

(No Model.)

2 Sheets—Sheet 1.

F. H. RICHARDS.

BUTTON SETTING INSTRUMENT.

No. 353,820.

Patented Dec. 7, 1886.

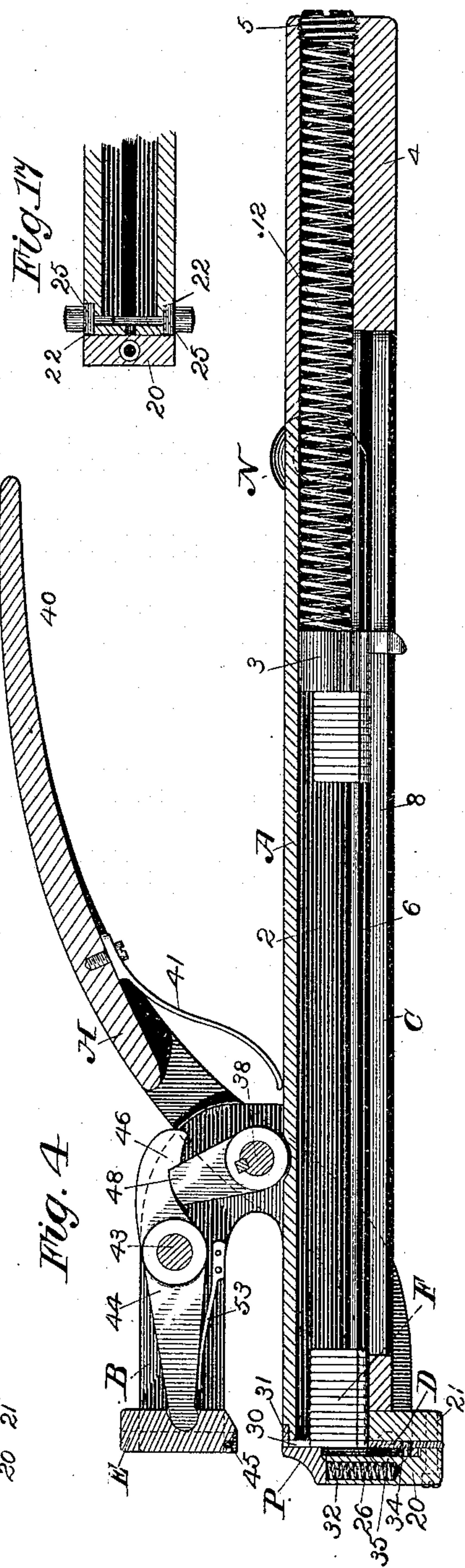
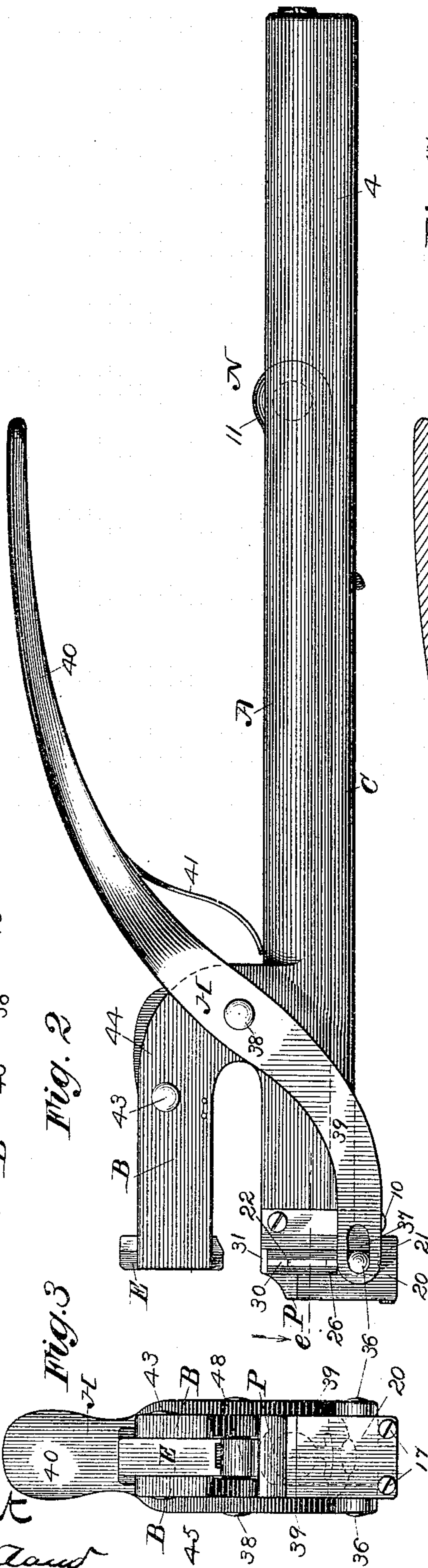
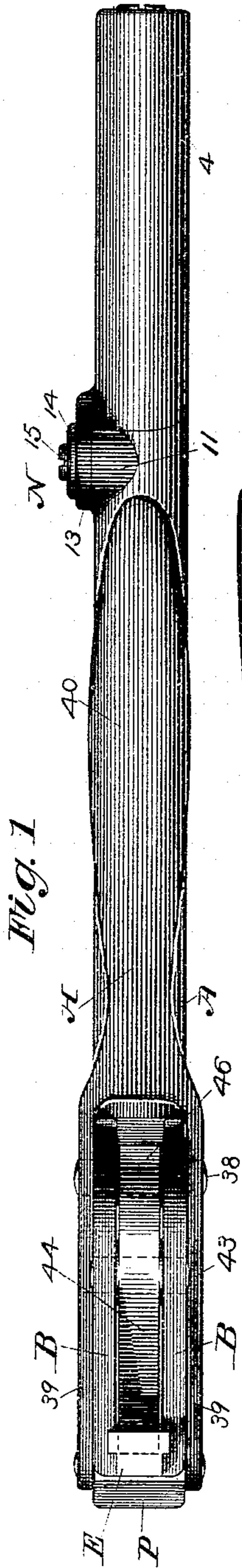


Fig. 11

Fig. A

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2 Sheets—Sheet 2.

