

April 29, 1958

O. O. SUNDERLAND

2,832,266

AUTOMATIC PISTOL

Filed Nov. 8, 1952

3 Sheets-Sheet 1

FIG. 1

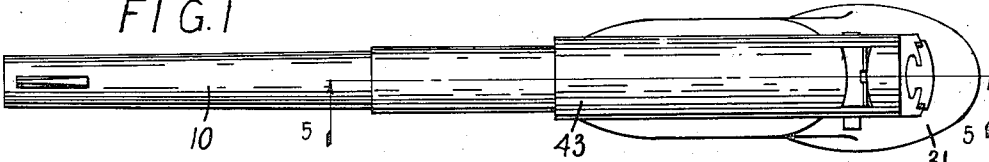


FIG. 2

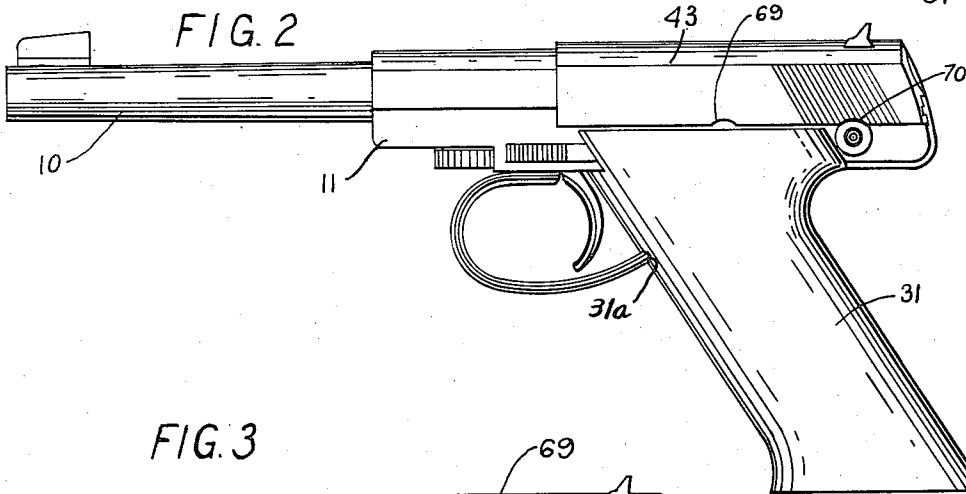


FIG. 3

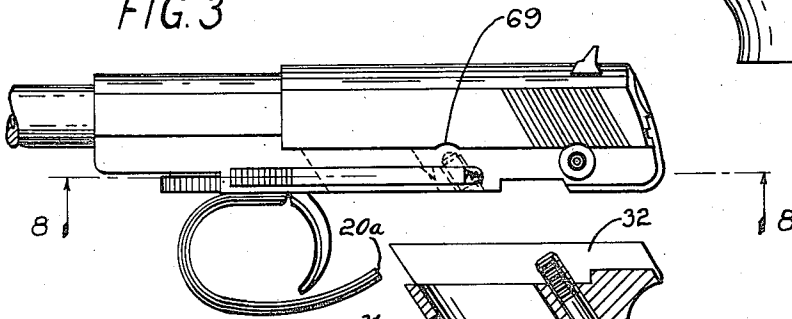


FIG. 7a

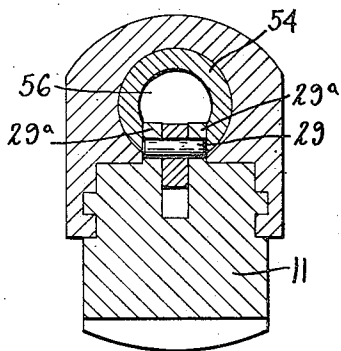
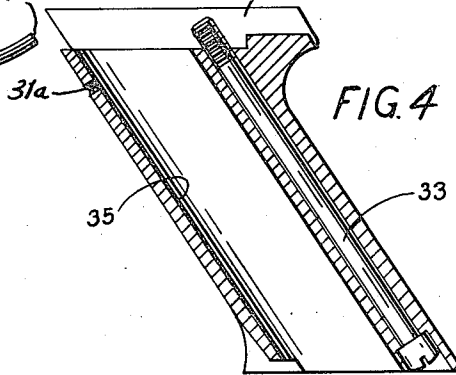


