W. J. WHITING.

AUTOMATIC PISTOL AND RIFLE.

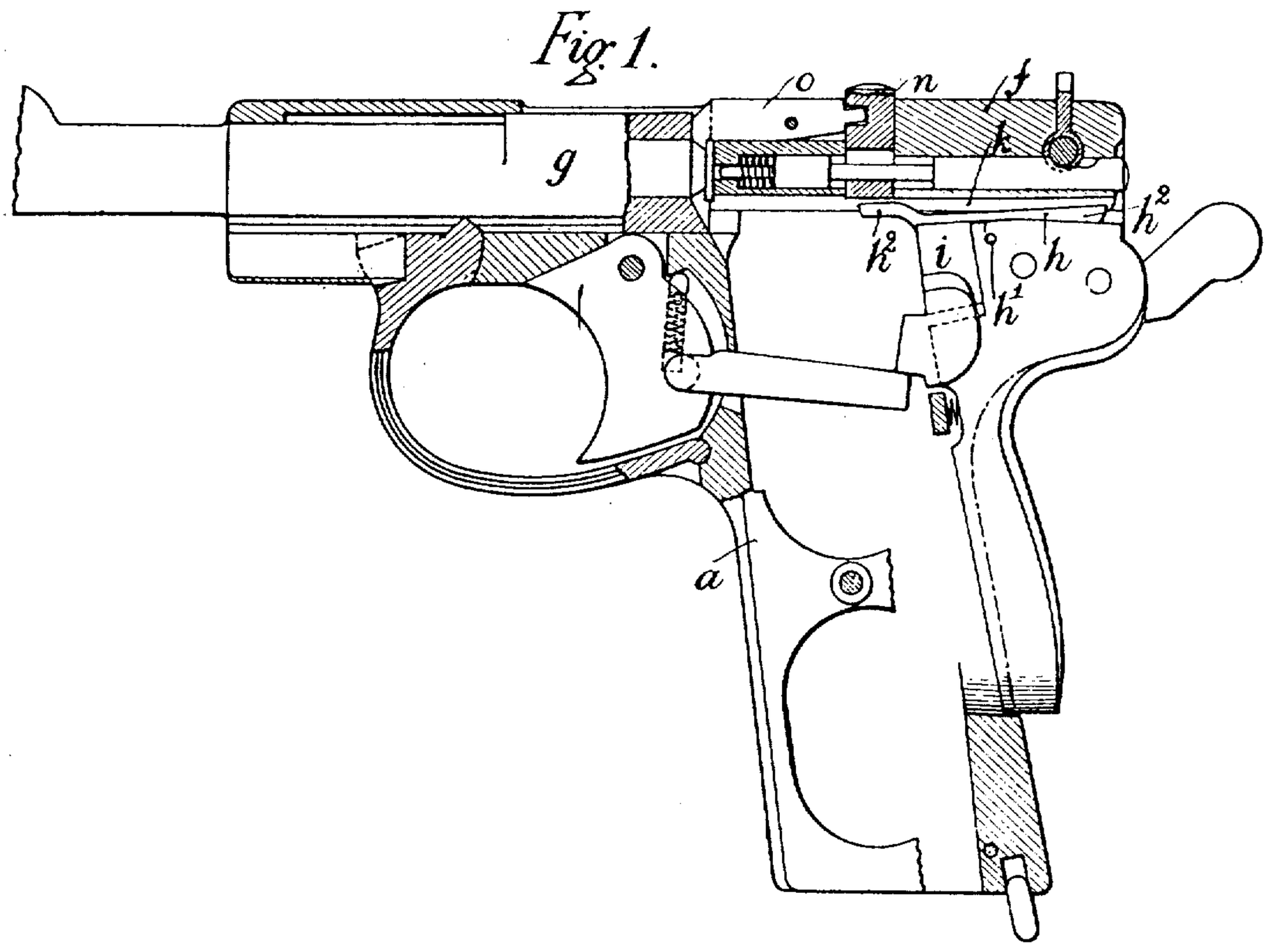
APPLICATION FILED APR. 8, 1909.

944,930.

Patented Dec. 28, 1909.

3 SHEETS--SHEET 1.

Fig. 1.



