

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in Small Arms.

I, ALVIN MOORE CRAIG, of No. 358, Whalley Avenue, in the City of New Haven, State of Connecticut, United States of America, Manufacturer, a citizen of the United States of America, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to small arms of the kind having a sliding breech bolt which is locked in its closed position by a manually retractable bolt and which is limited in its outward movement by a spring detent also capable of being manually retracted to permit the removal of the breech bolt when desired.

The object of the invention is to provide structural improvements in breech mechanism of this class and to produce a strong, simple, convenient and accurate firearm which carries a magazine, but is adapted to fire single shots as distinguished from the automatic fire-arms, and has few parts easily assembled and taken apart. The invention is intended to produce a reliable weapon which can be operated safely and which is not likely to get out of order.

According to the invention the breech bolt is securely locked in its closed position by means of a relatively strong spring-pressed bolt sliding forwards and upwards in a socket in the frame of the gun or pistol and adapted to engage in a correspondingly inclined socket in the underside of the breech bolt, lateral extensions carrying external thumb-pieces being provided on the locking bolt for manually releasing the breech bolt. The detent also comprises an upwardly urged spring-pressed bolt working in a socket in the rear of the gun or pistol frame

and adapted automatically to engage in the aforesaid socket in the underside of the breech bolt when the latter is fully opened. The detent is shaped, however, to allow the breech bolt to be closed; and is capable of being manually retracted for the removal of the breech bolt when desired.

The breech bolt may advantageously be provided with a spring-pressed plunger engaging the breech of the gun or pistol to produce or assist the opening of the breech bolt when the locking bolt is released therefrom.

In the drawings the invention is shown in the form of a pistol, and it is well adapted for this purpose, but the invention is not limited to this particular form. The structural advantages will appear clearly from the description which follows.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a side elevation of the pistol embodying my invention.

Figure 2 is a broken elevation with parts removed and with the breech bolt in longitudinal section, showing the breech bolt and firing pin in their most forward position.

Figure 3 is a broken longitudinal section through the breech mechanism, showing the breech bolt and firing pin partly retracted.

Figure 4 is a broken plan with the breech bolt removed.

Figure 5 is an inverted plan of the breech bolt, and

Figure 6 is a front end view of the breech bolt.

In the example shown, a pistol is illus-

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trated having a single piece frame 10 from which is formed the grip 11, trigger guard 12, and receiver 13, the latter being simply the top surface of the frame. In the frame is formed, at the front end, a bore 14 to receive the barrel 15 which can be fastened in any convenient way, and the arm is provided with suitable sights 16 and 17, which can be of any preferred kind, and which as illustrated has the sight 16 on the breech bolt, and the sight 17 on the barrel near the muzzle. In the grip is a chamber 18 in which a suitable magazine can be inserted, and the magazine is not shown as it forms no part of the invention. This is adapted to deliver cartridges in the conventional or any preferred way behind the barrel and in front of the breech bolt 21 presently referred to. The top surface 19 of the frame is left plain, and a recess 20 is cut through to permit the cartridges to pass upward into the receiver from the magazine below. The breech bolt 21 slides on the top of the frame 10, and moves backward and forward partly by manual manipulation as will be hereinafter described, and in order that it may be firmly seated and easily moved, it has side pieces 22 with inturned flanges 23 which enter the longitudinal and horizontal grooves 24 in the frame 10 near the butt of the firearm.

The breech bolt is securely locked in its forward position, and to this end it has a socket 50 in the under side, the front wall of which is forwardly inclined, and this receives the locking bolt 51 which slides obliquely upwards in the frame 10, and the bolt is relatively large and strong so that when it enters the socket 50 the breech bolt is securely held in its forward or firing position. The locking bolt slides in the bore 52 and is normally impelled upward by a spring 53. In order that it may be pulled down to release the breech bolt, it has a thumb piece 54, preferably roughened, which connects with it at one side and the shank of which moves in the slot 55 (see Figure 1).

