

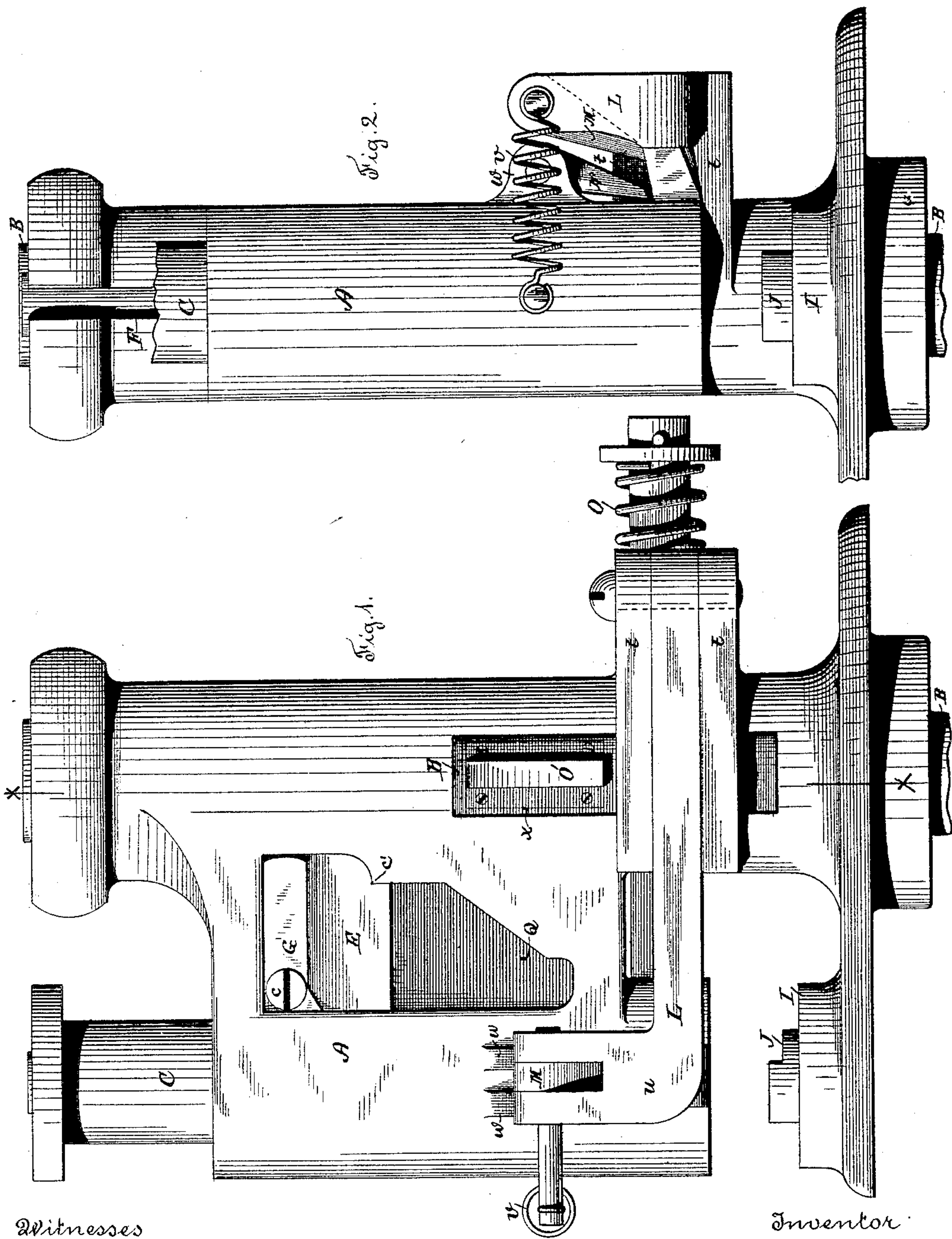
(No Model.)

5 Sheets—Sheet 1.

I. F. PECK.  
BUTTON ATTACHING MACHINE.

No. 453,588.

Patented June 2, 1891.



Witnesses  
Chas. F. Schmeltz.  
Benjamin G. Luther.

