

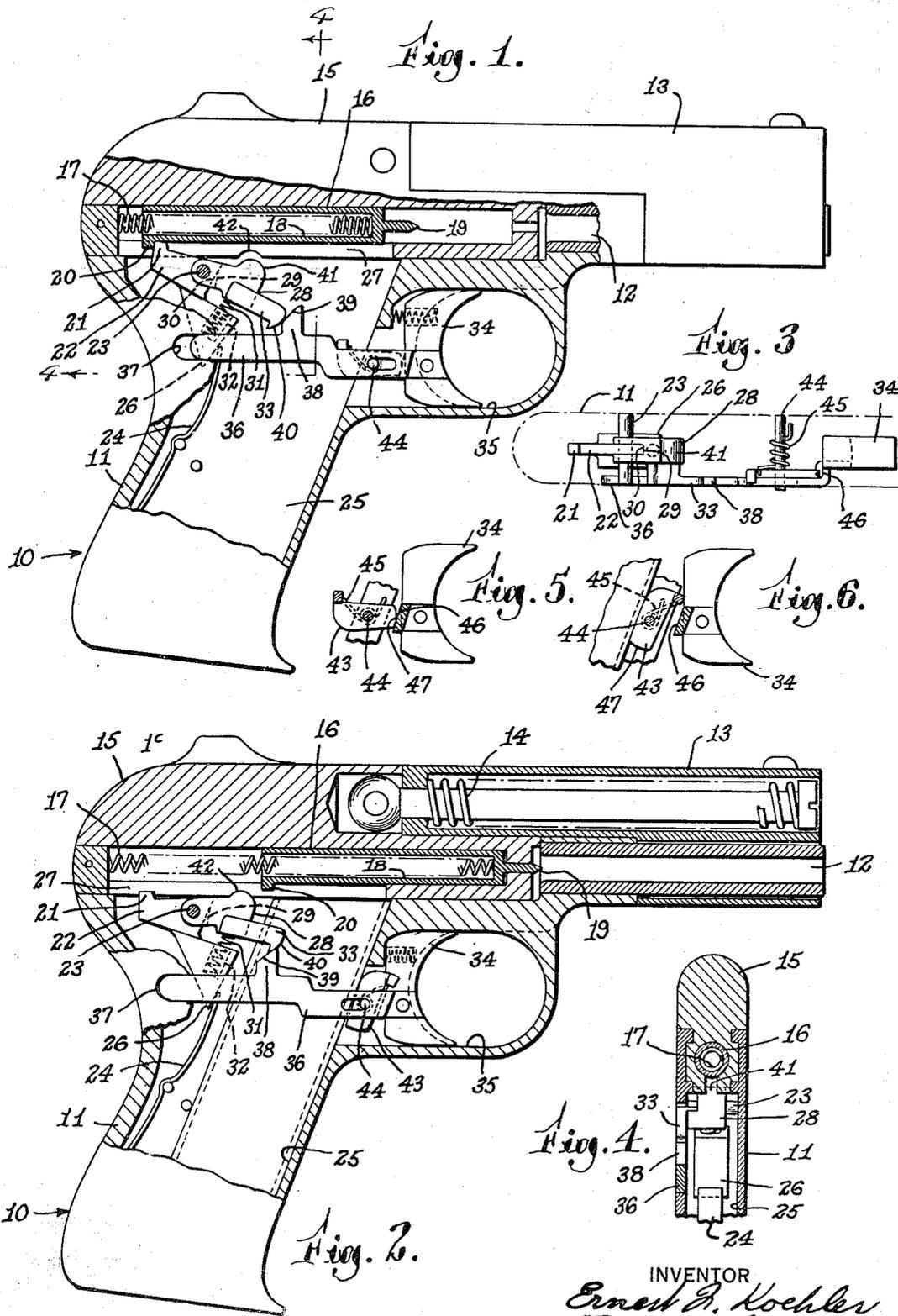
Sept. 29, 1942.

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2,296,998

FIREARM

Filed April 25, 1939



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# UNITED STATES PATENT OFFICE

2,296,998

FIREARM

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Application April 25, 1939, Serial No. 269,827

2 Claims. (Cl. 42-3)

My invention relates to a firearm and more especially to automatic pistols.