FIG. 4



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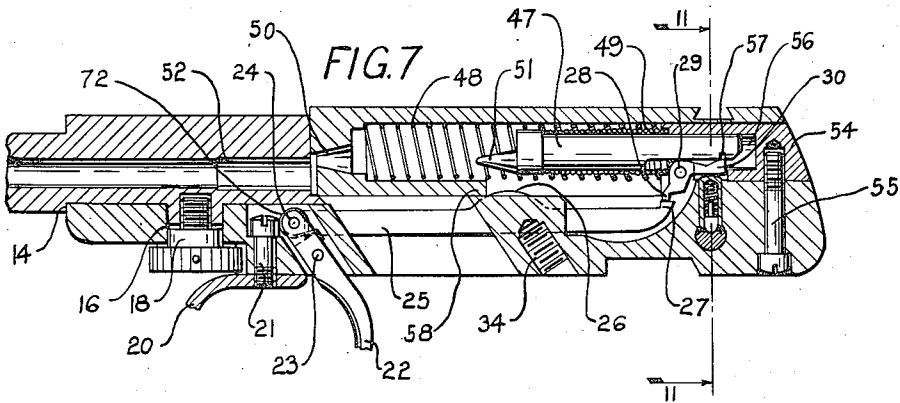
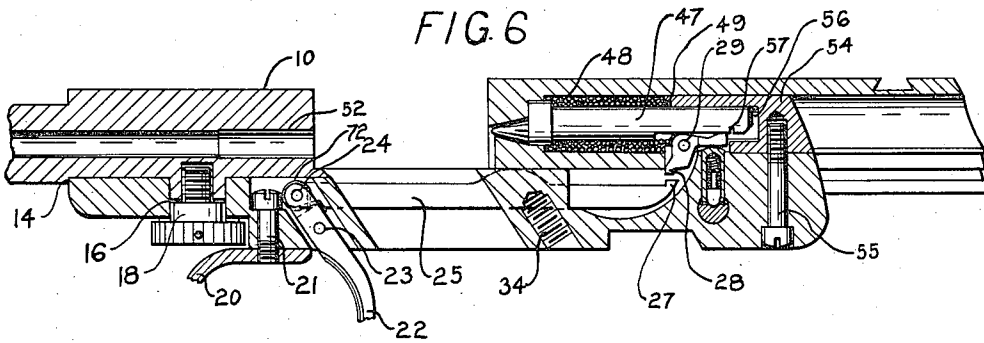
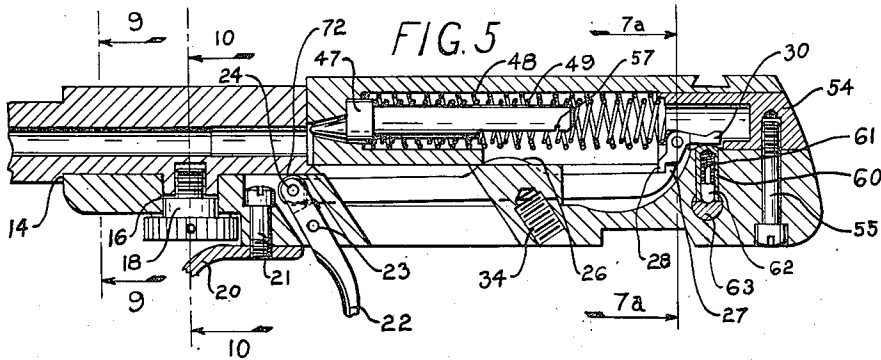
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AUTOMATIC PISTOL

