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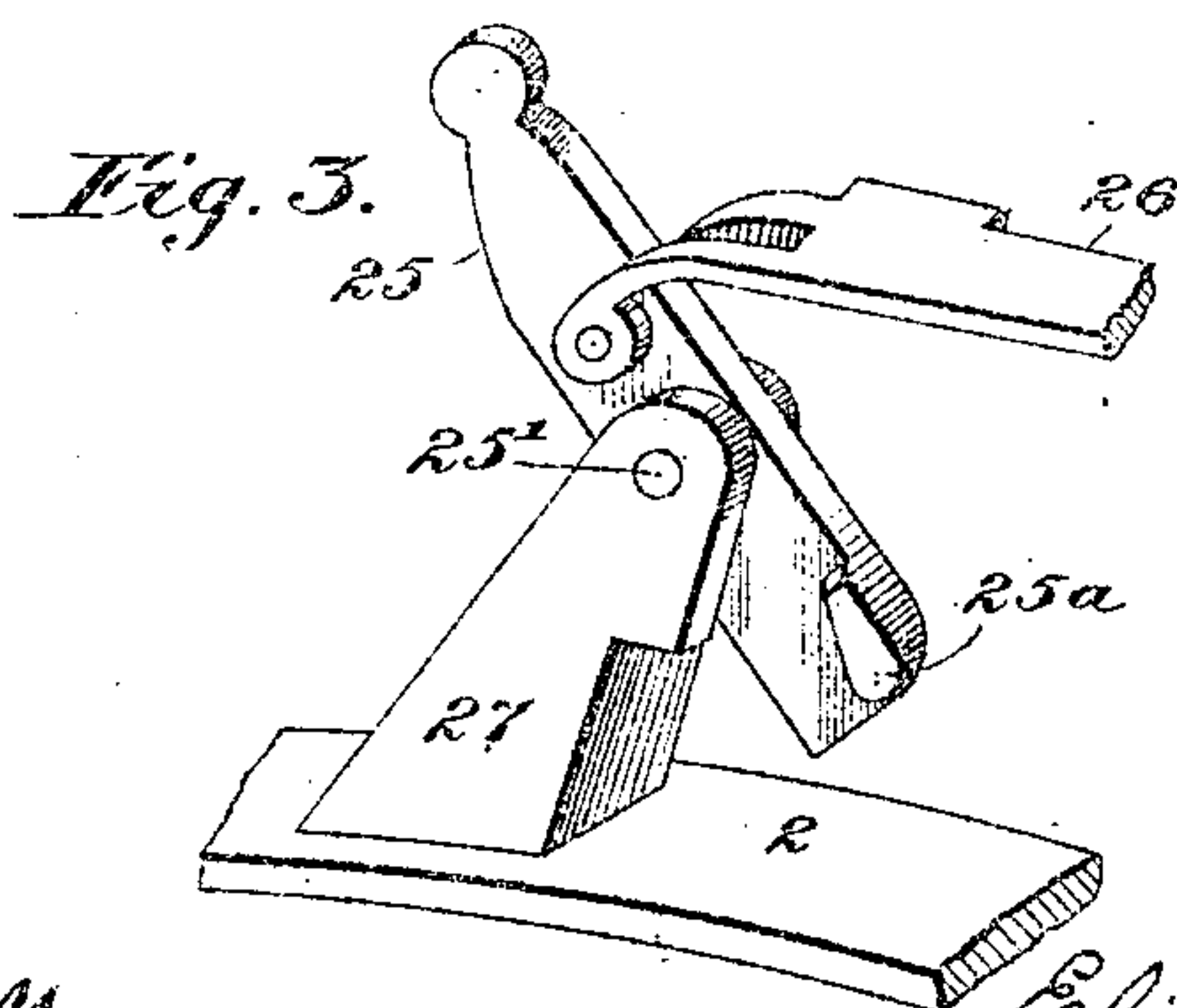
