

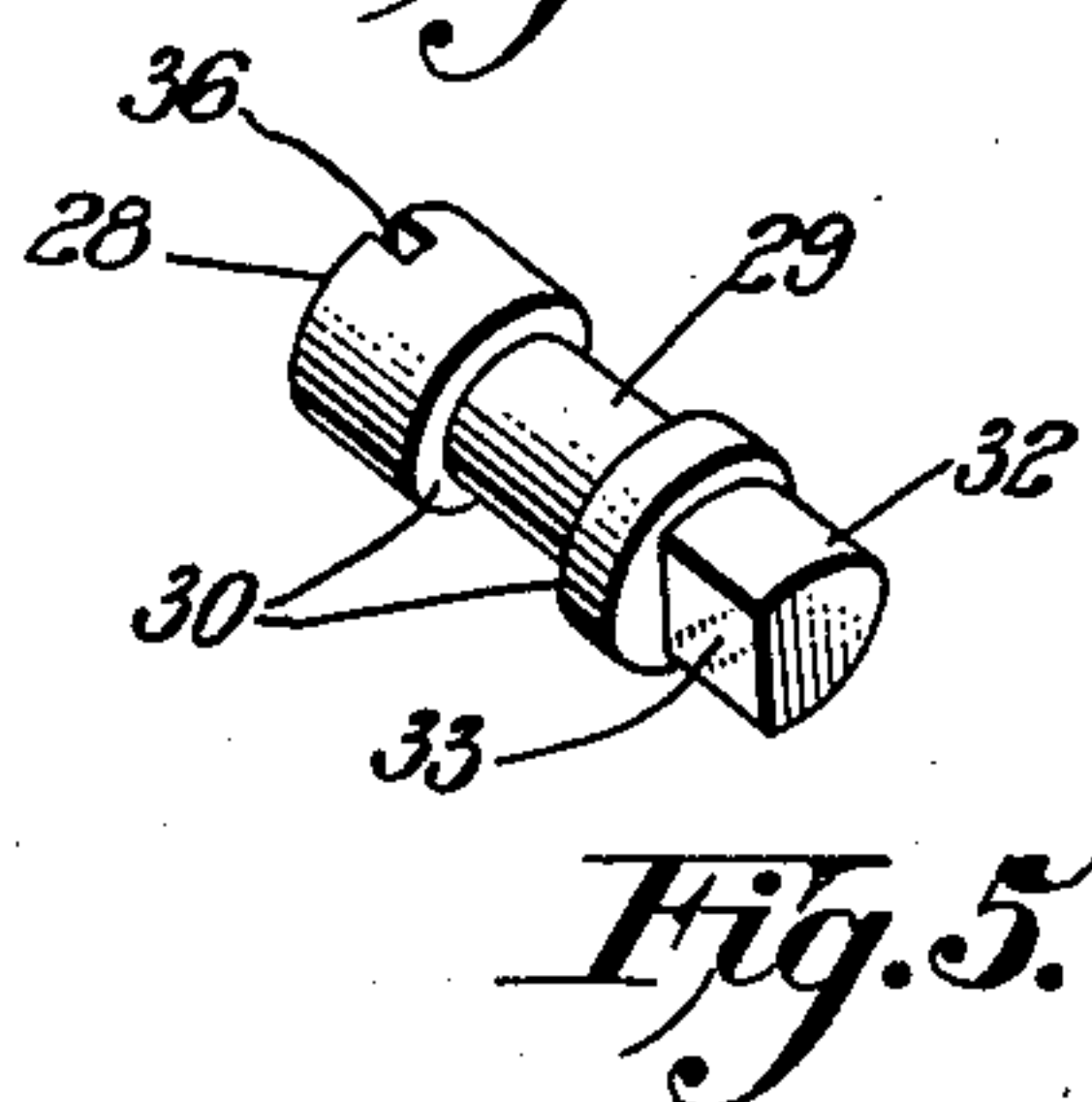