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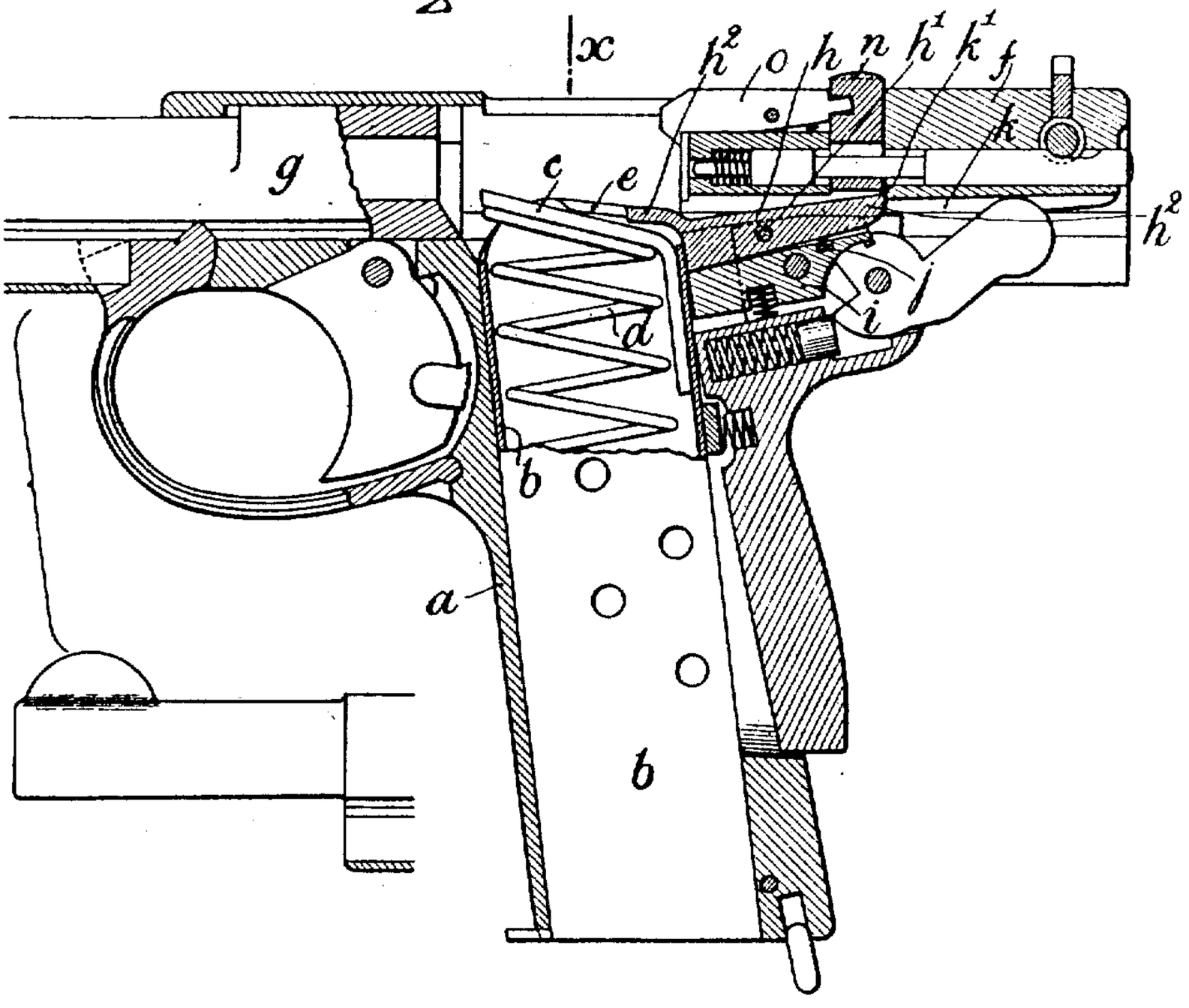
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