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FIG. 8

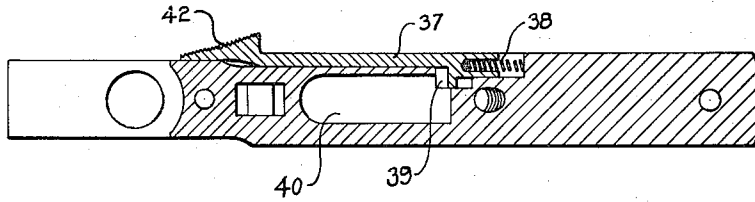


FIG. 9

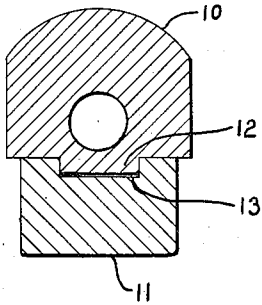


FIG. 10

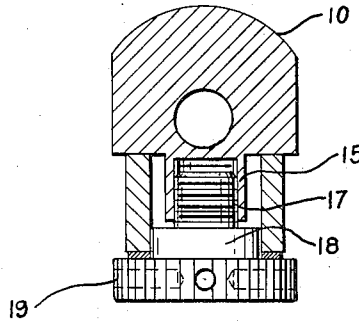


FIG. 12

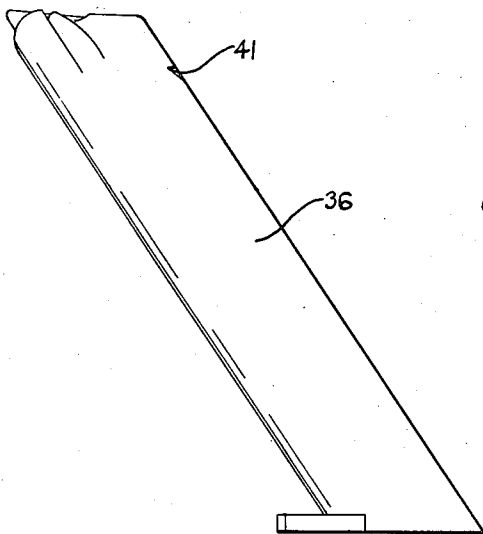
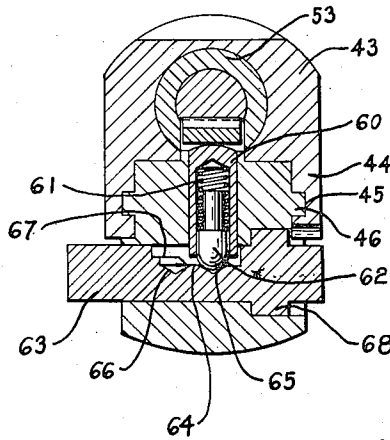


FIG. 11



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AUTOMATIC PISTOL

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6 Claims. (Cl. 89—195)

This invention relates to pistols, and more particularly to an automatic pistol in which the cartridges are carried in a magazine and automatically moved into the chamber by the recoil of the explosion when the gun is fired.

A weapon of this character commonly comprises a frame, a barrel, and a grip or handle portion usually secured to the frame. In general either the handle portion is hollow and the frame projects into the handle, or the handle portion or grip in some instances comprises handle scales secured upon opposite sides of the frame.

Also in many firearms of the type illustrated in the present application the mechanism for automatically moving a cartridge from the magazine into the chamber and cocking the gun is quite complex, and its manufacture is attended with considerable expense which also applies to the firing mechanism and other parts of the pistol such as the means for securing the barrel to the frame, and the safety mechanism.

It is contemplated by the present invention to provide an automatic pistol of simple construction which may be manufactured relatively economically. As illustrated the frame is so designed that it does not project into the grip or handle, the latter only serving to hold the magazine in addition to its function as a grip. It, therefore, may be made of wood or plastic and may be of relatively light weight.

One object of the invention, therefore, is to provide an automatic pistol of relatively simple construction wherein the mechanism is housed in a frame which does not project into the grip or handle to which the frame is secured.

A further object of the invention is to provide a new and improved striker mechanism for an automatic pistol which will be simpler in construction than that usually employed in devices of this kind.

A further object of the invention is to provide improved means for removably securing the barrel of the firearm to the frame.

Still further objects of the invention are to provide improved means for securing the magazine in place and to provide safety mechanism of improved construction.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a top plan view of an automatic pistol embodying my invention;

Fig. 2 is a side elevational view thereof;

Fig. 3 is an elevational view of the frame with the handle removed therefrom;

Fig. 4 is a sectional view of the handle;

Fig. 5 is a sectional view on line 5—5 of Fig. 1;

Fig. 6 is a view similar to Fig. 5 but showing the slide in its rearward position;

Fig. 7 is a view similar to Fig. 5 showing the striker in cocked position;

Fig. 7A is a sectional view on line 7A—7A of Fig. 5;

Fig. 8 is a sectional view on line 8—8 of Fig. 3;

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Fig. 9 is a sectional view on line 9—9 of Fig. 5;

Fig. 10 is a sectional view on line 10—10 of Fig. 5;

Fig. 11 is a sectional view on line 11—11 of Fig. 7; and
Fig. 12 is an elevational view of the magazine.

