July 8, 1941. G. A. WILSON 2,248,445

AUTOMATIC PISTOL

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Fig. 1.

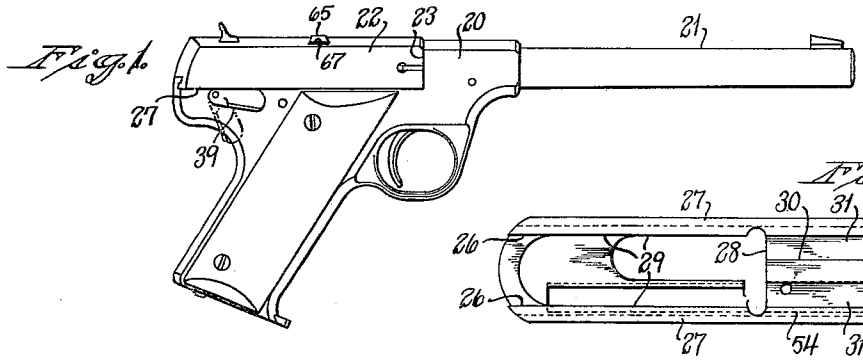


Fig. 1a.

Fig. 2.

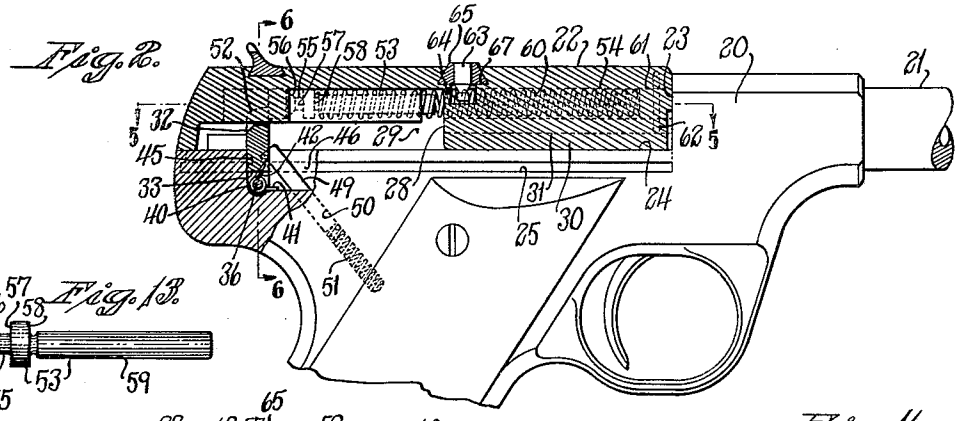


Fig. 3.

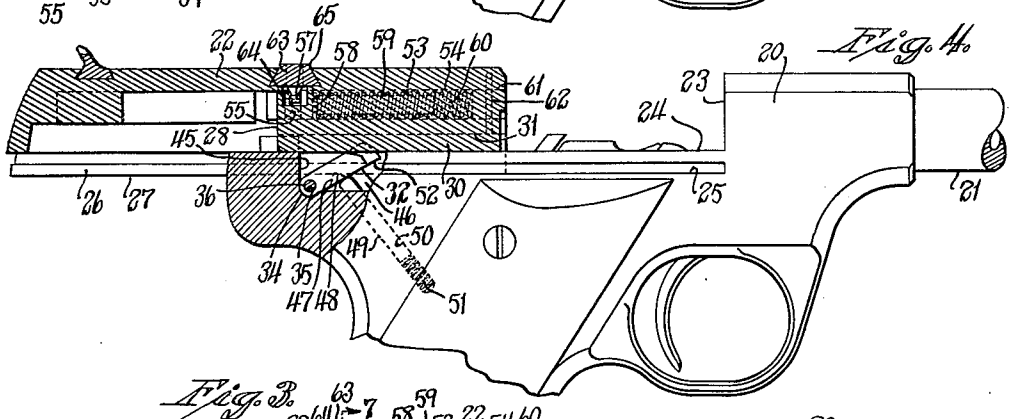
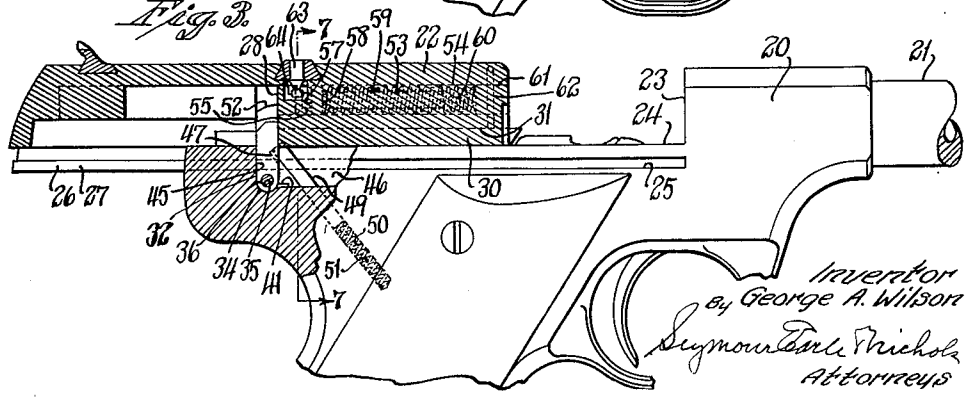