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Fig. 5

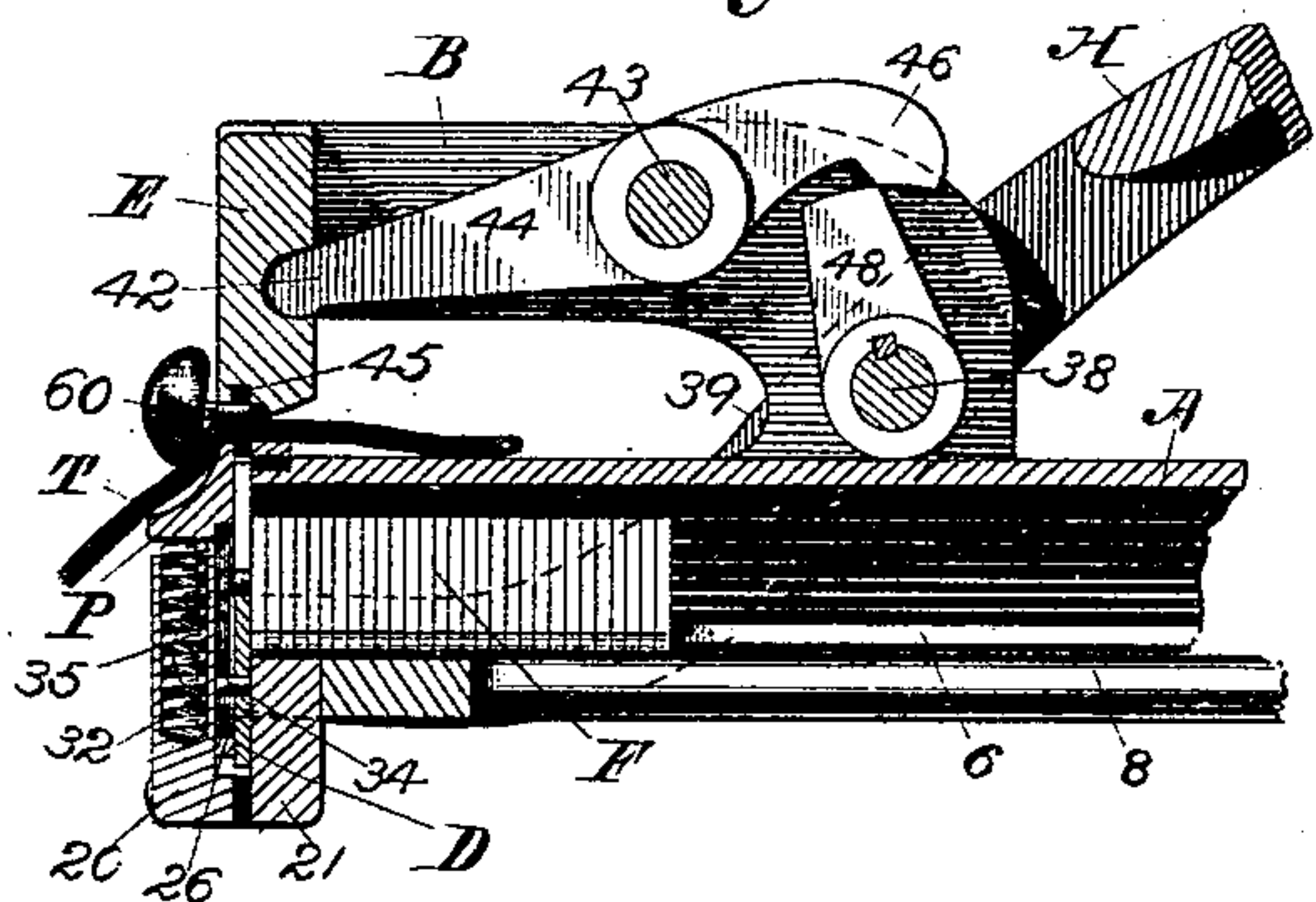


Fig. 6

