

J. MAUDRY.  
FIREARM.

APPLICATION FILED JUNE 11, 1908.

930,305.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

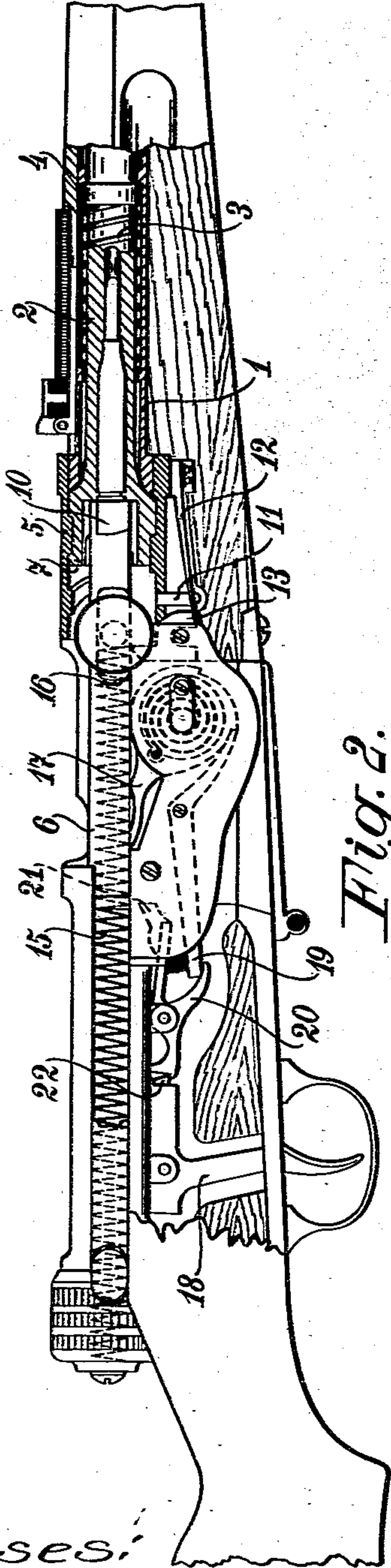
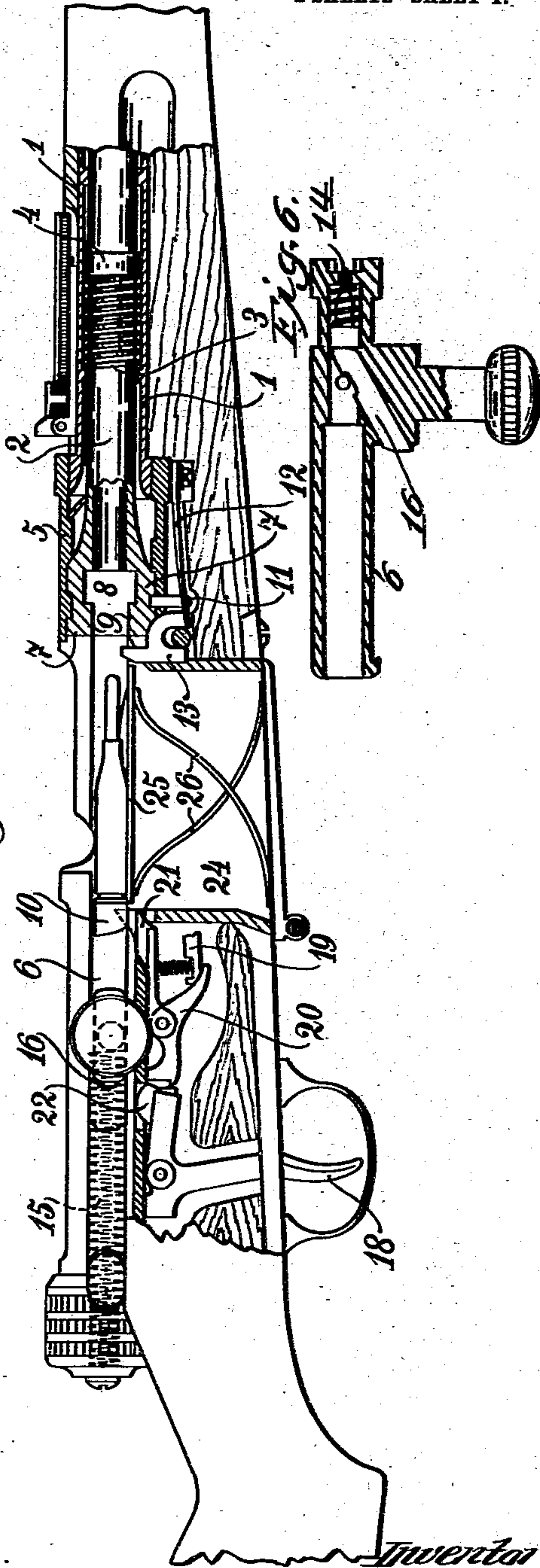