Fig. 3.



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Fig. 5.

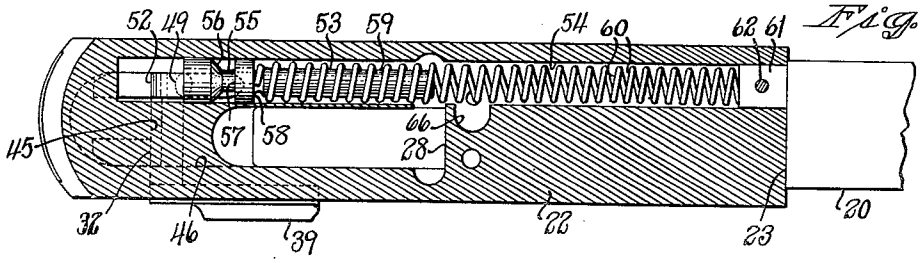


Fig. 6.

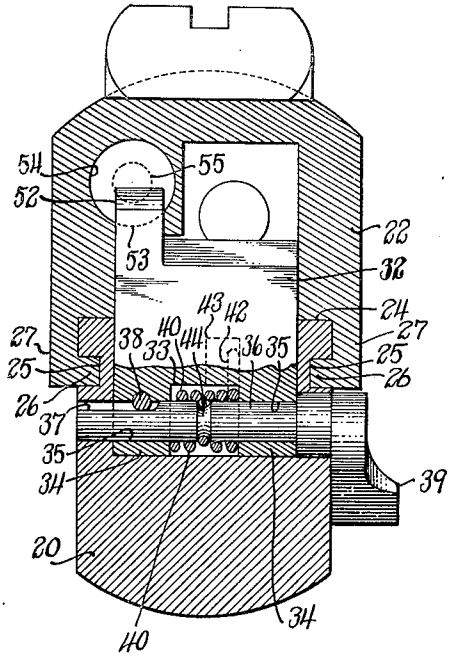


Fig. 10.

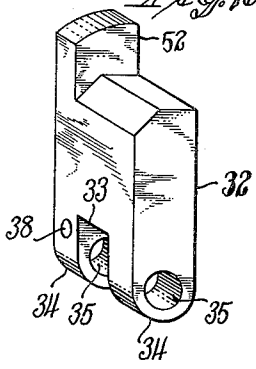


Fig. 11.

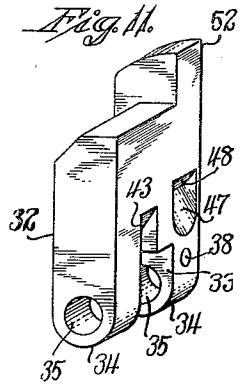


Fig. 9.

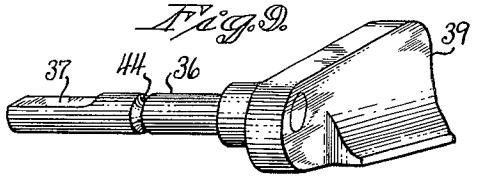


Fig. 7.