In the usual automatic or autoloading pistol means is provided for disconnecting the trigger from the firing mechanism each time the arm is fired, it being necessary for the shooter to release the trigger before the same may be manipulated to fire the next shot. In many cases, especially where the shooter is under nervous tension, he attempts to fire the succeeding shot without such release of the trigger with resulting delay which may be serious especially when the weapon is used for defensive purposes.

One of the more general objects of the present invention is to bring about a form of trigger mechanism for an automatic weapon of the pistol type wherein the trigger must be manipulated for each succeeding shot but wherein the trigger is automatically set in position to fire such a shot without conscious effort or action on the part of the shooter.

A further object of the invention is to bring about a form of trigger mechanism capable not only of producing the above results but which is of such a nature that the trigger may not be manipulated to fire a shot except when the mechanism of the pistol is in firing position.

A still further object of the invention is to bring about a form of automatic pistol of the magazine type wherein the same may be rendered incapable of being fired upon the magazine being withdrawn from the weapon.

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

In the drawing,

Fig. 1 is a sectional view of an autoloading pistol having the improvements of the invention applied thereto;

Fig. 2 is a view similar to Fig. 1 but showing the parts in a different position during the firing of the pistol;

Fig. 3 is a plan view of the firing mechanism;

Fig. 4 is a sectional view along line 4-4 of Fig. 1;

Fig. 5 is a fragmentary view showing the means for preventing firing of the pistol when the magazine is removed, and

Fig. 6 is a view similar to Fig. 5 but showing the parts in a different position.

Referring now to the drawing in which I have illustrated my invention by showing a preferred embodiment of the same, the reference numeral 10 indicates, in general, a pistol which may be

varied in many details within the invention but which in this instance is provided with a frame 11 which frame at its forward end rigidly supports a barrel 12, a spring housing 13, telescoped over the barrel 12, containing a return spring 14, connected to the slide 15, the latter being supported for rearward and forward sliding movement towards and away from the breech end of the barrel 12, by ways formed on the frame 11.

The slide 15 houses at its lower end a striker 16, which is mounted for axial movement towards the breech end of the barrel, the striker being impelled by main spring 17 received at one end within the bore 18, of the striker, the opposite end of the spring being supported in the slide 15. It will be understood without further description that when the striker is released for firing of a cartridge, in a manner to be hereinafter fully described, the striker moves forwardly under the pressure of the spring 17 until the nose 19 of the striker compresses the primer of a cartridge supported in the chamber of the barrel, whereupon the pressure generated by the firing of the cartridge drives the empty case of the latter together with the slide and striker rearwardly, the pistol shown herein being of the "blow back" type.

The striker 16 is provided with a sear notch or shoulder 20 which upon rearward movement of the striker is carried rearwardly beyond the nose 21 of the sear 22, the latter being mounted for pivotal movement on the frame 11 by means of pin 23, forward movement of the striker 16, upon the return movement of the slide 15, being arrested by engagement of the sear nose 21 with the sear notch 20. The sear is constantly urged into engagement with the striker by the flat spring 24 mounted in the frame 11 at one side of the magazine well 25, the upper end of the spring 24 pressing on the tail 26 of the sear and swinging the sear about its pivot pin in a clockwise direction. It will be noted that the lower side of the slide 15 is provided with a downwardly opening slot 27 in which the striker arm rides, the sear notch or shoulder 20 being on the forward end of the arm, the sear 22 swinging upwardly into the slot to engage the sear notch.

For the purpose of disengaging the nose of the sear from the striker to fire the pistol, the sear is provided with an actuator 28 pivotally supported on the sear pin 23, the actuator having a rearward face 29 which is normally maintained in contact with the forward face 30 of the sear by actuator spring 31 carried in an up-

wardly facing opening 32 in the sear and bearing against the lower end of the actuator, the latter having a laterally offset forwardly extending arm 33, the arm 33 lying at one side of the magazine well.

The trigger 34 is supported for rearward and forward movements in the recess 35 of the frame 11, the trigger having a laterally offset rearwardly directed arm 36 which lies immediately below the actuator arm at the same side of the magazine well, the rearward end of the trigger arm being supported in the outwardly facing slot 37 in the frame 11. Extending upwardly from the trigger arm 36, intermediate its length, is a finger 38, having at its upper end a downwardly and rearwardly extending cam face 39, the latter during the pulling of the trigger, that is to say, the rearward motion of the trigger under finger pressure, engaging the curved cam face 40 on the forward end of the actuator arm 33. It will be readily seen that rearward motion of the trigger, and thus the cam 39, will effect upward swinging movement of the actuator arm and thus movement of the actuator and sear in a direction to disengage the sear nose from the striker shoulder. Except for the features of the invention now to be described the sear would remain out of the path of the striker shoulder as long as the trigger was pressed.