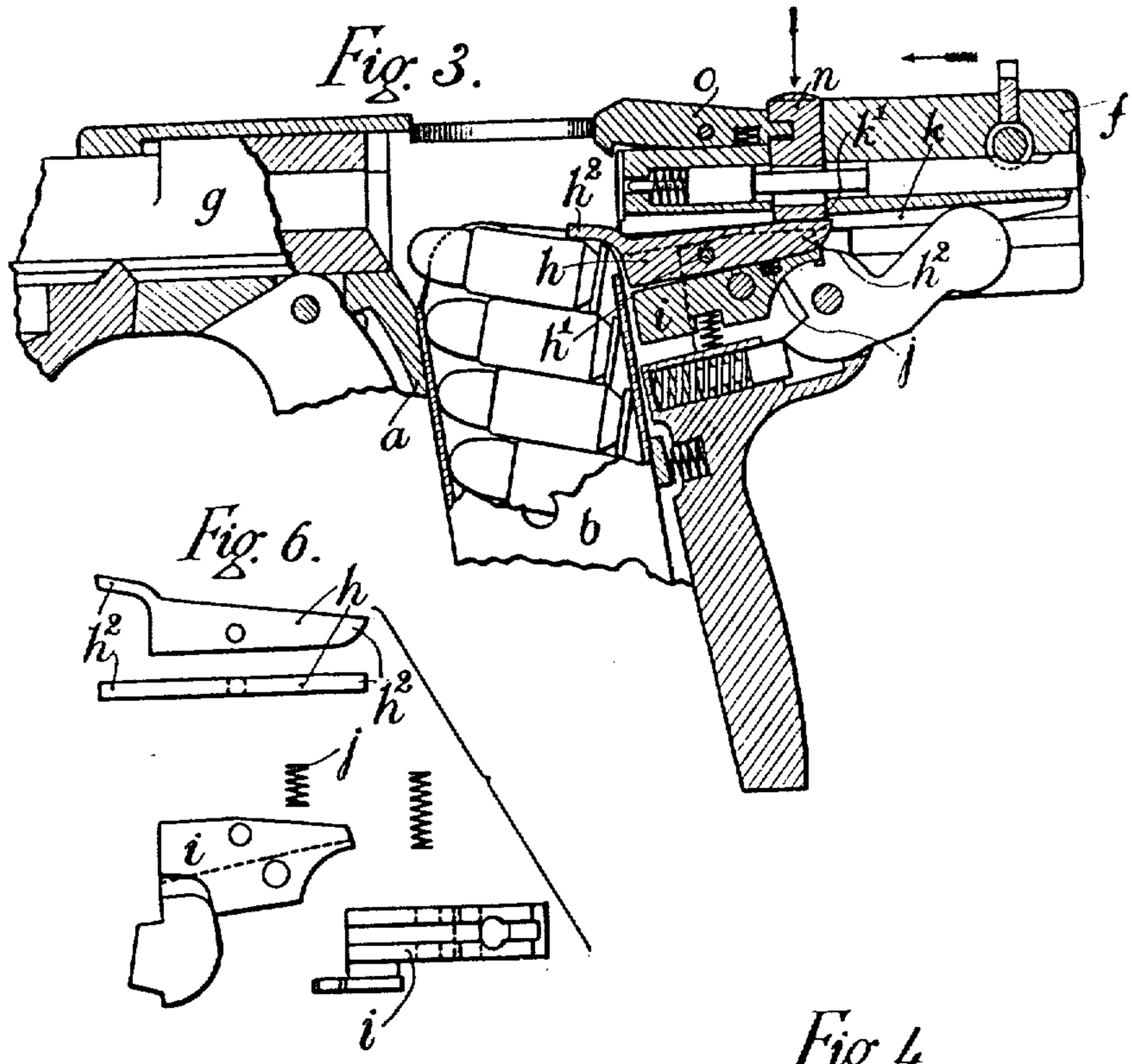


Fig. 6.

Fig. 5.

