

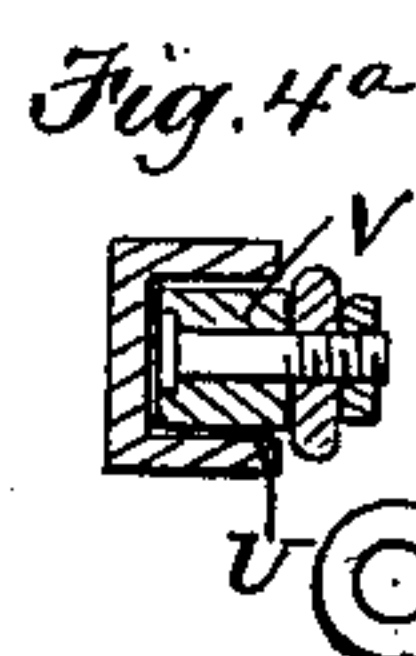
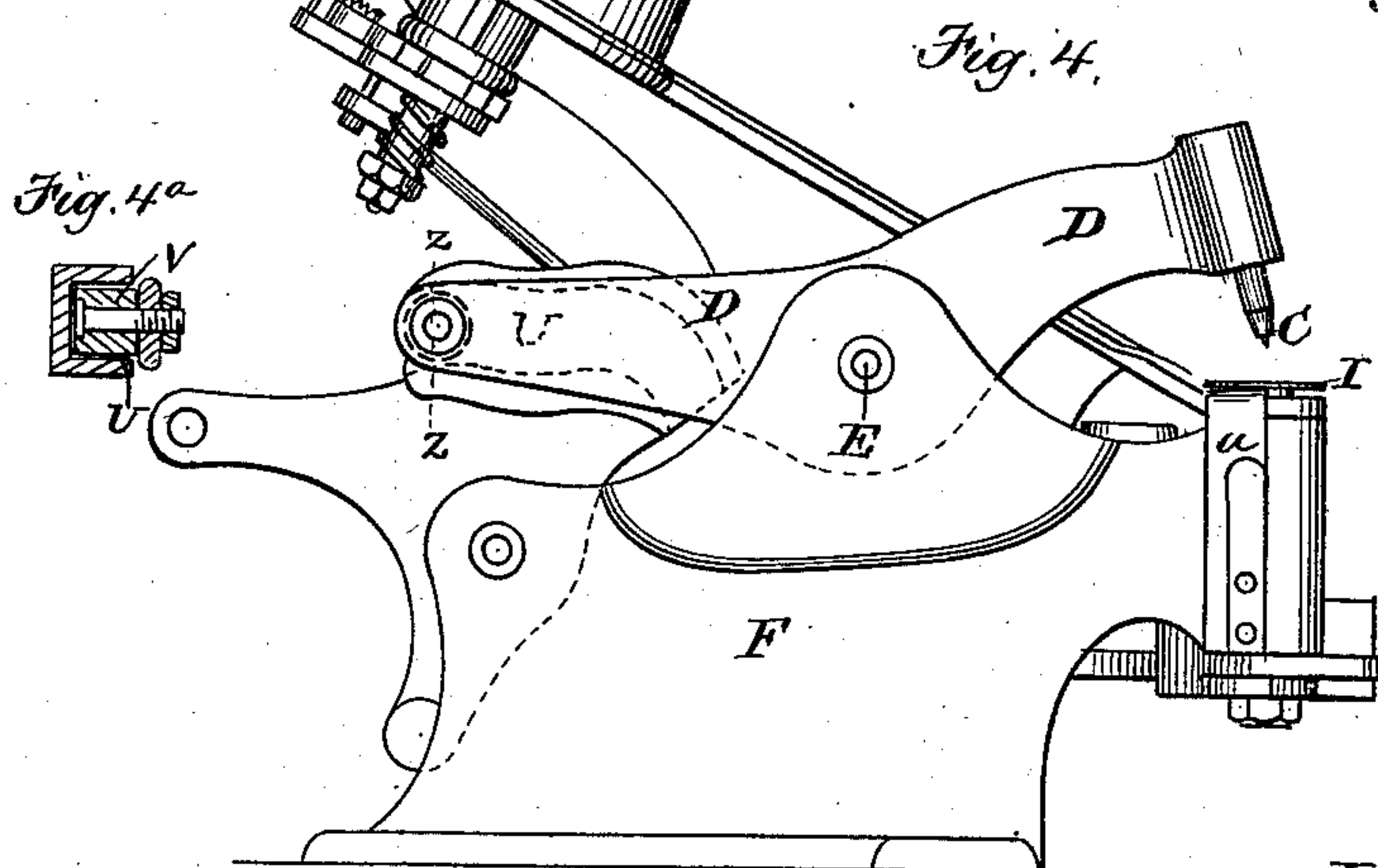
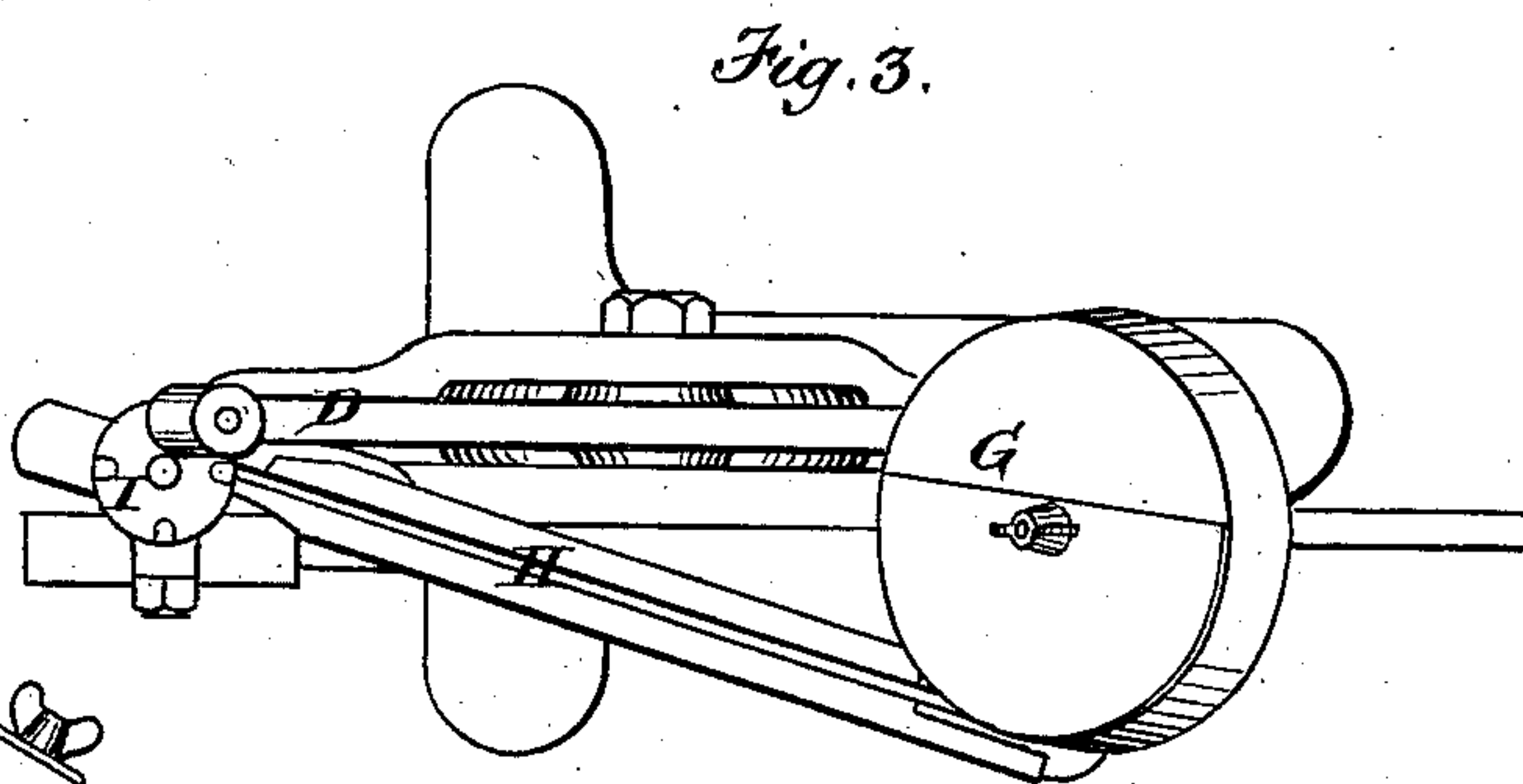