To illustrate a preferred embodiment of my invention, I have shown an automatic pistol comprising a barrel 10 removably secured to a frame designated generally by the numeral 11. As shown more especially in Figs. 5 to 7 and 9 the barrel is provided with a downwardly projecting rib 12 which rests in an upwardly facing groove 13 in the upper surface of the frame, and forwardly of this rib the barrel is provided with a shoulder 14 which rests against the front edge of the frame. The barrel portion of the gun is also provided with a downwardly projecting lug 15 which is received in a recess 16 in the frame, the lug being internally screw threaded at 17 to receive the screw 18 to secure the barrel in place. The screw 18 is provided with a knurled head 19 so that it may be readily manipulated. Thus by backing off the screw 18, the barrel may be readily removed from the frame.

A trigger guard 20 is secured to the frame by means of the screw 21 and a trigger 22, the exterior portion of which lies within the guard 20, is pivoted in the frame at 23, the upper end of the trigger lying in a recess in the frame provided therefor.

At the upper end of the trigger is pivoted at 24 a sear bar 25 which bar extends rearwardly in a longitudinally extending recess in the frame and is provided adjacent its central portion with a hump or cam member 26 adapted to be engaged by a portion of the slide as will be hereinafter described. The rear end of the sear bar is provided with an upwardly projecting nose 27 adapted to be engaged with and to actuate a depending arm 28 of a sear lever pivoted to the frame at 29 and provided with a sear 30 adapted to engage the striker, as will be hereinafter explained.

The grip or handle 31 may be provided at its upper end with spaced scales or flanges 32 to embrace the lower portion of the frame, as shown more especially in Figs. 2 and 3, the grip being secured in place by the screw 33 extending therethrough and being threaded into and being engaged with a threaded opening 34. The grip is also provided with a through passage or chamber 35 within which rests the magazine 36, shown in Fig. 12.

As shown more particularly in Figs. 2, 3 and 4, a recess 31^a is provided in the forward face of the grip adjacent the upper end thereof, and the rear end 20^a of the trigger guard is received in this recess to assist in securing the grip in place and also to provide a socket for the otherwise free rear end of the trigger guard.

The magazine is inserted into the grip from the lower end thereof so that its lower end is substantially flush with that of the handle. When the magazine is in its proper position, it will be held in place by a locking bar 37 (Fig. 8) slidably mounted on the frame in a recess opening through one side of the frame. A spring 38 normally urges this bar forwardly and the bar is provided with a detent or catch 39 which projects into the opening 40 in the frame in which the magazine is received and engages in a notch or recess 41 formed at the rear wall of the magazine. The latter is, therefore, held in place by the engagement of this locking detent 39 with its rear wall. The locking bar or slide 37 is provided on its forward end with a manually engageable finger piece 42 which projects from the frame. The user of the weapon by engaging the finger piece 42 may readily move the locking bar 37 rearwardly, as shown in Fig. 8, against the action of the compression spring 38 and disengage the locking detent 39 from the notch or recess 41 and thus permit the magazine to be removed.

A slide or breech block designated generally by the numeral 43 is mounted on the frame and provided with

depending flange portions 44 (Fig. 11) having longitudinal recesses 45 to slidably receive guide lugs 46 on the side edges of the frame member 11. As shown in Figs. 5 to 7, this slide is hollow to receive the striker 47 and also two springs, the slide return spring 48 and the striker spring 49, coils of the latter lying loosely and freely within the coils of the former. It will be understood that these coils will be wound in opposite directions so that one spring will not interfere with the other. At its forward end the slide is provided with a conical opening 50 adapted to receive the conical nose 51 of the striker so as to permit the latter to engage a cartridge in the chamber 52 to fire the latter. It may be noted that the member 51 is offset with respect to the axis of the striker 47 so that the latter will be guided by the entrance of the nose 51 in the opening or recess 50.

At its rear end the slide is provided with a substantially circular opening 53 (Fig. 11) to receive a sleeve member 54 secured to the frame by the screw 55. The sleeve 54 is provided with a forwardly facing chamber 56 which receives the rear end of the striker when the latter is in its rearward position and is counterbored at its inner end as at 54^a to provide a seat for the striker spring 49. The spring 48 seats against the end of the sleeve. The sear member 30 projects into this chamber to engage in a notch 57 in the striker to hold the latter in cocked position, as shown in Fig. 7.

