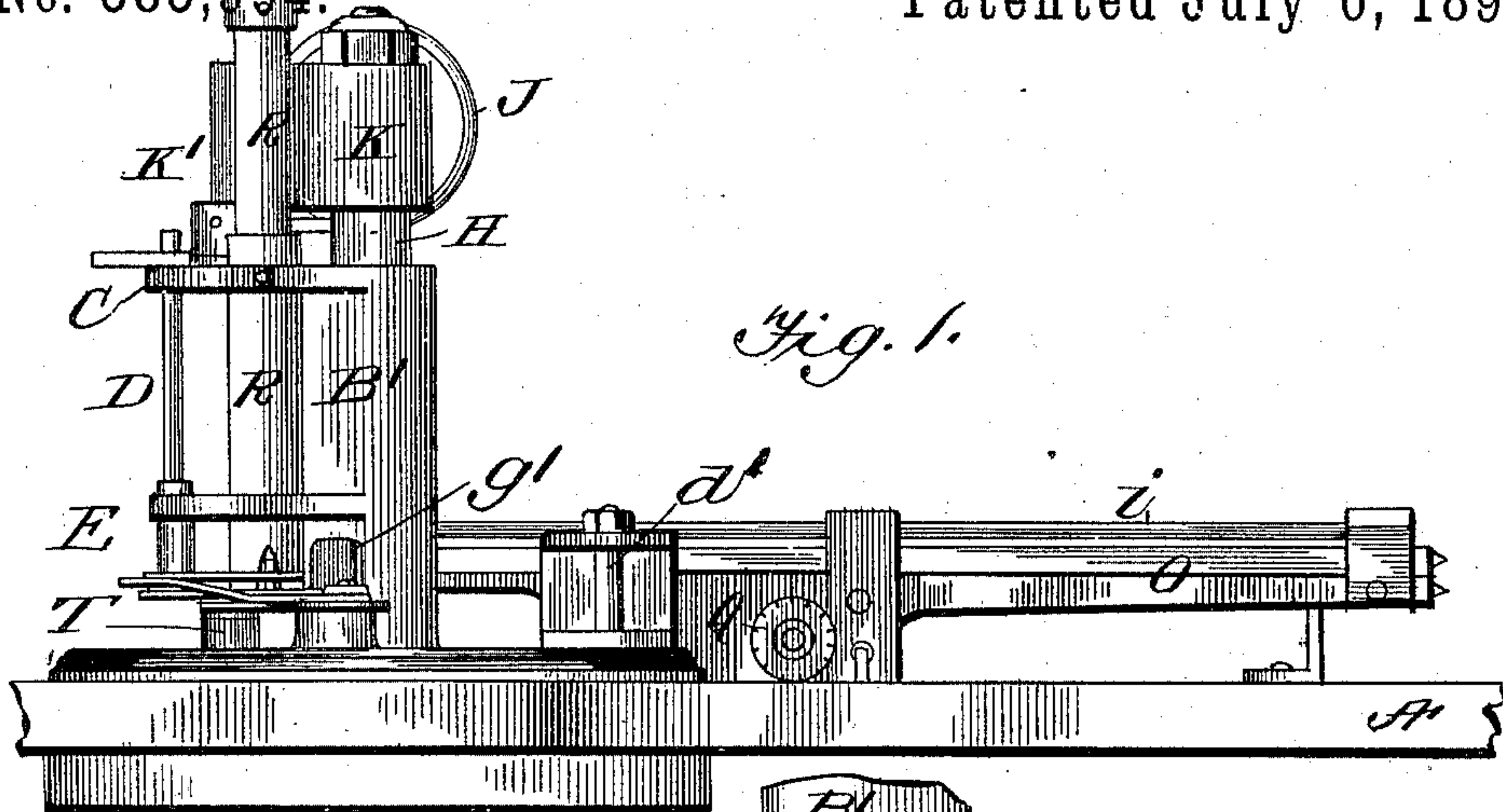
A. T. MILLER, Dec'd.

G. H. WILSON, Administrator.

EYELESS OR OTHER BUTTON FASTENER.

No. 585,994.

Patented July 6, 1897.