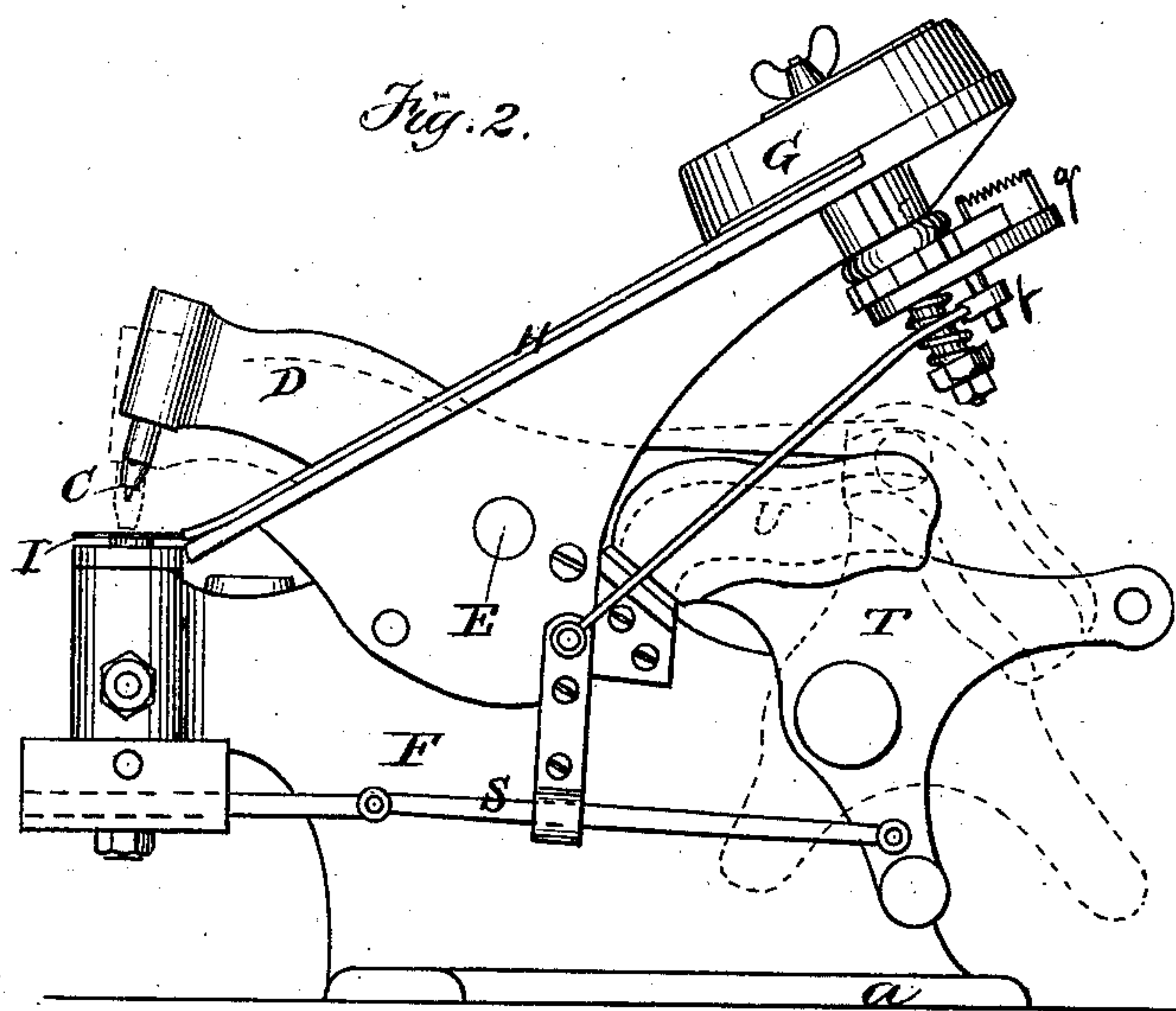
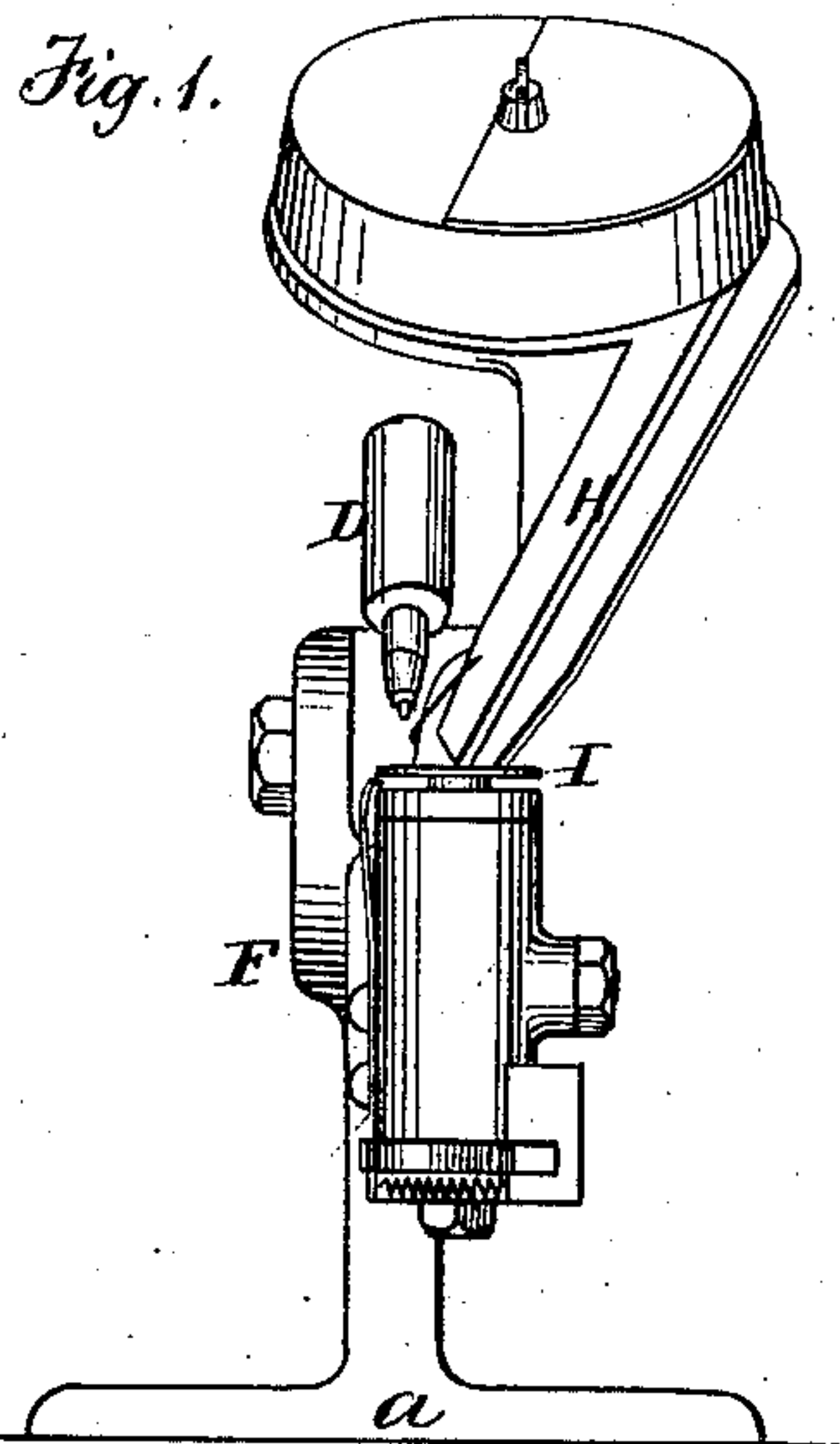
(No Model.)

