

O. H. J. KRAG.
 AUTOMATIC REPEATING FIREARM.
 APPLICATION FILED SEPT. 14, 1908.

954,441.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

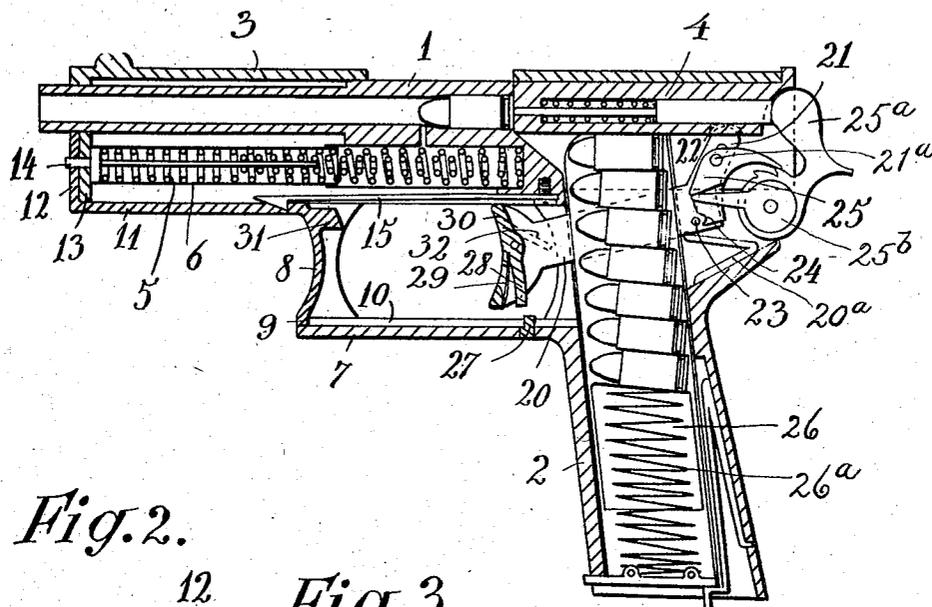


Fig. 2.

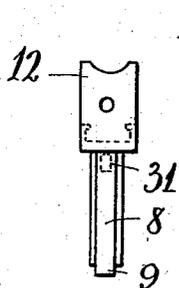
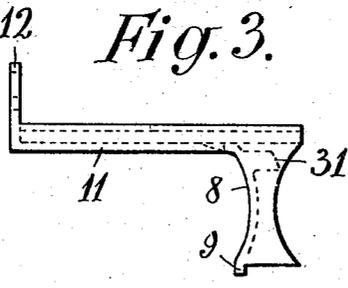


Fig. 3.