Inventor  
Ira F. Peck  
By his Attorney  
S. Scholfield

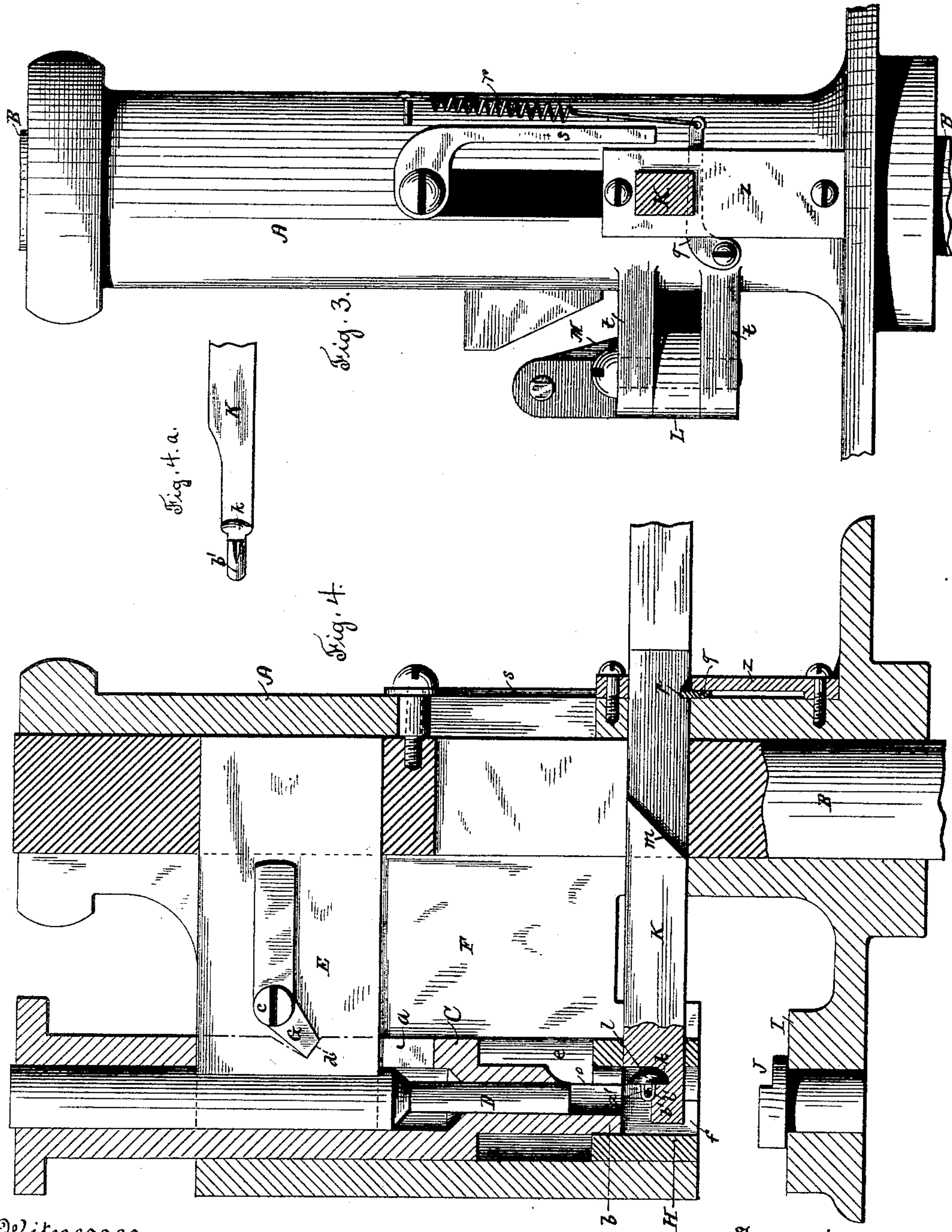
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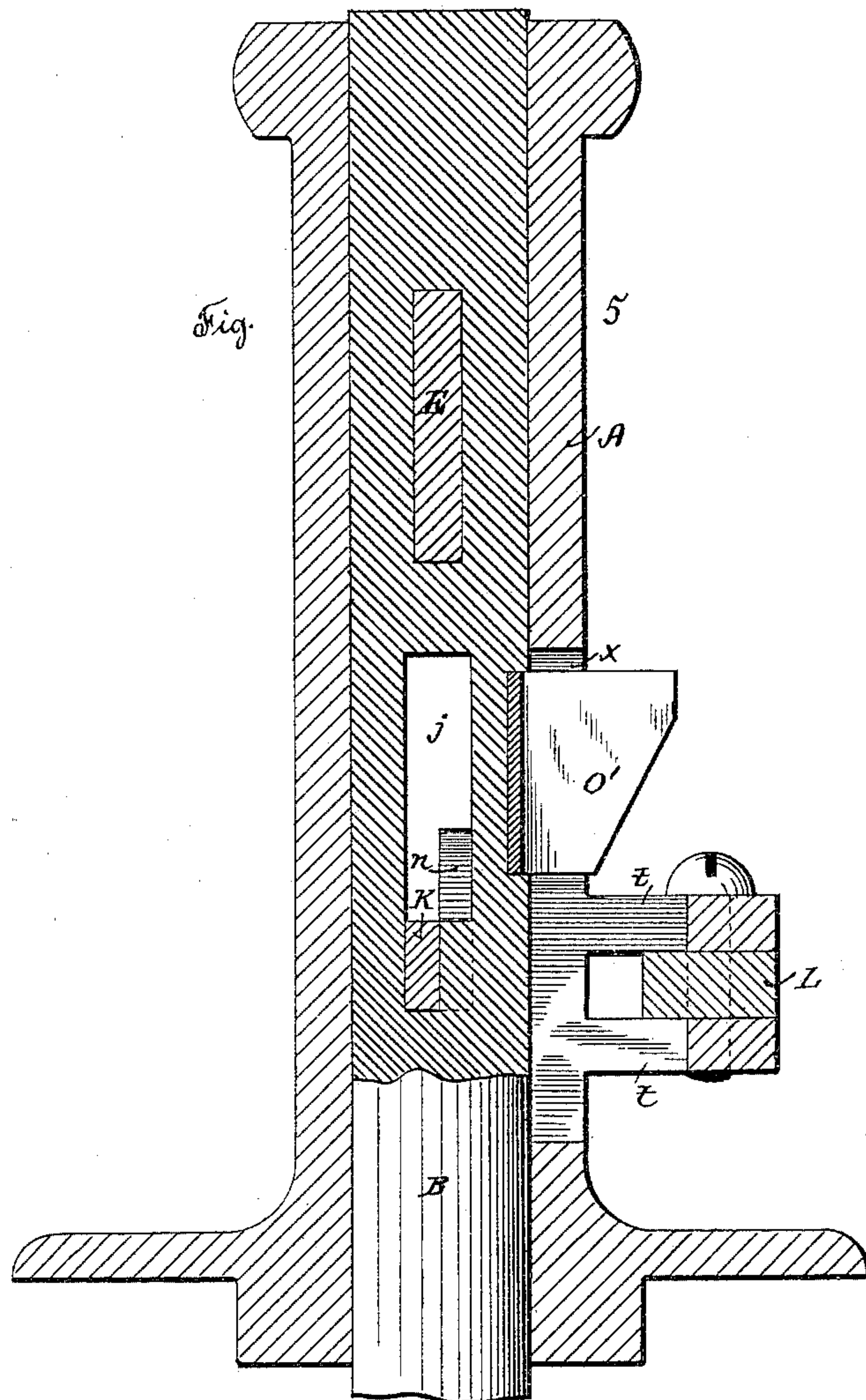