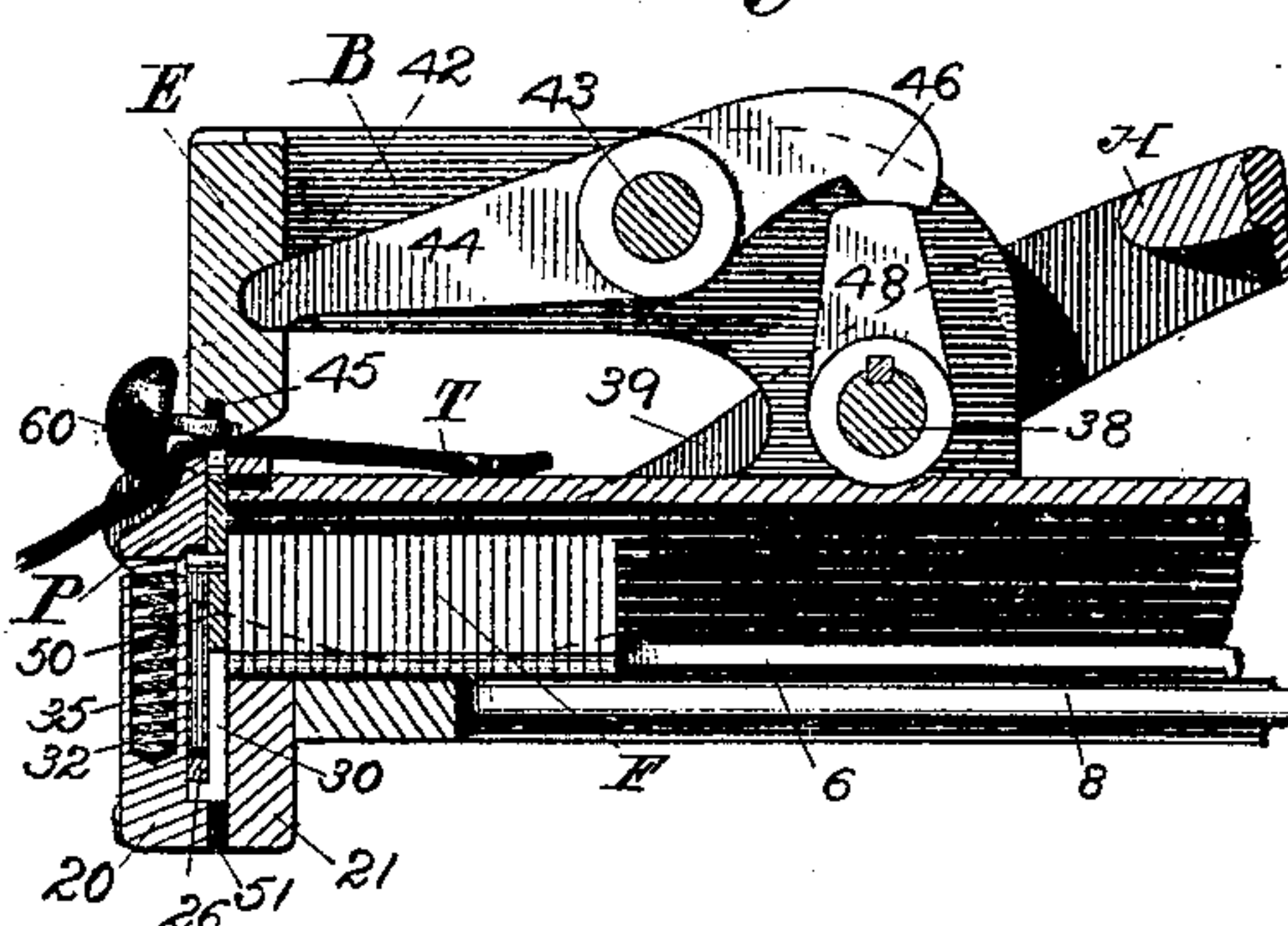


Fig. 7

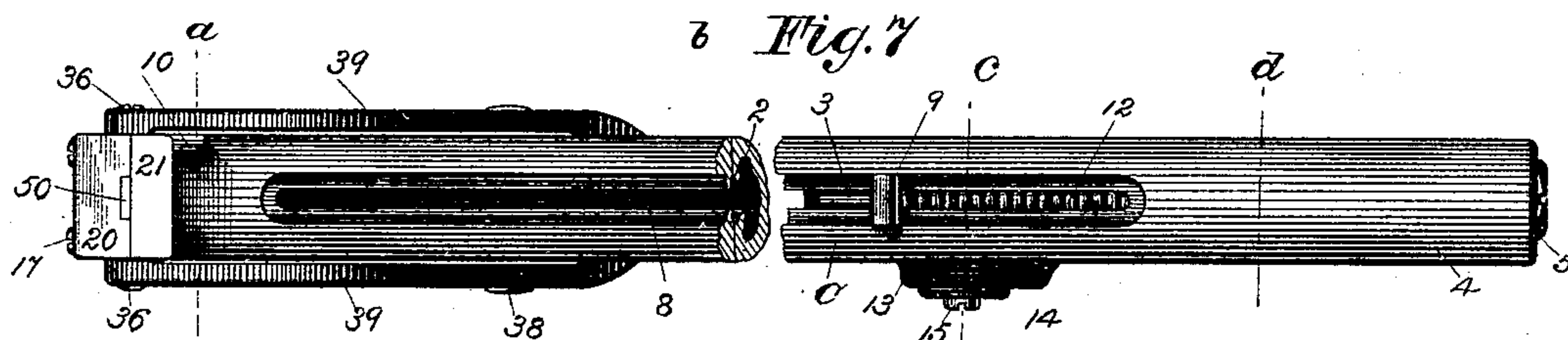


Fig. 8

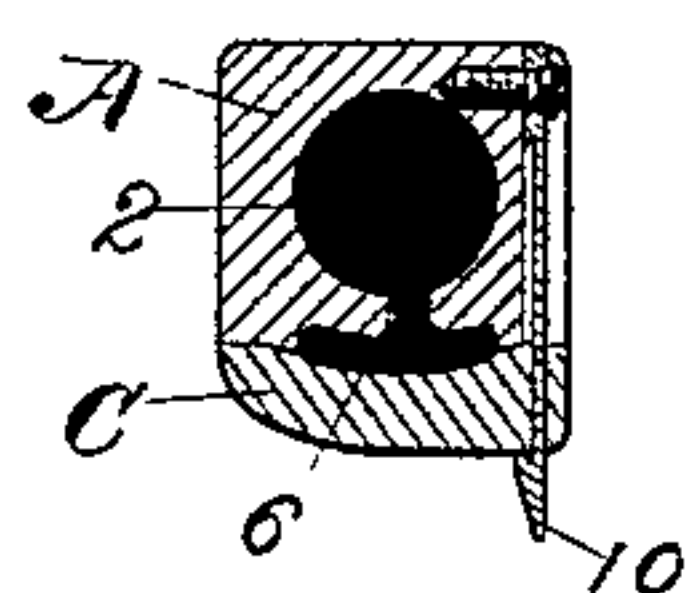


Fig. 9