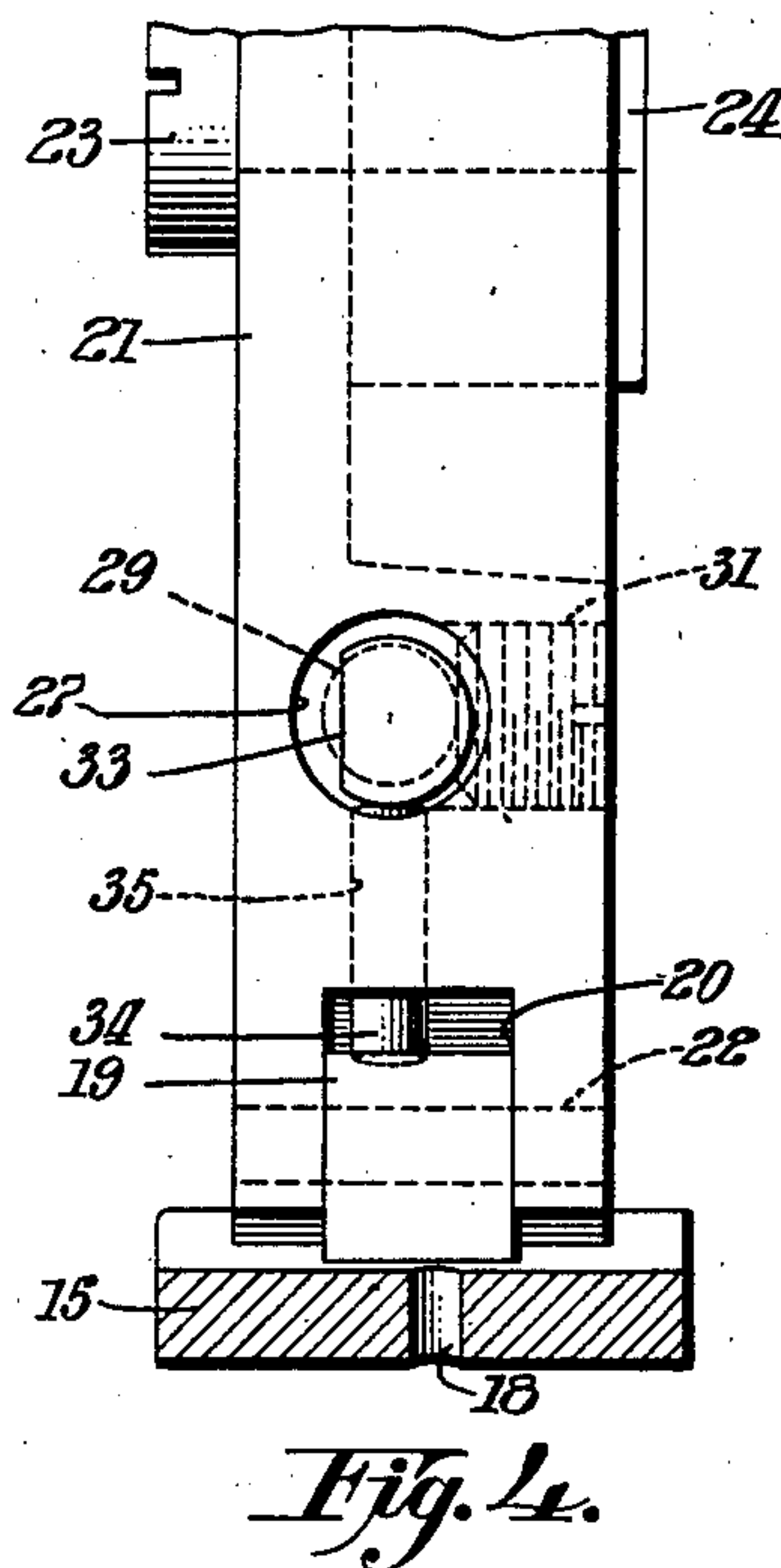
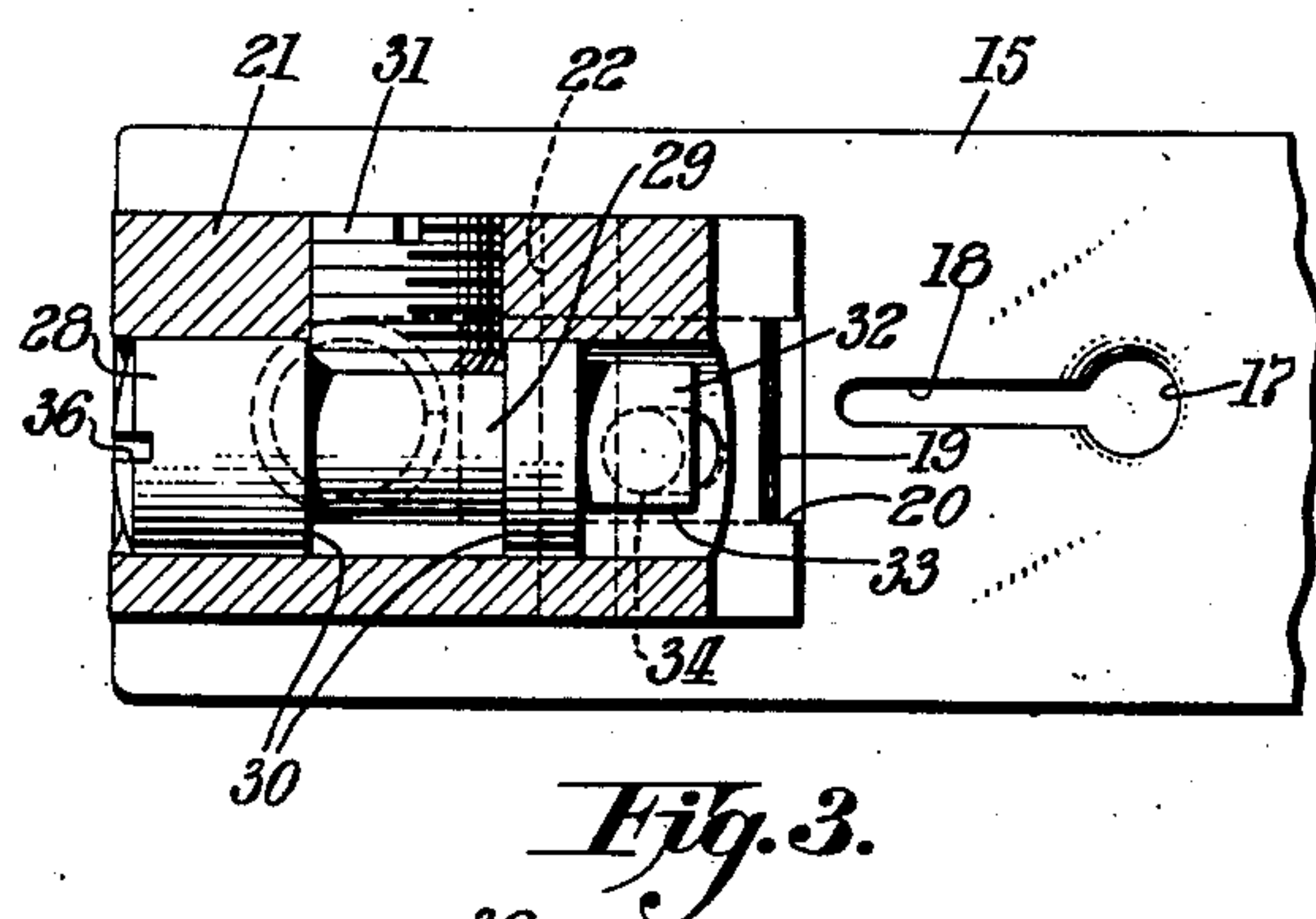