Fig. 7.

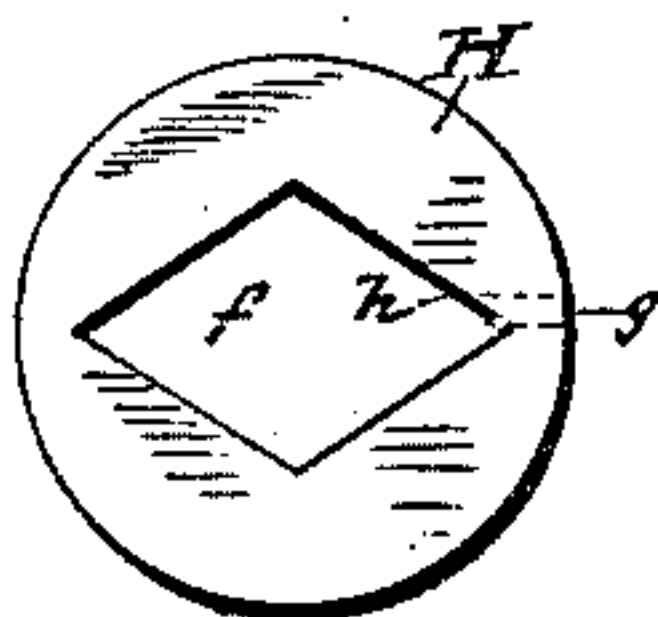


Fig. 6.