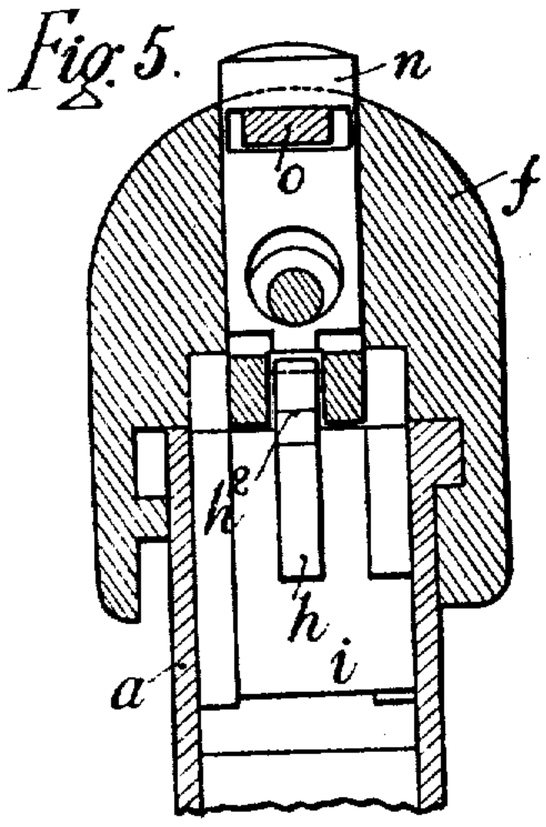
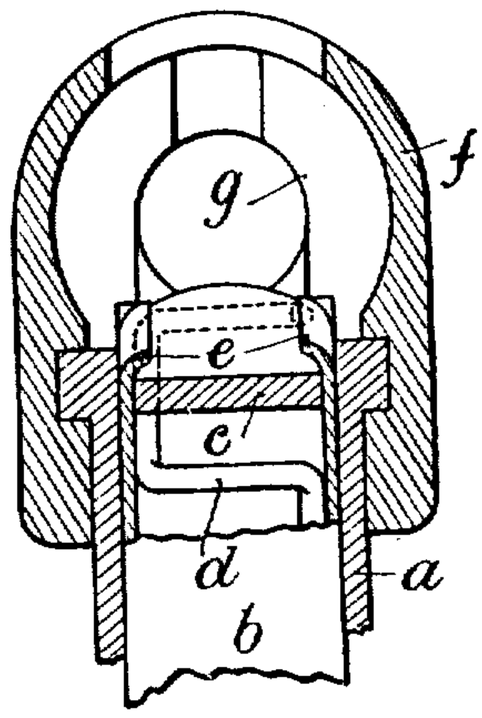


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM JOHN WHITING, OF HANDSWORTH, NEAR BIRMINGHAM, ENGLAND.

AUTOMATIC PISTOL AND RIFLE.

944,930. Specification of Letters Patent. Patented Dec. 28, 1909.

Application filed April 9, 1909. Serial No. 488,916.

To all whom it may concern:

Be it known that I, WILLIAM JOHN WHITING, a subject of the King of Great Britain, residing at 111 Antrobus road, Handsworth, near Birmingham, England, director of public company, have invented certain new and useful Improvements in Automatic Pistols and Rifles, of which the following is a specification.

This invention has reference to automatic hand fire-arms (including pistols and rifles) of the reciprocating breech-block or breech-slide type, and has for its object, to provide improved means for automatically arresting and locking the breech-block or breech slide in its open position after the last cartridge from the magazine has been discharged, so as to afford an indication to the shooter that the magazine of the pistol or arm is empty. The arrangements that have hitherto been devised and used for this purpose have been dependent upon the magazine spring, which, after the discharge of the last cartridge, actuates a locking limb, slide or stop and moves the same into such engagement with the breech slide that the latter is prevented from closing. But according to the improved arrangement which constitutes the present invention, so long as there is a cartridge remaining in the magazine, the magazine spring is made to act, through the said cartridge, for holding the breech-slide latch or locking device out of action, or in an inoperative position, whereas after the last cartridge has been loaded into the barrel-chamber, the magazine spring ceases to influence the said latch but the latter is then acted upon solely by another and weaker spring which is normally overpowered by the said magazine spring, so that on the breech slide recoiling when the last cartridge is fired, the latch is shifted into an operative position in which it engages with and prevents the return of the said slide. And when the empty magazine is replaced by a fully or partially-charged one, the cartridges in the latter again make connection between the magazine-spring and the latch so that after the latter has been disengaged and the breech-slide allowed to close, the said magazine spring again over-powers the weaker latch-engaging spring and functions to retain the said latch in its inoperative position for so long as a cartridge remains in the magazine to transmit the effort of the said magazine-spring to the latch.