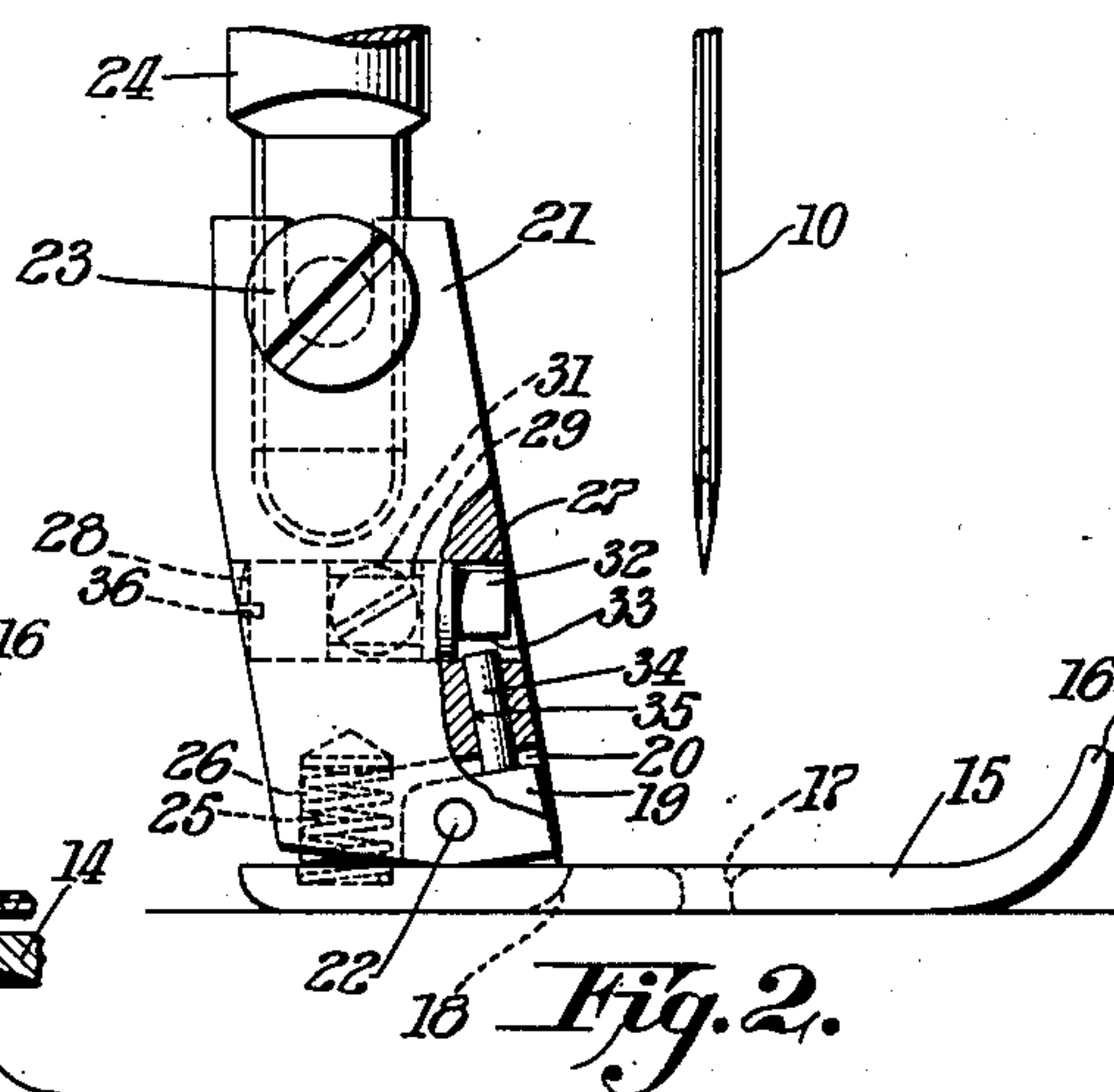