Witnesses
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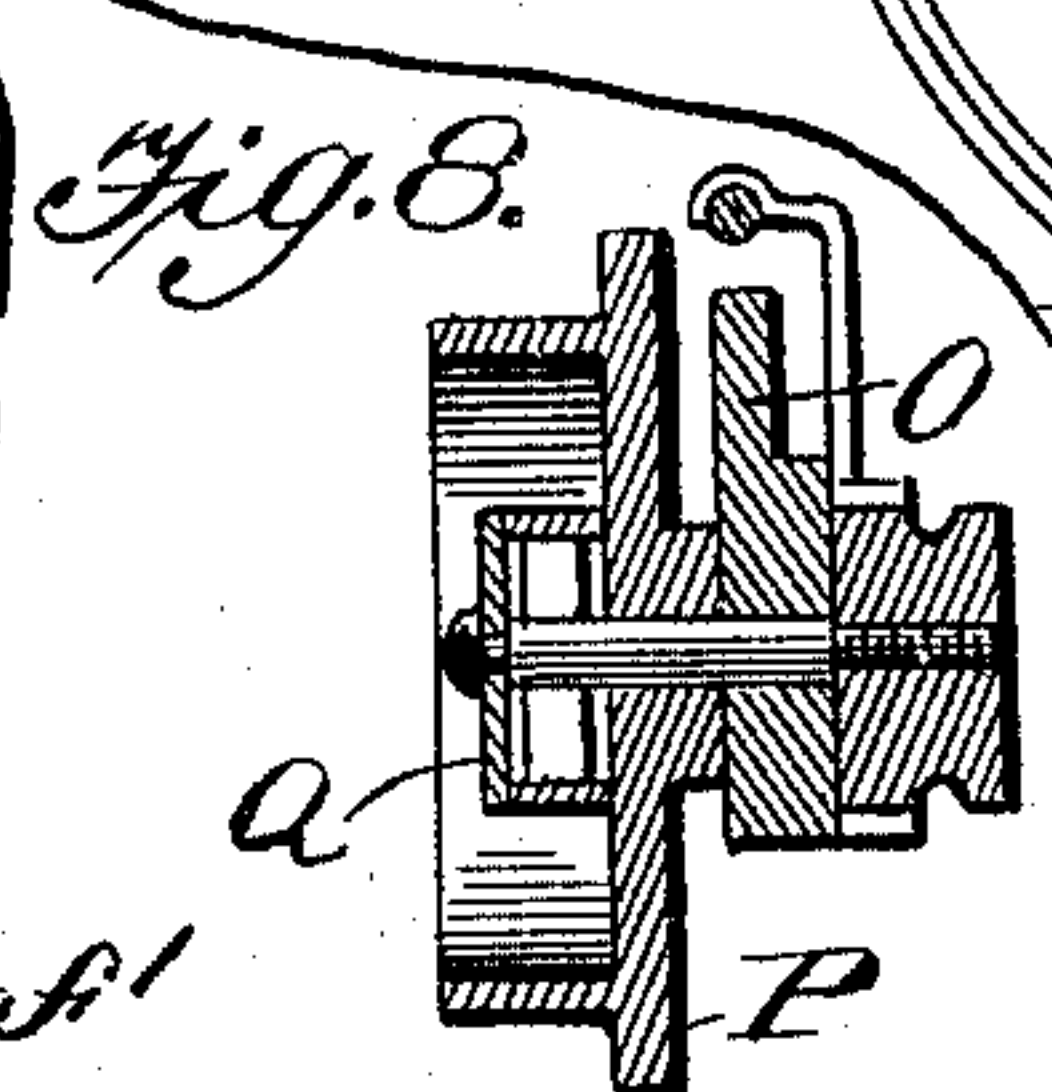