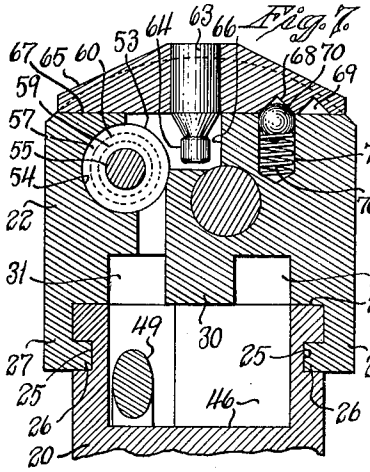
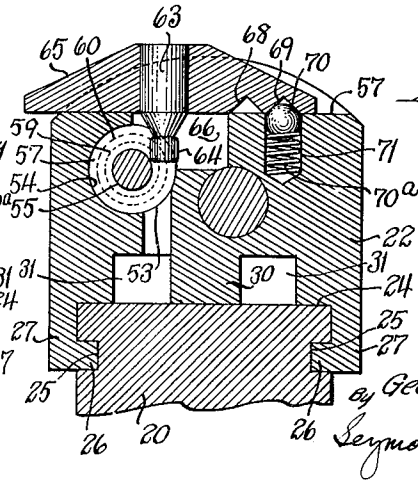


Fig. 8.



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UNITED STATES PATENT OFFICE

2,248,445

AUTOMATIC PISTOL

George A. Wilson, Hamden, Conn., assignor to The High Standard Manufacturing Company, New Haven, Conn., a corporation of Connecticut

Application December 16, 1938, Serial No. 246,039

10 Claims. (Cl. 42—3)

The present invention relates to improvements in automatic pistols, that is to say, that class of pistols in which a given discharge thereof automatically extracts and ejects a cartridge case of the just-fired shell preparatory to the insertion of a fresh cartridge. More particularly, the present invention relates to automatic pistols of the general class referred to, and having a removable breech-bolt or slide.

One of the objects of the present invention is to provide an automatic pistol with superior releasable means for checking the recoil of the slide or breech-bolt and characterized by simplicity, reliability and convenience of operation.

Another object of the present invention is to provide superior means for releasably preventing the reciprocating breech-bolt or slide from separation from the body of the pistol.

A further object of the present invention is to provide an automatic pistol having superior means whereby the breech-closing spring may be rendered inoperative to thus facilitate the removal of the breech-bolt from the frame.

Still another object of the present invention is to provide an automatic pistol with superior means for releasably rendering the breech-closing spring inoperative, together with an improved construction and arrangement of parts, whereby the said means may be automatically shifted by a movement of the breech-bolt to release the said breech-closing spring for normal functioning.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

In the accompanying drawings in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is a view in side elevation of an automatic pistol embodying the present invention;

Fig. 2 is a broken view on a larger scale than Fig. 1, mainly in side elevation but showing the slide or breech-bolt and a portion of the rear of the frame in vertical-longitudinal section;

Fig. 3 is a view corresponding to Fig. 2, but showing the breech-bolt or slide moved rearwardly to the limit of its normal movement;

Fig. 4 is a view corresponding to Figs. 2 and 3, but showing the breech-closing plunger locked in its retired position, and the breech-bolt stop in its depressed position to permit the removal of the breech-bolt, which removal is shown in progress;

Fig. 5 is a horizontal sectional view taken on the line 5—5 of Fig. 2;

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 2;

Fig. 7 is a transverse sectional view taken on the line 7—7 of Fig. 3;

Fig. 8 is a view corresponding to Fig. 7 but showing the retaining-slide and retaining-pin shifted to the left to lock the breech-closing plunger and breech-closing spring in their retired or inoperative position;

Fig. 9 is a perspective view of the rock-shaft and releasing-lever;

Fig. 10 is a perspective view of the breech-bolt stop viewed mainly from the rear;

Fig. 11 is a similar view of the breech-bolt stop but viewing the same mainly from the front;

Fig. 12 is a reverse plan-view of the breech-bolt or slide detached; and

Fig. 13 is a view in side elevation of the breech-closing plunger.

The particular automatic pistol herein chosen for the purpose of illustrating the present invention, includes as its major parts a frame 20, a usual barrel 21 and a reciprocating breech-bolt or slide 22. The upper rear portion of the frame 20 is cut away to provide a vertical rearwardly-facing wall 23 upstanding from an upwardly-facing wall 24 occupying a horizontal plane substantially below the upper surface of the forward portion of the said frame 20. On each of its respective opposite sides, at a point immediately below the horizontal wall 24 and extending in parallelism therewith, the frame 20 is provided with a longitudinal guide-groove 25, as is especially well shown in Figs. 6, 7 and 8.