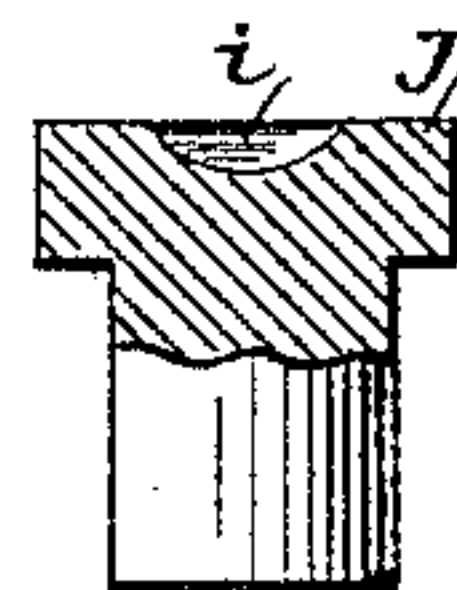


Fig. 8.

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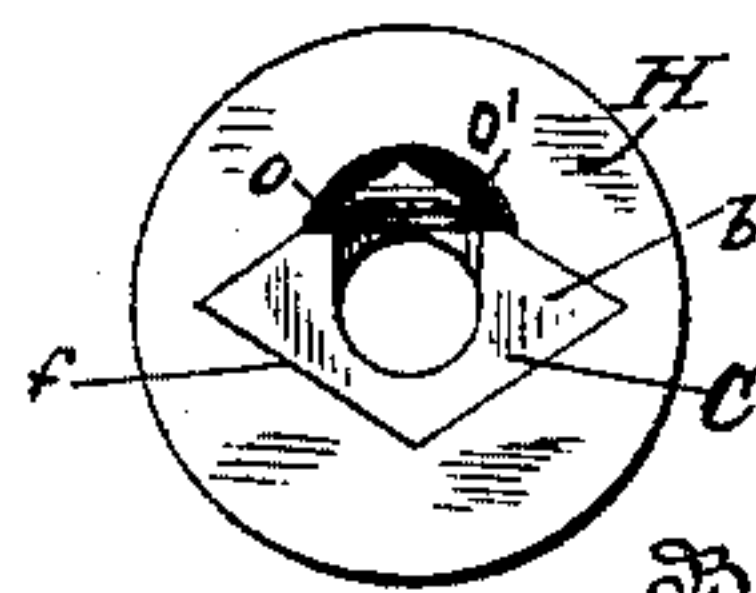


Fig. 6a.