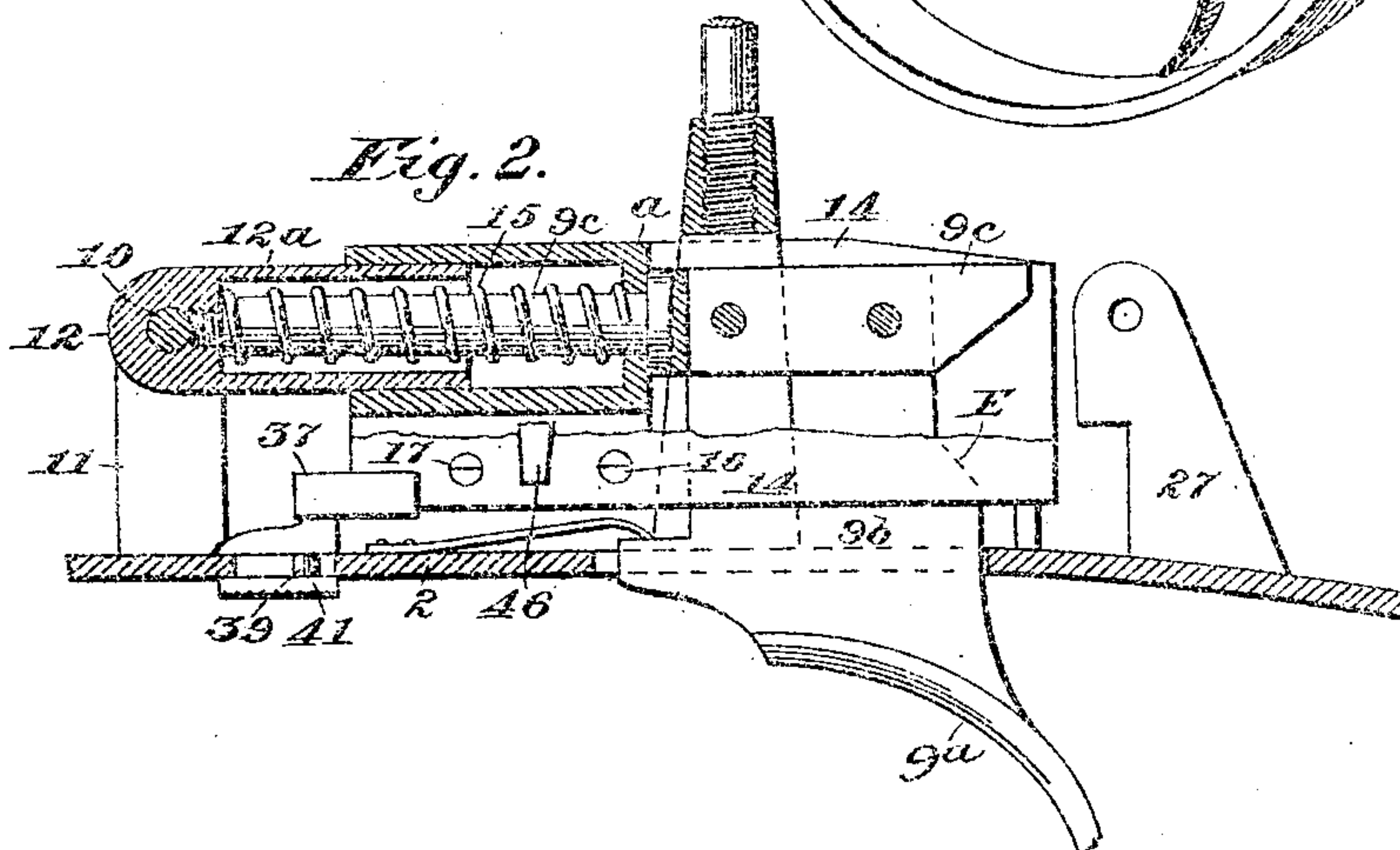
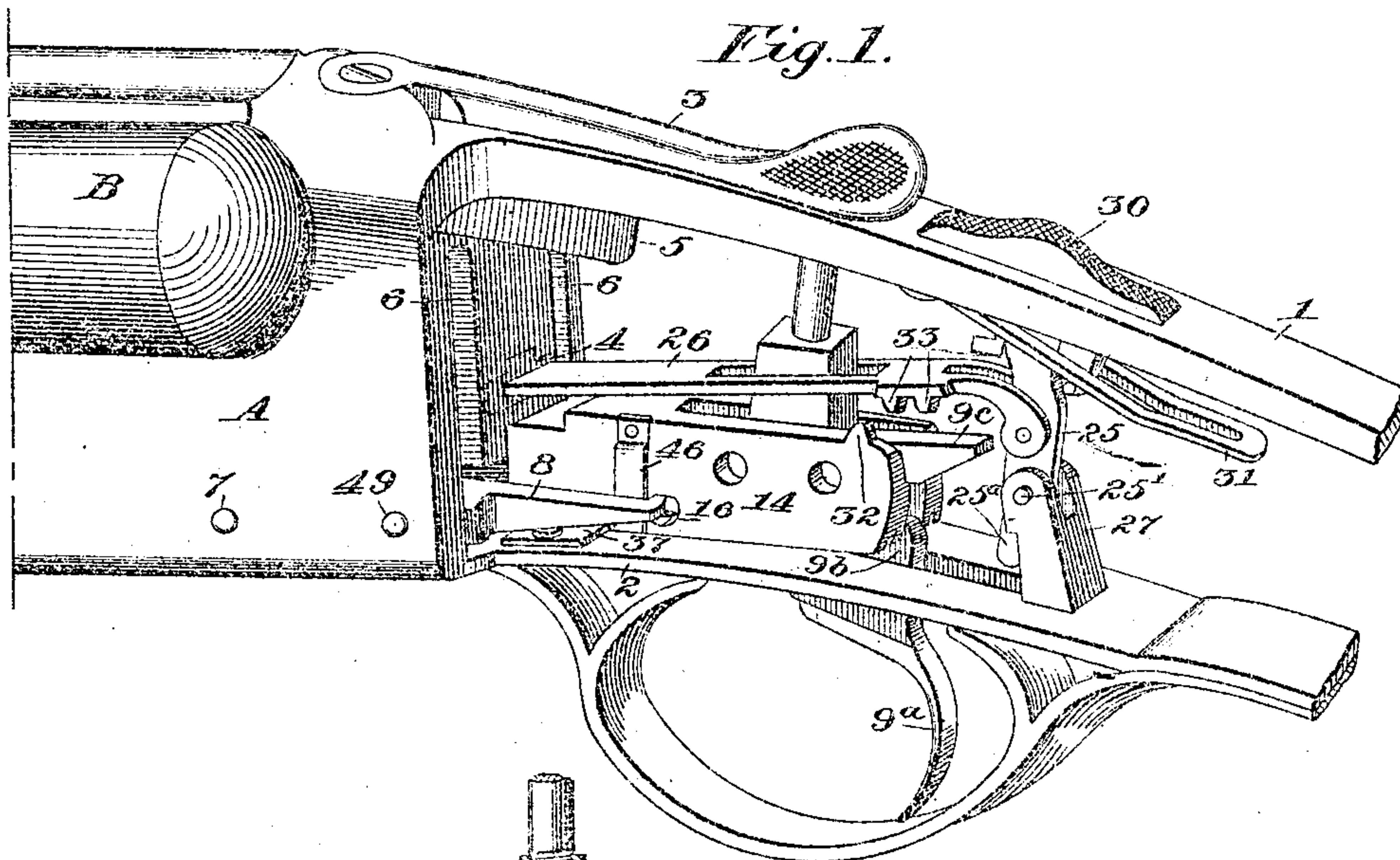
PATENTED FEB. 9, 1904.