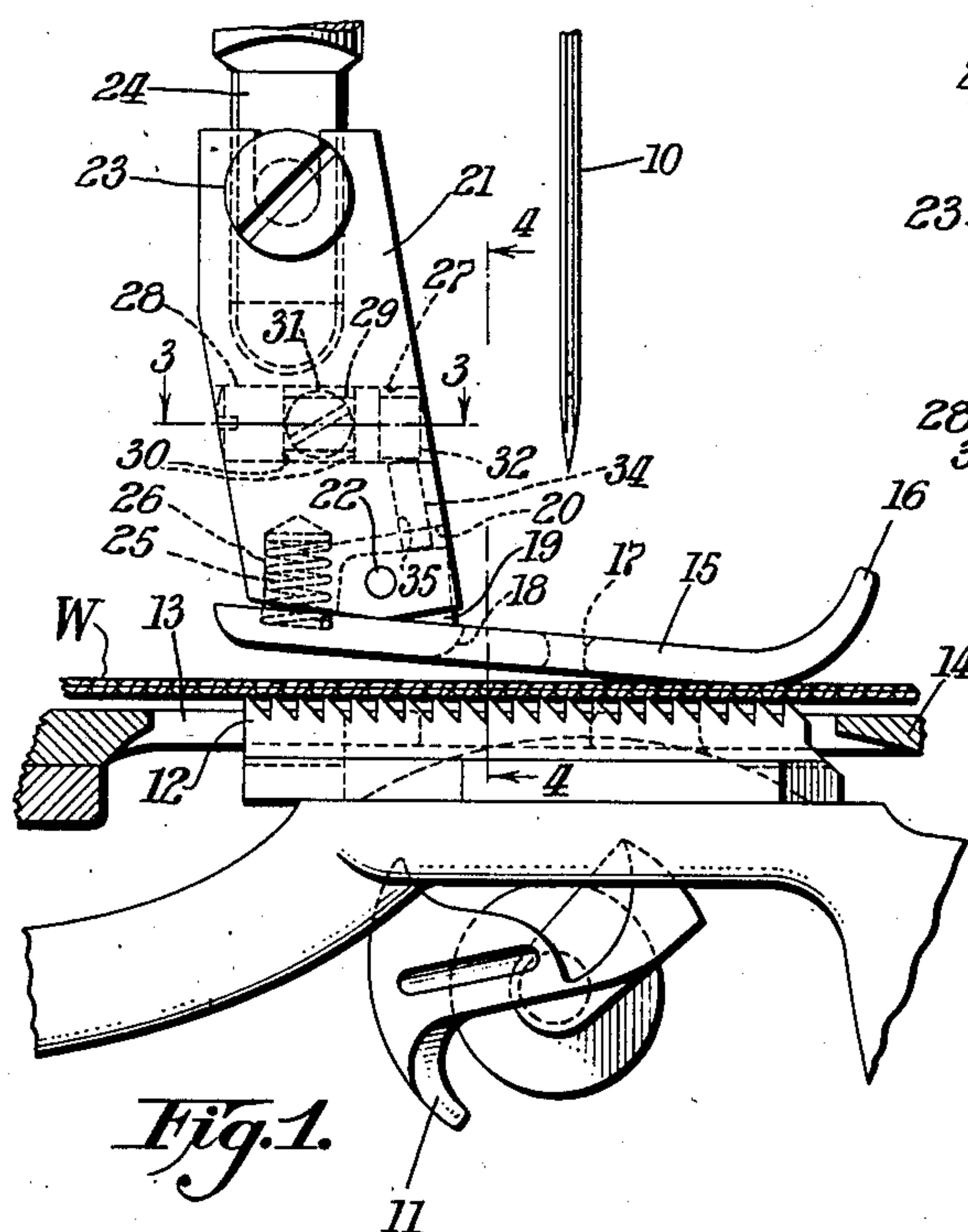
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2,343,609

