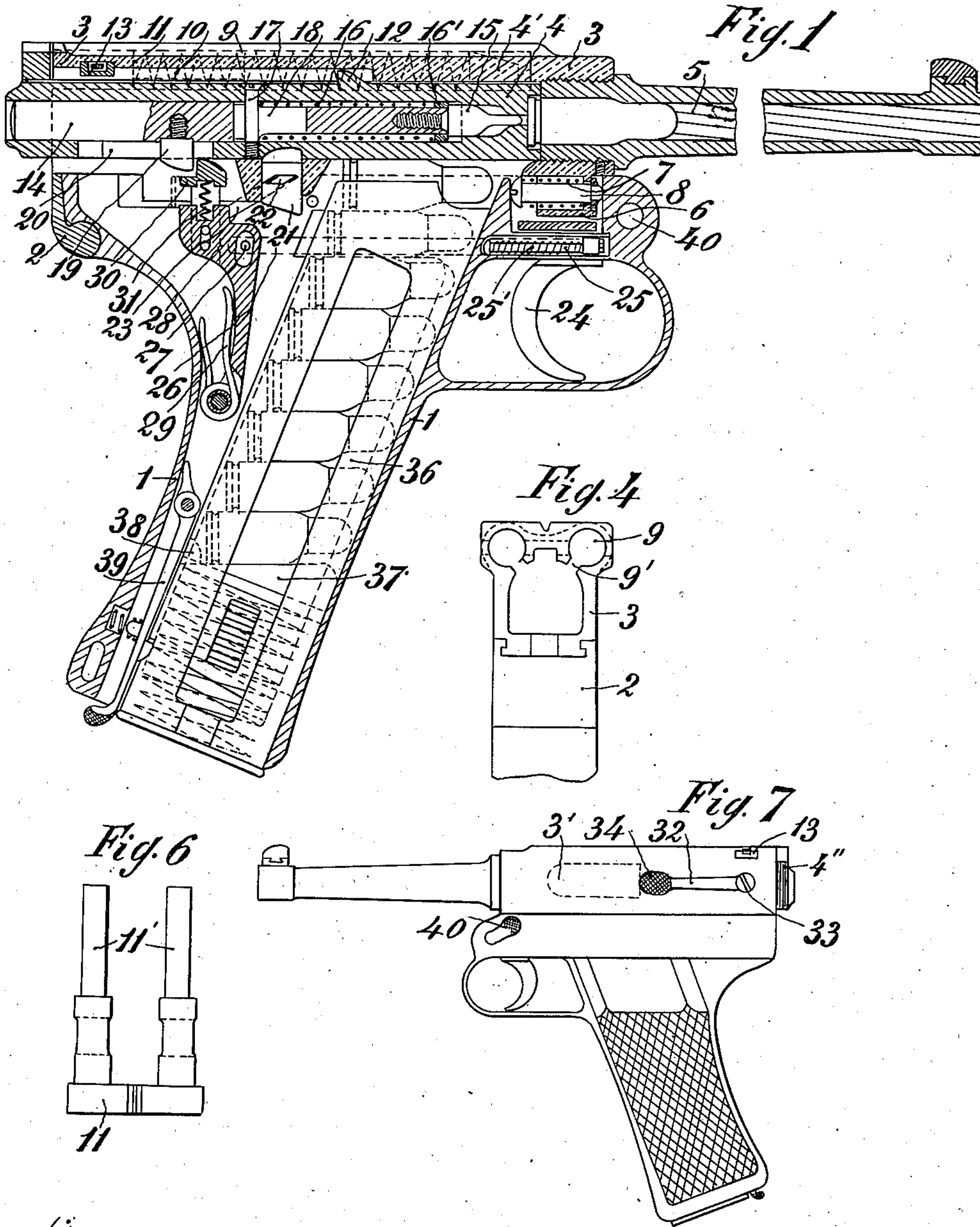


A. CUCCURULLO.  
AUTOMATIC PISTOL.  
APPLICATION FILED JUNE 9, 1910.

990,475.

Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.



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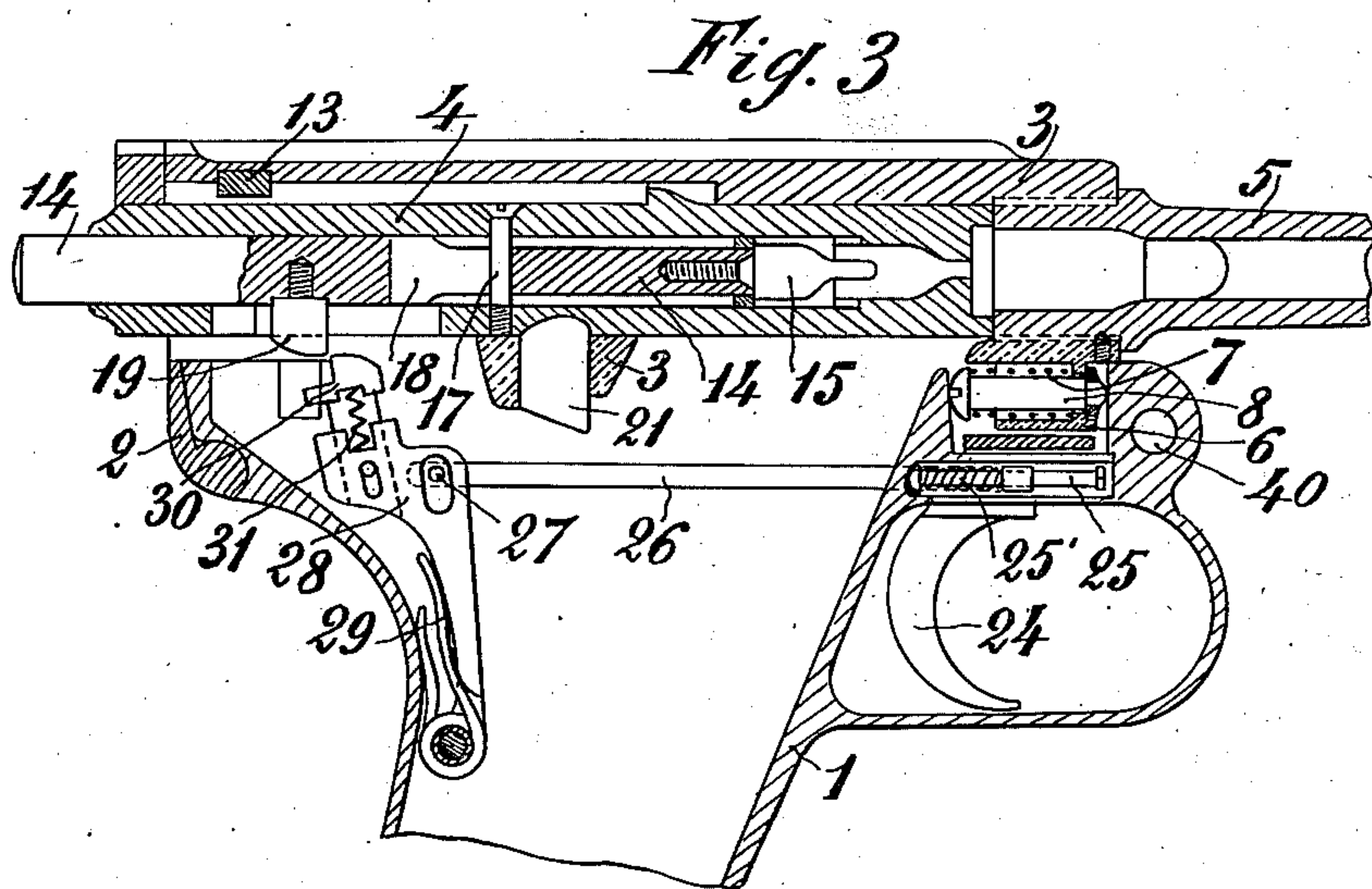