Fig. 2.



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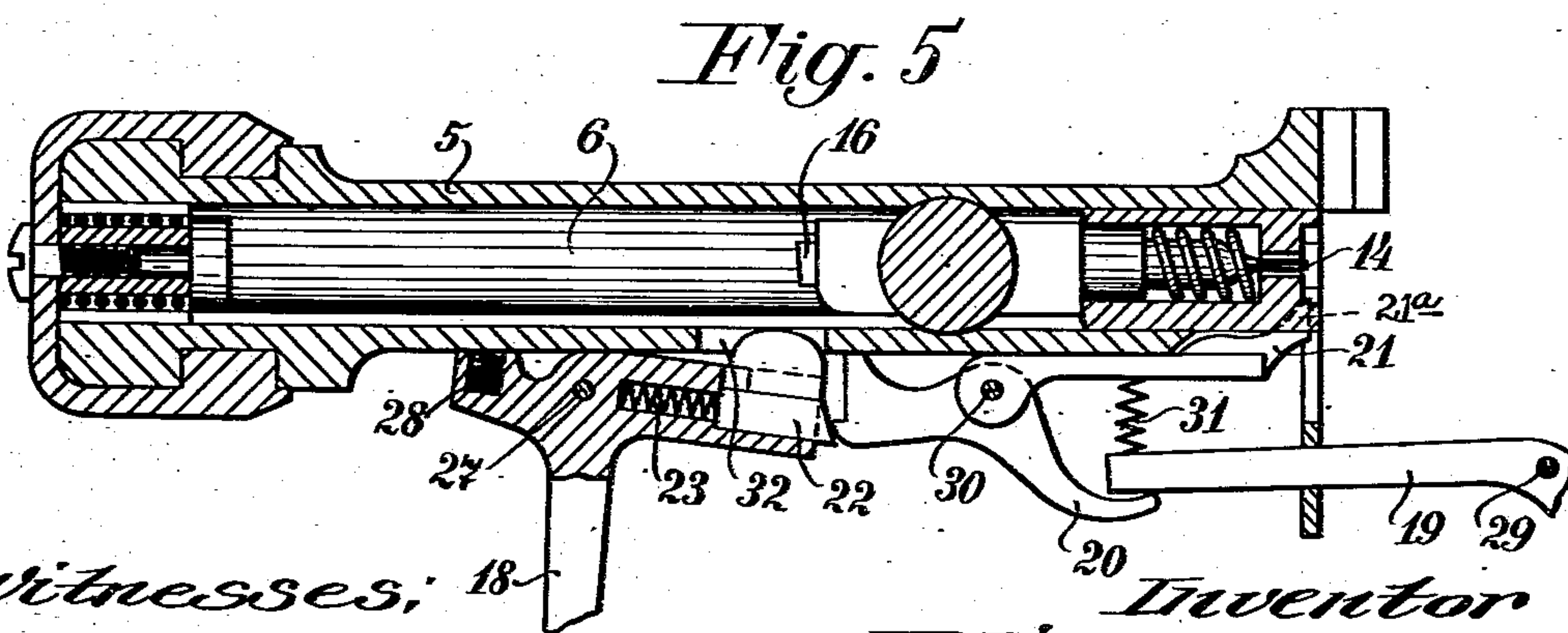
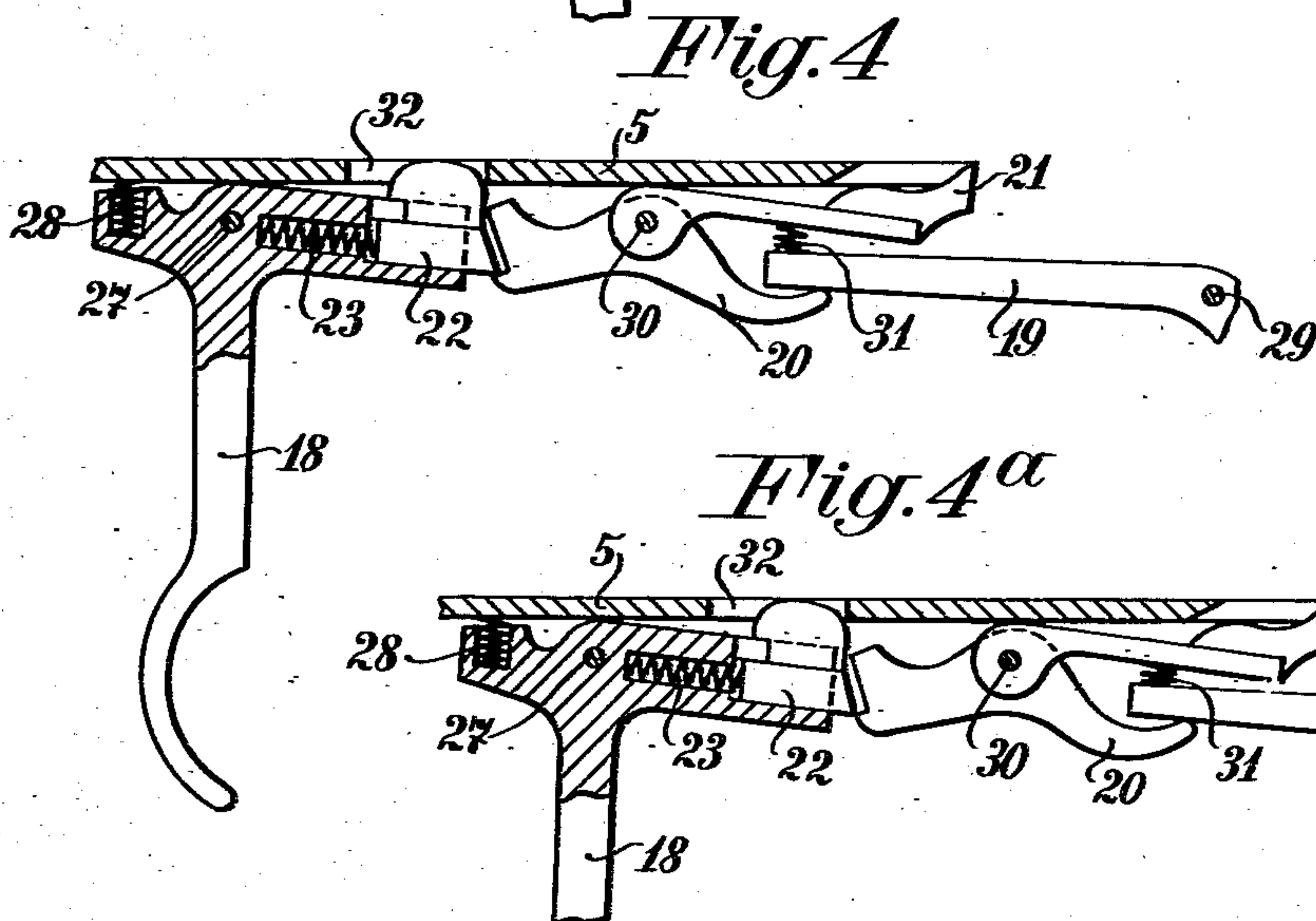