PRESSER-FOOT FOR SEWING MACHINES

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2,343,609

PRESSER FOOT FOR SEWING MACHINES

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5 Claims. (Cl. 112—235)

This invention relates to improvements in sewing machine presser-feet of the type capable of being adapted for employment to effect fulling or shirring of the work as well as for the usual plain stitching operations.

The present invention has for its object to provide improved means for changing the effective action of a sewing machine presser-foot for alternative employment for plain stitching and for fulling or shirring operations.

The invention consists in the presser-foot construction hereinafter described in connection with the accompanying drawing, which illustrates a preferred embodiment of the invention and in which:

Fig. 1 is a left side elevation of the presser-foot, the needle, the rotary looper and a portion of the feeding mechanism of a sewing machine containing the present improvement, the throat-plate of the machine and the work being shown in section, and the presser-foot being tilted for fulling the work. Fig. 2 is a left side elevation of the presser-foot and the needle, with the presser-foot shown in plain stitching position and partly in section. Fig. 3 represents an enlarged top plan view, partly in section, of a portion of the presser-foot; the section being taken substantially on the line 3—3 of Fig. 1. Fig. 4 is an enlarged front side elevation, partly in section, of the presser-foot; the section being taken through the sole-plate on substantially the line 4—4 of Fig. 1. Fig. 5 is a perspective view of the sole-plate positioning member.

The sewing machine shown in part in the drawing has a vertically reciprocatory needle 10 and a wing-type rotary looper 11 complementary to the needle 10 in the formation of chain-stitches. The work W is intermittently advanced by a conventional lower four-motion feed-dog 12 which operates through feed slots, as 13, provided in a work-supporting throat-plate 14.

Opposed to the feed-dog 12 is the sole-plate 15 of the present improved presser-foot. The sole-plate 15 has an upturned toe 16 at its forward end and is provided with a needle-aperture 17; said needle-aperture 17 merging into the usual rearwardly extending thread-chain clearance slot 18 and being disposed medianly between the front and rear ends of the presser-foot.

Rising from the sole-plate 15, rearwardly of the needle-aperture 17, is a lug 19. The lug 19 enters a clearance-recess 20 formed in the lower end of a shank-member 21; the sole-plate 15 being pivotally secured to the shank-member 21 by a hinge-pin 22 extending horizontally through

said shank-member and the lug 19 crosswise of the line of seam formation. The shank-member 21 is detachably secured by a screw 23 to the lower end of a conventionally spring-depressed presser-bar 24.

The upper face of the heel portion of the sole-plate 15 is recessed to receive the lower end of a coil-spring 25 disposed in a socket 26 formed in the lower end of the shank-member 21 rearwardly of the hinge-pin 22. The spring 25 functions yieldingly to tilt the toe 16 of the sole-plate 15 upwardly. The presser-foot as thus far described is of conventional construction.

In accordance with the present improvement, the shank-member 21 is provided with a circular hole 27 extending parallel to the line of seam formation and disposed above the shank-recess 20. Journaled for turning adjustment in the hole 27 is a cylindrical positioning-member 28 which is cut away between its ends to form a reduced shank 29 and axially spaced circumferential shoulders 30. A set-screw 31 is threaded into the presser-foot shank-member 21 for engagement with the reduced shank 29; said set-screw having a diameter substantially equal to the length of the reduced shank 29. The set-screw 31 thereby functions not only to secure the positioning-member in angularly adjusted position, but also serves to hold the positioning-member 28 against endwise movement when the set-screw 31 is released sufficiently to permit of turning adjustment of the positioning-member 28.

At its forward end, the positioning-member 28 is reduced to form an eccentric-head 32 which is lengthwise cut away or slabbed at one side of its axis to form a flat face 33. The eccentric-head 32 of the positioning-member overlies a thrust-pin 34 which is slidably disposed for endwise movement in a vertically inclined aperture 35 formed in the wall of the shank-member 21 to extend from the shank-member hole 27 to the sole-plate lug clearance-recess 20. The thrust-pin 34 is disposed so that the lower end thereof engages the upper face of the sole-plate lug 19 in advance of the hinge-pin 22.

In the conventional use of the described presser-foot for plain stitching operations, the positioning-member 28 is angularly adjusted and set in a position wherein the flat face 33 of the eccentric-head 32 is opposed to the upper end of the thrust-pin 34 as illustrated in Fig. 2 of the drawing. In this position of the member 28, the thrust-pin 34 is spaced from the eccentric-head 32 when the presser-foot sole-plate 15 assumes its

horizontal position of flatwise engagement with the work. Consequently, the sole-plate 15 is at this time free to rock a limited extent about the hinge-pin 22. In this position, the presser-foot sole-plate 15 is opposed to the feed-dog 12 both forwardly and rearwardly of the path of needle reciprocation, so that there is no special tendency to full or shirr the work.