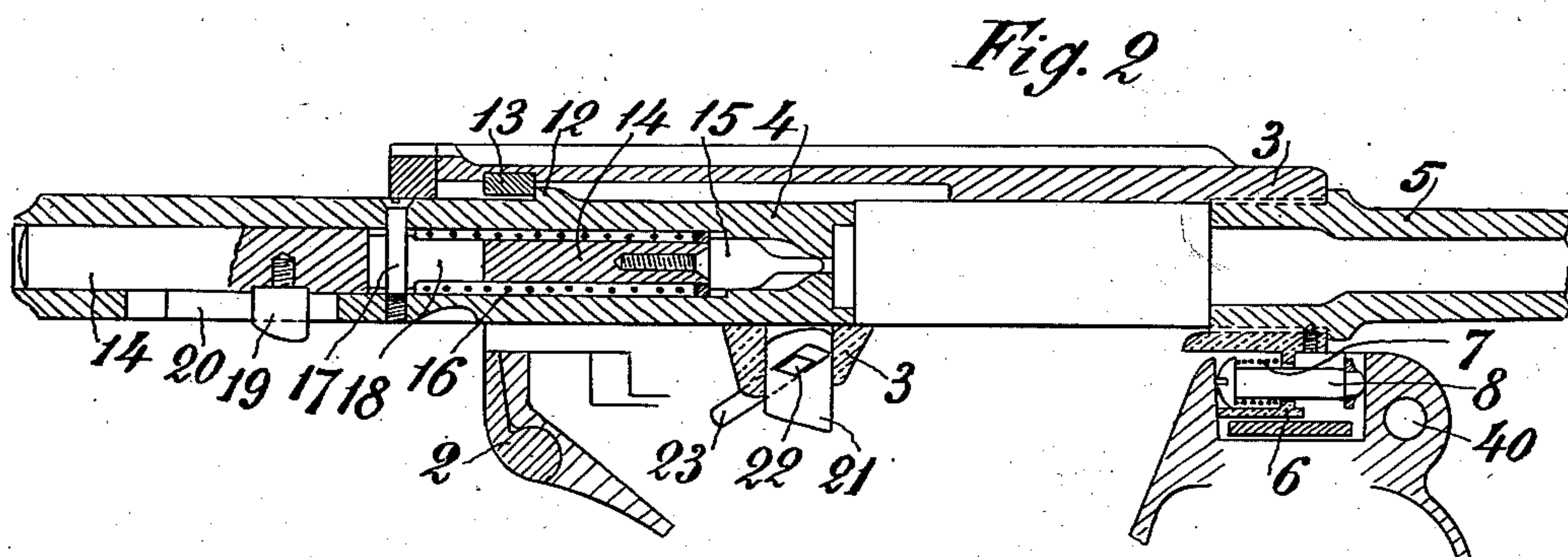
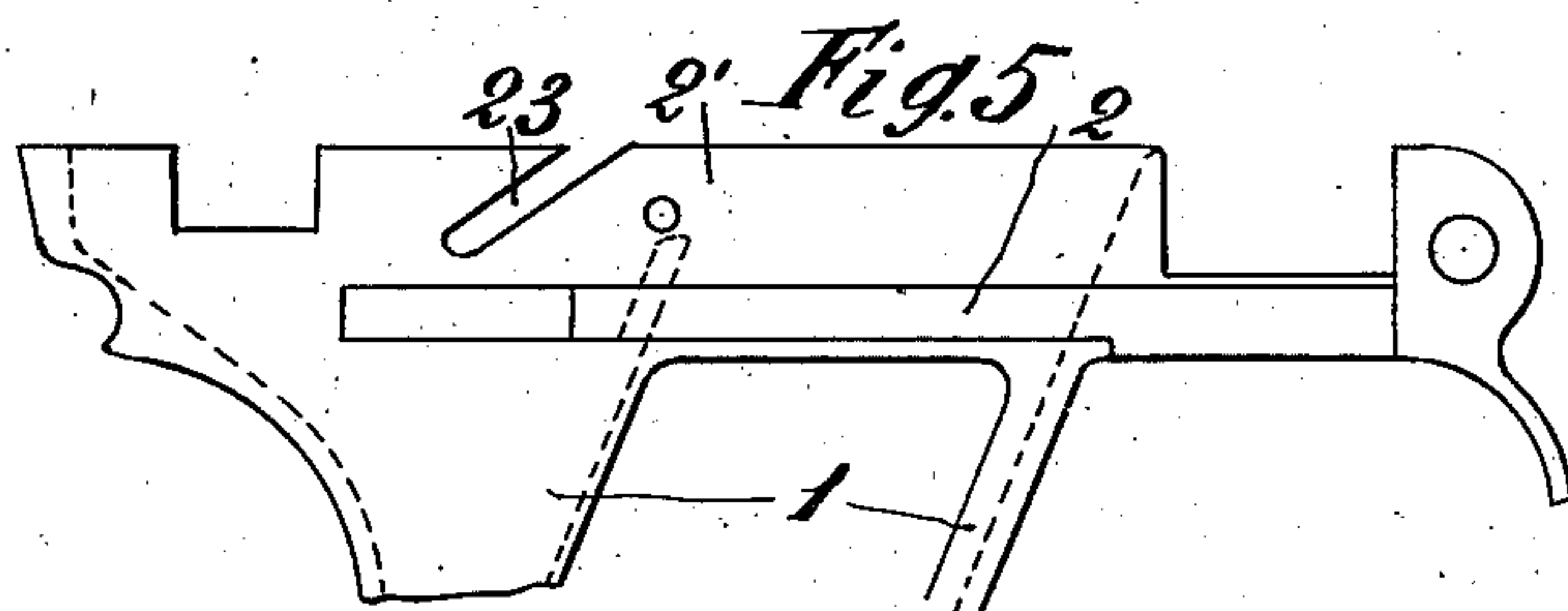
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 10