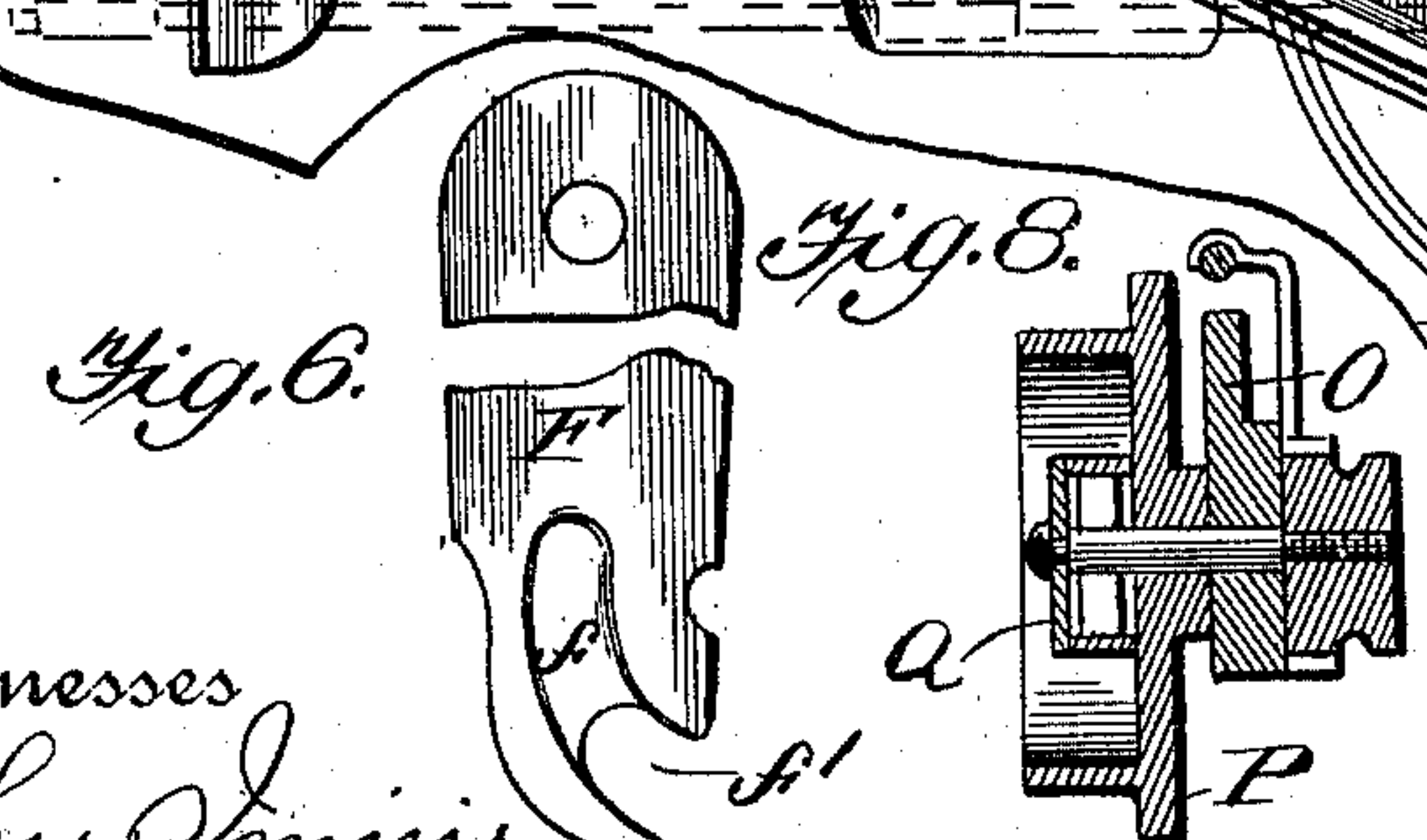
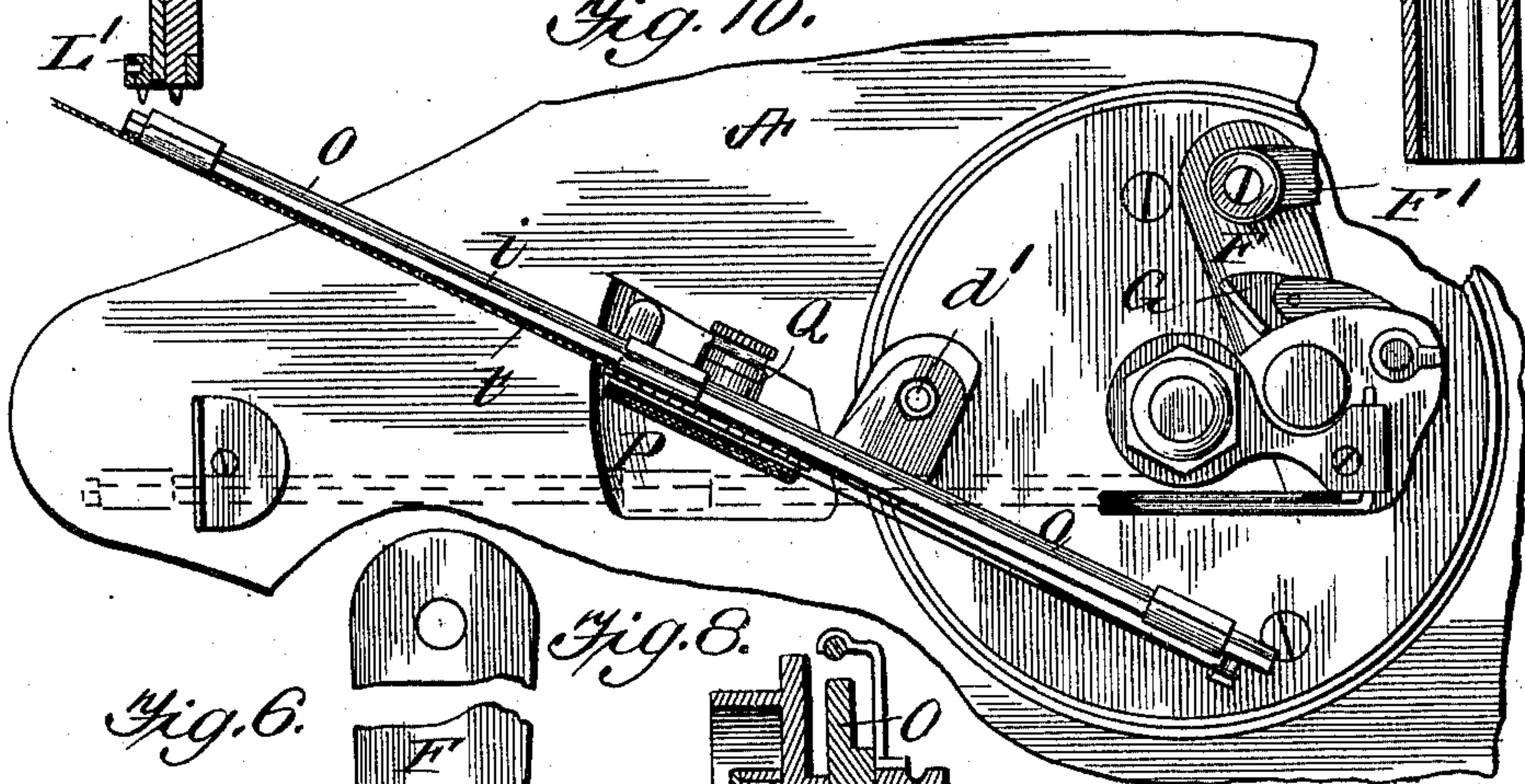
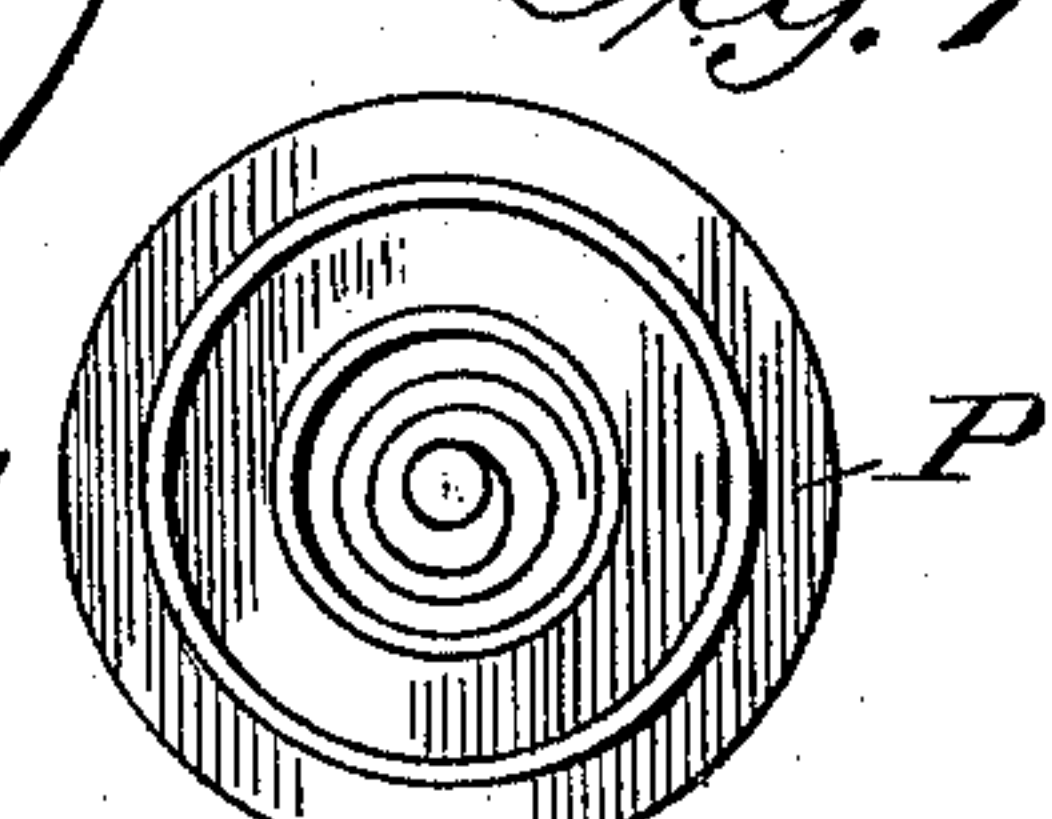