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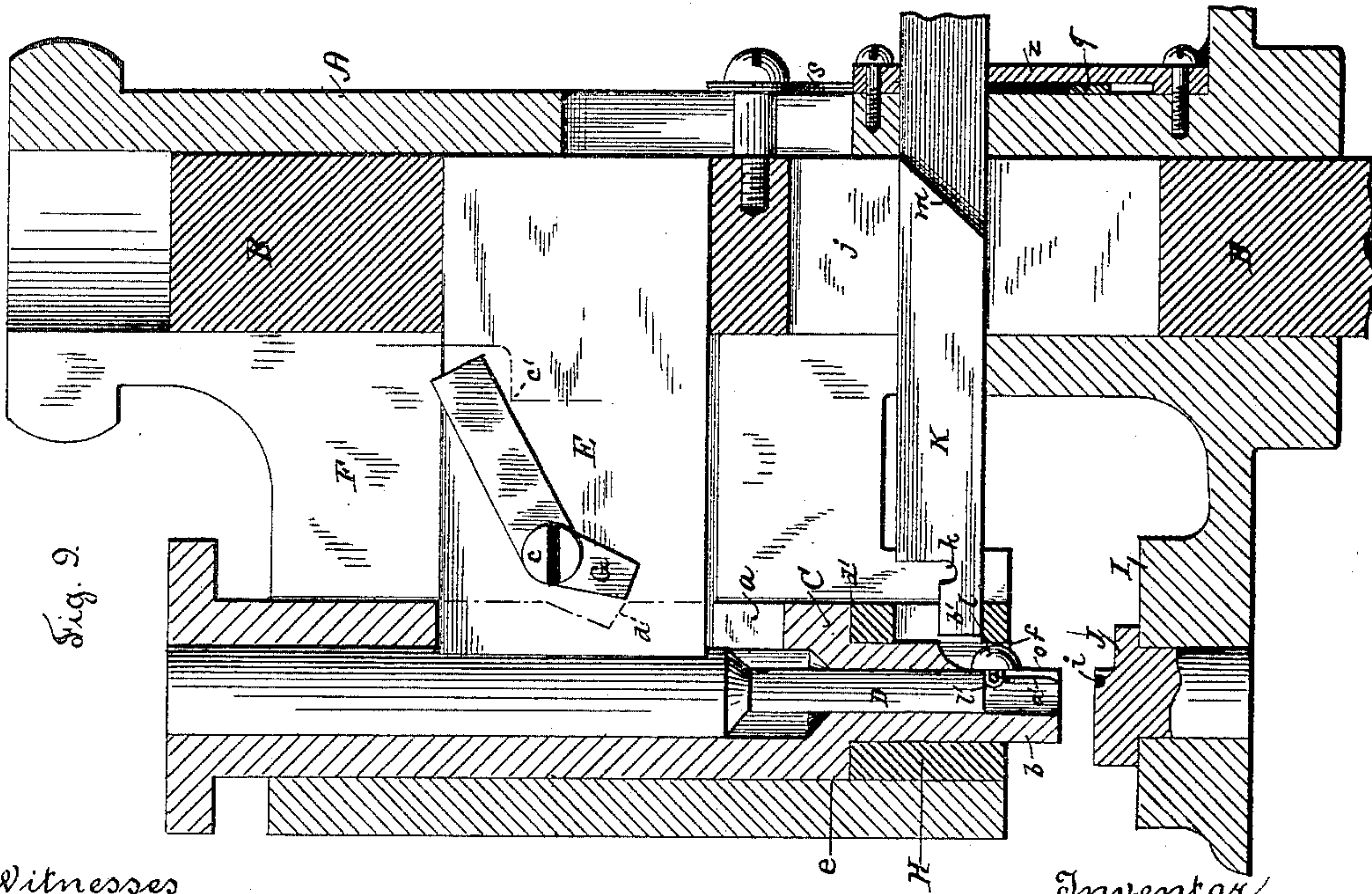
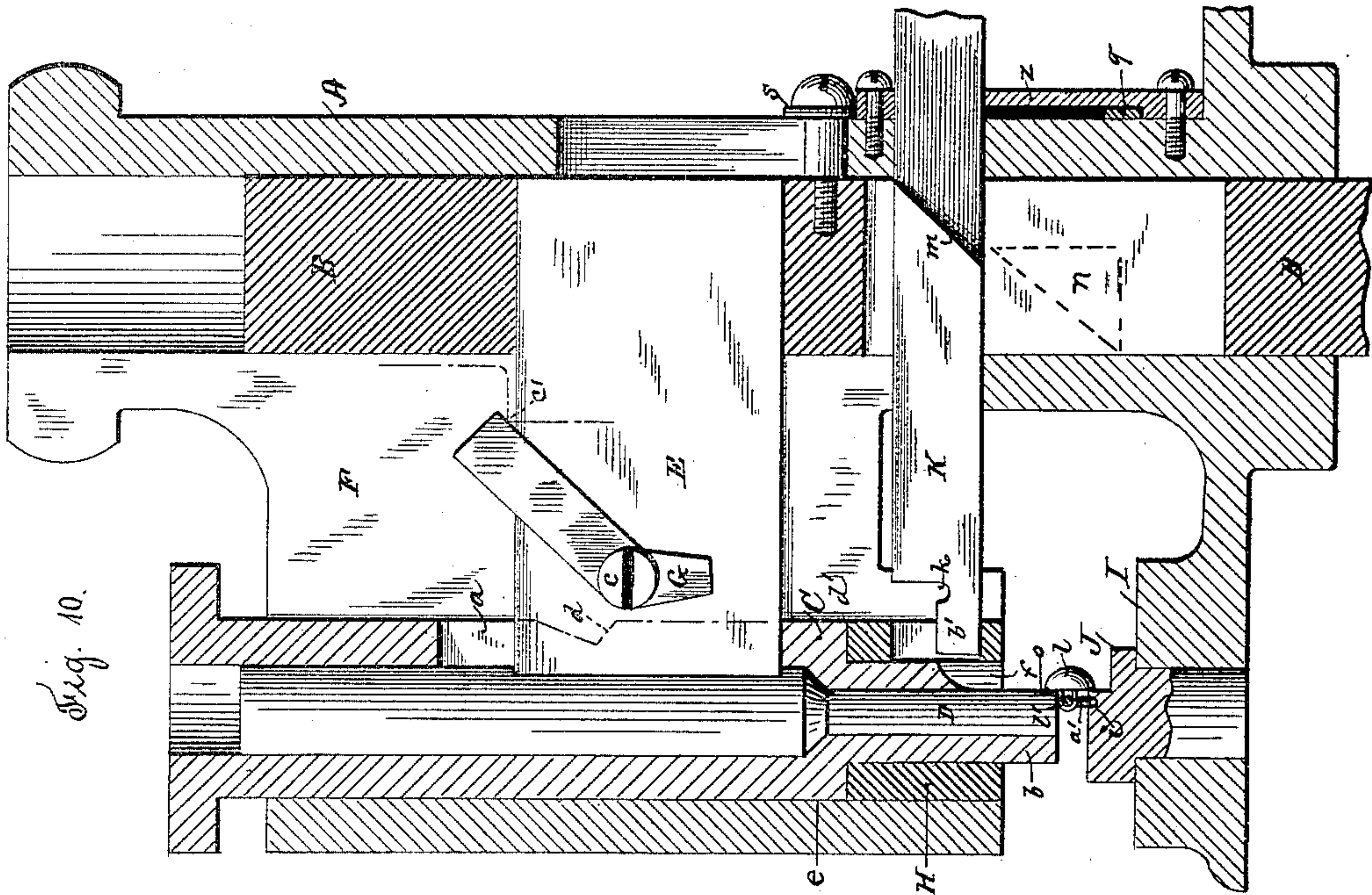