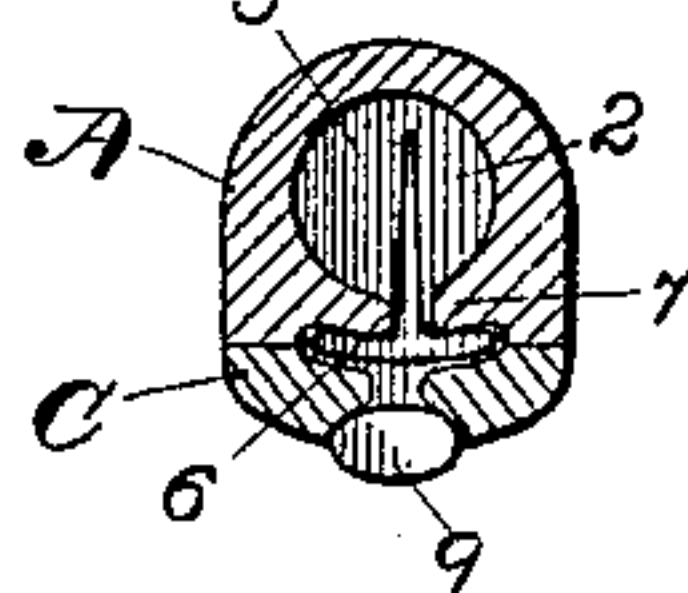


Fig. 10

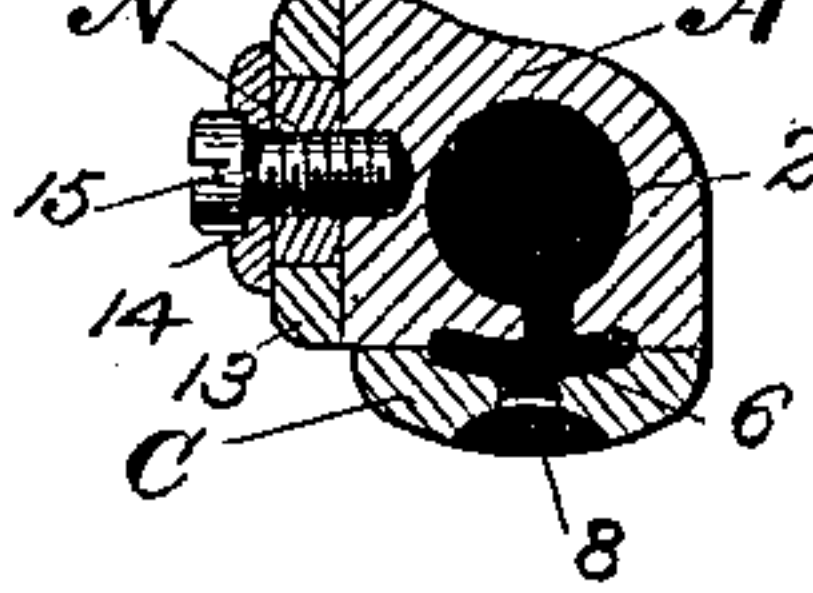


Fig. 11

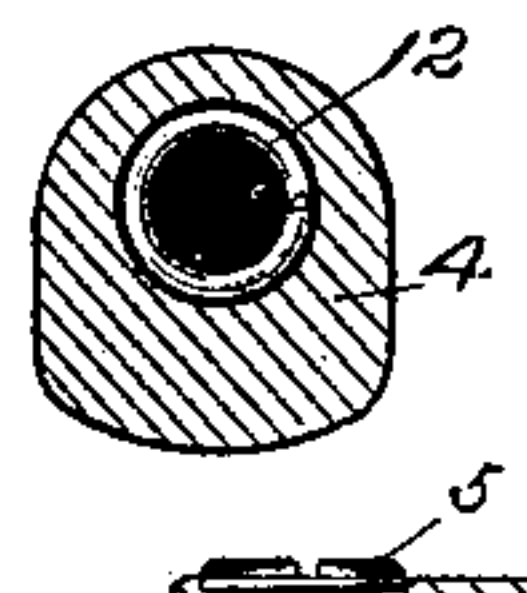