Each of the guide-grooves 25—25 in the frame 20, receives, with a smooth sliding fit, the adjacent one of two guide ribs 26—26, each of which latter constitutes the inwardly projecting portion of one of two L-shaped extensions 27—27. The L-shaped extensions 27—27 respectively integrally depend from the opposite side edges of the breech-bolt or slide 22, the under surface of which latter bears upon the upwardly-facing horizontal wall 24 of the frame 20.

Slightly forwardly of midway of its length the breech-bolt 22 is formed with a rearwardly-facing stop-abutment 28 which constitutes the forward wall of a recess 29 formed in the said breech-bolt, as is especially well shown in Fig. 12. Extending forwardly from the stop-abutment 28 of the breech-bolt 22 is a longitudinal bearing-rib 30 adapted to bear upon portions of the upwardly-facing horizontal wall 24 of the frame 20

and flanked on each of its respective opposite sides by a clearance-groove 31—31.

The stop-abutment 28 of the breech-bolt or slide 22 is adapted, under normal conditions, to abut against the forward face of a pivotal breech-bolt stop generally designated by the reference character 32 and located closely adjacent the rear-end of the frame 20 in position to project over the horizontal wall 24 thereof, under normal conditions, and to be depressed below the said wall into a clearance position, for the purpose as will more fully hereinafter appear.

The lower portion of the breech-bolt stop 32 above referred to, is formed midway of its width transversely of the firearm, with a notch 33 intersecting its lower edge and resulting in the formation, on each of the respective opposite sides of the stop 32, of two complemental trunnion-arms 34—34, each of which is provided with a cylindrical aperture 35 for the reception of a rock-shaft 36. The said rock-shaft 36 bears adjacent its respective opposite ends in the side-walls of the frame 20, and adjacent its left end the rock-shaft 36 is provided with a flat portion 37 which is engaged by a key-pin 38 extending through the left one of the trunnion-arms 34 of the breech-bolt stop 32 (Fig. 6). At its right end, the rock-shaft 36 has rigidly secured to it a releasing-lever 39 which, in its normal position, extends forwardly from the said rock-shaft 36 in substantial parallelism and beneath the adjacent lower edge of the breech-bolt or slide 22, as is especially illustrated in Fig. 1. Encircling the central portion of the rock-shaft 36, intermediate the two complemental trunnion-arms 34—34, is a helical torsion-spring 40 having one arm 41 bearing against the bottom surface of a recess 46 in the frame 20, and having its opposite arm 42 bearing in a notch 43 formed in the forward face of the breech-bolt stop 32 and leading forwardly and upwardly from the previously described notch 33 therein. The central or adjacent convolution of the torsion-spring 40 seats in an annular retaining-groove 44 formed in the periphery of the rock-shaft 36 about midway the length thereof.

As thus constructed and arranged, the torsion-spring 40 yieldingly urges the swinging breech-bolt stop 32 into its upstanding position, as is indicated in Fig. 2, in which position its rear face engages with the forwardly-facing rear wall 45 of a clearance-cut 46 opening upwardly through the horizontal wall 24 of the frame 20 and designed for the reception of the said breech-bolt stop 32. By having one or more of the convolutions of the torsion-spring 40 seated in the annular retaining-groove 44 in the rock-shaft 36, the said rock-shaft is prevented from axial displacement with respect to the breech-bolt stop 32, since the said spring 40 is confined endwise between the opposed inner faces of the trunnion-arms 34—34 of the said stop 32, and the said breech-bolt stop itself is prevented from lateral displacement by the respective opposite side-walls of the clearance-cut 46 in the frame 20.

For the purpose of providing means independent of and in addition to the torsion-spring 40 for yieldingly holding the breech-bolt stop 32 in its vertical position, the said stop 32 is provided in its forward face, adjacent its left side, with a notch 47, the forwardly-and-upwardly sloping upper wall of which constitutes a thrust-abutment 48, against which thrusts the upper end of a plunger 49 which is inclined upwardly and rearwardly and which reciprocates in a bore 50 intersecting the clearance-cut 46 in the frame 20. Interposed between the lower end of the plunger 49 and the bottom of the bore 50, is a helical spring 51 exerting a constant effort to move the reciprocating plunger 49 upwardly and rearwardly, so as to yieldingly maintain the breech-bolt stop 32 in its upright position.