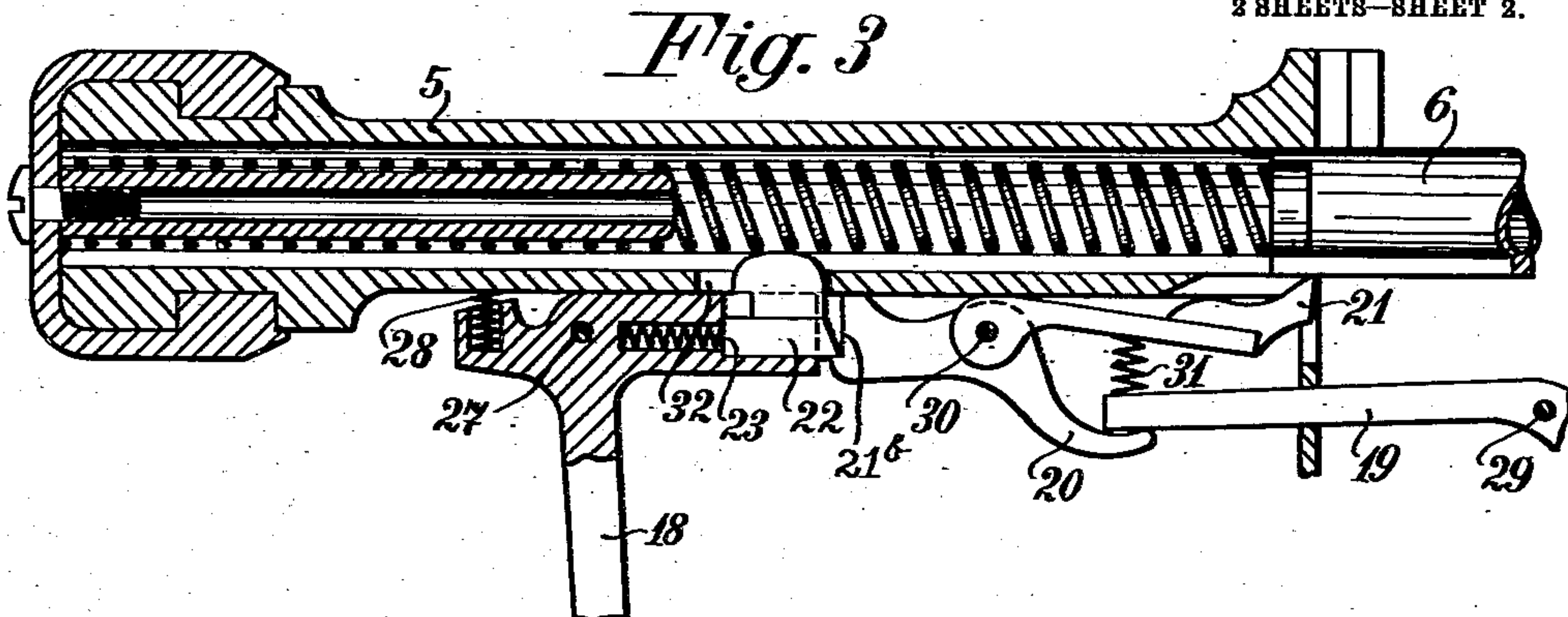
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