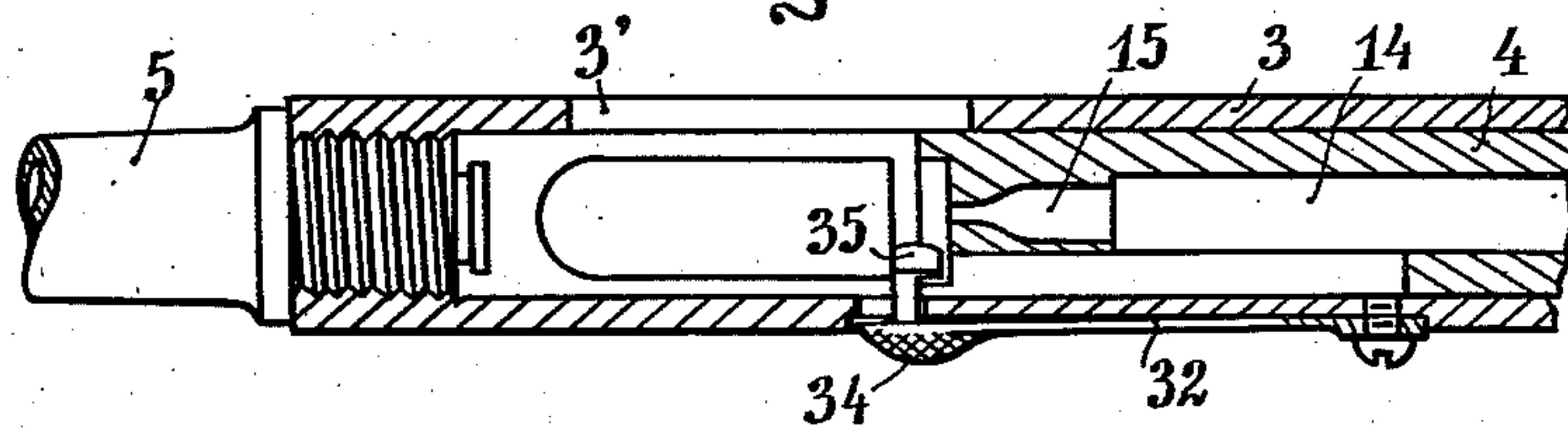


Fig. 11