2 Sheets—Sheet 1.

A. EPPLER, Jr.  
MACHINE FOR SETTING BUTTONS.

No. 256,659.

Patented Apr. 18, 1882.



Witnesses.  
Joseph Leuder  
A. L. White.

Inventor.  
A. Eppler Jr.  
G. Wright & Brown  
Atty.

(No Model.)

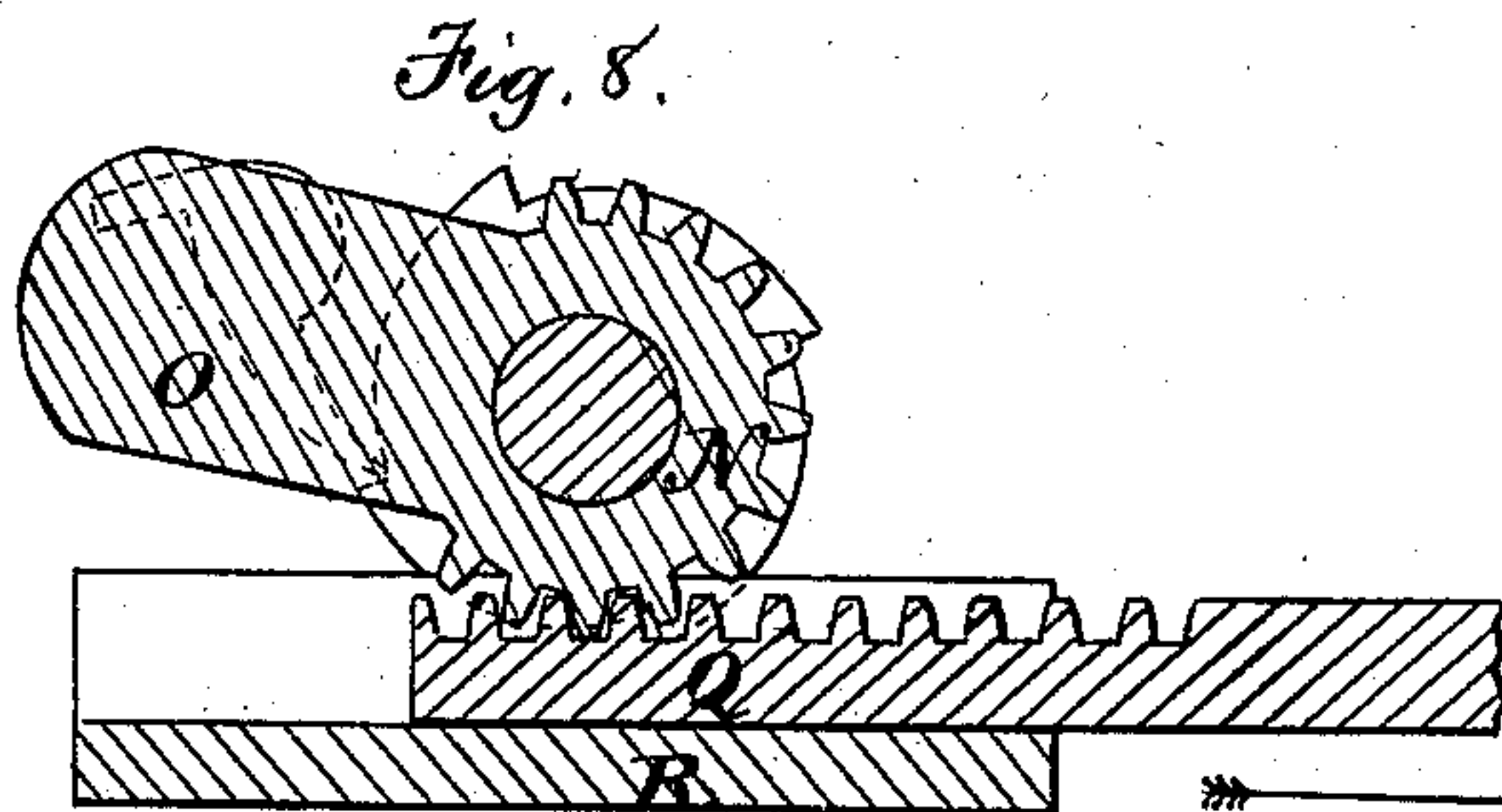