JULIUS MAUDRY, OF VIENNA, AUSTRIA-HUNGARY, ASSIGNOR TO THE FIRM OF GEBR. BÖHLER & CO., AKTIENGESSELLSCHAFT, OF VIENNA, AUSTRIA-HUNGARY.

## FIREARM.

No. 980,305.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed June 11, 1908. Serial No. 437,968.

*To all whom it may concern:*

Be it known that I, JULIUS MAUDRY, general of the Austrian army, subject of the Emperor of Austria-Hungary, residing at Vienna, Austria-Hungary, have invented certain new and useful Improvements in Firearms, of which the following is a specification.

This invention relates to that type of automatic fire-arms which, as recoil loaders, are provided with a rotating barrel retreating only a short distance and also with a cylinder breech mechanism with locking lugs on both sides.

According to this invention the barrel when in the loading position is secured by means of an automatically acting part in that position in which its locking to the breech block, which is guided to move in a straight line, can be effected, or the separation of the coupled parts completed after the completion of the unlocking movement. For this purpose a locking pin is pressed into engagement with a recess formed on the outside of the barrel by means of a spring and is disconnected by the breech block for the purpose of releasing the barrel to which it is to be locked.

According to this invention the blow of the hammer is transmitted to the firing pin, located in the breech block, by an intermediate piece mounted at an incline in the handle of the breech block, and this arrangement enables the trigger mechanism to be arranged laterally and in consequence thereof a compact construction of the fire-arm is provided.

In order to secure a sure discharge the trigger mechanism of the fire-arm comprises a sliding catch or sear which is forced against the operating lever by a spring and is so shaped as to provide two pressure or bearing points for the trigger. As a sliding piece of the trigger extends in the path of the breech block, it will be shifted back from the latter by opening the breech block and with its sharp corner presses under the sear lever so that the operation of the trigger and consequently the discharge of the lock by the open breech block is prevented.

The accompanying drawing illustrates by way of example a military rifle embodying this invention.

Figure 1 shows the gun in sectional elevation with the breech mechanism locked, the

gun lock being in elevation. Fig. 2 is a similar view showing the breech mechanism unlocked in its outermost rear position, the gun lock being removed. Figs. 3 to 4<sup>a</sup> show the trigger mechanism in operative positions. Fig. 5 shows the trigger mechanism in an inoperative position. Fig. 6 shows the breech block in horizontal section to a larger scale.

The barrel 2 is arranged to work in a sleeve 1 and is forced forwardly by means of a barrel spring 3 which surrounds it and which bears on the one hand against an inwardly extending collar on the sleeve 1 and on the other hand against an outwardly extending collar 4 on the barrel 2. The rear end of the barrel extends beyond the cartridge chamber and is guided in the casing 5; such extension is adapted to receive and to be locked to the head of the breech block 6. For this purpose the rear end of the barrel is in the form of a cylindrical enlargement, the periphery of which is provided with helically wound ribs 7 which engage with corresponding grooves formed in the casing 5; a recess or chamber within the cylindrical enlargement being adapted to receive the head of the breech block when it slides forward and while the barrel is in the loading position the wall of such chamber is provided with interrupted transverse ribs 9, see Fig. 2, with which two laterally extending lugs 10 on the breech block, when such breech block is in its forward position, engage immediately when the rotating barrel slides forwardly.

In order that the barrel shall be held in the loading position, that is, the position in which the separation of the coupled parts can be accomplished, when the unlocking movement is completed, there is provided in the periphery of the cylindrical extension a recess into which a locking pin 11 is forced by a spring 12 so that the barrel is then secured in the correct position. The locking pin 11 is adapted to be released by a plate-like device 13 which rests upon the spring 12 and is formed with an arm beveled at its rear face and which projects into the path of the breech block so that it is depressed thereby when the breech block passes over it.

The breech block is formed with a hole in its forward end for the firing pin 14, see Fig. 5; and a long recess at its rear for a breech spring 15, the outer end of which bears against the rear end plate of the casing 5.



The handle of the breech block is formed with an inclined passage in which is mounted an intermediate piece 16 through which the blow of the hammer 17, see Fig. 1, is transmitted to the firing pin.

The hammer is operated by an ordinary hammer lock which in consequence of the arrangement of the intermediate piece 16 can be placed at the side of the gun.