The frame is provided with a pair of spaced upstanding ears or lugs 29^a which carry the pivot pin 29 of the sear lever and between which the latter is mounted. These lugs, as shown in Fig. 7A, extend into the lower portion of the chamber 56 of the sleeve member 54. The striker 47 is provided with a flat lower surface adjacent its rear and the upper flat surfaces of the lugs engage this portion of the striker and maintain it against rotation and in the proper position so that the sear will engage in the notch 57.

The lower portion of the slide is cut away to permit the hump 26 on the sear bar 25 to project upwardly so as to be engaged by the portion 58 of the slide when the latter is moved rearwardly in order to cam the sear bar downwardly as shown, for example, in Fig. 6, and as will be explained hereinafter. Ordinarily when the slide is in its forward position, as shown in Figs. 5 and 7, the sear bar stands in its upward position with the hump 26 projecting above the lower edge of the member 58.

Below the sear member 30 a plunger 60 is slidably mounted in the frame, this plunger being urged upwardly against the sear by a compression spring 61, the other end of which engages a detent 62 so that the spring tends to urge the plunger 60 upwardly against the sear to serve as the sear spring, and also urges the detent 62 downwardly to serve as the detent spring of the safety mechanism.

As shown more especially in Fig. 11, a safety member 63 is slidably mounted in the lower rear portion of the frame member 11, this member being provided with an intermediate portion 64 reduced in size, which portion is provided with recesses 65 and 66 to receive the detent 62 to releasably hold the safety member in either one of two positions in which it may be moved. The member 63 is also provided with a locking shoulder 67 which, when the member 63 is moved to the right from the position shown in Fig. 11, engages below the plunger 60 and prevents this plunger moving downwardly thereby blocking the sear 30 at its upward position and preventing the firing of the gun. The member 63 is also provided with an enlarged portion 68 which, when this member is moved to the right, may engage in a recess 69 at the lower end of the slide and hold the slide in its rearward position. This member 68 may also engage with a recess 70 at the rear end of the slide and hold the latter closed when the safety is in the "on" position. It will be seen, therefore, that the spring 61 acts both as the sear spring and the safety detent spring.

A trigger spring 72 embraces the pivot 24 and reacts between the upper end of the trigger and the sear bar 25 so as to serve to spread these members apart or increase the angle between them. This tends to move the lower end of the trigger forwardly or in a clockwise direction and to move the sear bar 25 rearwardly and to raise it about its pivot. For example, when the sear bar is in the position shown in Fig. 7 and the trigger is released, the spring tends to move the sear bar rearwardly so as to position the nose 27 of the latter behind the depending arm 28 of the sear lever, which latter position is shown in Fig. 5.

The operation of the pistol is believed to be clear from the above description but will be briefly reviewed as follows. The position of the parts when the gun is not loaded or cocked is shown in Fig. 5 and the slide may be drawn rearwardly to the position shown in Fig. 6, and a cartridge will be moved upwardly from the magazine in front of the slide to be carried into the chamber. With the slide in its rearward position both the slide spring 48 and the striker spring 49 will be compressed. As soon as the slide is released the spring 48 will move it to the position shown in Fig. 7, the spring acting against the forward wall of the recess in the slide in which the striker moves. This will drive the cartridge into the chamber.

The striker spring 49 will also move the striker forwardly but the sear 30 will engage in the notch 57 of the striker and hold it in its rearward position with the spring 49 compressed, as shown in Fig. 7. The sear member will be urged to engaging position by the plunger 60, which is urged upwardly by the spring 61. The striker will, therefore, be held in its rearward position until the trigger is pulled to disengage the sear from the notch 57, as described below.

When the slide is moved rearwardly from the position shown in Fig. 5 to that shown in Fig. 6 (the trigger being held in its rearward position) the lower portion 58 of the slide engages the hump 26 of the sear bar 25 and moves it downwardly, as shown in Fig. 6, so that the sear member will be free to be moved upwardly by the plunger 60. When the slide moves forwardly again the sear bar is permitted to move upwardly and the nose 27 of the sear bar will be positioned under the arm 28 of the sear lever, as shown in Fig. 7. When the trigger is released, the trigger spring 72 moves the sear bar rearwardly and then upwardly to position the nose 27 behind the arm 28, as shown in Fig. 5.