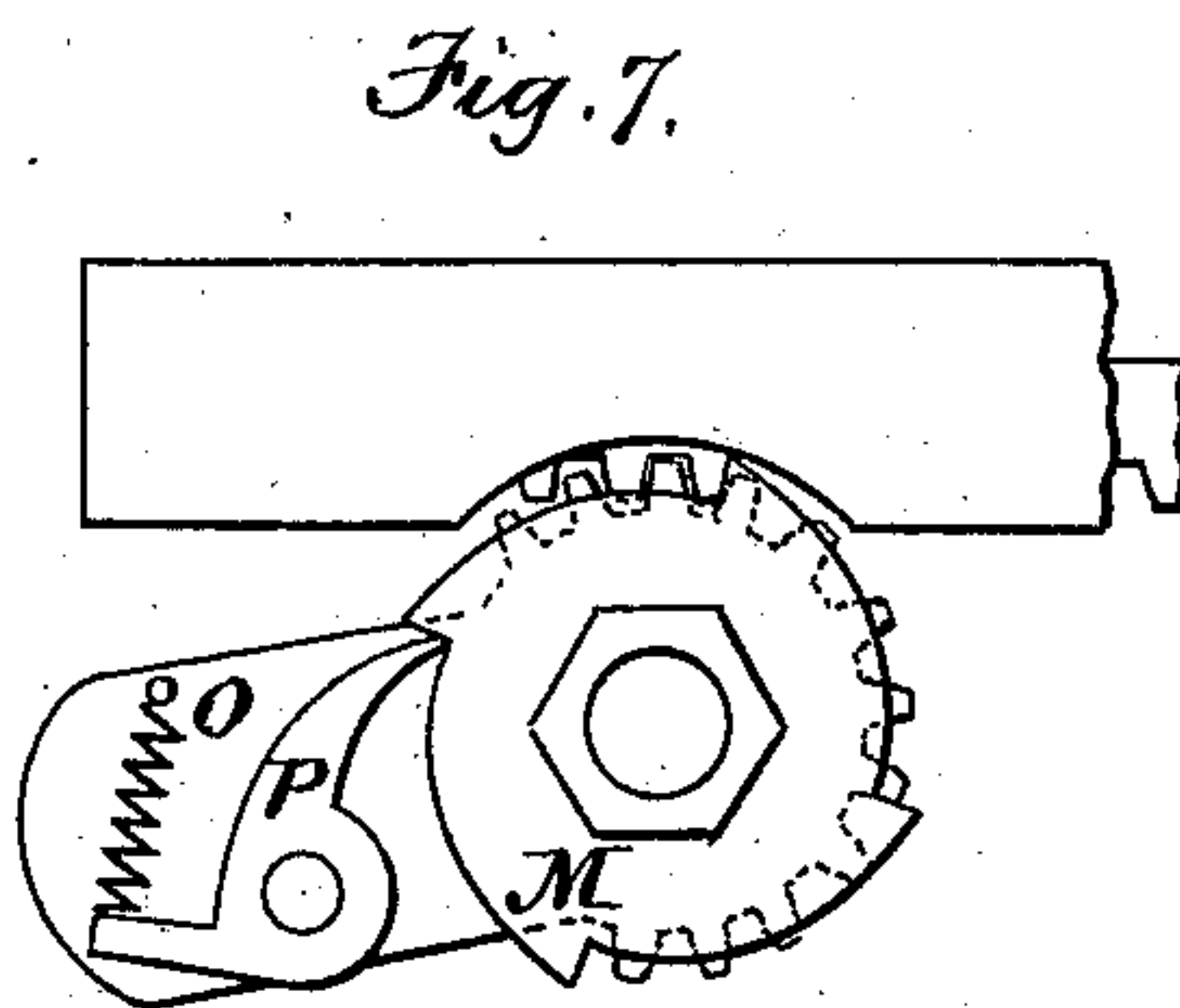
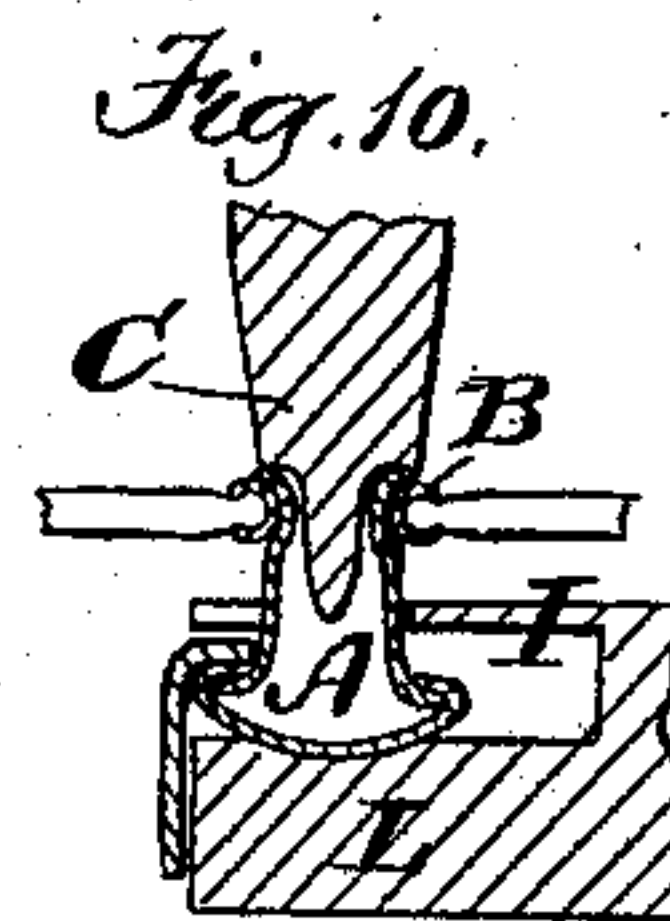
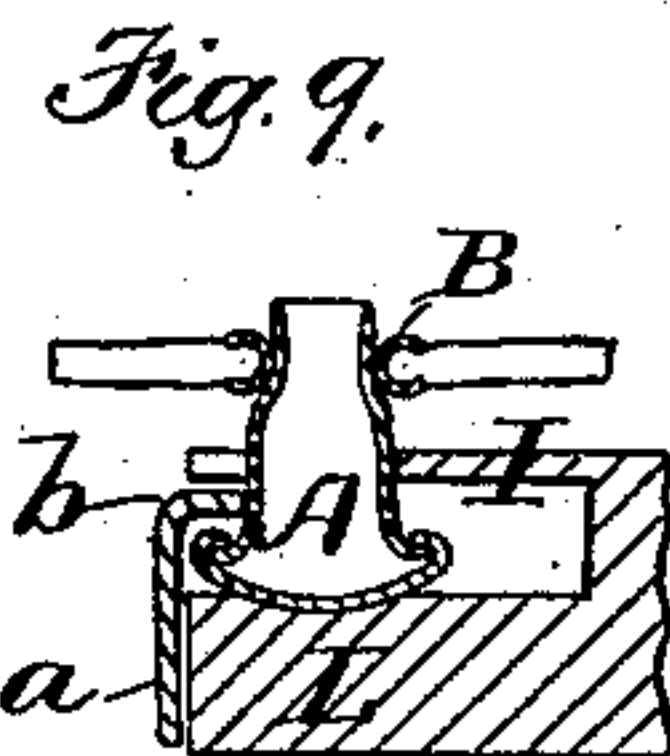