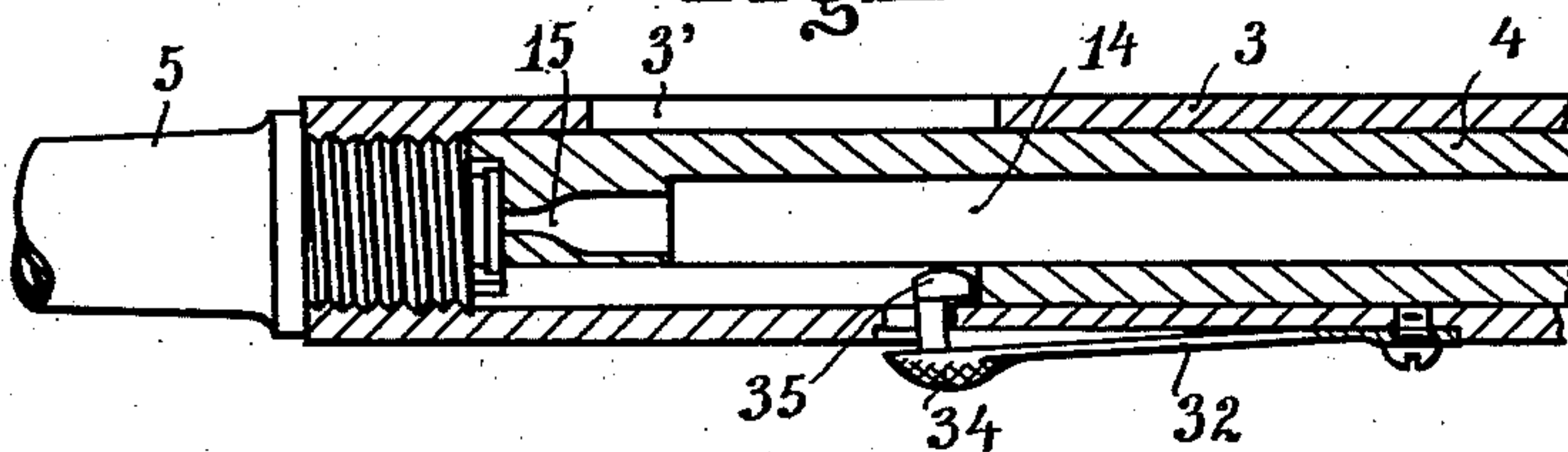
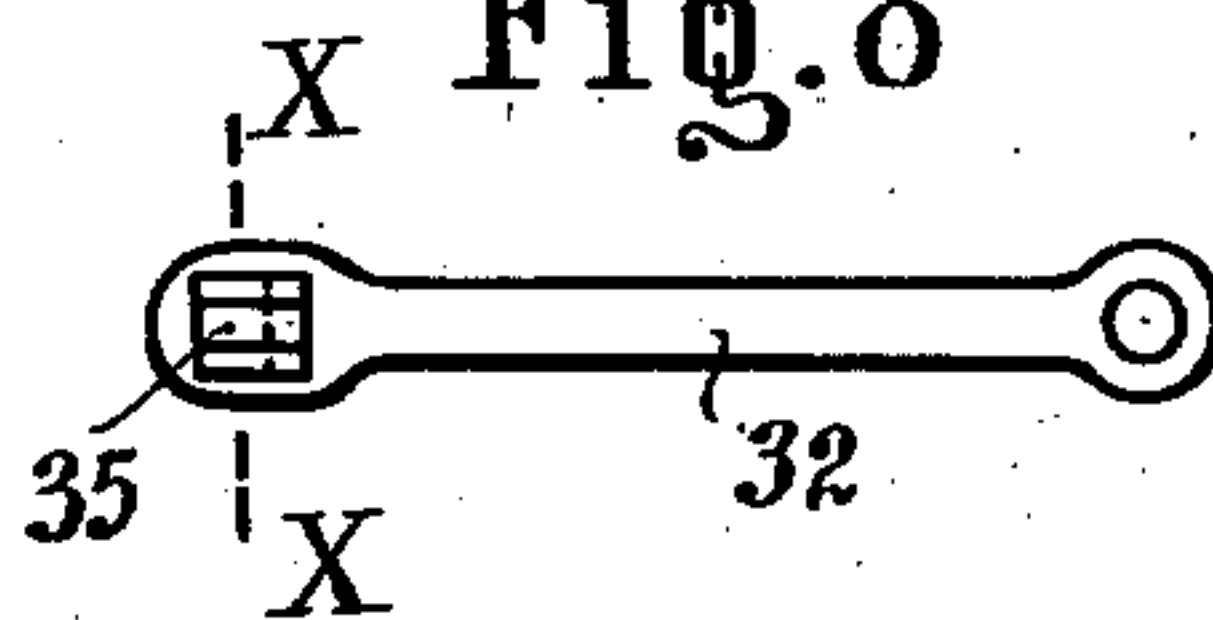