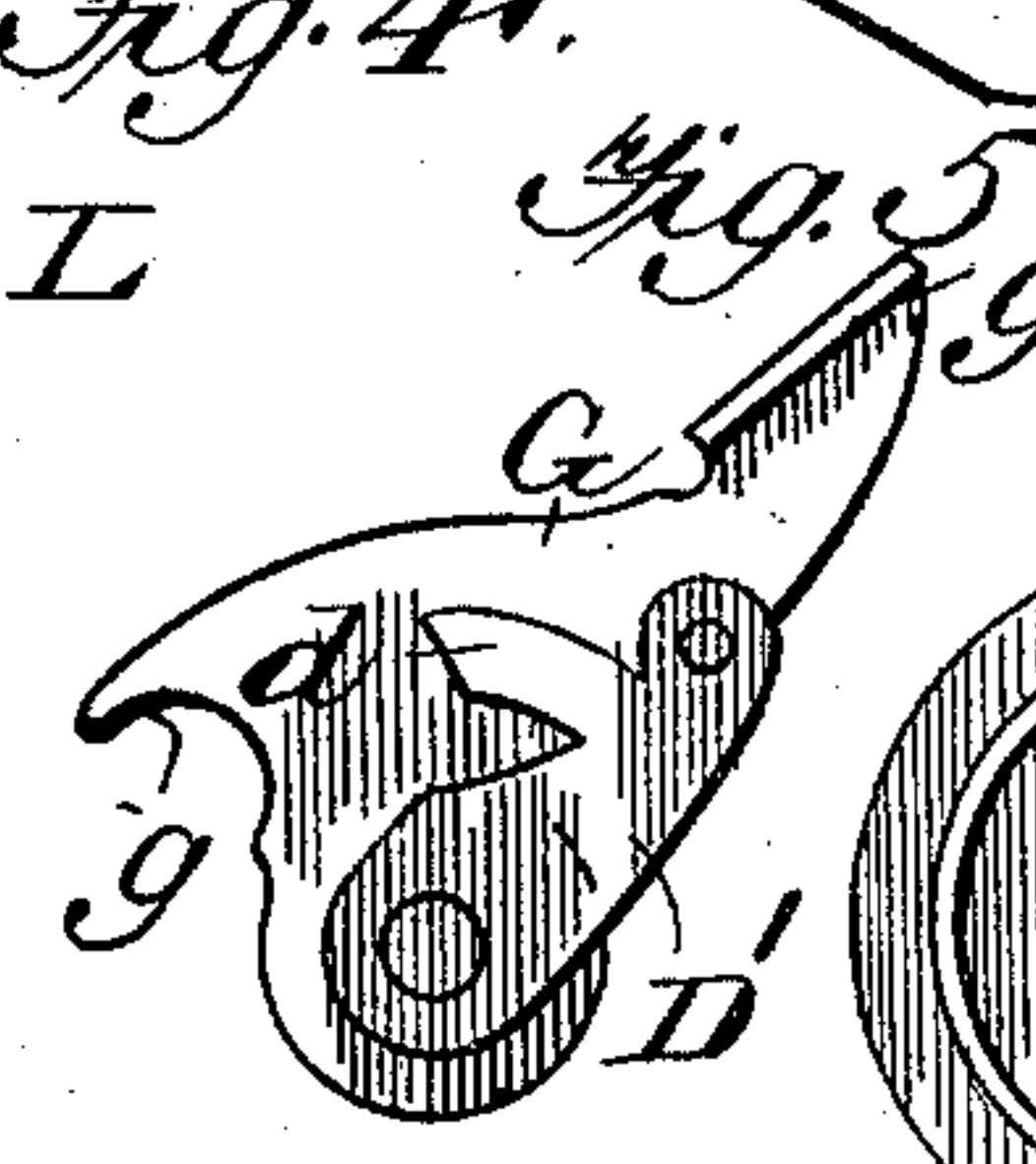
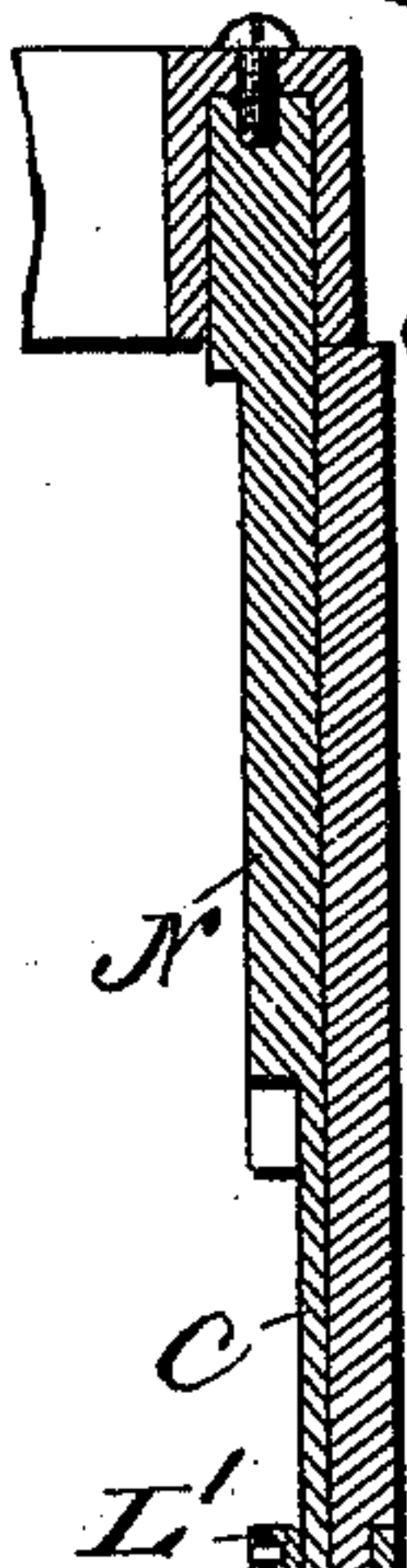