By employing the two distinct spring-means for yieldingly holding the breech-bolt stop 32 in its upright active position, the possibility of the said stop being free of spring-tension is materially reduced, since if one or the other of the spring-means should break, or fail to function for any other reason, the other spring-means may be counted upon to function properly under all ordinary conditions.

Extending upwardly from the left side of the breech-bolt stop 32 is a thrust-finger 52, against which bears the rear-end of a breech-closing plunger 53 reciprocating in a longitudinal cylindrical bore 54 formed in the breech-bolt 22 adjacent the left side thereof. The said bore 54 intersects the stop-abutment 28 in the breech-bolt and extends to a position closely adjacent the rear-end thereof and opens downwardly into the recess 29 in the breech-bolt 22 throughout substantially the full length of the latter, to thus provide for the entry of the thrust-finger 52 thereinto for engagement with the rear end of the breech-closing plunger 53.

The plunger 53 above referred to is formed adjacent its rear end with an annular-groove 55 having its rear wall shaped to provide a conically-contoured releasing-cam 56 for the purpose as will hereinafter appear. The forward wall of the annular-groove 55 just above referred to extends substantially perpendicularly with respect to the breech-closing plunger 53 and constitutes a retaining-abutment 57 for the purpose as will be made clear hereinafter. Spaced slightly forwardly from the rearwardly-facing retaining-abutment 57 is a forwardly-facing spring-seat 58, from which centrally projects, in a forward direction, a spring-guiding stem 59 extending within a helical breech-closing spring 60.

The rear end of the breech-closing spring 60 presses against the spring-seat 58 of the breech-closing plunger 53, and is accommodated in the longitudinal cylindrical bore 54 formed in the breech-bolt 22, as before described. The bore 54, as is particularly well shown in Fig. 5, intersects the forward face of the breech-bolt or slide 22, but is closed at this point by a cylindrical plug 61 which is retained in place by a pin 62, and the rear face of which constitutes a seat for the adjacent forward end of the helical breech-closing spring 60.

With the parts constructed and arranged as above described, the breech-closing spring 60, under all normal operating conditions, forwardly urges the breech-bolt 22 (and the parts carried thereby) into its breech-closing position.

For the purpose of rendering the breech-closing spring 60 temporarily inoperative when it is desired to demount the breech-bolt or slide 22 from the frame 20, a retaining-pin 63 is employed which is provided with a reduced lower end constituting a retaining-head 64 adapted to be entered into the annular groove 55 in the breech-closing plunger 53 in a manner as will hereinafter appear. The retaining-pin 63 is rigidly mounted in a retaining-slide 65, and its lower portions, including the retaining-head 64, are adapted to reciprocate transversely of the pistol

in a clearance-cut 66 formed in the breech-bolt 22 and laterally-intersecting the bore 54, in which the breech-closing plunger 53 and the breech-closing spring 60 reciprocate, as clearly indicated in Figs. 5, 7 and 8.

The retaining-slide 65 is of dovetail form in cross-section and is adapted to reciprocate transversely of the breech-bolt 22 in a transverse dovetail-groove 67 in the upper portion of the said breech-bolt. It will be noted by references to Figs. 7 and 8 in particular, that the lower or bottom wall of the dovetail-groove 67 is intersected by the clearance-cut 66 provided for the clearance of the lower portion of the retaining-pin 63.

For the purpose of yieldingly holding the retaining-slide 65 in either its active or retired positions, the said retaining-slide is formed in its under-face with two detent-sockets 68 and 69, into either of which is adapted to enter a detent-ball 70 under the urge of a helical spring 70*a*, both of which are located in an upwardly-opening pocket 71 formed in the breech-bolt 22 beneath the retaining-slide 65 and in alignment with the two detent-sockets 68 and 69, as is especially well shown in Figs. 7 and 8.

When it is desired to remove the breech-bolt or slide 22 from the frame 20, the said slide may be grasped by the hand of the user and drawn rearwardly until its stop-abutment 28 engages with the forward-face of the pivotal breech-bolt stop 32, as indicated in Fig. 3. The described movement of the breech-bolt will compress the breech-closing spring 60 and bring the annular groove 55 in the breech-closing plunger 53 roughly into alignment with the transverse path of movement of the retaining-pin 63 of the retaining-slide 65.

