SAFETY DEVICE FOR AUTOMATIC PISTOLS

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SAFETY DEVICE FOR AUTOMATIC PISTOLS

Harry A. Stevens, Hartford, Conn.

Application September 28, 1946, Serial No. 700,112

7 Claims.  (Cl. 89—148)

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UNITED STATES PATENT OFFICE 2,529,359

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This invention relates to firearms and particularly to an automatic pistol of the barrel recolling type and having its magazine within its grip handle.

A primary object of the present invention is to provide an improved positive safety feature for a pistol of this type enabling the pistol to be gripped in the usual manner while the safety devices remain in their safety positions and the hammer locking safety device moved to firing position while the pistol is being held in firing position.

A feature that is of primary importance relative to the safety device is that the recoil slide may be manually retracted to unload cartridges from the magazine and chamber while the safety device is in its safe and hammer locking position preventing the trigger from being actuated to release the hammer.

Another object of the invention is to provide a safety feature operating to lock the sear with the hammer in retracted or cocked position, the locking member for the sear being so mounted that it does not interfere with the manual retracting of the slide to unload the cartridges from the magazine and chamber and completely unload the pistol.

Still another object of the invention is to provide improved firing mechanism, this mechanism being rendered inoperative without the magazine being in place within the handle and permitting the recoil slide to be manually retracted at any time and with the magazine removed.

With the above and other objects in view, the invention may consist in the features of construction and operation set forth in the following specification and illustrated in the accompanying drawings.

In the accompanying drawings annexed hereto and forming a part of this specification, I have shown my invention embodied in a magazine pistol of the recoil actuated automatic cartridge expelling and reloading type.

In the drawings:

Fig. 1 is a side elevation of a complete automatic pistol provided with a safety device made according to the present invention.

Fig. 2 is an enlarged longitudinal sectional view showing the hammer actuating mechanism and the safety device associated therewith.

Fig. 3 is a longitudinal central section of the complete pistol shown in Fig. 1.

Fig. 4 is a plan view of the complete pistol.

Fig. 5 is a sectional view taken on the plane of line 5—5 in Fig. 1, and

Fig. 6 is a front elevation of the locking member for the sear.

In the above-mentioned drawings there has been shown but one embodiment of the invention which is now deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

Briefly, and in its broadest aspect, the invention includes the following principal parts: First, a frame including a slide way on its upper surface for the barrel and receiver and having formed integrally therewith a trigger guard and a magazine enclosing grip handle; second, a recoil slide including a barrel and receiver mounted for movement in said slide way and spring pressed in its forward direction; third, a spring operated hammer pivotally mounted within the frame; fourth, hammer actuating mechanism including a sear, sear trip lever, magazine controlled trigger connecter, trigger safety plunger and trigger; and fifth, a positive locking member for the sear mounted below the plane of the slide way in the frame and actuated from one side of the frame adjacent the grip handle into and out of position to lock the sear and hold the hammer against movement to fire the pistol.

Referring more in detail to the figures of the drawings, the slide 10 is shown in its forward or firing position relative to the pistol frame 11 and with the hammer 12 in its cocked position. The trigger lever 14 is in its operative position as if a magazine were in place within the grip handle 16. In dotted outline the inoperative position of the trigger connecter 14 and its magazine engaging plunger 48 are shown in Fig. 2. Movement of the trigger 20 about its pivot 22 to fire the pistol raises trigger connecter or lever 14 which is pivotally mounted on the upper portion of the trigger body and then tilts sear trip lever 24. The sear trip lever 24 is pivotally mounted within and moves with the recoil slide 10. This trip lever 24 also is pivoted centrally of its length and lies in a horizontal plane within the slide way in the frame 11. This tilting movement of the sear trip lever 24 about its pivot 27 in the slide 10 oscillates the sear 26 about its pivot 28 within the frame and disengages its rear extending projection from a notch formed in the hammer as shown in Fig. 2. When thus disengaged the hammer strut spring 30, housed within the grip handle 16, forces the strut 32 upwardly and rotates the hammer 12 about its pivot 34 to its firing position.

The recoil of the slide 10 when the pistol is fired
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cock the hammer 12 simultaneously with the ejection of the fired cartridge from the chamber. Forward movement of the slide 10 by its spring 36 advances a new cartridge into the chamber in the usual manner from the magazine. The rear extending projection 44 engages the notch in the hammer 12 and the forward extending projection is engaged by and depressed to release the hammer when contacted by the rear lever 24. Movement of the rear lever is effected by movement of the trigger in the usual manner. A third projection on the rear 26 extending downward is provided for the purpose of locking the rear in its hammer retaining position to form a positive safety device. This safety device for the rear 26 is provided so that in the upper position to which the safety or locking member 40 is oscillated, the rear 26 is locked with its rear projection disposed in its hammer notch engaging position and positively held against movement to permit release of the hammer 12. As shown in the figures, this locking member 40 is in the form of a short transverse bar positioned at the forward end of a pivotally mounted lever 42 mounted in the frame 41 and so positioned that it may be actuated by the thumb of the user immediately prior to firing. When moved about its pivot 44 to its lower oscillated position the locking member or bar 40 is disengaged from the lower arm or projection of the rear 26 and is disposed below the end of the rear to allow the rear 26 to be oscillated by retraction of the trigger to release the hammer and fire the pistol. As shown most clearly in Figs. 3 and 5, this safety member has a transversely extending bearing shaft or pivot 44 housed within the frame 41. On the outside end of this shaft is the plate 47 lying close to the side surface of the frame 41 and having a knurled portion portioned for ready engagement by a portion of the trigger column 23. Movement of the trigger therefore is ineffective to actuate the connector 24 and release the hammer. It is only with a magazine in position that the plunger 46 is maintained in its extended position and the trigger connector 14 is held below the trip lever 24 so that when the trigger 20 is actuated the trigger connector 14 will strike and tilt the trip lever 24.