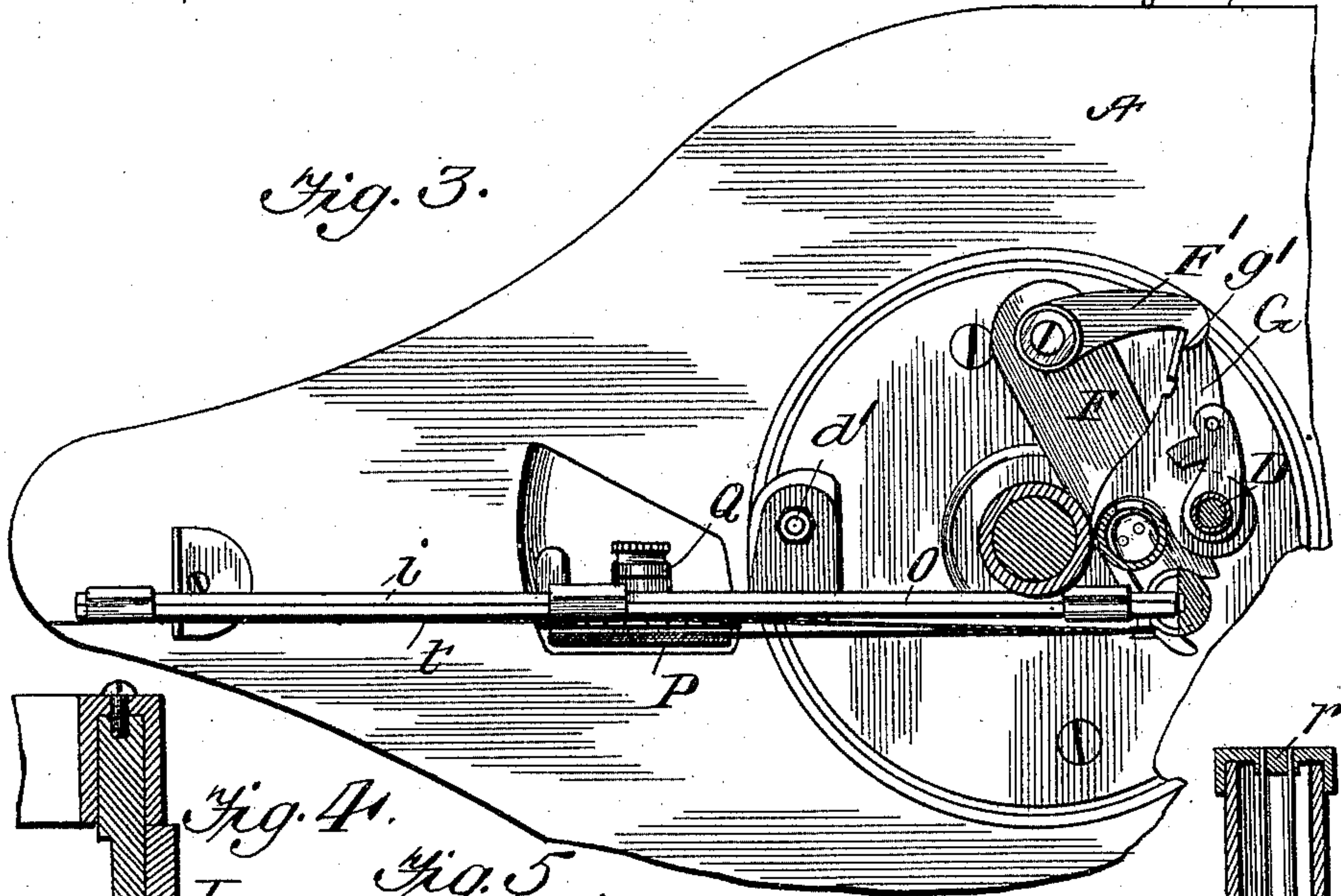
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EYELESS OR OTHER BUTTON FASTENER.