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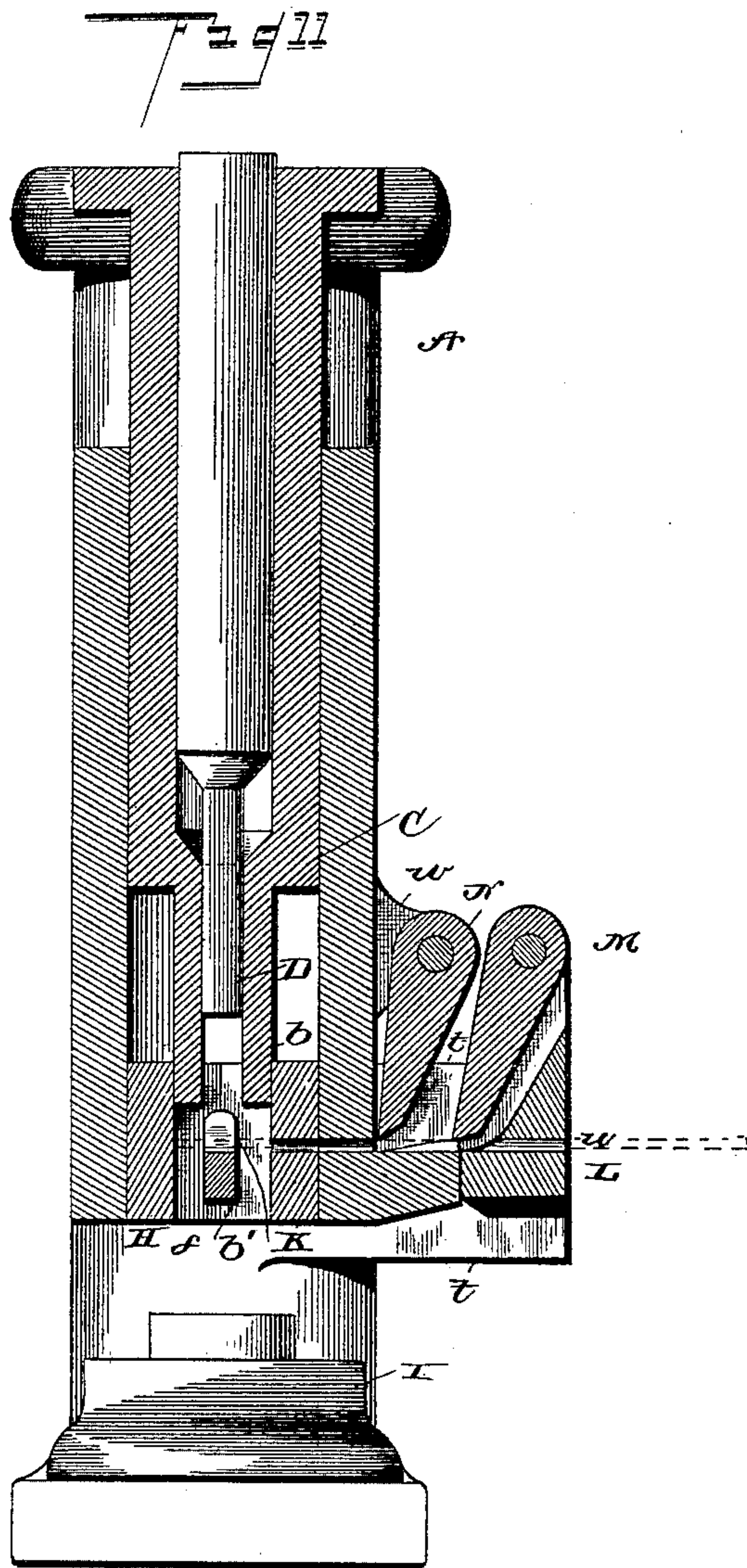
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# UNITED STATES PATENT OFFICE.