Figure 1 of the said drawings represents the pistol in longitudinal vertical section with the parts in the positions they assume when the breech-slide is closed and when the magazine contains cartridges for transmitting the effort of the magazine spring to hold the breech-slide latch out of action. Fig. 2 is a similar view but shows how the breech-slide is locked open by the latch device after the discharge of the last cartridge and also shows how the spring-lifted magazine platform is stopped or held clear of the said latch so that the latter is influenced only by its engaging spring. Fig. 3 is a view illustrating how the latch is disengaged to permit of the closing of the bolt after the empty magazine is replaced by a fully or partially charged one. Fig. 4 is a sectional view, upon an enlarged scale, of a part of the pistol, showing more clearly the stops which determine the position of the spring-lifted platform when the magazine is empty and prevent the latch being in any way influenced by the said spring. Fig. 5 is another sectional view on the same scale as Fig. 4, but taken on the dotted line *x* Fig. 2 and showing the engaging latch in end elevation. Fig. 6 shows the latch and the part on which it is mounted separately.

The same letters of reference indicate corresponding parts in the several figures of the drawings.

The handle part *a* of the frame of the pistol is of substantially the ordinary construction and is adapted to receive an ordinary magazine *b*, which is fitted internally with a platform *c* and a platform lifting spring *d*. The upper open end of the said magazine is also formed, on its opposite sides, with the usual inwardly overhanging lips *e* (see Figs. 2 and 4) against which the upper cartridge in the magazine is made to take its bearing and be thereby held in the proper position for insuring that same shall be pushed endwise out of the magazine and loaded into the barrel *g* of the pistol, by the breech slide *f* during its return or closing movement. These lips also serve as stops against which the magazine platform is lifted (see Fig. 2) after the loading of the last cartridge into the barrel and which prevent the magazine spring from influencing the breech-slide latch when the magazine is empty. The said breech slide latch is marked *h*, and consists, in the particular arrangement shown, of a rocking limb or lever which

is pivoted at h^1 within a slot in the top-side of the sear i of the firing mechanism, so that the device is mounted underneath the center part of the breech slide, and has one end h^2 extended forwardly so as to come above the uppermost cartridge in the magazine and receive therethrough the effort of the magazine-spring, whereby the said latch is retained in the idle position shown in Figs. 1 and 3. On the other hand, the rear end of the latch, which is constantly influenced by the relatively weaker engaging-spring j, lies within a groove k that is machined along the underside of the breech-slide and is, for a suitable distance from the front of the said slide, cut to a deeper section so as to provide, at the junction of the shallower with the deeper part, a shoulder or step k^1 for the rear end of the locking lever to engage with, as shown in Fig. 2; the said engagement being effected, as already explained, by the spring j, which becomes operative immediately the latch is relieved of the disengaging influence of the magazine spring, with the result that the breech slide is locked open on reaching the limit of its rearward or recoiling movement after the discharge of the last cartridge. When thus locked open, the breech slide is subjected to the forward thrust or closing influence of the tensioned return or reaction spring of the pistol, and this thrust tends to keep the shoulder k^1 in effective engagement with the rear end of the latch so that the locking action is not dependent upon the spring j. The release of the slide may be effected, on the insertion of a charged magazine, by easing back the said slide sufficiently to relieve the thrust of the return spring from the latch and thus allow the latter to be tilted clear by the magazine spring pressure which is transmitted through the cartridges, but in order to facilitate the release and reclosing of the slide, and also to provide for the closing of the same without the aid of the magazine spring, a releasing pusher such as n may be mounted in the top of the slide, preferably in such a manner that normally it is held clear of the latch by a spring device (such as the spring extractor o) but may be depressed onto the rearwardly extended end h^2 of the latch (see Fig. 3) by the application of pressure to the outer end.

In addition to forming the shoulder or engagement for the latch, the fact that the forward portion of the groove k is deepened may be taken advantage of to admit of the said latch being also used as an ejector device, as when the breech slide is recoiling backward and is withdrawing the empty shell from the barrel, the said deepened part of the groove admits of the forward extremity of the latch being positioned, by the thrust of the magazine spring, in the path of the extracted shell which, as the breech-slide approaches the limit of its recoiling movement, is made to forcibly impinge against the said extremity of the lever and be thereby smartly ejected from the arm. A further advantage arising from the formation of the engaging shoulder or step in the top of a groove that extends along the underside of the breech-slide is that there is no risk of the cartridge rims catching in the said shoulder as they are extracted from the barrel and which might otherwise occur and block the working of the weapon.