If, now, while the parts are in the positions just described, the retaining-slide 65 is urged from the position in which it is shown in Fig. 7 toward the position in which it is shown in Fig. 8, and if, at the same time, the rearward pull upon the breech-bolt 22 is slightly relaxed, the following action will take place: when in its slight forward movement (about $\frac{1}{16}$ of an inch) the breech-bolt 22 brings the forward face of the retaining-head 64 of the retaining-pin 63 into alignment with the retaining-abutment 57 of the breech-closing plunger 53, the said retaining-head may be fully entered into the groove 55 and into engagement with the retaining-abutment 57, by moving the retaining-slide 65 from right to left. By its engagement with the said retaining-abutment 57, the retaining-head 64 will prevent the rearward movement of the breech-closing plunger 53 until such time as the retaining-slide may be moved back into its normal inoperative position. In this manner, the breech-closing plunger 53 and the breech-closing spring 60 are prevented from forcing the breech-bolt 22 into its closed position, and both the said spring and the said plunger are retained in the breech-bolt for joint removal therewith.

With the breech-closing plunger 53 locked in its forward position in the bore 54 in the breech-bolt 22, as above described, the pivotal breech-bolt stop 32 may be rocked into its depressed or retired position, in which it is shown in Fig. 4, by depressing the forward end of the releasing-lever 39 on the right side of the frame 20, into the position indicated by broken lines in Fig. 1. The described movement of the breech-bolt stop 32 will (if the breech-bolt has not already manually been moved partly forwardly) crowd against the stop-abutment 29 of the breech-bolt and cam the same forwardly a short distance toward its breech-closing position.

With the breech-closing plunger 53 locked in its forward position in the bore 54 in the breech-bolt 22 and the breech-bolt stop 32 in its retired position, the said breech-bolt, together with the now-locked plunger 53 and spring 60, may be completely removed by sliding the same rearwardly off from the frame 20.

As soon as the user's finger is removed from the releasing-lever 39 and the forward end of the breech-bolt rides rearwardly clear of the breech-bolt stop 32, the latter will swing upwardly into its normal vertical position under the force provided by the torsion-spring 40 and the helical-spring 51.

When it is desired to reassemble the breech-bolt or slide 22 with the frame 20 and the remainder of the firearm, the guide-ribs 26—26, respectively, on the opposite sides of the said breech-bolt, may be brought into registration and alignment with the guide-grooves 25—25, respectively formed in the opposite faces of the rear-portion of the frame 20, as before described. The breech-bolt may now be slid forwardly, and when the forward face thereof strikes the rear face of the breech-bolt stop 32, the latter will turn forwardly and downwardly and permit the forward portion of the said breech-bolt to override it. As soon as the breech-bolt has been moved sufficiently far forwardly to move its rearwardly-facing vertical stop-abutment 28 forwardly of the said stop 32, the latter will again swing upwardly into the recess 29 in the breech-bolt to the rear of the stop-abutment 28 thereof, so as to again be in position to limit the rearward travel of the breech-bolt. The last described upward swinging movement of the breech-bolt stop 32 will also interpose its thrust-finger 52 behind the rear end of the breech-closing plunger 53.

If, now, the breech-bolt is manually pulled rearwardly, the retaining-head 64 of the retaining-pin 63 will engage the conical releasing-cam 56 of the plunger 53 and will be forced (together with the retaining-slide 65 by which it is carried) from left to right from the position in which it is shown in Fig. 8, to the position in which it is shown in Fig. 7, and, therefore, out of the path of movement of the retaining-abutment 57 of the said plunger 53. In this manner, the breech-closing plunger 53 will be released from restraint by the retaining-pin 63, and upon the breech-bolt being released by the operator, the said plunger 53, under the urge of the breech-closing spring 60, will immediately act to move the breech-bolt or slide 22 forwardly into its breech-closing position.