Witnesses,
B. Rommers
May Ellis

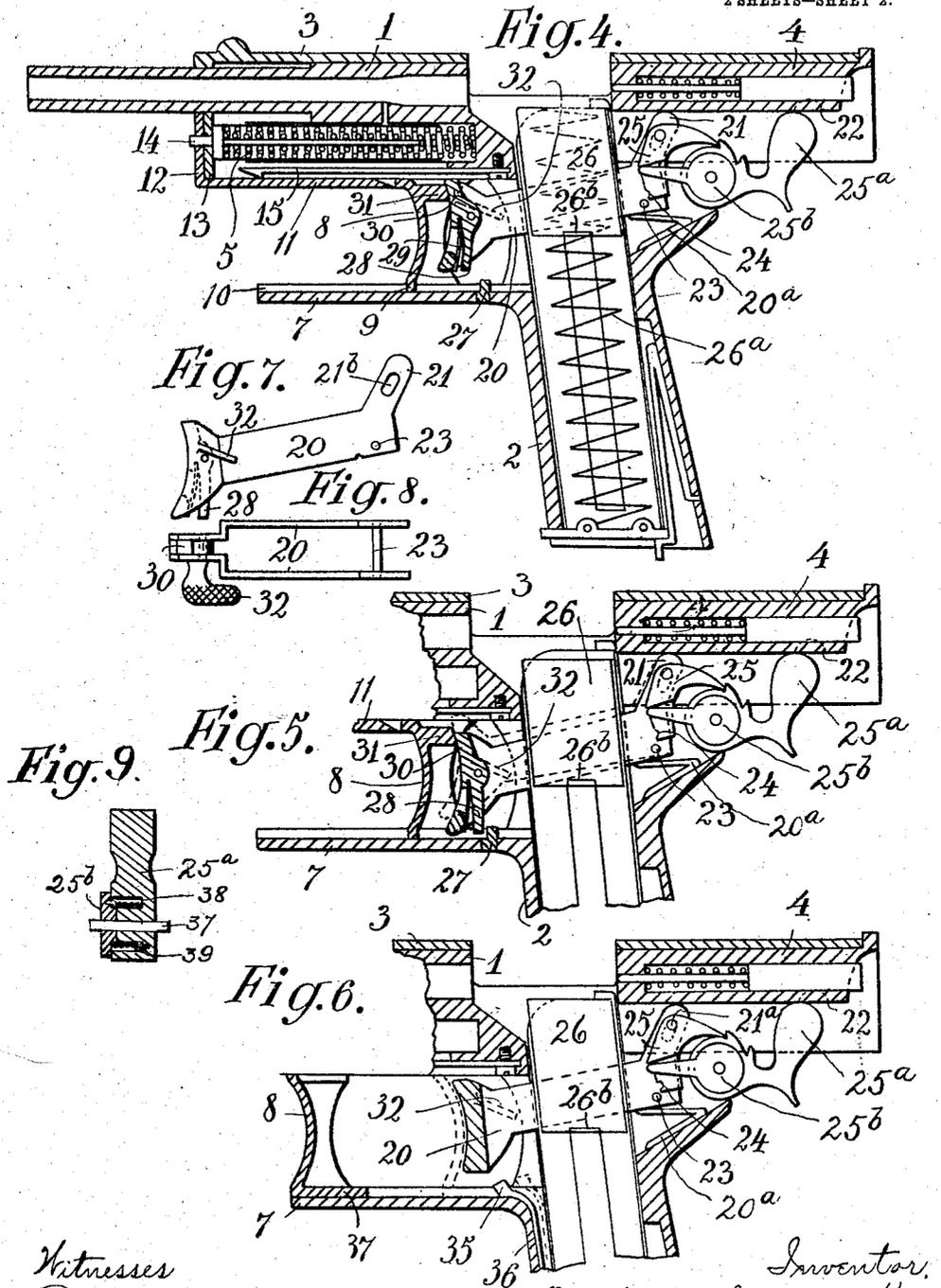
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 By *Henry Orth* Atty.

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UNITED STATES PATENT OFFICE.

OLE HERMAN JOHANNES KRAG, OF ULLERN, NEAR CHRISTIANIA, NORWAY.

AUTOMATIC REPEATING FIREARM.

954,441.

Specification of Letters Patent.

Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, OLE HERMAN JOHANNES KRAG, a subject of the King of Norway, residing at Ullern, near Christiania, in the Kingdom of Norway, have invented certain new and useful Improvements in Automatic Repeating Firearms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in fire arms especially applicable to automatic repeating pistols, of the kind which can be discharged as an automatic pistol or operated as an single loader only one hand being required for controlling either of the operations at will.

The automatic repeating fire arm or pistol according to this present invention is distinguished by the fact that the necessary movement of the breech mechanism on the barrel before the first shot has been fired or when necessary can be effected by the hand holding the pistol taking hold of a finger pull connected with a slide which carries the breech mechanism and pressing it back; in this manner the left hand is not needed to assist in the operation nor does the position of the pistol in the right hand require to be altered. In the proposed example the finger pull is arranged immediately in front of the trigger so that the pull takes the place of the front of the trigger guard. The finger pull also performs another function in that it coöperates with devices on the trigger lever, and the cartridge feeder to cause the latter to be depressed when the magazine is empty. This construction is however clearly differentiated from one previously proposed according to which a ring constituting a trigger guard was carried by the operating slider and was moved to and fro at every discharge of the firearm.

The improved arrangement of the parts is shown on the accompanying drawings in which:—

Figure 1 is a vertical section through a pistol, Figs. 2 and 3 are end view and side view respectively of the pull back. Fig. 4 is a vertical section through the pistol with the magazine empty and with the breech piece

pulled back. Fig. 5 is a vertical section of the pistol showing the cartridge feeder depressed. Fig. 6 is a vertical section showing a modified form of the stop for the trigger lever, Fig. 7 is a side elevation and Fig. 8 a plan of the trigger removed from the fire arm. Fig. 9 is a detail sectional view of the hammer, sear actuating member and the spring connecting them.

1 is the barrel, 2 the handle constituting a magazine which is firmly connected with the barrel.

3 is the slide with the breech block 4 screwed thereto (or fixed thereto in some other suitable manner.) The casing for the helical retractor spring 5 is situated in the lower part of the slide.