Between the trigger 18, which is revoluble on the bolt 27 and engaged by the spring 28 and the sear 19 revoluble on the bolt 29, is arranged a sear lever 20 revolubly mounted on a bolt 30, the said sear lever having a forward extension 21 which is engaged by a spring 31 also coöperating with the sear 19. Fig. 3 shows the trigger mechanism in its normal position of rest, the breech block being closed. The trigger 18 is retained in its normal position of rest by means of the spring 28 which presses against the under side of the breech block casing 5, and when the trigger is in this position its horizontal arm bears against the under side of the said breech block casing and has a sliding piece 22 disposed therein and engaged by a pressure spring 23, the said sliding piece projecting through the slot 32 of the breech block casing 5 and is held in the path of movement of the breech block 6. The extension 21 of the sear lever constitutes the ejector which rests against the under side of the breech block, and when the latter is near its rearward position, said extension engages a notch 21<sup>a</sup> in the head of the breech block and strikes against the base of the empty and rearwardly moving shell and snaps it out of the receiver. The spring 23 presses the sliding piece 22 forwardly in a horizontal direction and the sharp corner of the sliding piece 22 is maintained in engagement with the notch 21<sup>b</sup> of the sear lever 20. It is obvious that a pull exerted upon the trigger 18, which is shown in two phases in Figs. 4 and 4<sup>a</sup>, will cause the sliding piece 22 to be automatically disengaged from the notch 21<sup>b</sup> of the lever 20 and the said sliding piece can only be again actuated by the trigger 18 when the breech block 6 is in its forward or closed position.

When the breech block 6 is in its rearward open position, as shown by Fig. 5, the sliding piece 22 cannot engage the notch 21<sup>b</sup> because the bottom ledge of the breech block 6 will maintain the upper part of said sliding piece depressed, even after the trigger 18 has been released. As soon as the breech block 6 has left its open position shown by Fig. 5, and has assumed the closed position shown by Fig. 3, the trigger 18, released from the pressure of the finger of the operator, will be impelled by the action of the spring 28 and change from its position shown by Fig. 5 into the position shown by Fig. 3, and during its movement in making such change, the sharp corner of the sliding piece 22 will again en-

gage the notch 21<sup>b</sup> of the lever 20 and thereby dispose the trigger in position for subsequent actuation, that is to say, in position for firing a new shot.

It will be understood that the parts of the trigger mechanism can come into the respective positions shown by Figs. 4 and 4<sup>a</sup> only when the trigger 18 is pulled back by hand. In these positions the trigger 18 will be gradually turned more to the rear, and during this motion the sliding piece 22 impelled by the spring 23 will simultaneously slide forwardly so that it remains in engagement with the notch 21<sup>b</sup> of the lever 20. When the breech is opened by hand and the breech block 6 is shifted from its closed position as shown by Fig. 3 into open position as shown by Fig. 5, the lower rectilinear ledge at the rear end of said block will strike against the upper part of the sliding piece 22 which projects in the path of the said ledge, as shown by Fig. 3. In this operation the sliding piece 22 will be pushed rearwardly in the direction of the impact and the spring 23 will be compressed so that the sliding piece 22 will move rearwardly along the horizontal arm of the trigger 18 in the direction of its axial pin 27. In consequence of this rearward motion of the sliding piece 22 in a horizontal direction, its sharp corner will become disengaged from the notch 21<sup>b</sup> of the lever 20. The lever 20, however, remains in the position shown in Fig. 3, and for this reason the hammer cannot be released. The further rearward movement of the breech block 6 results in a downward pressing of the sliding piece 22 and also imparts a similar movement to the trigger 18, but owing to the position of the several parts at this time this movement can no longer influence the lever 20. The effect just described is due to the shape of the upper part of the sliding piece 22 which at first presents to the rear end of the breech block 6 a nearly vertical surface which merges into a curved horizontal surface, as clearly shown in the drawing. The breech block 6 during its rearward motion effects the cocking of the mechanism, but it will not be able to release the cocked lock mechanism. The cartridge magazine 24, Fig. 2, is located beneath the casing 5 and the cartridges held therein are lifted upwardly by means of a feed plate 25 through springs 26.