No. 585,994.

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Witnesses
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(No Model.)

3 Sheets—Sheet 3.

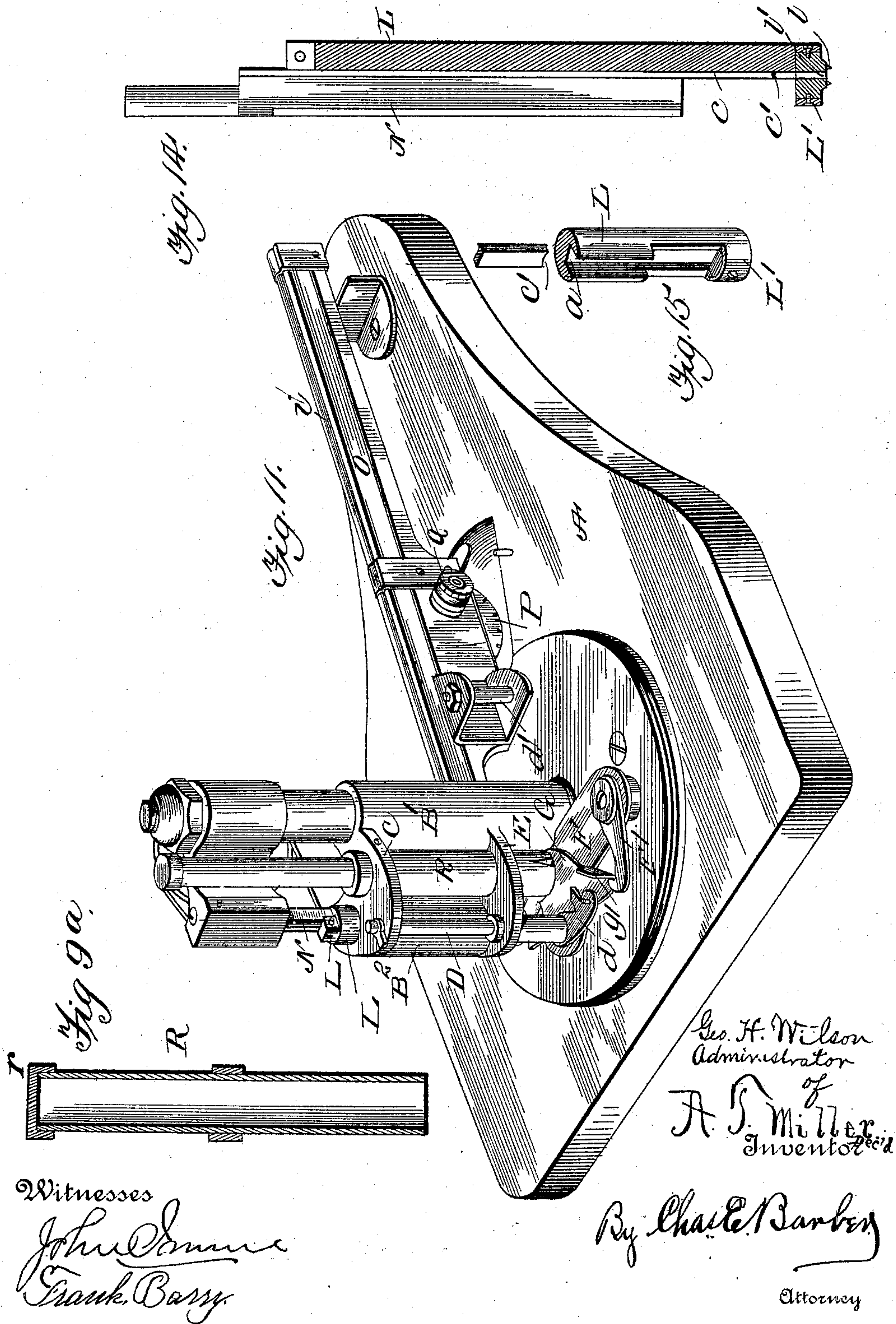
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EYELESS OR OTHER BUTTON FASTENER.