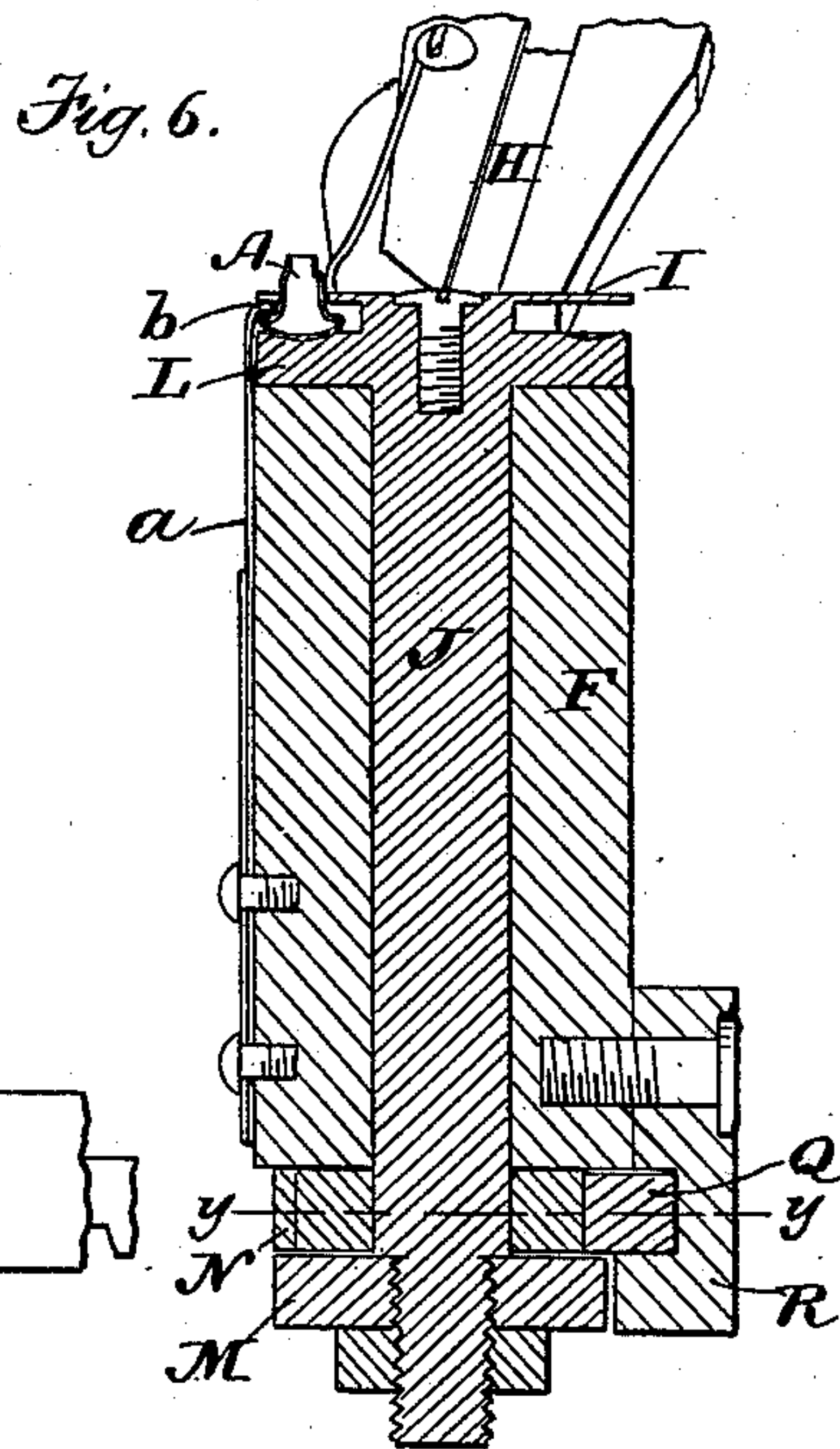
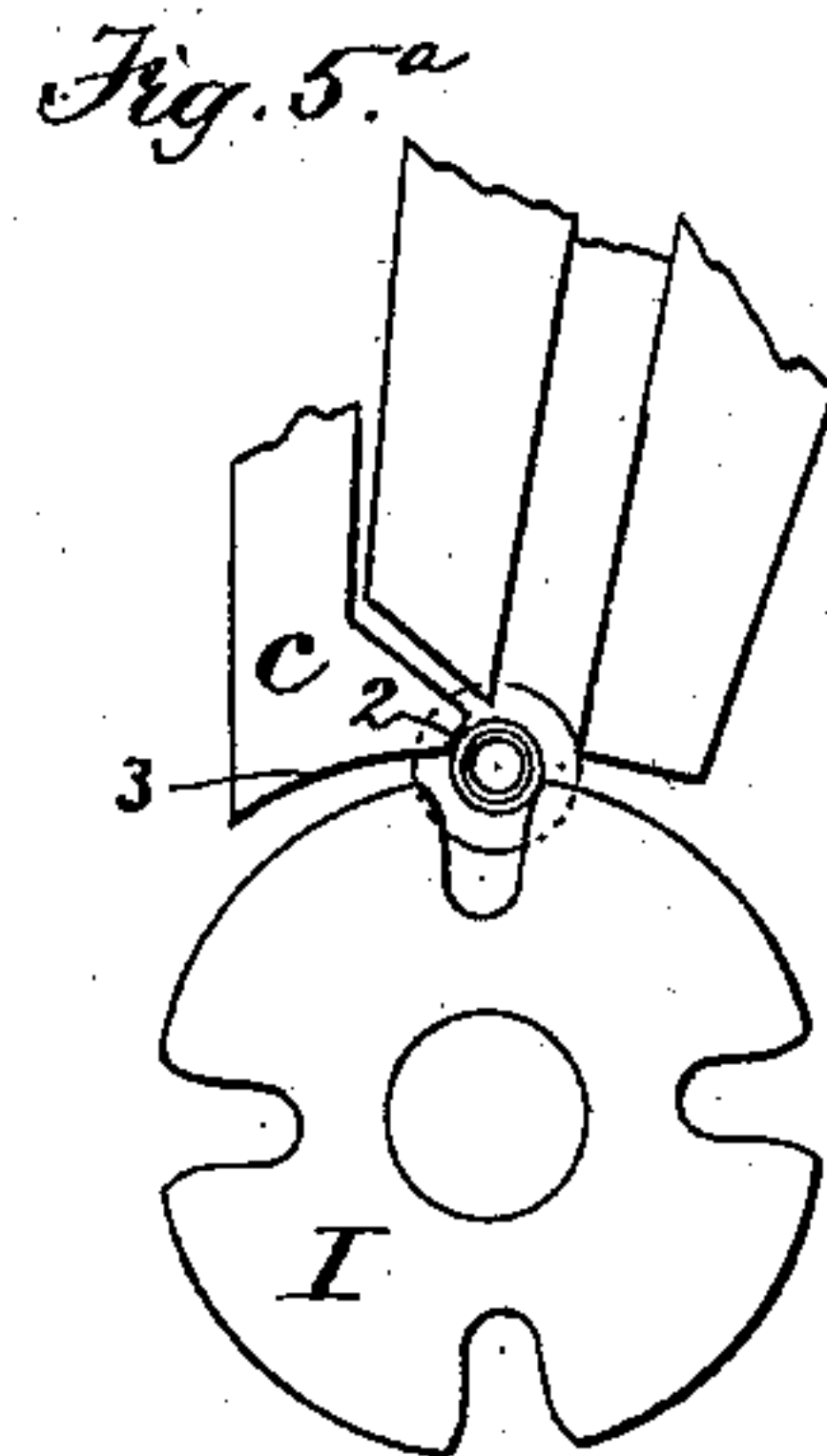
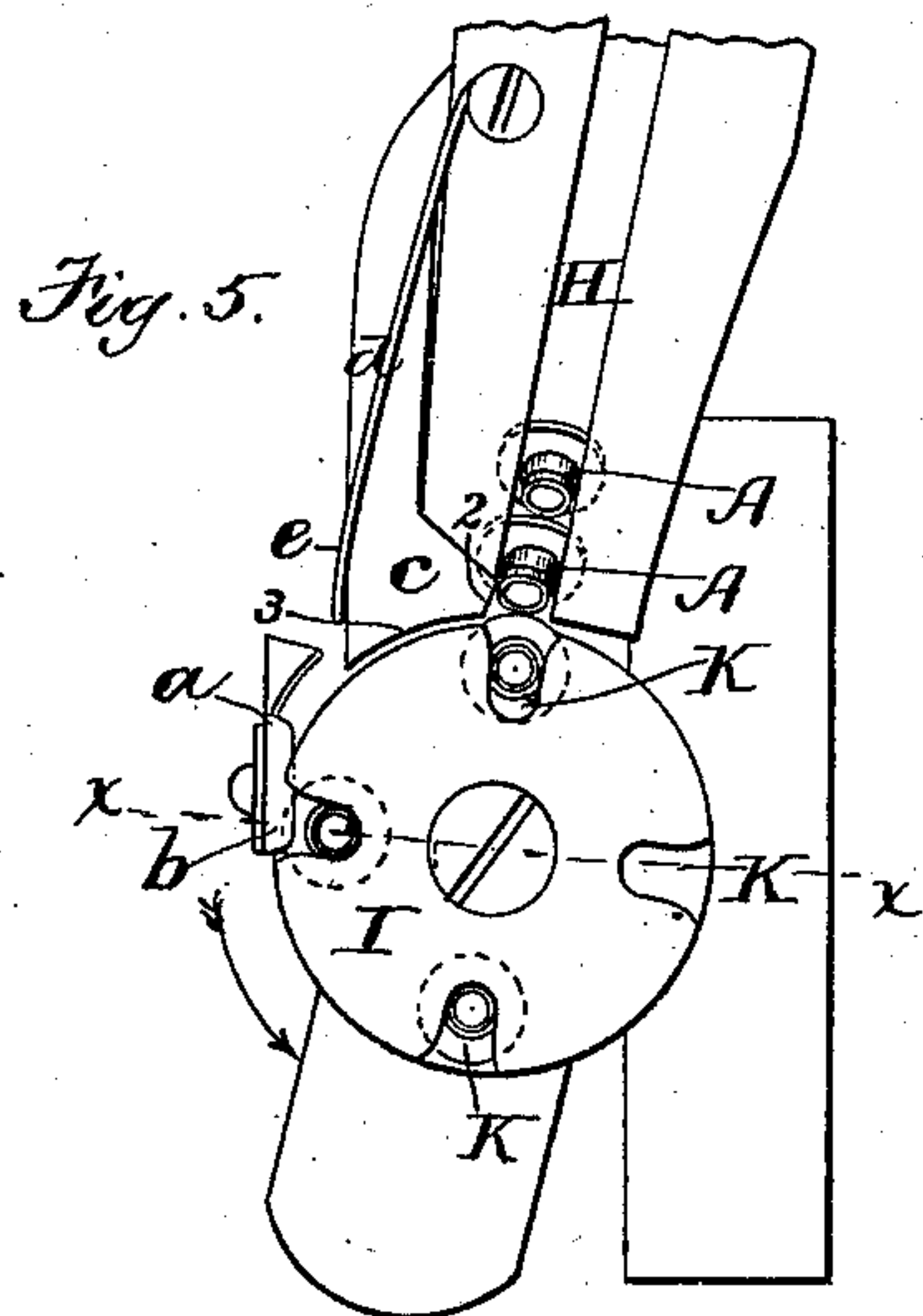
2 Sheets—Sheet 2.