IRA F. PECK, OF PROVIDENCE, RHODE ISLAND.

## BUTTON-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 453,588, dated June 2, 1891.

Application filed October 6, 1890. Serial No. 367,264. (No model.)

*To all whom it may concern:*

Be it known that I, IRA F. PECK, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Machines for Attaching Buttons to Fabrics, of which the following is a specification.

My invention consists in the improved construction and arrangement of the several parts of the machine, as hereinafter fully set forth.

Figure 1 represents a side elevation of my improved machine. Fig. 2 represents a front elevation with the upper end of the plungers broken away to show the slot in the standard. Fig. 3 represents a rear elevation. Fig. 4 represents a vertical section of the machine with the plungers in their elevated position; and Fig. 4<sup>a</sup> represents a top view of the mandrel, which, in connection with the outer plunger, is adapted to bend the wire in the form of a staple. Fig. 5 represents a vertical section taken in the line *xx* of Fig. 1. Fig. 6 represents a top view of the die for cutting the wire, and Fig. 6<sup>a</sup> represents an under side view of the die and the end of the outer plunger. Fig. 7 represents a top view of the die for clinching the wire. Fig. 8 represents a partial central vertical section of the same. Fig. 9 represents a vertical section showing the outer plunger in its lower position. Fig. 10 represents a vertical section showing both plungers in their lower position, and Fig. 11 is a vertical sectional view of the plunger and die in a plane at right angles to the plane of the section of Fig. 4.

In the accompanying drawings, A represents the frame or supporting-standard of the machine, and B the vertically-moving slide-bar from which the several movements of the machine are derived.

C is a hollow vertically-moving plunger, which is provided at one side with a slot *a* and with the angularly-shaped extension *b*, and within the cavity of the plunger C is placed the sliding plunger D, the said plunger D being rigidly connected to the slide-bar B by means of the connecting-bar E, which is adapted to move up and down in the slot F, formed in the standard A. At one side of the connecting-bar E is placed the catch G, which is pivoted to the screw-stud *c*, and is

adapted to engage with the notch *d*, made in the side of the outer plunger C, as shown by the dotted lines in Figs. 4, 9, and 10. At the lower end of the cylindrical cavity *e* in the standard A, which guides the up-and-down movement of the plunger C, is secured the die H, provided with an angular cavity *f*, which fits to the lower end *b* of the plunger C, and at one side of the die H is made a hole *g* for the introduction of the wire for fastening the buttons to the fabric, the said opening being shown by dotted lines in Fig. 6 and so arranged relatively to the side *h* of the cavity *f* in the die that the wire will be cut off obliquely and be thus adapted for penetrating the fabric. Upon the projecting bed I is placed the clinching-die J, which serves to bend the ends of the wire staple inwardly to clinch the ends at the back of the fabric, the ends of the staple being caused to enter the curved recess *i*, by means of which the said ends will be directed inwardly, as required.

The slide-bar B is provided with a slot *j*, through which is arranged the button-carrier K, the said carrier K being provided with a mandrel *b'* to form the staple and with a recess *k* to receive the head of the button *l* and with the cam-incline *m*, which is adapted to engage with the opposite cam-incline *n*, located at the side of the slot *j*, as shown in Fig. 5, by means of which the carrier K will be brought forward against the backward action of the spring O at the outer end of the carrier. The lower side of the carrier K is provided with the notch *p*, adapted for the engagement of the catch *q*, which is operated by the spring *r*, and by means of the catch *q* the carrier K will be held in its forward position after the separation of the inclines *m* and *n*, and the catch *q* may be properly supported against the resilient outward action of the spring *r* by means of the plate *z*, attached to the standard A. To the rearward side of the slide-bar B is secured the fingers *s*, which upon the downward movement of the slide-bar is adapted to trip the catch *q* and allow the spring O to carry the carrier K to its outward or receiving position, as shown in Figs. 9 and 10.