E. D. FULFORD.  
SINGLE TRIGGER FOR FIREARMS.

APPLICATION FILED DEC. 11, 1901.

NO MODEL.

2 SHEETS--SHEET 1.



Witnesses:  
Frank C. Wells  
S. A. Brown

Inventor:  
Elijah D. Trilford  
by Milton E. Robinson  
Attorney

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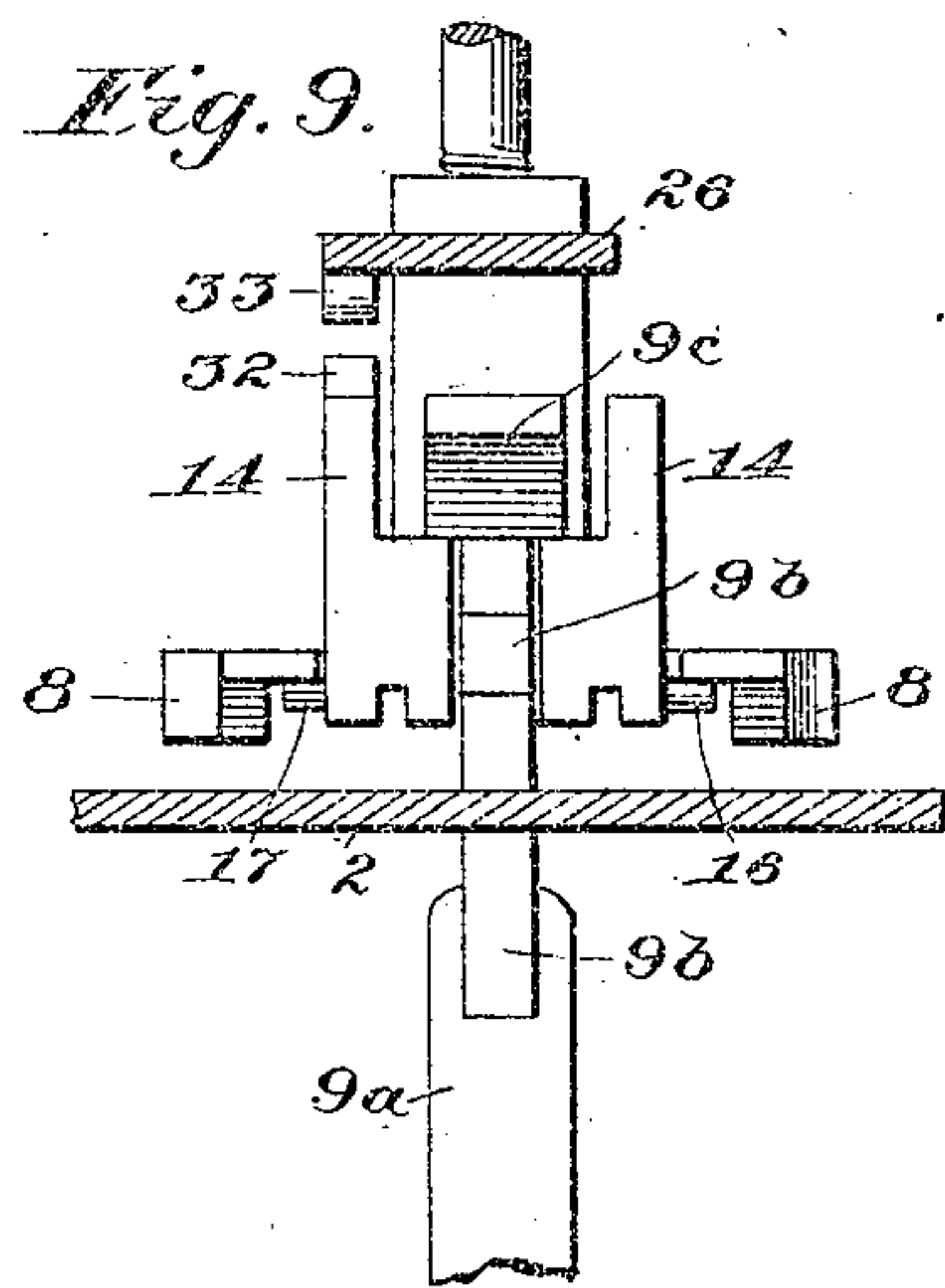
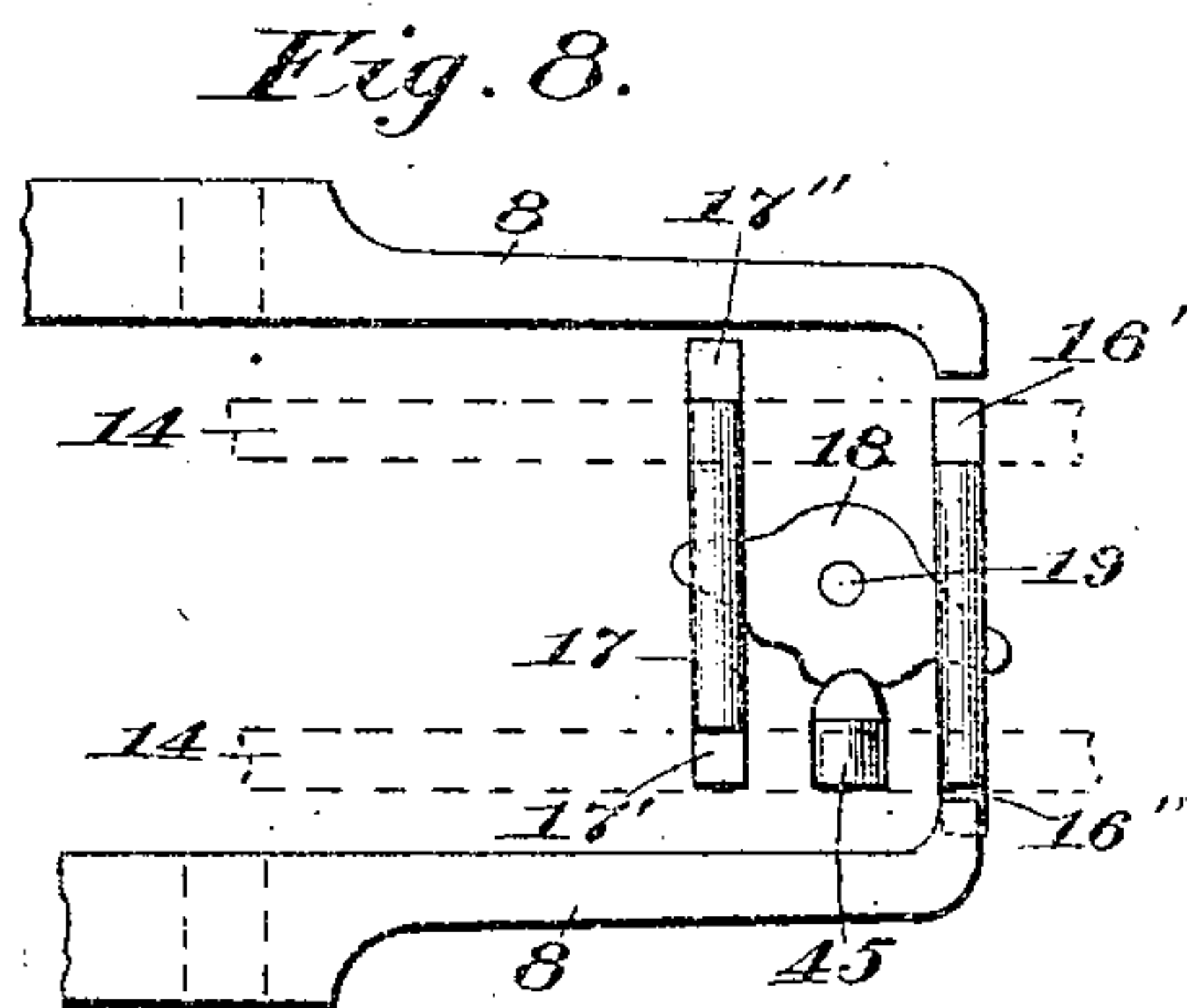
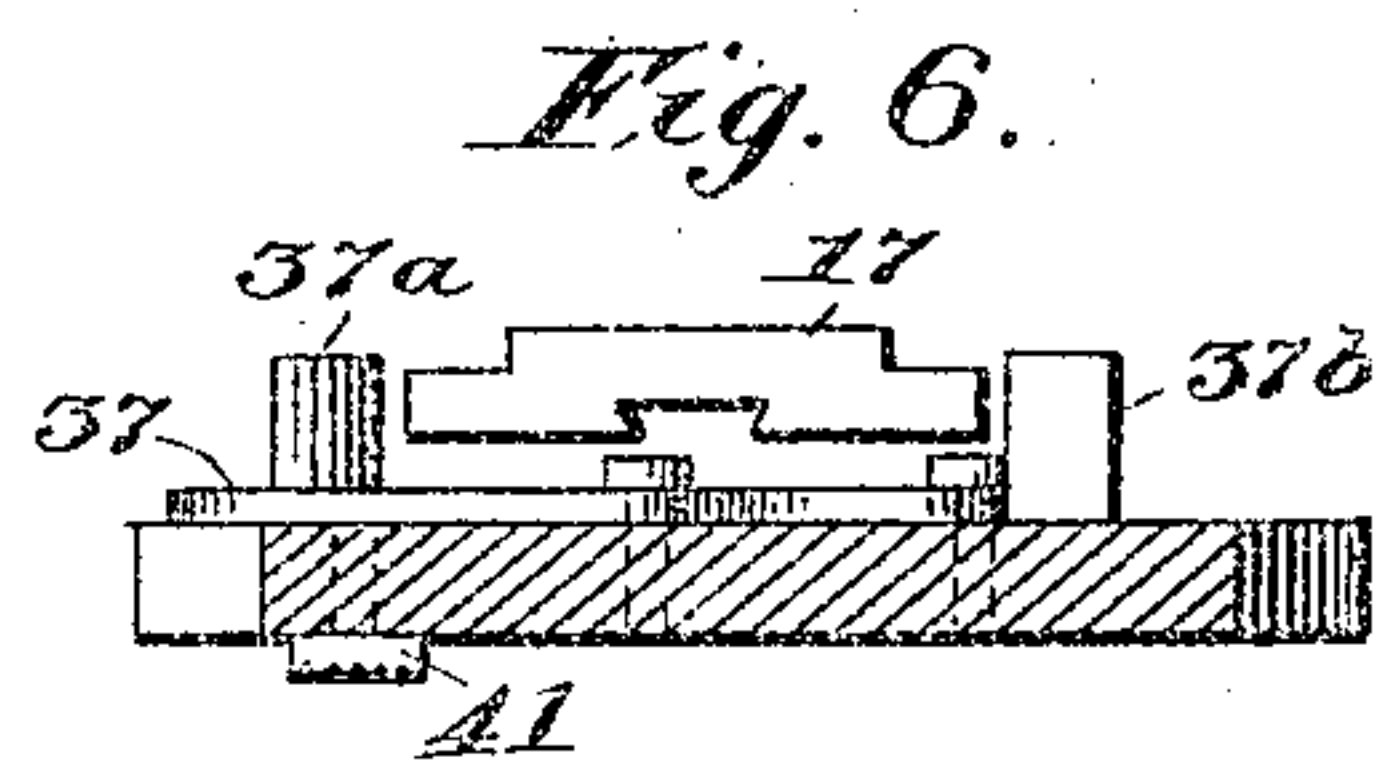