A guide 7 projects forwardly below the trigger 20 and forms the lower part of the trigger guard. Upon this guide rests the front part 8 of the guard which is formed as a finger pull, and is provided with a tooth 9 that engages with a groove 10 in the guide 7. The finger pull 8 which serves as an actuating member for the slide 3 is united at the top of the slide 3 by preference by means of a pull rod 11 projecting forwardly and in contact with the lower edges of the slide which is preferably arch shaped; in front the pull rod 11 has a transverse wall 12 which bears against the front wall 13 of the slide and is detachably connected thereto by a peg 14 projecting through a hole in the cross wall 12 from the spring casing 6.

The finger pull or guard 8 and its pull rod 11 are held against accidental rearward movement by means of a spring catch 15. This catch is fixed at its rear end to the frame of the piston beneath the barrel and has a cam-shaped head on its free forward end which head when the finger pull is in its forward position, (shown in Fig. 1,) rests in a recess in the pull rod. While the spring of the catch is sufficiently stiff to hold the head in the recess, and thereby hold the rod against accidental movement, if sufficient pressure be exerted by the finger on the guard 8 the head will, by reason of its cam, ride out of the recess and permit the guard and rod to be moved backward, bringing the slide 3 and breech bolt 4 with them, as shown in Fig. 4.

The hammer 25^a is pivoted on a pin 37 on the frame and is formed with a recess 38, Fig. 9 in which is mounted a coiled spring 39, which is connected at one end to the

hammer and at its other end to a sear actuating lever 25^b also pivoted on the pin 37. The coiled spring 39 holds the free end of the lever 25^b against an abutment on one arm of the sear 25 which latter is made in the form of a bell-crank lever, and thus holds the other arm of the sear in engagement with notches on the hammer.

The trigger is so constructed that it is used to depress the cartridge feeder, which, after the last cartridge has been fired protrudes into the path of the breech block 4 and thereby prevents the latter from moving forward and closing the breech.

When the parts are in the position shown in Fig. 1 the trigger lever 20 is held in a raised position by a spring 20^a and the end 21 of the lever projects into a notch 22 in the breech block 4. A pin 23 on the trigger-lever rests in front of a notch 24 on the sear 25 and if the hammer 25^a is now brought to a cock the sear 25 will be rocked on its pivot by the action of the spring-actuated lever 25^b, which is of well known construction and the notch 24 will engage the pin 23. To release the hammer the front end of the lever 20 is pulled but owing to the rear end of the lever being pivoted in the notch 22 an oscillatory movement instead of a sliding movement is imparted thereto and this movement will cause the pin 23, which is engaged by the notch, to raise the sear from off the hammer.

When the pistol is used as a single loader and the breech block is retracted by the finger pull 8, so that a cartridge may be inserted, the follower 26 is moved by the spring 26^a in front of the block, as shown in Fig. 4, and the latter cannot return to the closed position until the follower has been depressed.

An essential feature of my invention is to depress the follower by means of the trigger lever without affecting the action of the sear on the hammer and this is accomplished by the following described means. The movement of the breech-block to its rear position displaces the slot 22 so that the arm 21 is depressed by the under face of the block 4, said arm being slidably mounted on a pin 21^a, which projects through a slot 21^b in the arm 21. This depression of the latter carries the pin 23 below the notch 24 and the lever 20 may now be oscillated for the purpose of depressing the follower without actuating the sear and thereby cause a release of the hammer, which is held at full cock by the sear, when the breech block is subsequently returned to its closed position by means of the lever 20 engaging a lug 26^b on the follower 26 thereby depressing the latter below the breech block.

In order that the trigger may not prevent the follower 26 from rising in front of the breech-block after the last cartridge has been

fired, means are provided to normally prevent the depression of the lever sufficiently to permit it to engage the stop 26^b. In the construction shown in Figs. 1, 4 and 5 this means consists of a small stop or lug 27 which is secured to the guide 7 and of a movable stop in the form of a lever 28 on the trigger-lever 20. This lever 28 is held normally by a spring 29 in the position shown in Fig. 1 and when firing said lever 28 comes down upon the stop lug 27 which thus limits the stroke of the lever 20. But if the finger pull 8 Fig. 4 is pulled back so that its stop 31 presses against the upper arm 30 of the lever 28 the latter will assume such a position that, if now the trigger lever be depressed, the lever 28 will not come against the stop lug 27 but as shown in Fig. 5 be carried down so far that it moves the cartridge feeder along with it. In order then to be able to depress the trigger lever, when the finger pull 8 is in the position shown in Fig. 4 it is provided with a lateral thumb piece 32 so that it can be worked by the thumb.