No. 585,994.

Patented July 6, 1897.



UNITED STATES PATENT OFFICE.

GEORGE H. WILSON, OF QUINCY, ILLINOIS, ADMINISTRATOR OF ALEXANDER T. MILLER, DECEASED, ASSIGNOR OF ONE-HALF TO MICHAEL ROONEY, OF SAME PLACE.

EYELESS OR OTHER BUTTON FASTENER.

SPECIFICATION forming part of Letters Patent No. 585,994, dated July 6, 1897.

Application filed November 22, 1895. Serial No. 569,861. (No model.)

To all whom it may concern:

Be it known that ALEXANDER T. MILLER, late a citizen of the United States, deceased, residing at Quincy, in the county of Adams and State of Illinois, did invent certain new and useful Improvements in Eyeless or other Button Fasteners, of which the following is so full, clear, and exact a description as will enable those skilled in the art to which the invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of the right side of the device. Fig. 2 is an elevation of the left side of the same. Fig. 3 is a top plan view. Fig. 4 is a section through the plunger. Fig. 5 is a detail view of the forwarding device for the button. Fig. 6 is a detail view of the button-support. Fig. 7 is a side elevation of the winding device. Fig. 8 is a cross-section of the winding device. Fig. 9 is a cross-section of the button-reservoir. Fig. 9^a is a section of a reservoir for eyeless buttons. Fig. 10 is a plan view. Fig. 11 is a perspective view of the improved button-fastening machine. Fig. 12 is a detail view showing the operating mechanism. Fig. 13 is a detail side elevation. Fig. 14 is a detail of plunger, and Fig. 15 is a detail of collar in which the plunger operates.

The object of the present invention is to provide a device by the use of which eyeless or blind buttons may be attached to garments in rapid succession and with the greatest security.

The invention is especially designed as a fastening for pants-buttons; but it is obvious that it may be used for fastening buttons on other garments or articles of clothing for both man and beast. It can be used with equal facility on shoe-buttons, buttons for horse-blankets, buttons for carriage-curtains, tents, and all other articles.

The invention may be described as embracing a button-reservoir from which the buttons drop one at a time into a button-support, a forwarding device for forcing the button off said support, a presser beneath which said button is forced and which grasps and holds

the same, a staple-feeding device which feeds the staples one at a time into place where they may properly engage the button held by said presser, and a plunger for forcing said staples through the button and cloth and for clenching the same, said parts being operated automatically and otherwise and preferably so timed in their respective movements that a staple is fed into position to engage the button at the same time the button is brought into place to receive it and the plunger arrives at a position where its next movement will cause the staple to be acted upon by it, and the button thereby secured to the fabric.

The detail construction considered to be the best adapted to carry the invention into practical effect is as follows:

A designates a bed-plate or table to which is secured a vertical standard B, which latter preferably consists of two connected tubes B¹ B² and laterally-projecting arms C and E. Extending through perforations in said arms is a shaft D, which serves as a pivot for a forwarding device embodying preferably a plate G, having a recess *g* and at the other end a projection *g'*. To the plate G is attached a smaller plate D', having a finger *d*. The projection *g'* serves as a handle by means of which it may be moved back and forth by the operator, who thereby brings it into forcible contact with the button and forces the same off its support F into a position beneath the presser and brings said forwarding device back into place to engage another button. Said button-support F is secured to the bed-plate A and is formed with a channel *f*, which is located immediately beneath the discharge end of the button-reservoir R, which latter extends through openings in and is upheld by the arms C and E, above described, and said button-support is also formed with an opening *f'*, through which the button drops when forced off the support. The support F may also be provided with a projecting part F', having its outer end located in the path of the movement of the handle *g'* and serving to limit the movement of the forwarding device in one direction, while the movement of the forwarding device in the other direction may

be limited by providing it with a tongue or projection *d*, arranged to strike the reservoir R.

L designates a reciprocatory presser which
 5 moves within the part B² of the standard and may be raised or lowered by any suitable means acting automatically or otherwise, but it is preferably lowered by the means hereinafter described. This presser engages and
 10 holds the button and cloth from any movement while the button is being secured to the fabric, and its lower end is formed with a foot L', having an opening *l'* to permit the staple to pass through it, and with depending spurs
 15 or projections *l*, which are so located and of such shape that they will engage within two of the openings in the button, and if the latter is not in proper position to receive the staple will turn said button by engaging the
 20 concave walls of said openings, so that the other two openings thereof will thereby be brought into position properly to receive the limbs of the staple. The presser is also formed with a groove *a*, through which the plunger
 25 N reciprocates, the lower end of which plunger is reduced in thickness by forming it with a cut-away part, (indicated at *c*,) so that its said reduced part may project into the opening *l'* in the presser-foot and also to enable the
 30 feed-bar, hereinafter described, to be brought immediately above said opening, so that the staple may drop into said opening. The lower extremity of said reduced end of the plunger is preferably curved similarly to the top of
 35 the ordinary staple, as shown at *c'*, Fig. 1. The upper end of the plunger is secured to a projection K', which extends from a collar K, which collar encircles and is fixed to the upper end of an operating-bar H, that reciprocates through the part B' of the standard,
 40 whereby the movements of said operating-bar are communicated to said plunger. Connected with the lower end of said operating-bar is a pivoted foot-lever I, by means of which
 45 said bar and plunger are lowered.