On the upper forward end of the actuator 28 is an upwardly extending convex projection or lug 41, the lug 41 being opposite a downwardly opening transverse slot 42 in the lower side of the slide 15, the slot 42 being shaped to receive and form clearance for the lug 41 upon the movement of the actuator 28 by the trigger on firing of the pistol. As soon as the slide recoils rearwardly the actuator is forced to swing downwardly by the curved edges of the slot 42 until the lower edge of the slide clears the actuator, this downward movement of the actuator permitting upward swinging movement of the sear into sear notch engaging position. At the same time the downward movement of the actuator arm and particularly the cam face 40 thereof, through its engagement with the cam face 39 of the trigger arm 36 forces the trigger forwardly. As soon as the slide has completed its rearward motion it is returned to its original position by the recoil spring 14, and if the pressure is again applied to the trigger or maintained thereon by the finger, the projection or lug 41 may again pass into the slot 42 to fire the pistol.

From the above description it will be readily seen that the return motion of the trigger is positive and does not depend on conscious release of the trigger by the shooter so that the pistol may be fired repeatedly by application of pressure on the trigger. However, it will also be seen that the pistol in no case can be fired except when the bolt is fully closed, to bring the slot 42 opposite the lug 41 of the actuator.

In order that the pistol may be safe against firing when the magazine is withdrawn a magazine trigger lock is provided herein which automatically locks the trigger against motion when the magazine is withdrawn. In the form shown the lock consists of a lever 43 mounted for pivotal movement on frame 11 by means of pin 44, the lever 43 being mounted immediately below the trigger arm and urged constantly into

the position shown in Fig. 5 by the coiled spring 45 mounted on the pin 44 and having one end in engagement with the lever 43, the other end of the spring engaging the frame. The trigger is provided with a shoulder 46 in this instance formed by the lateral offset position of trigger arm, the end 47 of the lever engaging the shoulder, when the magazine is removed, to prevent rearward or firing movement of the trigger. The opposite end of the lever extends into the magazine well in the path of the magazine 48. As the latter is inserted it engages and swings the lever 43 into the position shown in Fig. 6 wherein the end 47 of the lever is out of the path of the shoulder 46 on the trigger. In this position the trigger may move into firing position. When the magazine is emptied and removed the spring 45 will return the lever into its original position opposing movement of the trigger.

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

What I claim is:

1. The combination in an autoloading weapon having a frame, a recoil retracted bolt mounted for movement on the frame and having a notch provided in the underside thereof and a spring impelled striker mounted in the bolt and provided with a sear notch, of a sear pivoted on the frame, a spring normally urging the sear towards the striker to engage the sear notch to hold the striker in retracted position, a sear actuator pivotally mounted on the frame and including a spring located between the sear and the sear actuator for normally urging the sear actuator in one direction into engagement with the sear and toward the notch provided in the bolt, a trigger, connections between the trigger and sear actuator for swinging the latter, together with the sear, into striker releasing position upon the application of finger pressure to the trigger, and for simultaneously moving the sear actuator into the bolt notch, whereby a recoil of the bolt forces the sear actuator to positively return the trigger under finger pressure and into position to release the sear for re-engagement with the striker.

2. The combination in an autoloading weapon having a frame, a recoil retracted bolt slidably mounted on the frame, a striker and a spring for impelling the striker, of a sear pivoted on the frame, spring means for constantly urging the sear towards the striker to engage and hold the same in retracted position, a sear actuator pivotally supported on the frame for movement in one direction to disengage the sear from the striker and in the opposite direction to free the sear for engagement with the striker, said actuator having a radial arm, a trigger on said frame having an arm in engagement with the sear actuator arm for pivotal movement of the sear actuator into position to disengage the sear from the striker, and co-operating means on the bolt and sear actuator for swinging the sear actuator together with the trigger back into position to release the sear for engagement with the striker upon recoil movement of the bolt.

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