Fig. 12

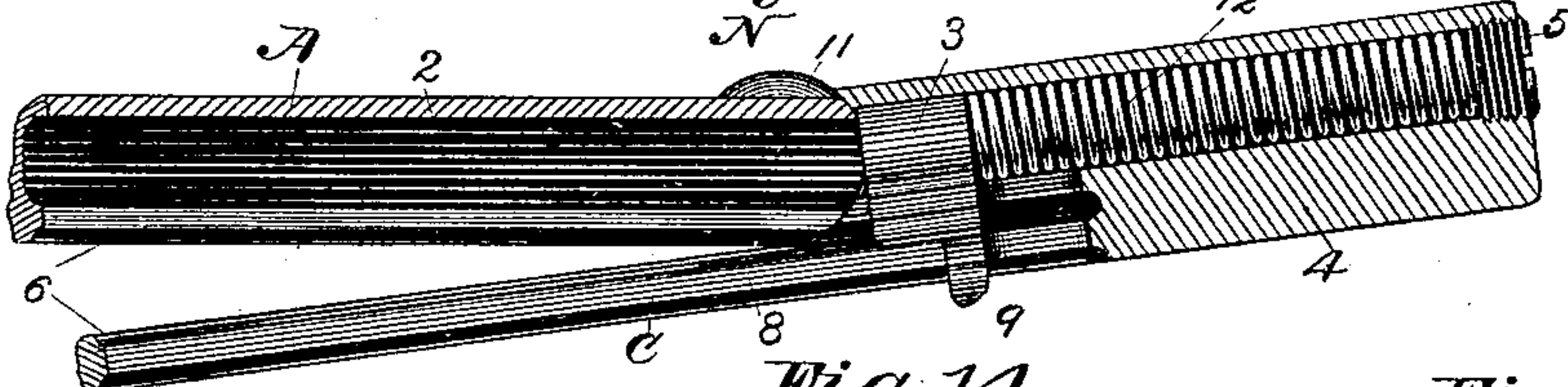


Fig. 14

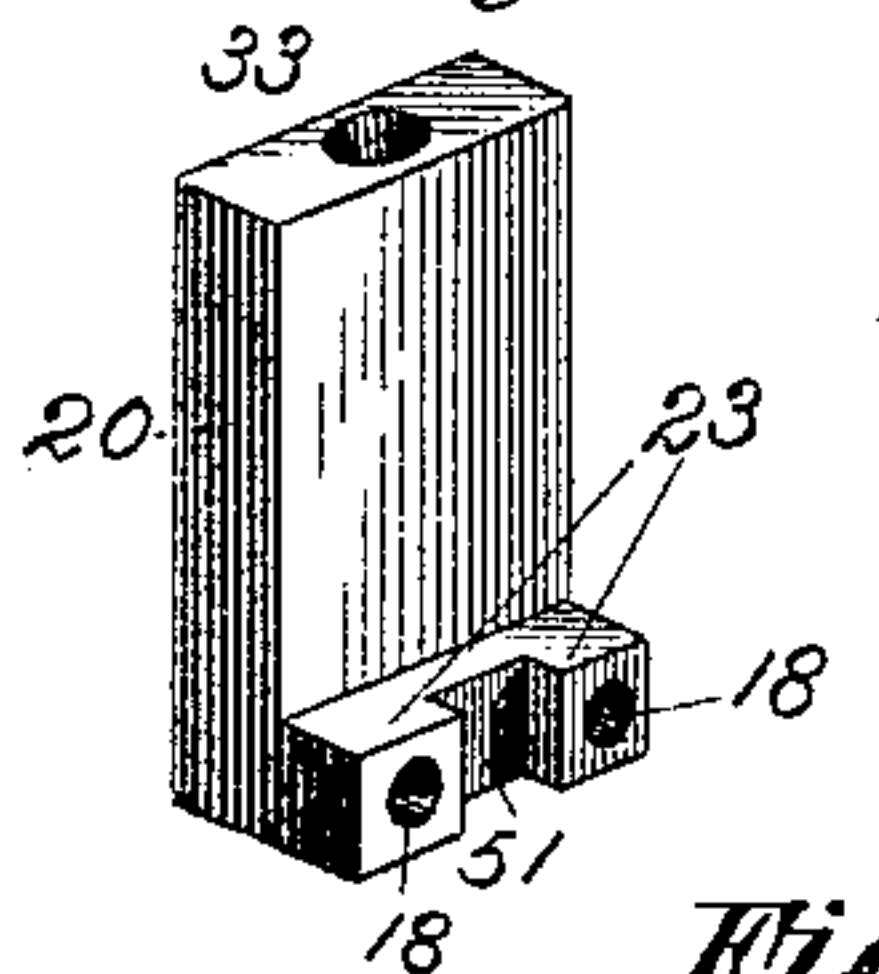


Fig. 15