A spring J is preferably employed to throw the presser down upon the material in advance of the plunger, said spring being herein shown as coiled at its central part and having one end inserted in the projection K' and its other end inserted in the presser L. Beneath the presser is a die T, against which the limbs of the staple are forced, so that they will be bent properly to secure the button to the fabric.
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The button-reservoir R is open at its discharge end and is provided with two vertical rods A, which pass through two of the openings in the buttons and upon which said buttons are thereby strung, so that they may fall by gravity, one by one, upon the button-support F. The upper ends of these rods are secured to the cap *r* of the button-reservoir R, and the rods are thereby supported in position within the reservoir.
 60
 65

O designates a feed-bar, which is pivoted at *d'* so as to be capable of swinging in a hori-

zontal plane, and the inner cut-away part *c* in the plunger to a place adjacent to the opening *l'* in the foot L'. This bar is provided
 70 with a drum P, having a suitable ratchet-and-spring mechanism Q, which automatically causes the drum to rotate in one direction, and with any suitable means (indicated at Q) by which the spring may be wound up, and
 75 the bar is further provided with a grooved pulley *e*, which is located at its inner end, and with a slide *g*², guard-rail *i*, and cord *t*, which cord is secured to said slide and extends around said pulley and drum. The
 80 staples *h* are placed on the feed-bar in front of the slide *g'* and beneath the guard-rail *i*. Previously to mounting the staples on said feed-bar the latter is swung around into the position shown in Fig. 10 and the slide is
 85 pulled back a proper distance to allow the required number of staples to be placed upon the bar, and after this is done the feed-bar is swung back to the position shown in Fig. 3. The staples are fed to the plunger automati-
 90 cally by the above-described means by the tension of the spring within the drum, which exerts a constant strain on one end of the cord *t*, thereby tending to force the slide *g'* forward, which tendency is resisted by the
 95 staple within the recess *c* in the plunger, whereby the staples are fed one at a time.

From the above the operation of the invention will readily be understood to be as follows: Assuming that a button is being held
 100 by the presser and the staple is in position to be forced through the button and fabric, the operator depresses the foot-treadle, thereby lowering the plunger with sufficient force to clench the staple, as above intimated, and
 105 then removes his foot from the treadle. When in the upward stroke of the plunger it passes above the feed-bar O, a staple is allowed to drop from the latter into the space left vacant by the upward movement of the plun-
 110 ger, and therefore into position to be acted upon by the plunger. Meanwhile the button which has dropped from the reservoir into the supporting-plate has been forced by the forwarding device beneath the presser-foot and
 115 held and clenched by the presser and plunger, respectively, in the manner above described, these operations being repeated until the desired number of buttons are secured to the fabric.
 120

The device is well adapted to attach eyeless buttons made of soft metal, and when used for attaching such buttons the reservoir will have a clear unobstructed passage, as shown in Fig. 9^a, and the spurs on the presser-foot
 125 may be omitted.

Having described the objects, uses, and advantages of the invention, what is believed to be new, and what is therefore claimed, is—

1. In a button-fastening machine, the combination of a grooved reciprocatory presser, having a foot formed with an opening, a device for feeding the staples to said opening and a plunger operating in said groove and
 130

having a reduced end designed to operate through said opening, substantially as described.

2. In a button-fastening machine, the combination of a grooved reciprocatory presser having a foot, formed with an opening and with depending spurs or projections, and a plunger operating in said groove and having a reduced end designed to operate through said opening, substantially as described.

3. The combination with means for forcing staples through buttons and cloth and for clenching the ends of the staples, of a staple-feeding device, comprising a feed-bar upon which the staples are strung, a slide upon said bar, a drum connected with said slide and a spring-and-ratchet mechanism within said drum for forcing said slide in one direction, substantially as described.

4. In a staple-feeding device, the combination of a feed-bar upon which the staples are strung, a slide upon said bar, a drum having a spring-and-ratchet mechanism and cords connecting said drum to said slide, substantially as described.

5. In a button-fastening machine, the combination with a grooved reciprocatory presser, having a foot formed with an opening, and a plunger operating within said groove and

having a reduced end, designed to operate through said opening, of a feed-bar, upon which staples are to be strung, said feed-bar extending to said groove and terminating immediately above said opening, a slide upon said bar and means for forcing said slide in one direction, substantially as described.

6. The herein-described button-fastening machine, comprising a button-reservoir having a clear unobstructed interior and open at the lower end, a presser having an opening in its foot and formed with grooves, a plunger reciprocating within said groove and at its lower end through said openings, a spring connection between said plunger and presser, a pivoted forwarding device for carrying the button from the receptacle to beneath the presser-foot, and a staple-feeder projecting to a place immediately above the opening in said presser-foot, the movements of said parts being relatively timed, substantially as described.

GEORGE H. WILSON,

Administrator of the estate of Alexander T. Miller, deceased.

Attest:

JAMES F. CARROTT,
M. ROONEY.