To prevent the breech bolt from being pulled entirely off except at the desired time, a detent 57 in the form of a pin is arranged to slide vertically in a bore 56 at the butt end of the frame, and the detent pin is normally pushed upward by the spring 58. Its upper end 59 is inclined on the rear side so that while the detent will spring upward and engage in the socket 50 when the breech bolt is pulled back, the inclined surface will permit the breech bolt to be readily

slipped on the frame when it has been removed and is to be replaced. The detent or pin 57 has a notch 60 at its lower end and on one side in which the thumb nail can be inserted so as to pull down the pin and permit the removal of the breech bolt 21 when desired.

The breech bolt at its forward end and under side is preferably grooved as shown at 61 to provide clearance for the side edges of a magazine which may be inserted in the chamber 18. The breech bolt is also shown with an extractor 62 which can be of any preferred type.

The breech bolt can be moved backward and forward by hand, but if desired it has at its upper part and forward end been provided with a piston 63 which moves in a bore of the breech bolt and is normally pushed forward by the spring 64. Thus when the breech bolt is pushed forward to firing position, the spring 64 will be compressed, and after firing and releasing the bolt 51, the tension of the spring 64 will cause the breech bolt to spring back automatically, and the piston 63 will also serve the purpose, to a certain extent, of guiding the cartridge which moves up from the magazine below, and it will further act to prevent the ejected shell from flying upward, but cause it to go out surely from the side.

When the firearm is to be used, the breech bolt is pulled back by grasping the roughened sides 21^a, thus permitting the cartridge to move up from the magazine below into the receiver and between the front of the breech bolt and the rear end of the barrel. When the breech bolt is moved forward, the bolt 51 will enter the socket 50, thus securely locking the breech bolt in its forward position. The firearm is then ready for firing. Before the breech bolt can be pulled back, the operator presses down on the thumb piece 54 thus releasing the breech bolt, and if the piston 63 is used the tension of the spring 64 on this will cause the breech bolt to fly back, but if the piston 63 is not used, the breech bolt is pulled back manually.

When the pin 51 is released from the socket, the breech bolt cannot be pulled too far back because the detent 57 will engage the wall of the socket 50. If it is desired to remove the breech bolt entirely to clean the firearm, or for any purpose, the pin 51 is released from its socket, the detent 57 is pulled down, and the entire bolt simply pulled off the butt of the gun. To replace the breech bolt it is simply pushed on with the flange 23 in the grooves 24 until the front end of

the breech bolt strikes the sear, when the latter is depressed by pulling the trigger and the breech bolt can then be pushed on until the front end strikes the pin 51, and this is depressed permitting the breech bolt to be pushed on to its most forward position.

It will be seen from the foregoing description that a very simple, strong, and reliable firearm is produced which can be made in any preferred design.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. A small arm of the kind referred to, wherein the breech bolt is locked in the closed position by means of a spring-pressed, manually retractable bolt sliding in a socket inclined upwardly and forwardly in the gun or pistol frame and engaging in a correspondingly inclined socket in the underside of the breech bolt when fully closed, an upwardly urged spring-pressed detent bolt being provided in a vertical socket in the rear of the frame to engage in the aforesaid socket in the breech bolt to limit the opening of the breech and adapted to be

manually retracted for the removal of the breech bolt.

2. A small arm of the kind referred to, comprising a frame having a generally flat top behind the barrel of the firearm, and characterised by a slide bolt which moves on the top of the frame and has a dovetail connection therewith, the slide bolt having a socket therein arranged to engage an inclined spring-pressed locking bolt which is concealed in the handle of the firearm and slides beneath the main slide bolt.