From the foregoing, it will be seen that by the mere act of drawing rearwardly upon the breech-bolt 22 after the breech-bolt stop 32 has been permitted to move up into its normally vertical position, the retaining-slide 65 and retaining-pin 63 will be automatically restored to their normal positions, in which they do not interfere with the action of the breech-closing plunger 53 or the breech-closing spring 60.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and

equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. An automatic pistol including in combination: a barrel; a frame provided with a forwardly-facing stop-abutment; a breech-bolt reciprocatable on said frame and having a rearwardly-facing stop-abutment; a releasable pivotal breech-bolt stop pivotally mounted in the said frame and normally projecting into the path of movement of the stop-abutment of the said breech-bolt for normally checking the recoil of the latter, the said pivotal breech-bolt stop being normally against the stop-abutment of the said frame and retirable by a swinging movement away from the stop-abutment of the said frame and out of the path of movement of the stop-abutment of the said breech-bolt stop to permit the removal of the latter from the said frame; and spring-means urging the said pivotal breech-bolt stop into engagement with the stop-abutment of the said frame and into the path of movement of the stop-abutment of the said reciprocating breech-bolt.

2. An automatic pistol including in combination: a barrel; a frame provided with a forwardly-facing stop-abutment; a breech-bolt reciprocatable on said frame and having a rearwardly-facing stop-abutment; a releasable pivotal breech-bolt stop pivotally mounted in the said frame and normally projecting into the path of movement of the stop-abutment of the said breech-bolt for normally checking the recoil of the latter, the said pivotal breech-bolt stop being normally against the stop-abutment of the said frame and retirable by a swinging movement away from the stop-abutment of the said frame and out of the path of movement of the stop-abutment of the said breech-bolt stop to permit the removal of the latter from the said frame; and two separate and distinct springs yieldingly urging the said pivotal breech-bolt stop into engagement with the stop-abutment of the said frame and into the path of movement of the stop-abutment of the said breech-bolt.

3. An automatic pistol including in combination: a barrel; a frame; a breech-bolt reciprocating on the said frame; a releasable breech-bolt stop carried by the said frame and normally checking the recoil of the said breech-bolt; a spring-pressed breech-closing plunger carried by and reciprocating in the said breech-bolt for moving the latter into its breech-closing position, the said breech-closing plunger being provided with a retaining-abutment and with a releasing-cam; and manually-operable retaining-means carried by the said breech-bolt and having a portion engageable with the retaining-abutment of the said breech-closing plunger for locking the same in its retired position, and also engageable by the releasing-cam of the said breech-closing plunger for automatically shifting the said retaining-means into its retired position when the said breech-bolt is moved rearwardly relative to the said breech-closing plunger.

4. An automatic pistol including in combination: a barrel; a frame; a breech-bolt reciprocating on the said frame; a releasable breech-bolt stop carried by the said frame and normally checking the recoil of the said breech-bolt; a spring-pressed breech-closing plunger carried by and reciprocating in the said breech-bolt for moving the latter into its breech-closing position, the said breech-closing plunger being provided with a rearwardly-facing retaining-abutment and with a rearwardly-and-outwardly-sloping releasing-cam; and manually-operable retaining-means carried by the said breech-bolt and having a portion engageable with the retaining-abutment of the said breech-closing plunger for locking the same in its retired position, and also engageable by the releasing-cam of the said breech-closing plunger for automatically shifting the said retaining-means into its retired position when the said breech-bolt is moved rearwardly relative to the said breech-closing plunger.

5. An automatic pistol including in combination: a barrel; a frame; a breech-bolt reciprocating on the said frame; a releasable breech-bolt stop carried by the said frame and normally checking the recoil of the said breech-bolt; a spring-pressed breech-closing plunger carried by and reciprocating in the said breech-bolt for moving the latter into its breech-closing position, the said breech-closing plunger being provided with a retaining-abutment and with a releasing-cam; a manually-operable retaining-slide carried by the said breech-bolt and movable transversely thereof; a retaining-projection carried by the said retaining-slide and movable thereby into the path of movement of the retaining-abutment of the said breech-closing plunger for locking the latter in its retired position, the said retaining-projection being also engageable by the releasing-cam of the said breech-closing plunger for being automatically shifted thereby into its retired position when the said breech-bolt is moved rearwardly relative to the said breech-closing plunger.