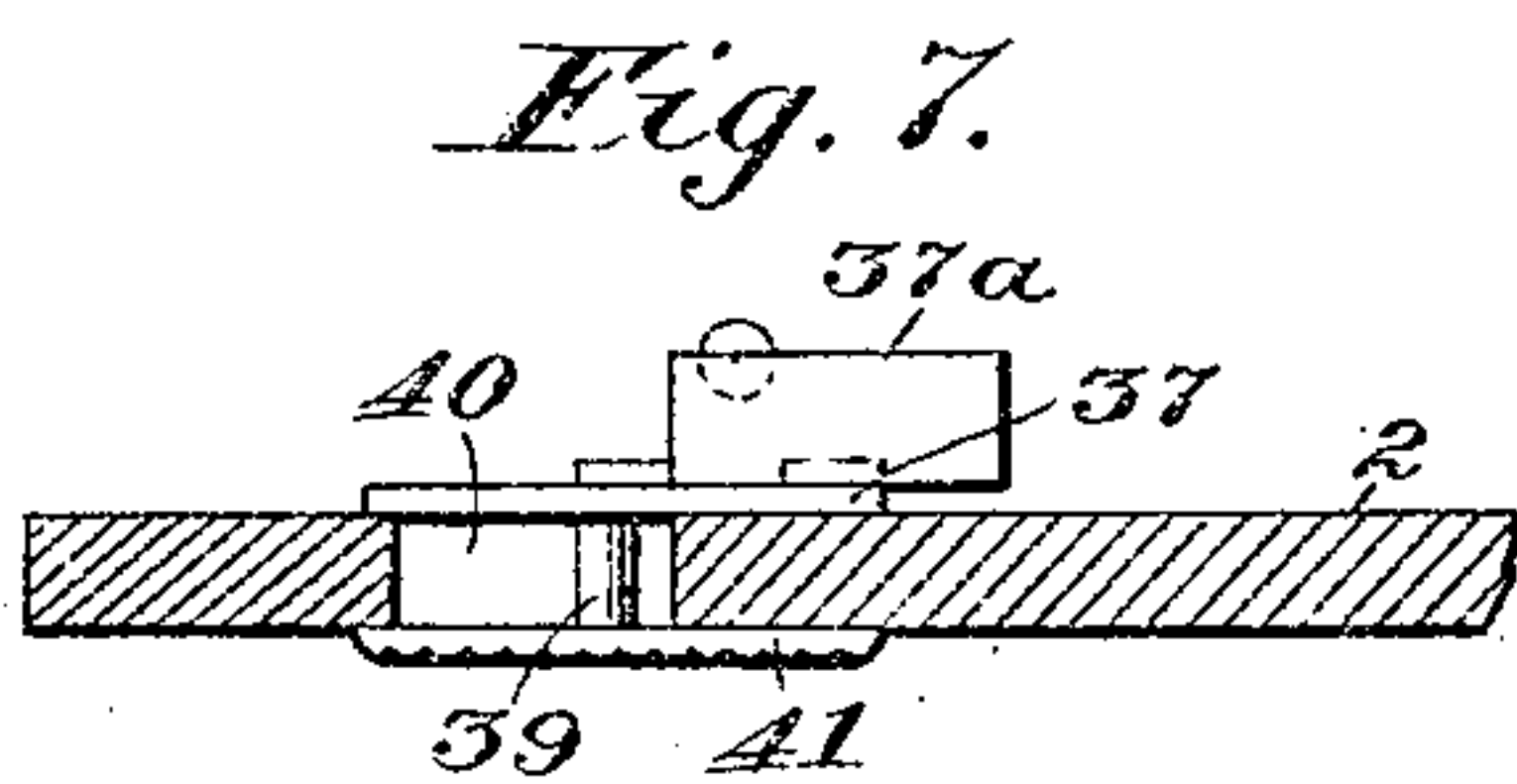
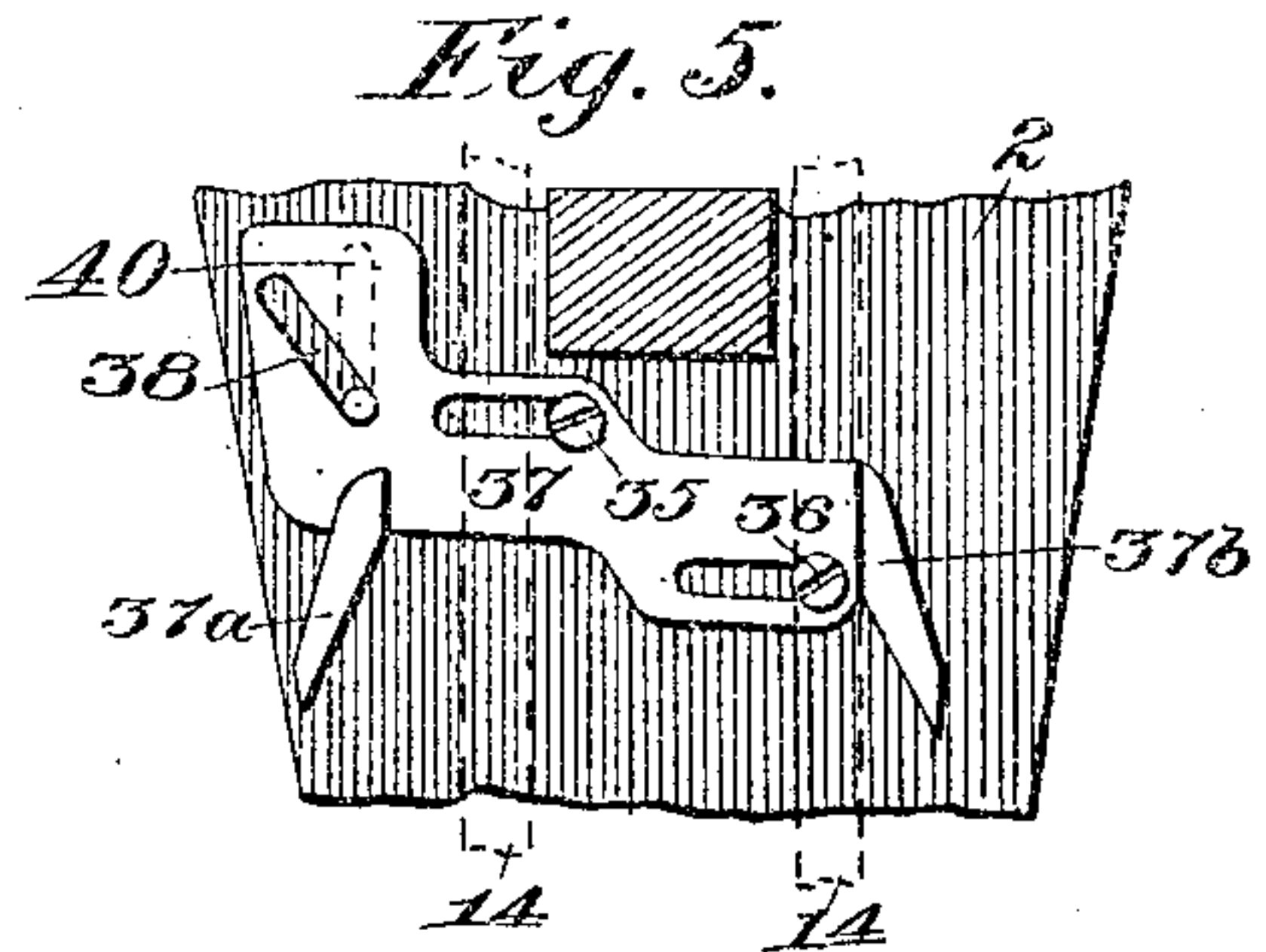
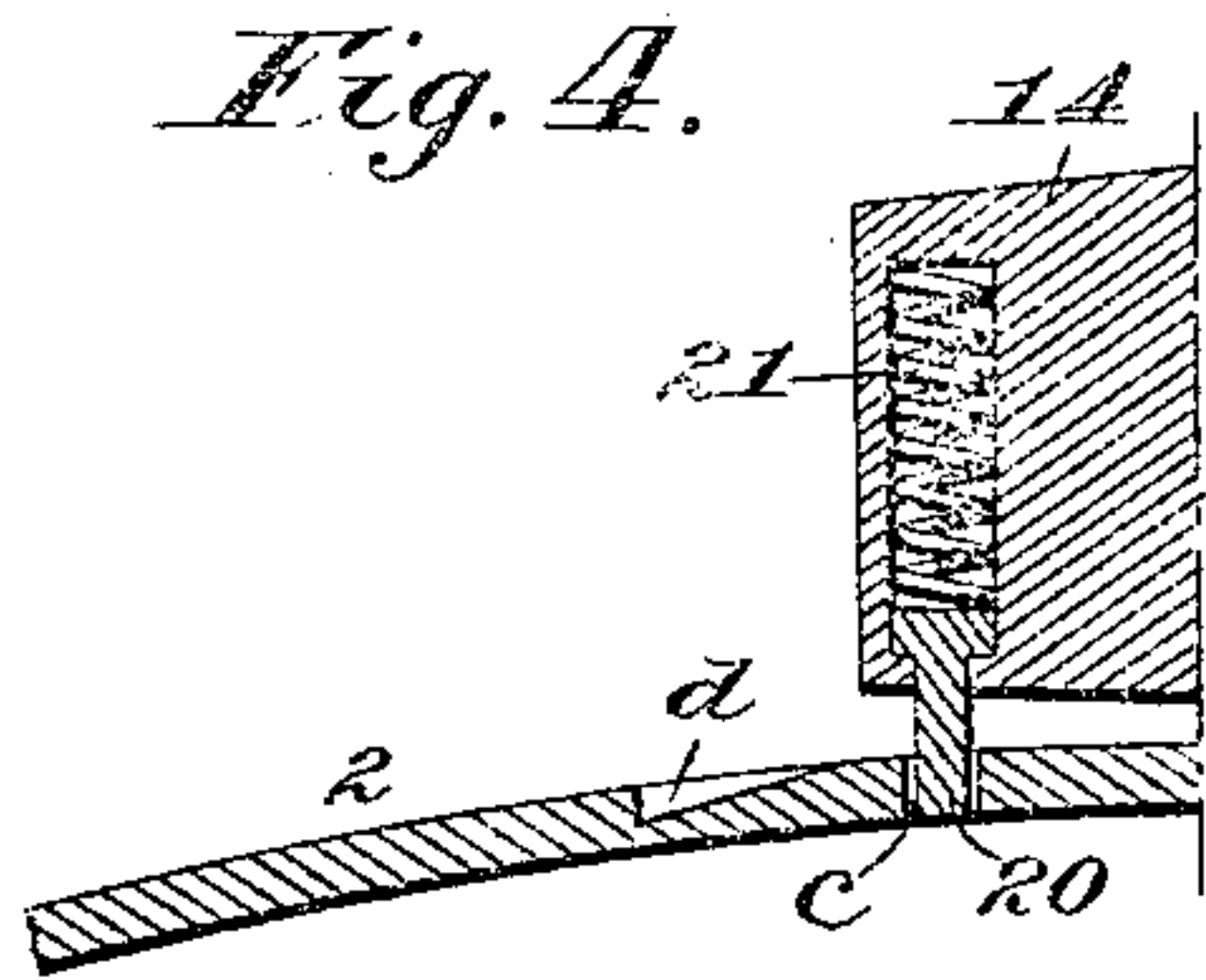
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2 SHEETS—SHEET 2.