Fig. 9



Fig. 8



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# UNITED STATES PATENT OFFICE.

ALESSANDRO CUCCURULLO, OF PARMA, ITALY.

## AUTOMATIC PISTOL.

990,475.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed June 9, 1910. Serial No. 565,978.

*To all whom it may concern:*

Be it known that I, ALESSANDRO CUCCURULLO, a subject of the King of Italy, and resident of Parma, Italy, have invented certain new and useful Improvements in Automatic Pistols, of which the following is a specification.

This invention relates to automatic pistols in which the firing pin normally remains uncocked, and in a position of safety, whereas the pistol is always ready to be fired, the firing pin being cocked when pressure is exerted on the trigger.

In the annexed drawing, Figure 1 shows a longitudinal section of a complete pistol; Fig. 2 shows the breech-block in the position it assumes upon its recoil; Fig. 3 shows the mechanism for cocking the firing pin; Fig. 4 is a rear view of the breech frame; Fig. 5 shows in detail one lateral wall of the body with the guides in which slides the locking block; Fig. 6 shows in detail the recoil stop; Fig. 7 is an outside view of the pistol showing the application of the mechanism for arresting the breech block, and serving also as an ejector of the empty cases; Fig. 8 shows the stop for arresting the breech block and Fig. 9 is a section on the line  $x-x$ , Fig. 8. Fig. 10 is a horizontal section showing the breech block open the stop 35 being in the position it assumes when it acts to arrest the breech block. Fig. 11 is a similar longitudinal section of the breech frame with the breech block closed, showing the stop 35 in the position it assumes when serving as an ejector.

As shown in Fig. 1, the body 1 of the pistol is provided at its upper part with a groove 2 in which slides the movable breech frame with its breech block 4.

The movable breech frame is provided at the front with the barrel 5, and has a cylindrical projection 6 located below the barrel and provided with a recess in the interior of which is placed the coil spring 7 surrounding a spindle 8.

Above the lower openings for permitting the passage of the cartridge coming from the magazine and above a lateral opening 3<sup>1</sup> (Fig. 7) serving for the expulsion of the empty case or for the introduction of the first cartridge, the breech frame has at its upper part two longitudinal cylindrical holes 9, for receiving the recoil springs 10 of the breech block. These holes 9 are closed at the rear by the plug 11 (Fig. 6) comprising two

cylindrical stems 11<sup>1</sup> each of which enters the spring and forms a stop for the recoil movement of the breech block 4, which for this purpose, is provided with small lugs 4<sup>1</sup> entering the said holes through the slots 9<sup>1</sup> (Fig. 4). The arrest of the breech block in its recoil movement is further insured by the tooth 12, which, at the end of the movement of the breech block abuts against the transverse pin 13.