However, when operating upon stretchy materials, there is a decided tendency to elongate the work by the work-advancing action of the feed-dog 12. As the needle penetrates the work after a work-advancing movement of the feed-dog, the work is secured in its stretched condition by the stitches, whereby the work is distorted along the seam line.

To overcome this difficulty, the positioning-member 28 is angularly adjusted so that the eccentric circular face of the head 32 thereof is brought into engagement with the upper end of the thrust-pin 34 to depress said thrust-pin, thereby tilting the forward or toe end of the sole-plate 15 downwardly, as illustrated in Fig. 1 of the drawing. The positioning-member 28 may, of course, be adjusted into a plurality of set positions determining different angles of inclination of the sole-plate 15, to meet different requirements. In order conveniently to turn the positioning-member 28, the rearward end thereof is provided with a screw-driver slot 36.

In the inclined position of the sole-plate 15 illustrated in Fig. 1 of the drawing, the work is fed in advance of the path of needle-reciprocation in a manner to crowd the work at the stitching point. When the work is of a stretchy character, the result may be a mere fulling of the work at the needle path to an extent compensating for the stretching of the work incidental to the feeding action of the feed-dog 12.

Should the work be of a more inelastic character, the feeding of the work solely in advance of the needle results in shirring the work; the fullness of the shirring varying with different angles of inclination of the presser-foot sole-plate 28.

Having thus set forth the nature of the invention, what I claim herein is:

1. A sewing machine presser-foot comprising, a shank-member, a work-engaging sole-plate pivotally carried by said shank-member for tilting movements about an axis extending crosswise of said sole-plate, an upright thrust-pin slidably supported upon said shank-member for endwise engagement with the upper face of said sole-plate at a point spaced from the pivot-axis of the sole-plate, a positioning-member journaled upon said shank-member for turning adjustment into and

out of sole-plate tilting engagement with said thrust-pin, and means for securing said positioning-member in set position.

2. A sewing machine presser-foot comprising, a shank-member, a work-engaging sole-plate pivotally carried by said shank-member for tilting movements about an axis extending crosswise of said sole-plate, an upright thrust-pin slidably supported upon said shank-member for endwise engagement with the upper face of said sole-plate at a point spaced from the pivot-axis of the sole-plate, a positioning-member journaled upon said shank-member for turning adjustment, said positioning-member having an eccentric-head disposed for peripheral engagement with the upper end of said thrust-pin, and means for securing said positioning-member in set position.

3. A sewing machine presser-foot comprising, a shank-member, a work-engaging sole-plate pivotally carried by said shank-member, a positioning-member journaled upon said shank-member and disposed above said sole-plate for turning adjustment, said positioning member having a slatted eccentric-head, and a thrust-pin interposed between said eccentric-head and a portion of said sole-plate spaced from the pivotal axis of the sole-plate, said thrust-pin being supported by and confined to endwise movement upon said shank-member.

4. A sewing machine presser-foot comprising, a shank-member, a work-engaging sole-plate pivotally carried by said shank-member, a cylindrical positioning-member journaled for turning adjustment in said shank-member and disposed above said sole-plate, said positioning-member having an eccentric-head, means for restraining said positioning-member against endwise movement during turning adjustment thereof, and means interposed between said eccentric-head and said sole-plate for tilting said sole-plate by turning adjustment of said positioning-member.

5. A sewing machine presser-foot comprising, a shank-member, a work-engaging sole-plate pivotally carried by said shank-member, a cylindrical positioning-member journaled for turning adjustment in said shank-member above said sole-plate, said positioning-member having an eccentric-head and being provided with axially spaced and circumferentially extending shoulders, a set-screw threaded into said shank-member for engagement with said positioning-member between said shoulders, and a thrust-pin interposed between said eccentric-head and a portion of said sole-plate spaced from the pivot-axis thereof, said thrust-pin being supported by and confined to endwise movement upon said shank-member.

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