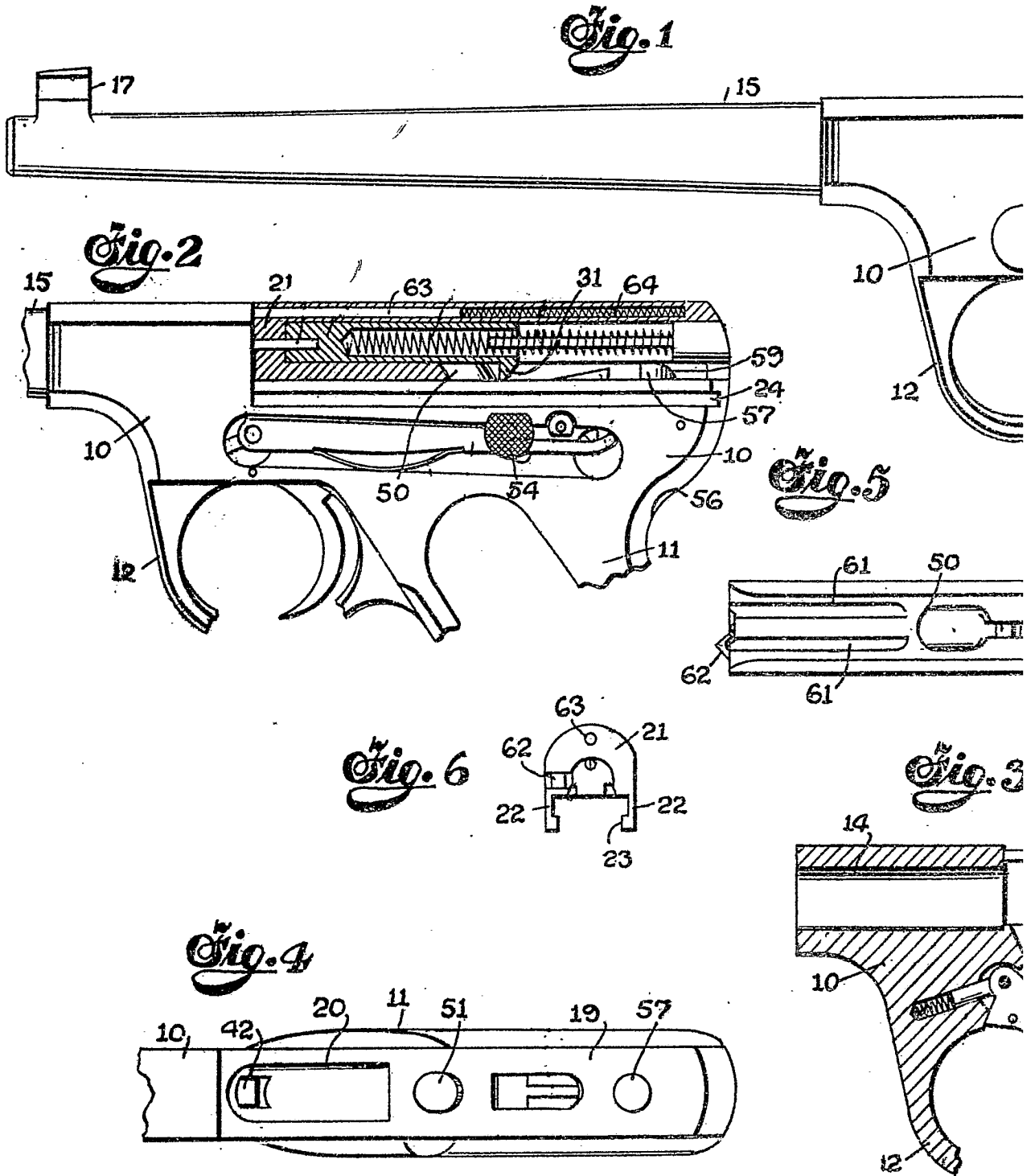
3. In a small arm according to Claim 1, the provision on the breech bolt of a spring-pressed plunger engaging the breech of the gun or pistol to produce or assist the opening of the breech bolt when the locking bolt is retracted.