The working of the improved fire-arm is as follows: If the trigger 18 be pulled when the rifle is loaded and the hammer cocked, the lower sharp corner of the sliding piece 22, see Fig. 3, and its end face, see Figs. 4 and 4<sup>a</sup>, successively engage with the lever 20 so that when in the position shown in Fig. 4 the pull is transmitted through two pressure or bearing points whereby a sure and gradual discharge is rendered possible. By the consequent release of the sear 19, the hammer 17



is disengaged and strikes against the intermediate piece 16 which thereupon drives the firing pin forward and by a central blow causes the cartridge to explode. After the shot has been fired, the barrel 2 with the locked breech block 6 slides to the rear. While the barrel is partially rotating, the breech block 6 is unlocked as before described and slides straight to the rear. As soon as these movements have been accomplished the barrel 2 is secured by engagement with the locking pin 11; the breech block 6 in its rearward movement cocks the hammer 17, and the exploded cartridge case is ejected by its rear end coming in contact with the ejector 21. The stressed breech spring 15 now drives the breech block 6 forward again so that it thrusts the cartridge, moved up by the feed plate 25, into the barrel, releases the locking pin 11 by striking against the beveled face of the releasing device 13 and continues to move onward with the barrel thereby released. As the barrel must rotate when so moving forward, the locking of the barrel to the breech block is also simultaneously effected, as hereinbefore described.

What is claimed is:

1. An automatic fire-arm comprising a rotating barrel having a retreating movement for a short distance and provided with an outer recess therein, a longitudinally movable cylindrical breech-block with barrel locking lugs on both sides, a fixed barrel casing having a lateral aperture, and a spring-actuated locking pin guided in the said aperture of the barrel casing and engaging the outer recess of the barrel to secure the latter against longitudinal and rotary movement at the point where the breech block is unlocked from the barrel and allowed to retreat to the rear.

2. An automatic fire-arm comprising a rotating barrel having a retreating movement for a short distance and provided with an outer recess therein, a longitudinally movable cylindrical breech block with barrel locking lugs on both sides, the breech block having a firing pin therein and an intermediate piece mounted in a portion thereof at an incline, a fixed barrel casing having a lateral aperture, and a spring-actuated locking pin guided in the said aperture of the casing and engaging the outer recess of the barrel to secure the barrel against longitudinal and

rotary movement at the point where the breech block is unlocked from the barrel and allowed to retreat to the rear.

3. An automatic fire-arm comprising a rotating barrel having a retreating movement for a short distance and provided with an outer recess and a longitudinally movable cylindrical breech block with barrel locking means, a trigger mechanism comprising a spring pressed sliding piece, an operating lever, the sliding piece being of such shape as to bear upon said lever at two pressure bearing points, a fixed barrel casing having a lateral aperture, a spring-actuated locking pin guided in the said aperture of the casing and engaging the recess of the barrel and engaged by the breech block, the barrel being secured against longitudinal and rotary movement by engagement of the locking pin with the recess thereof at the point where the breech block is unlocked from the barrel and allowed to retreat to the rear.

4. An automatic fire-arm comprising a rotating barrel having a retreating movement for a short distance and provided with an outer recess, a longitudinally movable cylindrical breech block provided with barrel locking means and having a firing pin therein and also provided with an intermediate piece disposed at an incline in a portion thereof, trigger mechanism including a spring-actuated sliding piece, an operating lever, the sliding piece being associated in such manner as to bear upon said lever at two pressure or bearing points, a fixed barrel casing having a lateral aperture, and a spring-actuated locking pin to engage the outer recess of the barrel to secure the latter against longitudinal and rotary movement at the point where the breech block is unlocked from the barrel and allowed to retreat to the rear, the breech block being guided to move in a straight line with relation to the barrel after it is unlocked, the breech block when in open position preventing the actuation of the trigger and consequently the operation of the lock.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JULIUS MAUDRY.

Witnesses:

JOSEF RUBARCH,  
AUGUST FUGGER.