A wire spring 48 wrapped around the trigger bearing shaft 22 has one end engaging the trigger body 20 and its opposite and a longer end bearing against the trigger connector 14 to hold this lever toward its operative position. The doubled portion of the spring 48 bears against a recessed portion of the frame 41 to apply a light pressure to the spring ends.

To resiliently retain the safety member 40 in its safety and released positions, a small spring-pressed detent 43 is provided within the lever 42 and engages within slight depressions in the side surface of the frame 41 when in either of these positions.

I claim:

1. A magazine pistol comprising a frame, a barrel, a recoil slide therefor normally spring pressed to its forward position, a hammer, a trigger and a hammer including a rear mounted within the frame below the slide and engaging a notch formed within the frame and hammer including a rear mounted within the frame below the slide and movable into a position engaging a depending projection on said rear to prevent movement of said rear to release the hammer and a spring engaging said projection normally forcing said rear towards its hammer retaining position, whereby said recoil slide and barrel may be manually retracted while said locking member is in its rear engaging position.

2. A magazine pistol comprising a frame, a barrel, a recoil slide therefor normally spring pressed to its forward position, a hammer, a trigger, operative connections between said trigger and hammer including a rear mounted within the frame below the slide and having a projection engaging a notch formed within the hammer, a second projection on said rear, a locking member pivoted mounted within the frame adjacent the seed movement by the thumb of the seed locking member having a portion movable into engaging position with said second projection to lock said seed against movement to release the hammer, and a spring bearing against said second projection normally forcing said rear towards its hammer retaining position whereby said recoil slide and barrel may be manually retracted while said locking member is in its rear engaging position.

3. A magazine pistol comprising a frame, a barrel, a recoil slide therefor normally spring pressed to its forward position, a hammer and a trigger, operative connections between said trigger and hammer including a rear mounted within the frame below the slide and engaging a notch formed within the hammer, said rear having three angularly disposed radial projections, a lock on said rear pivotally mounted within the frame and below the slide and movable into a position to engage the lowermost projection of said rear to prevent movement of said rear to release the hammer, and a spring bearing against said projection and normally forcing said rear toward its hammer retaining position whereby said recoil slide and barrel may be manually retracted while said locking member is in its rear engaging position.

4. A magazine pistol having a frame and a re-
coiling barrel slidably mounted in said frame, said slide being normally spring pressed to its forward position a hammer mounted in said frame, trigger mechanism to release said hammer for firing movement, said mechanism including a sear mounted within the frame below the slide and pivotally mounted within the frame and having three substantially radially extending projections, one projection engaging a notch in the hammer, another projection engaging against a part of the trigger mechanism, and a third projection being engaged by a locking member, said locking member being manually movable into and out of engagement with said sear whereby said recoil slide and barrel may be manually retracted while said locking member is in its sear engaging position.

5. A magazine pistol having a frame and a recoiling barrel slidably mounted in said frame, said slide being normally spring pressed to its forward position a hammer mounted in said frame, trigger mechanism to release said hammer for firing movement, said mechanism including a sear mounted within the frame below the slide and pivotally mounted within the frame and having three substantially radially extending projections, one projection engaging a notch in the hammer, another projection engaging against a part of the trigger mechanism, and a third projection being engaged by a locking member, said locking member being manually movable into and out of engagement with said sear, and a spring bearing against said last mentioned projection normally forcing said sear toward its hammer locking position whereby said recoil slide and barrel may be manually retracted while said locking member is in its sear engaging position.

6. A magazine pistol having a frame and a recoiling barrel slidably mounted in said frame, said slide being normally spring pressed to its forward position a hammer mounted in said frame, trigger mechanism to release said hammer for firing movement, said mechanism including a sear mounted within the frame below the slide and pivotally mounted within the frame and having three substantially radially extending projections, one projection engaging a notch in the hammer, another projection engaging against a part of the trigger mechanism, and a third projection being engaged by a locking member, said locking member being manually movable into and out of engagement with said sear, and a lever on the outside of said frame attached to said locking member, whereby said locking member may be conveniently moved from one position to the other and said slide may be manually actuated with the locking member in its sear locking position.

7. A magazine pistol having a frame and a recoiling barrel slidably mounted in said frame, said slide being normally spring pressed to its forward position a hammer mounted in said frame, trigger mechanism to release said hammer for firing movement, said mechanism including a sear mounted within the frame below the slide and pivotally mounted within the frame and having three substantially radially extending projections, one projection engaging a notch in the hammer, another projection engaging against a part of the trigger mechanism, and a third projection being engaged by a locking member, said locking member being manually movable into and out of engagement with said sear, a spring bearing against said last mentioned projection normally forcing said sear toward its hammer locking position, and a lever on the outside of said frame attached to said locking member, whereby said locking member may be conveniently moved from one position to the other whereby said recoil slide and barrel may be manually retracted while said locking member is in its sear engaging position and said slide may be manually actuated with the locking member in its sear locking position.

HARRY A. STEVENS.

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