In an axial opening in the breech block is movably mounted the firing pin 14 which is provided at its front end with a point 15. A coil spring 16 surrounds the forward end of the pin 14, and bears, on the one hand, on a washer 16<sup>1</sup> movable on the stem of the firing pin and pushed against a shoulder thereon, and on the other hand on a pin 17 passing through a slot 18 in the firing pin. The firing pin 14 is provided at its rear end with a tooth 19 for the sear which tooth is adapted to move in a slot 20 in the breech block. In advance of the tooth 19 the breech block has a notch in which is normally arranged a block 21 located in a cavity in the movable breech frame, and provided with lateral projections 22 entering the guides 23 provided in the lateral walls 2<sup>1</sup> of the groove 2 (Fig. 5). This block 21 serves to connect the breech block rigidly with the breech frame at the moment of firing.

The trigger 24 is mounted on the spindle 25 so as to be movable longitudinally, and the spring 25<sup>1</sup> serves to return it to its initial position. The trigger is connected by means of a rod 26 and a projection 27 thereon, with a sear 28 held in the position shown in Fig. 1 by the spring 29 and having at its end a movable member 30 guided on the sear 28 and operated by a coil spring 31. This movable member 30 is formed as a tooth and coöperates with the tooth 19 of the firing pin.

For arresting the breech block 4 in its completely open position, for instance for the purpose of introducing a single cartridge, there is provided a blade spring 32 mounted on the breech frame by means of the screw 33 and provided at its free end with a button 34 on the one face, and on the other face with the projection 35 (Fig. 9) forming a stop for the end of the breech block and serving at the same time for ejecting the empty cases. This projection 35 has a notch which is engaged by the wall



of the breech frame, when the spring 32 is in place, so that the said projection rests in the wall of the breech frame and is held in the groove in the breech block, thus acting  
 5 as an ejector when the breech block has completed its recoil movement (Fig. 2). The projection 35 may be caused to enter the interior of the breech frame, when the breech block is open, if pressure is exerted  
 10 on the button 34. In this position the projection 35 acts as a stop for the breech block.

The magazine is constructed as usual of a box 36 in which is mounted the elevator 37 subjected to the action of a spring. For  
 15 indicating when the magazine is empty, the elevator is provided with a projection 38 which, when the elevator reaches the under side of the breech chamber, holds the breech block in its open position. A lever 39 constitutes the arresting mechanism for the  
 20 magazine.

The operation of the fire-arm is as follows:—The breech block 4 is grasped by its milled ends 4<sup>1</sup> and retracted (Fig. 7) and  
 25 is secured in retracted position by the application of pressure on the button 34 whereby the projection 35 is moved into engagement therewith, as shown in Fig. 10. The breech block thus remains open and a  
 30 cartridge may be introduced through the lateral opening 3<sup>1</sup> in the breech frame (Fig. 7). The breech block is closed by retracting it further and then releasing it by grasping the button 34 and withdrawing the  
 35 projection 35 from in front thereof; and the magazine charged with cartridges is introduced at the bottom of the butt. The pistol is thus completely charged, while the firing pin remains uncocked, as above-mentioned,  
 40 since the rearward movement of the breech block is without effect on the trigger mechanism.

To fire a shot, it suffices to apply a pressure to the trigger 24, so as to cause the partial vibration of the member 28, with which  
 45 the trigger is rigidly connected by means of the rod 26. The member 28 carries the tooth 30 which engages the tooth 19, solid with the firing pin, and on pulling the trigger retracts the firing pin compressing the coil  
 50 spring 16, until, on account of the vibrating movement of the lever 28, the tooth 30 leaves the tooth 19 (Fig. 3), and the firing bolt is, under the action of the spring 16, brought  
 55 quickly toward the right (Fig. 1), thus bringing the point 15 against the cap of the cartridge. The point 15 thereafter returns to the interior of the breech block, as the washer 16<sup>1</sup> strikes against a shoulder within  
 60 the opening in the breech block, so that the spring is slightly compressed and immediately forces back the firing pin in well-known manner. In this manner the firing operation commences immediately on the  
 65 cocking of the firing pin, although normally