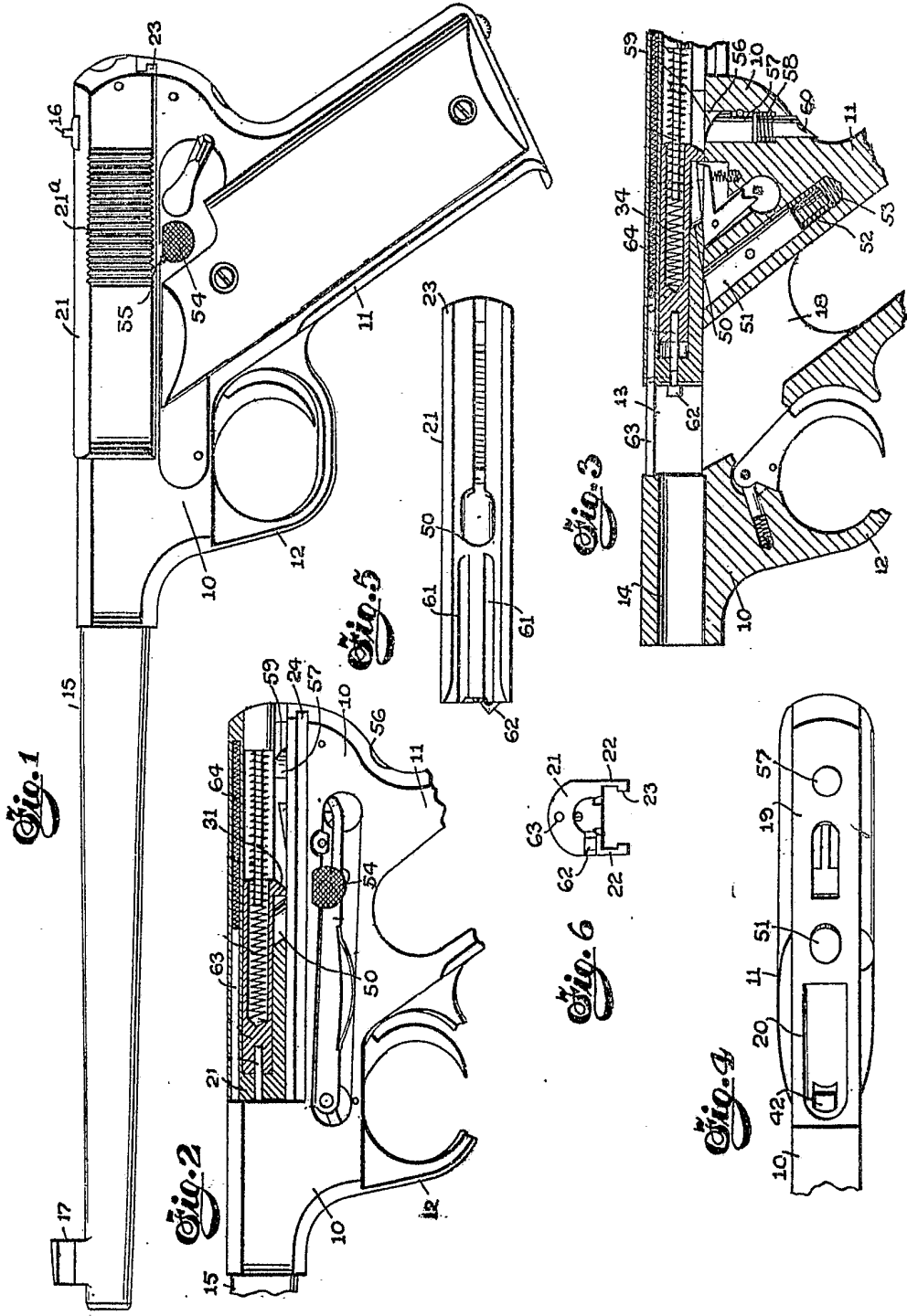
4. Small arms constructed, arranged and adapted to operate, substantially as described by reference to the accompanying drawings.

Dated this 7th day of April, 1920.

HASELTINE, LAKE & Co.,
28, Southampton Buildings, London,
England, and
55, Liberty Street, New York City,
U.S.A.,
Agents for the Applicant.

[This Drawing is a reproduction of the Original on a reduced scale.]





[This Drawing is a reproduction of the Original on a reduced scale]