A. EPPLER, Jr.

MACHINE FOR SETTING BUTTONS.

No. 256,659.

Patented Apr. 18, 1882.



Witnesses.  
Joseph Leutler  
A. L. White.

Inventor  
A. Eppler, Jr.  
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Atty.



# UNITED STATES PATENT OFFICE.

ANDREW EPPLER, JR., OF QUINCY, MASSACHUSETTS, ASSIGNOR TO DAVID WHITTEMORE, OF SAME PLACE.

## MACHINE FOR SETTING BUTTONS.

SPECIFICATION forming part of Letters Patent No. 256,659, dated April 18, 1882.

Application filed January 9, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW EPPLER, JR., of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain Improvements in Machines for Setting Tubular-Shanked Buttons, of which the following is a specification.

This invention relates chiefly to machines for upsetting the tubular shanks of certain kinds of buttons, and thus securing them to the article or material on which they are to be used; and it has for its object mainly to provide improved means for feeding the buttons from a roadway or guide to the setter or device for upsetting the tubular shanks.

The invention also has for its object to provide improved means for operating the setter and the feeding device. To these ends the invention consists in the improved feed mechanism and operating devices which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a front elevation of a machine embodying my invention. Fig. 2 represents a side elevation of the same. Fig. 3 represents a plan view. Fig. 4 represents an elevation of the opposite side. Fig. 4<sup>a</sup> represents a section on line *zz*, Fig. 4. Fig. 5 represents an enlarged plan view of the feeding device and the lower end of the roadway or guide. Fig. 5<sup>a</sup> represents a similar view with the feeding device in a different position. Fig. 6 represents a section on line *xx*, Fig. 5. Fig. 7 represents a bottom plan view of the mechanism for operating the feed device. Fig. 8 represents a section on line *yy*, Fig. 6. Figs. 9 and 10 represent different stages of the operation of securing a button to the article on which it belongs.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the button on which my invention is intended to operate, the same being the kind used chiefly on gloves, and having an enlarged head, and a tubular-shouldered shank, the end of which is thin and adapted to be turned outwardly or upset like an eyelet. The article to receive the button is first provided with an ordinary eyelet, B, (see Figs. 9 and 10,) which serves as a bushing for the button, the shank of the button

being inserted in the eyelet, as shown in Fig. 9, and then upset thereon by a setter, C, as shown in Fig. 10.

The setter is supported in the end of a lever, D, which is pivoted at E to the supporting-frame F of the machine, and is oscillated by suitable means to alternately raise and lower the setter.

G represents a reservoir for the buttons, and H an inclined roadway leading therefrom.