Witnesses:  
Frank C. Wells  
S. A. Brown.

Inventor:  
Elijah D. Fulford  
by Milton E. Robinson  
Attorney



# UNITED STATES PATENT OFFICE.

ELIJAH D. FULFORD, OF UTICA, NEW YORK, ASSIGNOR OF ONE-HALF TO  
J. H. WEBSTER AND PAUL NORTH, OF CLEVELAND, OHIO.

## SINGLE TRIGGER FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 751,979, dated February 9, 1904.

Application filed December 11, 1901. Serial No. 85,420. (No model.)

*To all whom it may concern:*

Be it known that I, ELIJAH D. FULFORD, of Utica, in the county of Oneida and State of New York, have invented certain new and useful  
5 Improvements in Single Triggers for Firearms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use  
10 the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form part of this specification.

The object of my present invention is to provide a single-trigger mechanism for fire-arms which is simple in its construction and efficient in its operation and particularly intended to provide against what is known as the "involuntary pull."

20 In the drawings, Figure 1 shows a perspective view of the trigger and mechanism in connection with the adjacent portions of the fire-arm and as applied to what is known as a "double-barrel" shotgun with the stock removed.  
25 Fig. 2 shows a vertical longitudinal section of portions of the mechanism. Fig. 3 shows a perspective view of the resetting and locking lever in connection with its supports and portions of the operating mechanism. Fig. 4  
30 shows in section details of a catch employed in the construction. Fig. 5 shows a plan view, Fig. 6 a side elevation, and Fig. 7 an end elevation, of a shifting mechanism for adapting the single trigger to operate first upon one firing  
35 mechanism and then the other, or vice versa. Fig. 8 shows in plan view, on an enlarged scale, the sears in their relative positions and the operative portion of the shifting-catch mechanism, whereby the order of the firing  
40 may be reversed. Fig. 9 shows a rear end view of the major portion of the trigger mechanism in connection with sections of the trigger-plate and the thrust-rod or operating-bar.

Referring to the reference letters and figures  
45 in a more particular description, A indicates the usual frame of what is known as a "break-down breech-loading double-barrel" shotgun, to the forward end of which frame A are pivoted in the usual manner the barrels B.