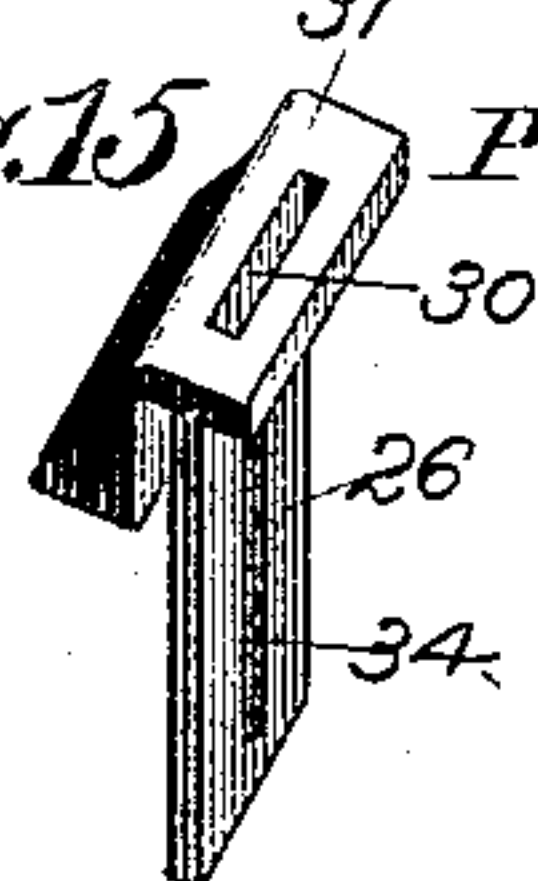


Fig. 13

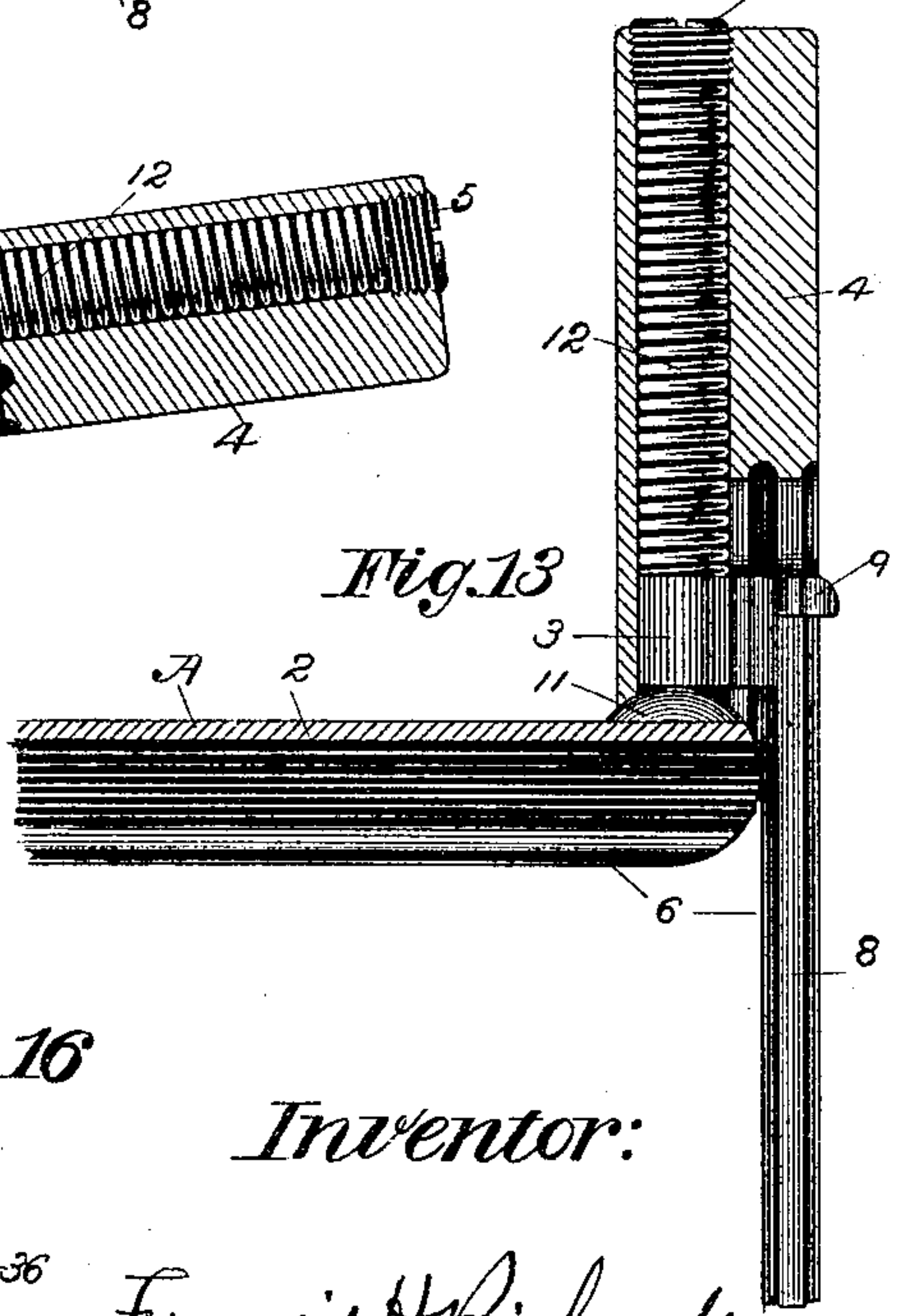
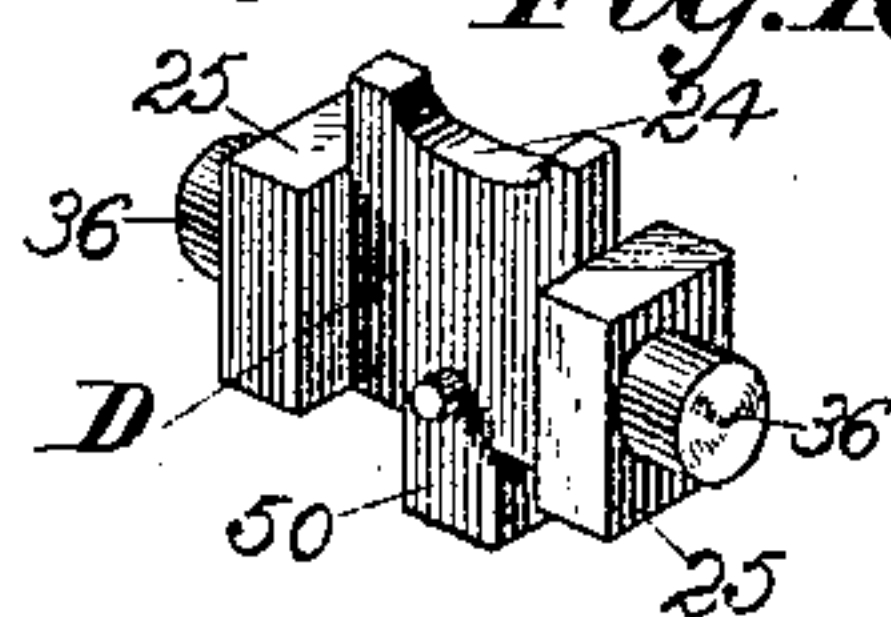