Fig. 6 shows another form of the arrangement just described. A stop 35 is here provided which is arranged on a spring 36. In the position shown in full lines this stop prevents the trigger lever from going down beyond a certain limit; but if the finger pull 8 is pulled back so that its stop 37 has brought the stop 35 into the dotted position, then the trigger lever can be fully depressed. It is convenient to use the finger pull 8 for the described operation, partly because accidental operation is thereby prevented and partly because the finger pull 8 in any case has to be brought back after each shot, when the pistol is used as a single loader.

The magazine can be loaded with the number of cartridges, for which the pistol is constructed. The charged magazine is inserted in the handle. For the first shot the slide is drawn back by the pull rod by the hand which carries the pistol, and without the assistance of the other hand. The force of the powder gases driving the bullet from the barrel acts rearwardly as is well known, against the bolt overcoming the inertia of the slide and the tension of the retractor-spring and as a result the slide and bolt recoil together without retracting the pull rod. The movement cocks the hammer, and when the slide is in this position, the magazine follower and follower spring raise the topmost cartridge so as to bring it into the barrel, when the slide again is forced forward. After the firing of the last cartridge, the slide remains open and allows loading of the barrel as single loader. To bring the slide again forward and to introduce the cartridge in the chamber of the barrel it is only necessary to draw back

the pull rod and press with the thumb on the trigger arms; the extracted cartridge cases are ejected in any convenient manner as by pushing them against a projection in the top of the magazine case.

I claim:—

1. In a breech loading fire-arm, the combination with a breech-block, a spring actuated carrier therefor and a firing mechanism, of an actuating member for the carrier in front of the trigger of said firing mechanism said carrier being movable independently of said member.

2. In a breech loading fire-arm, the combination with a frame, a breech-block, a spring actuated slide mounted on the frame carrying the breech block and a firing mechanism, of an actuating member for the carrier mounted in front of and forming a trigger guard.

3. In a breech loading fire-arm, the combination with a frame, a breech-block, a spring-actuated slide mounted on the frame carrying the breech-block and a firing mechanism, of a guard projecting under the trigger of the firing mechanism, and an actuating member for the slide movable on the guard in front of the trigger.

4. In a breech loading fire-arm, the combination with a breech-block, a magazine, and a follower in the latter movable into the path of the breech-block, of a trigger adapted to engage the follower and move it out of said path.

5. In a breech loading fire-arm, the combination with a breech block, and a magazine, of a follower in the latter movable into the path of the breech block, a hammer, a sear to engage the latter, a trigger adapted to operate the sear, means operated by the recoil of the breech block to move the trigger out of operative position and means on the follower to be engaged by the trigger when the trigger is in its inoperative position.

6. In a breech loading fire arm, the combination with a breech-block, of a hammer adapted to be cocked by the rearward movement of the breech-block, a sear to control the hammer, a trigger adapted to engage the sear, means operated by the recoil of the

breech-block to depress the trigger, a spring urged follower movable into the path of the breech-block, and a lug on the follower adapted to be engaged by the trigger, for the purpose set forth.

7. In a breech loading fire-arm, the combination with a breech-block, of a hammer adapted to be cocked by the recoil of the breech-block, a sear to control the hammer, a trigger having a pin to engage the sear, means operated by the recoil of the breech-block to depress the trigger and move the pin below the sear, a spring urged follower movable into the path of the breech-block, a stop to limit the stroke of the trigger, a pull-rod connected with the breech-block, and means on the pull-rod to free the trigger of the stop.

8. In a breech-loading fire-arm, the combination with a breech-block, an automatically actuated carrier, and a firing mechanism; of an actuating member detachably connected to the carrier and means to hold the actuating member forward during the automatic action of the carrier.

9. In a breech-loading fire-arm, the combination with a breech-block, an automatically actuated carrier, and a firing mechanism; of a guide projecting parallel to the carrier, a guard slidable on the guide, means to detachably connect the guard with the carrier, and means to hold the guard forward during the automatic action of the carrier.

10. In a breech-loading fire-arm, the combination with a breech-block, an automatically actuated carrier, and a firing mechanism; of a guide projecting parallel to the carrier, a guard slidable on the guide, a pull-rod connecting the carrier and guard and a spring catch fixed to the frame of the fire-arm taking into the pull-rod, for the purpose specified.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

OLE HERMAN JOHANNES KRAG.

Witnesses:

HENRY BORDEWICH,
MICHAEL ALGER.