I represents a disk or plate located partially under the setter, and attached to a vertical spindle, J, which is adapted to rotate in a bearing in the frame F. The plate I is provided with a series of radial recesses or pockets, K, each of which is of sufficient size to receive the shank of one of the buttons A. Under the plate I is a bed or surface, L, to support the heads of the buttons A, and separated from the plate I by a space of sufficient width to allow the heads of the buttons to be inserted between the bed and plate.

The spindle J is provided with mechanism whereby it is rotated step by step, and each step or rotation is of sufficient length to move a recess or pocket K of the plate I from the lower end of the roadway H to a point under the setter C. The mechanism employed in the present instance for rotating the spindle and plate is composed of a ratchet, M, rigidly attached to the lower end of the spindle, a segmental pinion, N, journaled to rotate loosely on said spindle, and having an arm, O, to which is pivoted a pawl, P, engaging with the teeth of said ratchet, and a reciprocating rack, Q, sliding in a fixed guide, R, and engaging with the teeth of the pinion N. The rack Q is connected by a rod, S, with a three-armed lever, T, pivoted to the frame F, and is reciprocated by the oscillation of said lever on its pivot. The lever T is provided on one of its arms with a curved groove, U, which receives a stud or friction-roller, V, on the rear end of the carrying-lever D. The third arm of the lever T is connected with a treadle or other device by which said lever is oscillated. The setter and the feed-plate are therefore both operated by the lever T.

*a* represents a thin metal plate, attached at its lower end to the frame F, and having on its upper end a lip, *b*, projecting inwardly over



the bed L, and occupying such a position that it will force the buttons A into their proper place as they come under the setter, as hereinafter described.

5 One side of the lower end of the roadway H is composed of a movable section, *c*, formed on a pivoted lever, *d*, and provided with an edge, 2, which forms the termination of one side of the roadway, and a concave edge, 3, which, 10 when the section *c* is in its normal position, is about parallel with the adjacent edge of the plate I, as shown in Fig. 5. A spring, *e*, normally holds the section *c* in the position shown in Fig. 5, and permits it to yield, as shown in 15 Fig. 5<sup>a</sup>.

The operation is as follows: The setter being raised, as shown in full lines in Figs. 1, 2, and 4, the feed-plate is held so that one of its recesses or pockets will receive a button from 20 the roadway H, as shown in Fig. 5. The lever D is then turned on its pivot to the position shown in dotted lines in Fig. 2, thereby forcing the setter downwardly into the shank of the button held under it, upsetting said 25 shank in the eyeleted material, as shown in Fig. 10. The lever D is then turned to the position shown in full lines in Figs. 1, 2, and 4, thereby raising the setter and at the same time moving the rack Q in the direction indi- 30 cated by the arrow in Figs. 2 and 8. The rack is thus caused to rotate the pinion N and cause the pawl P, pivoted to the arm of said pinion, to engage with the ratchet M and rotate the latter a distance equal to the length 35 of one tooth, thereby giving the feed-plate a sufficient rotation to simultaneously bring to the front the recess or pocket containing the button last secured, so that the button can be 40 removed, move the pocket which last received a button from the roadway into position under the setter, and move another pocket into position to receive a button from the roadway. This movement of the feed-plate com- 45 mences after the setter has been partially raised and removed from the shank of the button last inserted, so that said finger will not prevent the rotation of the plate, and terminates while the setter is raised to its full height.

In case the button sliding into the pocket 50 of the feed-plate from the roadway does not reach the inner end of said pocket, as shown in Fig. 8, the spring-lip *b* bears against the button when the latter is brought under the setter and pushes it properly into the pocket 55 of the feed-plate, so that its tubular shank will coincide with the finger of the setter.

In case a button only partly enters the pocket of the feed-plate and remains partly in the roadway, the yielding section *c* of the roadway yields 60 when the feed-plate is rotated, as shown in Fig. 5<sup>a</sup>, thereby, first, preventing the shank of the button from being crushed by the movement of the feed-plate, and, secondly, when the button reaches the concave edge of said section

forcing the button into the pocket, all without 65 injury to the button.

The arm *f*, carrying the pawl *g*, that rotates the agitator of the eyelet-box, is oscillated by a connection with the reciprocating rod S, as 70 shown in Fig. 2.

I do not limit myself to the use of the rotary feeding device for moving buttons from the roadway to the setter, said device being capable of holding and moving lacing-hooks, as 75 shown in my application for Letters Patent for machine for setting lacing-hooks, filed January 31, 1882.

I claim—

1. In a machine for securing buttons or other equivalent fastening devices having tubular 80 shanks, the combination of a guide or roadway, a rising and falling setter, a feeding and supporting device located under the setter, and provided with pockets, each adapted to receive a fastening device from the roadway, and mechanism for rotating said feeding device step by 85 step, the location of the feeding and supporting device under the setter adapting it to support each fastening device during the action of the setter, as set forth. 90

2. The combination, with the rotary feed-plate having button-receiving pockets or recesses, of the roadway or guide having a yielding end or section adapted to yield to prevent 95 injury to buttons partially inserted in the pockets of the feed-plate, and to force such buttons into the pockets, as set forth.

3. The combination of the rotary feed-plate having pockets or recesses and a spring-lip, 100 *b*, adapted to hold each button in place under the setter, as set forth.

4. As a means for rotating the feed-plate step by step, the reciprocating rack Q, the pinion N, journaled loosely in the spindle of the feed-plate, and provided with an arm, O, hav- 105 ing a pawl, P, and a ratchet, M, rigidly attached to the spindle of the feed-plate and rotated intermittently by the pawl P, as set forth.

5. The pivoted lever D, supporting at one end the setter, and provided at the other end 110 with a stud or roller, V, combined with the pivoted lever T, having the cam-groove U, with which said stud is engaged, as set forth.

6. The combination of the setter, its supporting-lever D, the pivoted operating-lever 115 T, having a cam-groove engaged with a stud on the lever, the rotary feed-plate I, the rack Q, rotating said feed-plate through intermediate mechanism, and a rod, S, connecting the rack with an arm of the lever T, as set forth. 120

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of December, A. D. 1881.

ANDREW EPPLER, JR.

Witnesses:

C. F. BROWN,  
A. L. WHITE.