Fig. 16



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UNITED STATES PATENT OFFICE.

FRANCIS H. RICHARDS, OF SPRINGFIELD, MASS., ASSIGNOR TO THE AMERICAN BUTTON FASTENER COMPANY, OF NEW BRITAIN, CONN.

BUTTON-SETTING INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 353,820, dated December 7, 1886.

Application filed February 18, 1886. Serial No. 192,438. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Springfield, in the county of Hampden, State of Massachusetts, have invented certain new and useful Improvements in Button-Setting Instruments, of which the following is a specification.

This invention relates to instruments to be operated by hand for attaching shank-buttons to shoes and fabrics by means of malleable pointed metallic fasteners.

The object of the invention is to provide an instrument of that class which shall contain in a suitable magazine the fasteners to be used, from which they may be taken out one at a time, as required.

To this end the invention consists in the improvements and combinations hereinafter described and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a top view of an instrument embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is an elevation of the front end, which is at the left hand in Figs. 1 and 2. Fig. 4 is a vertical longitudinal section through the entire instrument. Figs. 5 and 6 are two views, similar to Fig. 4, of the front portion of the instrument, showing the parts in successive positions during the setting operation. Fig. 7 is a plan view of the under side of the instrument. Fig. 8 is a cross-section in line *a*, Fig. 9 in line *b*, Fig. 10 in line *c*, and Fig. 11 in line *d*, Fig. 7. Fig. 12 shows the magazine-cover partially opened. Fig. 13 shows the same fully opened. Fig. 14 is a perspective view of the slide-cap. Fig. 15 is a similar view of the presser-slide. Fig. 16 is a similar view of the driver. Fig. 17 is a horizontal section in line *e*, Fig. 2.

Similar characters designate like parts in all the figures.

This improved instrument comprises a frame-work containing the fastener-magazine, and provided with fastener-setting appliances, a movable setting-die, and devices for operating said die and appliances. The frame-work consists of a tubular or hollow case, A, having arms B B, for holding in place said die, and means for attaching the details of the instrument. Said case has formed therein

a suitable passage, 2, in which the follower 3 is fitted to slide. At the back end of case A, and preferably on one side thereof, there is pivotally attached thereto the magazine-cover C, which not only serves to cover the under side of the case, but forms an extension thereof for the purpose of containing the said follower, together with its actuating-spring, when the magazine is opened. The preferred construction and arrangement of these parts is shown best in Figs. 4 and 7 to 11, inclusive. The said extension of the cover is designated by 4, and has formed clear through it a hole corresponding to passage 2, it being closed at the back end by screw-plug 5. The magazine-groove 6 is formed partly in the case A and partly in the cover. It has a slot, 7, opening into passage 2, another slot, 8, being formed in the cover, as best shown in Figs. 7, 9, and 10. The follower 3, which fills the magazine-groove as well as passage 2, has a thumb-piece, 9, projecting through slot 8, whereby said follower may be drawn back by hand, to be, together with spring 12, entirely within extension 4, as in Fig. 12. This being done, and the spring-catch 10 being unhooked, the cover may then be turned on its joint N and swing wide open, as in Fig. 13, for the purpose of replenishing the magazine with fasteners. The preferred form of said joint is well shown in Figs. 1, 7, and 10, though other well-known kinds are suitable. As there shown, the cover C has formed thereon a flange, 13, which fits over a washer, 14, fixed on case A by a screw, 15. While the cover is open the follower rests against the curved end 11 of case A, as shown, being thus securely locked back, and on closing the cover the follower is automatically unlocked and pushed forward by spring 12, thereby forcing the fasteners F to the front end of the magazine, as in Fig. 4.

The front end of the case A is so shaped as to have secured thereto a front plate, 20, for holding in place the presser slide and driver. Said plate is shown thus secured to the downwardly-projecting flange 21 by screws 17, Fig. 3, which pass through holes 18, Fig. 14. Between the front end of the case, preferably notched, as shown at 22 in Figs. 2 and 17, and said plate the driver D is fitted to slide vertically.