the breech bolt is uncocked, so that it is possible without danger to keep in the barrel an additional cartridge and thus increase by one the number of shots contained in the magazine. This arrangement permits also  
 70 of repeating the firing without altering the aim when a shot is not fired; it being sufficient to renew the pressure on the trigger 24, in the manner indicated. When released the trigger is restored to its initial position by  
 75 the spring 25<sup>1</sup>, while the sear 28 is brought into position by the spring 29, and the tooth 30, which is adapted to be lowered by cam action on the tooth 19, compressing the  
 80 spring 31, is brought in front of the tooth 19, and reassumes the position shown in Fig. 1, which is also the position of safety, as the firing pin is prevented by the tooth 30 from advancing under the action of accidental  
 85 shocks. When the shot is fired, the barrel recoils with the movable breech frame until this movement is stopped by the spring 7. The recoil of the movable breech frame causes a backward movement of the breech  
 90 block (which carries away the empty case) and of the locking block 21 which now descends, its lateral lugs 22 being guided in the inclined slots 23 in the walls 2<sup>1</sup>, and thus unlocks the breech block from the breech  
 95 frame. When the block 21 is free of the slot of the breech block, the latter is free to pursue its recoil movement until it strikes with its tooth 12 against the transverse pin 13, and with its lug 4<sup>1</sup> against the ends of the  
 100 stems 11<sup>1</sup> of the plug 11 (Fig. 6). At the same time the empty case carried away by the breech blocks strikes on the projection 33 (Fig. 8) and is ejected. During the backward movement of the breech block 4, the  
 105 coil springs 10 housed in the holes 9 of the breech have been compressed so that the breech block is forced forward and causes the introduction into the barrel of the next cartridge which has been pushed into the  
 110 breech chamber by the elevator 37. As will be readily understood, during this operation of automatically recharging the pistol, the trigger mechanism has not been operated, so that the firing-pin remains uncocked and  
 115 will be cocked only at the moment of firing. As soon as the magazine is empty, the projection 38 of the elevator 37 enters the chamber of the breech and arrests the breech block in its open position, so that the magazine  
 120 may be recharged.

It is to be noted that the mounting of the lateral wall of the groove 2 is obtained by means of a transverse screw 40 which is operated by hand, and which, by reason of  
 125 its transverse position relatively to the fire-arm, cannot become loose on account of shocks to which the firearm is submitted.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In an automatic pistol, in combination, 130



a movable breech frame, having two longitudinal cylindrical holes, a breech block slidable in said breech frame, recoil springs for the breech block housed in said holes, two  
5 lugs on the breech block adapted to enter the said holes, and a plug with two cylindrical stems entering the springs and cooperating with the lugs to provide stops.

2. In an automatic pistol, in combination  
10 a movable breech frame having two longitudinal cylindrical holes, a breech block slidable in the said breech frame, recoil springs for the breech block, two lugs on the breech block entering the said holes, a plug with  
15 two cylindrical stems entering the springs and cooperating with the lugs of the breech block to form stops, a transverse pin on the breech frame and a tooth on the breech block abutting against said transverse pin.

20 3. In an automatic pistol, in combination, a movable breech frame, a breech block slidable in said breech frame, said block having

a longitudinal groove, a button carried externally of said breech frame, and a projection on said button adapted to enter said  
25 groove and to bear on the inner wall of said breech frame, as and for the purpose set forth.

4. In an automatic pistol, in combination, a movable breech frame, a breech block slidable in said breech frame, said block having  
30 a longitudinal groove, a spring mounted externally of said breech frame, a button carried by said spring, and a projection on said button adapted to enter said groove and to  
35 bear on the inner wall of said breech frame, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALESSANDRO CUCCURULLO. [L. s.]

Witnesses:

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CHARLES L. BOLOGNERI. [L. s.]