The frame is provided with the upper tang 1 50 and has secured in its under side what is known as the "trigger-plate" 2, which in practice amounts to another tang to the frame. The arm is provided with the usual top lever 3, which, among other things, operates the lock- 55 bolt 4, that locks the barrels in closed position on the frame. This top lever is operated to its closed position by the usual spring 5. The hammers, which are not shown, but are of the usual inclosed form, are within the recesses 6 6 60 in either side of the frame and are pivoted on pivots, the end of which is shown and is indicated by 7. With the hammers are adapted to engage in the usual manner the forward ends of the sears 8, which sears are pivoted on a pin 49, 65 passing transversely through the frame. The rear ends of the sears 8 are provided with inwardly-turned ends, as shown.

A trigger which consists of the finger portion 9<sup>a</sup> and plate-like portion 9<sup>b</sup>, passing 70 through a slot in the trigger-plate and the body or internal portion 9<sup>c</sup>, is pivoted at 10 to a standard or post 11, secured on the trigger-plate. A spring 50 is provided secured on the trigger-plate and engaging on a shoulder 75 in the part 9<sup>b</sup> for forcing the trigger downwardly. The body portion 9<sup>c</sup> of the trigger is formed cylindrical in part and at its forward end is secured in the pivot-piece 12, which piece includes a sleeve-like portion 12<sup>a</sup>. 80 On the body or internal portion of the trigger is provided a slide or reciprocating trigger part 14, which in the main consists of two connected side plates and which trigger part has a bearing at *a* on the part 9<sup>c</sup> and at *b* on the 85 sleeve 12<sup>a</sup>. The bearing *a* is formed in a cross-wall in the part 14, and between this cross-wall and the head of the pivot-piece 12 is interposed a spring 15, adapted to move the part 14 toward the rear or away from the pivot 10. 90 The part 14 may be made somewhat bulky, whereby it has considerable weight in and of itself. The movable trigger part 14 carries a set of catch-shoulders 16', 16'', 17', and 17'', which are formed in or on the projecting ends 95 of the transverse pins 16 and 17, passing through the part 14. The pins 16 and 17 are capable of sliding lengthwise through the part



14 and are connected by a rocker 18, mounted on a pivot 19, and the arrangement is such that when the end of one of the pins—say 16—projects on one side of the part 14 the end of the other pin, as 17, will project on the opposite side, all as clearly appears from Fig. 8 of the drawings. The projecting ends of the pins 16 and 17 are adapted to alternately engage with one or the other of the sears 8.

10 In the rear end of the movable trigger part 14 there is provided a catch-pin 20, which is capable of a limited movement into the socket *c*, which receives it, as shown in Fig. 4, and is held or pressed down by the spring 21 in said socket. The said catch-pin 20 is adapted to engage on a shoulder, which, as shown, is a hole *c* in the trigger-plate 2, and secures the movable trigger part 14 in its forward position. To the rear of the hole *c* there may be provided an incline *d*, on which the end of the pin 20 is adapted to engage and which will cause the pin to be forced up against the tension of the spring 21 when the part 14 is moved forward.

25 The combined resetting and safety-lock lever 25 is pivoted at 25' in a projection or support 27, secured to the trigger-plate 2 at the rear of the trigger-slot. To the lever 25 is attached a reciprocating bar or thrust-rod 26, the forward end of which is arranged to engage with the locking-bolt 4, heretofore mentioned. For resetting the movable trigger part 14 the lower end of the lever 25 engages with the rear end of the part 14 and to this end is provided with a sidewise-projecting part 25<sup>a</sup>, which, as shown, is only provided on one side of the lever 25, but may equally well be provided on both sides. This projection 25<sup>a</sup> prevents the lower end of the lever from entering the slot between the rear parts of the trigger part 14. To act as a safety-lock, the lower end of the lever 25 is adapted to engage on a shoulder *e* on the trigger. Mounted on the tang of the frame there is provided a sliding thumb-piece 30, which has projections engaging with the upper end of the lever 25, whereby the same may be operated. 31 is a spring for holding the thumb-piece 30 in its forward or rear position against accidental movement and when not forcibly moved. Upon the rear end of the movable trigger-piece 14 there is also provided an upwardly-projecting tooth 32, which is adapted when in its upper position to engage with one or the other of the teeth 33 on the under side of the thrust-bar 26.

As a means for adjusting the sear-catches there is provided on the trigger-plate 2, by means of screws or headed pins 35 36, passing through longitudinal slots therein, a transversely-sliding shifter 37. For operating this shifter there is provided therein an inclined slot 38, which receives the inner end of a pin 39, passing through the longitudinal slot 40 in the trigger-plate, and provided on its outer

end with a thumb-piece 41. The shifter is provided with upwardly-projecting shoulders 37<sup>a</sup> 37<sup>b</sup>, adapted to engage with the ends of the pin 17, and these shoulders are carried rearward in a spreading manner, as shown for purposes which will hereinafter appear. In order to maintain the pins 16 and 17 in one or the other of their two shifted positions, there is provided in the rocker 18 a pair of indentations adapted to receive the inner ends of the snap-pin 45. This pin 45 is pressed toward the rocker 18 by the spring 46.

As shown in Fig. 1, the mechanism is set ready for firing and, as shown, for firing the left-hand barrel first and the right-hand barrel subsequently. When the trigger is operated in the usual manner, the rear end swings up, turning about the pivot 10. In this operation the projecting end of the pin 16 engages with the left-hand sear, throwing up the rear end and releasing the hammer in the usual manner. As the trigger rises the pin 20 is drawn out from the hole in the trigger-plate, releasing the movable trigger part 14, which is then impelled toward the rear by the spring 15. It is, however, halted by the projection 32 engaging with one of the projections 33. With the recoil of the gun the trigger is involuntarily released more or less by the operator and immediately following the recoil is involuntarily pulled or operated. Upon releasing the trigger immediately following its operation upon the recoil taking place the recoil also acts upon the movable trigger part 14, or, more properly stated, the trigger part 14 by its own inertia tends to maintain the same position while the recoil of the gun carries the other parts of the trigger mechanism to the rear. Thus the sear-catches are held out of engagement with the sears at and during the recoil, and it takes some time following the recoil before the trigger part 14 is moved to its rearmost position by its spring 15, where the projecting end of the pin 17 is in position to engage with the sear of the firing mechanism which has not been operated. During this interval the involuntary pull, if any, has taken place and without any effect. In order that this action may be secured in its best and most perfect form, the weight of the movable part 14 and the strength of the spring 15 should be relatively adjusted so that under the heavy recoil the inertia of the part 14 may temporarily wholly or partially counteract the action of the spring 15. In case the recoil is not sufficient to produce an involuntary pull or when there is no recoil whatever the movable part 14 simply moves back, impelled by spring 15, to its rearmost position, where it is prepared to operate the firing mechanism of the second barrel. After the arm has been fired it is necessary to operate the top lever 3 to break-down the gun and reload the same. In operating the lever 3 the locking-bar 4 is moved back-