When the trigger is pulled the nose 27 will move the arm 28 forwardly and effect a downward movement of the sear member 30 to disengage it from the notch 57 and allow the striker to move forwardly and discharge the cartridge. When the cartridge is discharged the slide will be blown rearwardly carrying with it the striker, as shown in Fig. 6, the striker being prevented from turning by engagement of the nose 51 in the conical opening 50 so that the notch 57 will be in the proper position to be caught by the sear so that the gun will be cocked.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the claims.

What I claim is:

1. A pistol comprising a frame having a barrel and grip secured thereto, means for detachably securing the grip to the lower wall of the frame to project downwardly therefrom, a bolt slidably carried upon the frame, an abutment member at the rear end of the frame, a bolt-returning spring acting between said abutment and a part of the bolt, firing mechanism mounted on the frame comprising a reciprocating striker, a striker spring acting between the striker and said abutment, a sear pivoted at the rear portion of the frame and cooperating with the striker, a sear bar engaged at its rear end with the sear and extending forwardly therefrom longitudinally of the frame, a trigger pivoted to the frame with which

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the forward end of the sear bar is connected, the sear bar being movable longitudinally of the frame, all of said parts of said firing mechanism being above the grip, and said grip being disposed wholly rearwardly of the trigger.

2. A pistol as in claim 1 wherein the means for detachably securing the grip to the frame comprises a screw extending through the bottom of the grip and into the lower wall of the frame.

3. A firearm comprising a frame, a barrel secured to the frame at the forward end of the latter, an abutment member at the rear end of the frame at the upper side thereof and spaced from the barrel, a breech block movably mounted on the frame and having a hollow interior portion, a striker of generally cylindrical form mounted in the breech block, said striker having a nose extending through an opening in the front portion of the breech block, a pair of telescoping springs embracing the striker, one acting upon the breech block and one on the striker at their forward ends, said springs acting against said abutment at their rear ends, the striker being mounted to reciprocate freely within the breech block spring, said springs being oppositely wound whereby one will be guided within the other without interference, the outer of said springs being guided by the face of the hollow interior portion of the breech block, a pair of spaced lugs provided adjacent the rear of the frame, a sear member pivoted between said lugs and cooperating with the striker, and said striker having a flattened lower surface engaging the upper surfaces of said lugs to be guided thereby.

4. A firearm comprising a frame, a barrel secured to the frame at the forward end of the latter, a breech block movably mounted on the frame and having a hollow interior portion, a striker of generally cylindrical form mounted in the interior of the breech block and having a nose extending through an opening in the forward portion of the breech block, a pair of telescoping springs embracing the striker, one acting on the breech block and one upon the striker at their forward ends, said striker being mounted to reciprocate freely within said breech block spring, an abutment at the rear end of the frame against which the rear ends of said springs abut, said abutment being disposed within the breech block and having a recess to receive the rear end of the striker, a pair of spaced lugs on the frame adjacent said abutment, a sear member pivoted between said lugs and adapted to extend into said recess to engage the striker and hold it in cocked position, a sear-actuating bar engaged at its rear end with said sear and extending forwardly therefrom in the frame, and a trigger pivoted to the frame and connected to the forward end of the sear bar.

5. A pistol as in claim 1 wherein the grip is provided

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with a through opening extending from top to bottom thereof, a magazine received in said opening, and a spring-pressed slidable member is carried by the frame above the grip, said member engaging the rear wall of the magazine adjacent the upper end thereof to hold it in place.

6. A firearm comprising a frame, a barrel secured to the frame at the forward end of the latter, a breech block movably mounted on the frame having a hollow interior portion, a striker of generally cylindrical form mounted in the breech block, said striker having a nose extending through an opening in the front portion of the breech block, a pair of oppositely wound telescoping springs embracing the striker, one acting upon the breech block and one on the striker, said striker being freely mounted within said breech block spring, abutment means at the rear end of the frame against which the rear ends of said springs abut and over which the breech block slides, said abutment having a recess to receive the rear end of the striker, a pair of spaced lugs on the frame extending into said recess, a sear pivoted between said lugs and having a nose extending into said recess to engage the striker, and said striker having a flat lower surface engaging the upper surfaces of said lugs to prevent rotation of the striker.

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