6. An automatic pistol including in combination: a barrel; a frame; a breech-bolt reciprocating on the said frame; a releasable breech-bolt stop carried by the said frame and normally checking the recoil of the said breech-bolt; a spring-pressed breech-closing plunger carried by and reciprocating in the said breech-bolt for moving the latter into its breech-closing position, the said breech-closing plunger being provided with a rearwardly-facing retaining-abutment and with a rearwardly-and-outwardly-sloping releasing-cam; a manually-operable retaining-slide carried by the said breech-bolt and movable transversely thereof; a retaining-projection carried by the said retaining-slide and movable thereby into the path of movement of the retaining-abutment of the said breech-closing plunger for locking the latter in its retired position, the said retaining-projection being also engageable by the rearwardly-and-outwardly-sloping releasing-cam of the said breech-closing plunger for being automatically shifted thereby into its retired position when the said breech-bolt is moved rearwardly relative to the said breech-closing plunger.

7. An automatic pistol including in combination: a barrel; a frame provided with a forwardly-facing stop-abutment; a breech-bolt reciprocatable on said frame and having a rearwardly-facing stop-abutment; a releasable pivotal breech-bolt stop pivotally mounted in the said frame and normally projecting into the path of movement of the stop-abutment of the said breech-bolt for checking the recoil of the latter, the said pivotal breech-bolt stop being normally against the stop-abutment of the said frame and retirable by a swinging movement away from the stop-abutment of the said frame and out of the path of movement of the stop-abutment of the said breech-bolt stop to permit the removal of the latter from the said frame; a spring-pressed breech-closing plunger carried by and

reciprocating in the said breech-bolt for moving the latter into its breech-closing position, the said breech-closing plunger being provided with a rearwardly-facing retaining-abutment and with a rearwardly-and-outwardly-sloping releasing-cam; a manually-operable retaining-slide at the top of the said breech-bolt and movable transversely thereof; a retaining-projection carried by the said retaining-slide and movable thereby into the path of movement of the retaining-abutment of the said breech-closing plunger for locking the latter in its retired position, the said retaining-projection being also engageable by the releasing-cam of the said breech-closing plunger for being automatically shifted thereby into its retired position when the said breech-bolt is moved rearwardly relative to the said breech-closing plunger.

8. An automatic pistol including in combination: a barrel; a frame; a breech-bolt automatically reciprocatable to retracted and advanced positions on said frame, the advancing-means for said breech-bolt including an actuating-spring and a plunger extending therein, and the said breech-bolt being also manually movable to retracted position; a retirable breech-bolt stop normally spring-pressed into the path of said breech-bolt to check retracting movement thereof; releasable restraining-means manually operable to interlock with said plunger when the breech-bolt is manually drawn to retracted position to cause said actuating-spring to be held substantially-compressed and prevent automatic movement of said breech-bolt forwardly or rearwardly of its said retracted position; and the said breech-bolt stop being retirable to permit said breech-bolt to be drawn rearwardly of its said retracted position and removed from the said frame.

9. An automatic pistol including in combination: a barrel; a frame; a breech-bolt automatically reciprocatable to retracted and advanced positions on said frame, the advancing-means for said breech-bolt including an actuating-spring and a plunger extending therein, and the said breech-bolt being also manually movable to retracted position; a retirable breech-bolt stop normally spring-pressed into the path of said breech-bolt to check automatic and manual retracting movement thereof; releasable restraining-means manually operable to interlock with said plunger when the breech-bolt is manually drawn to retracted position to cause said actuating-spring to be held substantially-compressed and prevent automatic movement of said breech-bolt forwardly or rearwardly of its said retracted position; and the said breech-bolt stop being engageable with said breech-bolt to cam the same forwardly and by swinging movement to move out of the path of the breech-bolt to permit said breech-bolt to be drawn rearwardly of its said retracted position and removed from the said frame.

10. An automatic pistol including in combination: a barrel; a frame; a breech-bolt reciprocatable on the said frame and having an internal rearwardly-facing stop-abutment; a releasable breech-bolt stop pivoted in the said frame and normally projecting into the path of movement of the stop-abutment of the said breech-bolt for checking the recoil of the latter, the pivoted breech-bolt stop being retirable by a swinging movement thereof out of the path of the stop-abutment of the said breech-bolt for removal of the latter from the said frame; and independently-acting spring-means including a torsion-spring and a helical compression-spring respectively yieldingly urging the said breech-bolt stop to its advanced or operative position with respect to the said breech-bolt.

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