ward and engaging with the thrust-bar 26 swings the lever 25 from the position shown in Fig. 1 to that shown in dotted lines in Fig.

2. This moves the part 14 to its forward position, where it is retained by the catch-pin 20, entering the hole *c*. After being reset, as described, the construction, as shown, will remain with the lever 25, locking the trigger against movement. The operator may release the safety-lock by forcing forward the thumb-piece 30. I contemplate also dispensing with the safety feature, in which case the forward end of the thrust-bar 26 would be attached to or connected with the bolt 4, which would cause the lever 25 to recover the position shown in Fig. 1 after having reset the part 14.

The shifter 37 is so arranged on the trigger-plate that when the part 14 is in its forward position the pin 17 will lie directly between the shoulders 37<sup>a</sup> and 37<sup>b</sup> of the shifter. When in position, the pin 17 may be shifted through either side of the part 14 by operating the thumb-piece 41. When the pin 17 is operated in one direction, the pin 16 is operated in the other direction, so that there is always one sear-catch projecting on the opposite sides of the part 14. By this arrangement it will be observed that either barrel may be fired first. In case the shifter 37 is operated when the movable trigger part is in its rear position when it is moved forward the end of the pin 17 will engage with the inclined portion of one or the other of the inclined shoulders 37<sup>a</sup> or 37<sup>b</sup> and be forced through the part 14 without damage to the parts. The snap-pin 45 engages in the indentations in the rocker 18 and prevents accidental movement of the pins 16 and 17.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a single-trigger mechanism of the trigger and sears, a movable trigger part mounted on the trigger and movable toward the rear having catches for alternately engaging the sears, a spring for moving the said trigger part toward the rear, the spring and weight of said movable trigger part being arranged or adjusted to utilize the inertia, and a catch for securing said trigger part in its forward position, substantially as set forth.

2. In a single-trigger mechanism, the combination of two sears and a trigger, a trigger part mounted on the trigger, movable from the front toward the rear having catch-shoulders for alternately engaging said sears, a spring for moving said trigger part toward the rear, a catch for securing said trigger part in its forward position when the trigger is in its normal or not-pulled position, a stop-shoulder for stopping the rearward movement of said trigger part when the trigger is in its pulled or up position and means for resetting said movable trigger part, substantially as set forth.

3. In a single-trigger mechanism, the com-

bination of the trigger and sears of a rearwardly-movable trigger part weighted to utilize the inertia and having catch-shoulders for alternately engaging said sears, a catch for securing said trigger part in its primary or starting position when the trigger is unoperated, a spring for moving the said trigger part toward the rear when released, and adjusted to be affected by the inertia thereof and means for limiting the rearward movement of said trigger part with the second shoulder in position to engage with the sear, substantially as set forth,

4. The combination in a single-trigger mechanism of the sears and trigger, catches for alternately engaging the sears mounted on a rearwardly-movable part, a catch arranged to secure said rearwardly-movable part in its forward position with one of said catch projections in position to engage the sear, said catch being releasable upon the manipulation of the trigger, a spring for impelling said movable part toward the rear when released and adjusted to be effected by the inertia and recoil, and means for resetting said movable part, substantially as set forth.

5. In a single-trigger mechanism for firearms, the combination of the trigger and sears, a trigger part mounted on the trigger movable lengthwise of the arm, transversely-movable catch-pins mounted in said movable trigger part having catch-shoulders to engage the sears upon their ends, and mechanism connecting and for shifting said catch-pins whereby the ends are alternately presented at opposite sides of the movable trigger part, substantially as set forth.

6. In a single-trigger mechanism for firearms, the combination of the trigger, a trigger part mounted on the trigger and movable lengthwise of the firearm, a pin transversely movable through said movable trigger part having a catch-shoulder on its ends adapted to engage one or the other of the sears and means for shifting the position of said catch-pin, substantially as set forth.

7. The combination in a single-trigger mechanism of the sears and trigger, catches for alternately engaging the sears mounted on and rearwardly movable on the trigger, a catch arranged to secure said rearwardly-movable part in its forward position with one of said sear-catches in position to engage one of the sears, the said catch being releasable upon the manipulation of the trigger, a spring for impelling the said movable part toward the rear when released and means for resetting said movable part, and manually-operative means for shifting the position of said sear-catches, substantially as set forth.

8. The combination in a single-trigger mechanism of the trigger and sears, a trigger part mounted on the trigger and movable toward the rear having sear-catches for alternately engaging the sears, a spring for moving the



said trigger toward the rear, tensioned and proportioned with reference to the weight of the movable trigger part to utilize the inertia, as set forth, and a catch for securing said trigger part in its forward position, substantially as set forth.

9. The combination in a single-trigger mechanism of the trigger and sears, a catch for engaging the first-operated sear, a trigger part mounted on the trigger movably toward the rear having a catch for engaging the secondly-operated sear, a spring for moving said movable trigger part toward the rear, tensioned and proportioned with reference to the weight

of the movable trigger part to utilize the inertia of the part to retard the movement substantially as set forth, a catch for securing said trigger part in its forward position and mechanism for resetting the same, substantially as set forth.

In witness whereof I have affixed my signature, in presence of two witnesses, this 30th day of November, 1901.

ELIJAH D. FULFORD.

Witnesses:

E. WILLARD JONES,  
S. A. BROWN.