I claim as my invention:

1. In an automatic firearm of the class embodying a reciprocatory breech block, a magazine having a cartridge feeding spring, and a latch for locking the breech block from movement after the cartridges have been exhausted from the magazine, said latch being automatically moved into an unlocked position by the engagement therewith of the topmost cartridge contained in the magazine during the insertion of a charged magazine.

2. In an automatic firearm of the class embodying a reciprocatory breech block, a magazine having a cartridge feeding spring, and a latch normally tending to lock the breech block in open position and after the cartridges have been exhausted from the magazine, said latch having a part adapted to be engaged by the topmost cartridge contained in the magazine and automatically tripped thereby upon the insertion of a filled magazine, the said latch being also held in an inoperative or tripped position under the influence of the cartridge feeding spring of the magazine.

3. In an automatic firearm, the combination of a barrel, a reciprocatory breech block, a magazine having a cartridge feeding spring, and a latch having a spring for moving it into an operative position to lock the breech block, said latch having a part constructed and arranged to be engaged by the topmost cartridge in the magazine during the insertion of the latter to unlock the breech block, the cartridge feeding spring of the magazine being of a strength greater than that of the latch spring and acting upon the latch through one or more cartridges in the magazine to retain said latch in an inoperative position until the cartridges have been exhausted from the magazine.

4. In an automatic fire arm, the combination of a barrel, a reciprocatory breech block, and a movable magazine having a cartridge feeding spring, of a locking latch for the breech block, said latch being movable in substantially the direction of movement of the magazine and arranged to be engaged by a cartridge in the magazine to automatically trip it when a filled magazine is inserted and to be held in an inactive position under the influence of the magazine spring, and a spring for moving the latch in position to

lock the breech block after the magazine has been emptied, said second spring being overpowered by the magazine spring while the magazine contains one or more cartridges.

5. In an automatic fire arm, the combination of a barrel, a movable breech block, and a magazine having a cartridge feeding spring, of a locking latch for the breech block mounted in rear of the magazine having one end to engage the breech block and its opposite end overhanging the magazine to be engaged by the spring-actuated cartridges therein whereby said latch will be held in an inactive position.

6. In an automatic fire arm, the combination of a barrel, a reciprocatory breech block, and a movable magazine having a spring-pressed follower, and means for limiting the movement of said follower, of a locking latch for the breech block movable in the plane of movement of the magazine and capable of engaging and locking the breech block in open position and having a portion overhanging the magazine and arranged to be engaged by a spring-pressed cartridge therein, said latch being free of the influence of the magazine spring after the magazine has been emptied.

7. In an automatic fire arm, the combination of a barrel, a reciprocatory breech slide provided on its under side with a longitudinal groove having a shoulder, and a magazine having a cartridge feeding spring, of a locking latch for the breech slide, a spring acting on said latch to move one end thereof into engagement with the shoulder in the longitudinal groove of the breech slide and having its opposite end arranged to be acted on by a cartridge in the magazine, the cartridge feeding spring overpowering the action of the spring first mentioned to retain the latch in inoperative position while one or more cartridges are contained in the magazine.

8. In an automatic pistol, the combination of a barrel, a reciprocatory breech slide, and a latch for locking the slide in open position after the cartridges in the magazine have been exhausted, said latch having a forwardly extending end arranged to act as an ejector for the empty shells.

9. In an automatic pistol, the combination of a barrel, a reciprocatory breech slide, a magazine latch for locking the breech slide in open position after the magazine has been emptied, said latch having a forwardly projecting portion arranged to act as an ejector, a spring-actuated extractor carried by the breech slide, and a releasing device for the latch normally held in inoperative position by the extractor.

10. In an automatic fire arm, the combination of a barrel, a reciprocatory breech slide, a firing mechanism embodying a sear, and a latch mounted on the sear and capable of coöperating with the breech slide to lock it in open position.

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

WILLIAM JOHN WHITING.

Witnesses:

HENRY SKERRETT,

HENRY NORTON SKERRETT.