The driver-point 24, Fig. 16, is shaped to conform to the head of the fastener used, and it should be very slightly less in thickness than such fastener to secure the free working of the instrument. For convenience in holding it in place, and for holding in place the presser-slide, the driver is provided on each edge with flanges 25, one edge of which fits in notches 22, the other resting against front plate, 20, as shown in Fig. 17. This construction leaves a space inclosed on four sides between the said plate and driver, into which the stem 26 of the presser-slide P is fitted, which stem forms the front of the driver-channel 30, that is continued up through the presser-plate 31 of said slide. (See Figs. 4 and 15.) Slide P is forced up by a spring, 32, contained in a hole, 33, Fig. 15, formed in cap 20. It is moved down by a pin, 34, working in a slot or groove, 35, Figs. 4 to 6 and 15. On the downward stroke of the driver pin 34 comes to the lower end of the slot, and thereby carries down the slide, both reaching at the same time their lowest position, (shown in Fig. 4,) where the driver-point 24 stands just below the magazine-groove. At this time the driver rests on the surface 23 of cap 20, which then acts as a stop to limit said downward motion.

The driver-blade has a narrow continuation, 50, which, when the driver is down, lies in a notch, 51, of cap 20. When the driver is up, as in Fig. 6, said projecting part 50 stands in front of the fastener F to prevent them entering the channel 30 below the driver and interfering with the proper operation of the instrument. For the purpose of operating it, driver D has oppositely-disposed journals or trunnions 36 fitting into slots 37 in the arms 39 of hand-lever H, which lever has a handle, 40, and is pivoted on a shaft, 38, which is rigidly fixed in and is turned by said lever. A spring, 41, serves to throw up the lever when the operator releases the handle. Thus, as will appear from Figs. 1 to 4, the instrument has two handles, of which one is the ordinary plier-handle and the other is the case containing the magazine. This device is desirable in practice, because by its use the instrument may be made of less depth at its front part, thereby adapting it to be used for setting buttons on shoes of small size.

In order that less movement shall be required of the presser slide and driver, I have constructed the setting-die to be movable vertically by means of devices operated by lever H. The die proper is the ordinary concave one, 45, formed in the lower end of the sliding-die body E. This slide E is operated by a lever, 44, pivoted at 43, whose front end, 42, fits a notch in the back of said slide. The back end of lever 44 is formed into a cam, 46, which is operated by the arm 48, which arm is keyed fast to shaft 38 between the arms B B. By means of this or of some similar apparatus the first movement of the handle in closing throws the lever 44 and slide E from their position in Fig. 4 to that in Fig. 5, where they

remain until the handle is opened again. A spring, 53, Fig. 4, is a suitable means for throwing up said lever and slide.

The operation of my improved button-setting instrument, and especially the operation of the details thereof, will be readily understood from the drawings and preceding description.

In using the instrument, the magazine being first properly supplied, a fabric or other material, T, is placed in position over the presser-slide. The operator then partly closes the handles, thereby throwing down slide E and starting up the driver a little way, as in Fig. 5, until said presser-slide and slide E clamp the fabric between them, as there shown. Next, a button, 60, is put with its shank under the setting-die, as also shown in said Fig. 5, after which the handles are completely closed, as in Fig. 6, thereby forcing the fastener-prong through the material T and closing it into a hook, holding said button thereto after the manner of other machines for setting this class of button-fasteners. This operation being completed, the handle H and the parts operated thereby are allowed to return to their first position, ready for inserting the next fastener.

It will of course be understood, that this instrument, and especially the minor details thereof, are capable of modification in various ways and degrees after the manner of machines in general without departing from my invention.

In another application, Serial No. 191,362, filed February 9, 1886, I have described and claimed a combination having a driver arranged in a channel open at the sides, as hereinbefore described; hence I do not broadly claim the same in this application.

Having thus described my invention, I claim—

1. The combination, in a button-setting instrument of the class described, and with a frame constituting one handle of the instrument, and having a magazine, and a driver-channel vertical to said magazine, of a driver in said channel, a handled lever pivoted to said frame and operating said driver, a vertically-movable setting-die above said channel, and means, substantially as described, operating said die from said lever, substantially as set forth.

2. The combination of a frame having a magazine, substantially as described, cap 20, having notch 51, there being a driver-channel between said cap and frame, and a driver sliding in said channel, and having the downward projection 50, substantially as and for the purpose set forth.

3. The combination of the frame containing the magazine, cap 20, the presser-slide, driver D, a spring operating to move the slide up, and means, substantially as described, whereby the slide is moved down by the driver, substantially as set forth.

4. The combination, with the frame containing the magazine, and having the front

plate, 21, and notches 22, of cap 20, the driver D, having flanges 25 fitting said notches, and the presser-slide fitting between and guided by the cap and driver, substantially as set forth.

5 5. The combination, in a hand button-setting instrument, of the frame, and fastener-setting apparatus, substantially as described, the sliding die E, lever H, having a handle, 10 40, and operating said apparatus, lever 44, having cam 46, and arm 48, connected to lever H, all substantially as and for the purpose set forth.

15 6. In a button-setting instrument, the combination of a frame, as A, a cover, substantially as described, jointed to said frame, there being a follower-channel in said frame, and a magazine-groove between said frame and cover, and a follower sliding in said channel and 20 groove, substantially as set forth.

7. In a button-setting instrument, the combination of a frame, as A, a cover, substan-

tially as described, jointed to the end of said frame, having an extension, as 4, of the frame, substantially as described, there being a fol- 25 lower-channel in said frame, and a magazine-groove between said frame and cover, both extending beyond said joint, and a follower sliding in said channel and groove, which follower is adapted to be locked back by said 30 joint on the opening of the cover, substantially as set forth.

8. In a button-setting instrument, the combination of a frame, as A, having channel 2, cover C, connected to said frame by a joint, 35 N, at one side of said channel, groove 6 between said frame and cover, follower 3, and spring 12, all constructed and operating substantially as shown and described.

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Witnesses:

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