The plunger C is cut away at one side and provided with a slot-opening *o*, adapted to receive the mandrel *b'* of the carrier K and allow sufficient space at each side of the



mandrel for the thickness of the wire to be bent over the mandrel to form the fastening-staple, and a recess  $o'$  is formed in the cavity of the die H to receive the head of the button  $l$ . To the ears  $t t$  at the side of the standard A is pivoted the arm L, which is provided with the guiding-hole  $u$  for the wire to be fed to the machine, and to the outer end of the arm L is pivoted the dog M, adapted for feeding the wire forward with the forward movement of the said arm, the said forward movement being effected by means of the spring  $v$ . To the ears  $w w$  at the side of the standard A is pivoted the retaining-pawl N, which serves to prevent a retrograde movement of the wire upon the backward movement of the dog M, the said backward movement being caused by the engagement of the inclined cam  $O'$ , which projects from the side of the slide-bar B through the slot  $x$  in the standard A with the inner side of the arm L.

When the machine is to be operated by foot, a suitable spring is to be arranged to carry the slide-bar B upward against the downward movement of the pedal, the button  $l$  being fed through the side opening Q of the standard A either automatically or by hand into the recess  $k$  of the carrier when the slide-bar B is at its lower position, as shown in Fig. 10. The wire is to be inserted into the hole  $u$ , and carried forward in the hole  $g$  in the die H, until its end reaches the cavity  $f$  in the die H, so that the upward movement of the slide-bar will allow the spring  $v$  to carry the dog M forward, thus forcing the wire across the cavity  $f$  in the die H and through the eye  $l'$  of the button, which will be brought forward with the carrier K by the action of the inclines  $m$  and  $n$  upon the said upward movement of the slide-bar. The button-carrier K is then retained in its forward position by means of the catch  $q$ , as shown in Fig. 4, until released therefrom by the succeeding downward movement of the engaging finger  $s$ , which is attached to the slide-bar. Upon the downward movement of the slide-bar B the wire  $a'$ , which has entered the eye  $l'$ , will be cut off by the downward movement of the plunger C, caused by the engagement of the catch G with the notch  $d$ , and the continued downward movement of the plunger C will cause the wire  $a'$  to be bent around the mandrel  $b'$  to form a staple, after which the carrier K and mandrel will be carried back by the spring O upon

the disengagement of the catch  $q$  by the finger  $s$ , and thereafter the plunger C will be carried downward until the catch G by engagement with a projection  $c'$  within the slot  $a$  of the standard A will be thrown out of engagement with the notch  $d$ , as shown in Fig. 9, and thereafter the plunger C will remain stationary, with the shoulder  $d'$  resting upon the top of the die H, and the plunger D will be carried downward with the continued movement of the slide-bar, so as to drive the wire staple  $a'$  into the fabric which is to be placed upon the top of the clinching-die J, and the points of the staple after passing through the fabric will be clinched by the action of the curved recess  $i$  during the continued downward movement of the plunger D, as shown in Fig. 10, which shows the button in its set position, with the recess  $k$  of the carrier K in proper position for the reception of another button, which upon the upward movement of the slide-bar will be brought forward for the reception of the wire  $a'$ , which wire will be cut off in pointed form and be bent into a staple preparatory to insertion into the fabric, as before described, upon the succeeding downward movement of the slide-bar B.

I claim as my invention—

1. The combination, with the cutting and bending plunger, of the button-carrier provided with the mandrel and with a recess adapted to receive the head of the button, so as to present the eye of the same to the incoming wire, of means for moving the button-carrier forward to a position under the cutting and bending plunger, the catch for holding the button-carrier in its forward position, the retracting-spring, and means for disengaging the holding-catch, substantially as described.
2. The combination, with the hollow cutting and bending plunger provided with a slot and a cut-away portion at its lower end, and the setting-plunger held within the cavity of the cutting and bending plunger, of the mandrel, means for moving the mandrel forward to enter the slot of the cutting and bending plunger, the catch for holding the mandrel in its forward position, the spring for withdrawing the mandrel, and means for disengaging the holding-catch, substantially as described.

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