

Roy

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**[54] COMBINATION SLIDE LATCH AND
TAKEDOWN MECHANISM FOR
AUTOMATIC PISTOL**

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[58] **Field of Search**..... 89/163, 196

[56] **References Cited**

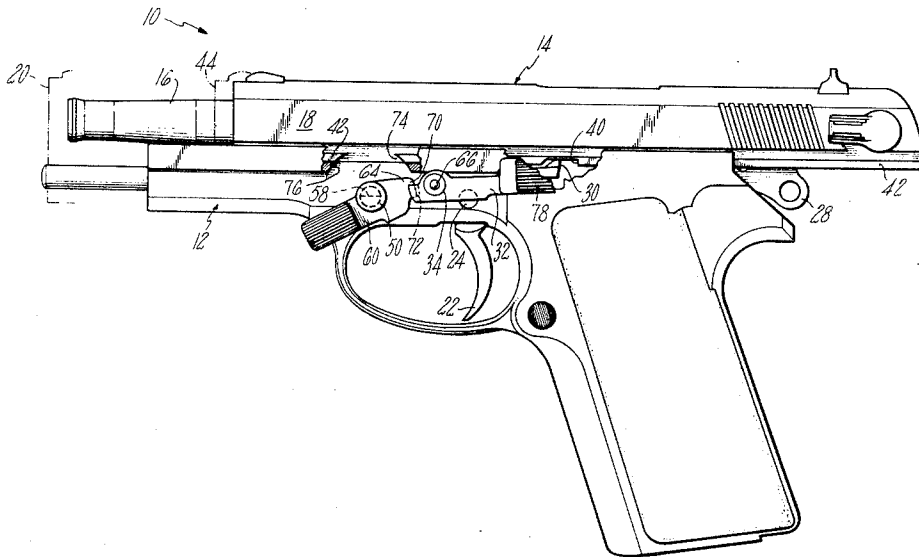
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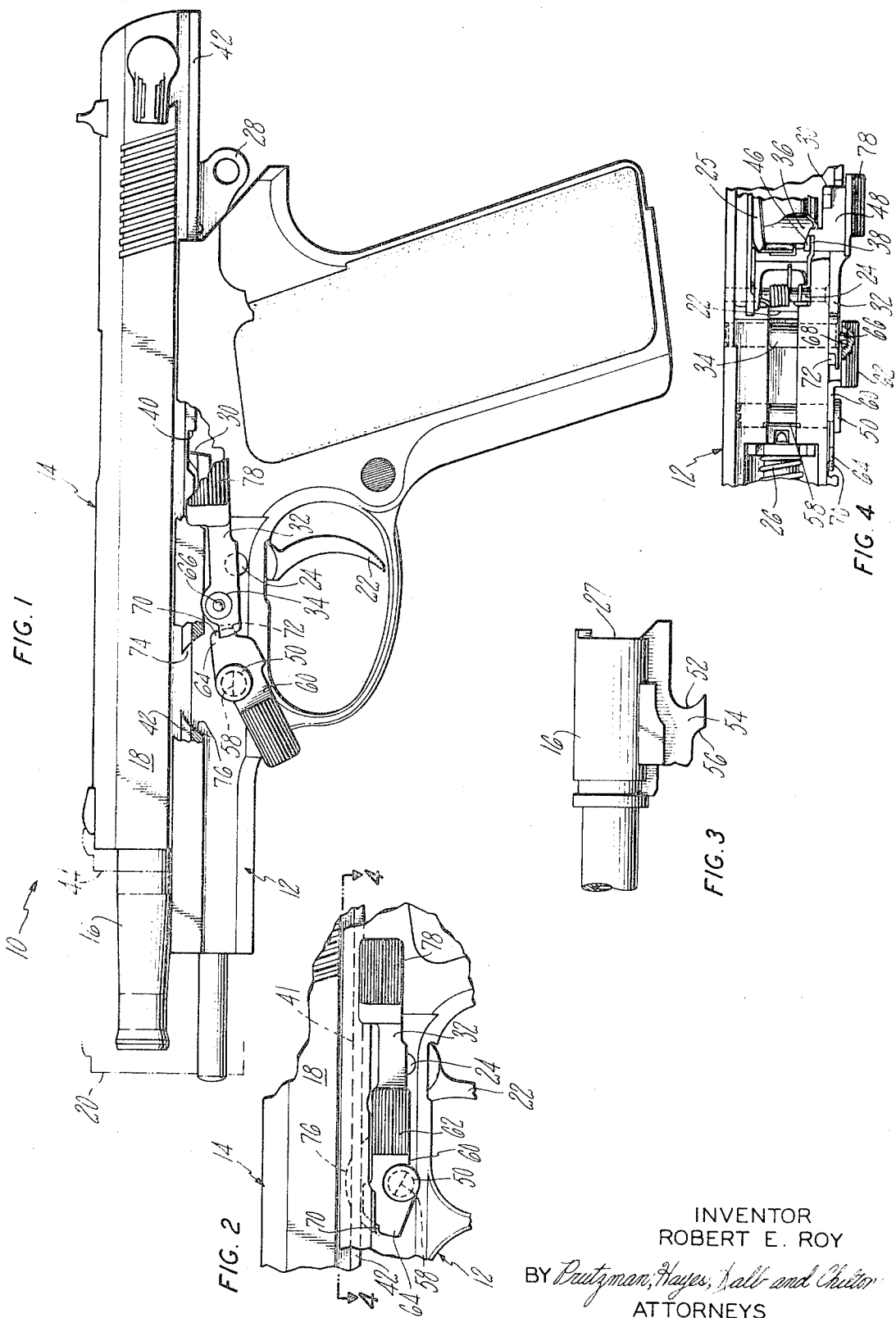
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[57] **ABSTRACT**

A takedown lever operable from a slide stop position to a slide release position wherein the takedown lever automatically activates a slide stop-open latch to prevent inadvertent forward slide release during disassembly.

9 Claims, 4 Drawing Figures





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COMBINATION SLIDE LATCH AND TAKEDOWN MECHANISM FOR AUTOMATIC PISTOL

This invention generally relates to handguns and particularly concerns slide release mechanisms facilitating disassembly of an automatic pistol.

In conventional magazine fed automatic pistols, a slide latch is frequently employed to automatically hold the slide in a rearward position with the chamber opened and a slide operating spring compressed upon firing the last round in the magazine. As is well known, a follower of the emptied magazine normally actuates the slide latch. In addition, slide removal from the frame is facilitated by the provision of a so-called takedown pin in certain pistols. While no takedown pin is incorporated in many automatic pistols, such devices are known as exhibited by that described in applicant's United States patent application Ser. No. 864,609 entitled "Pistol" filed Oct. 8, 1969, granted Aug. 8, 1972 as U.S. Pat. No. 3,682,040 and assigned to the assignee of this invention.

In removing the slide from the frame, even in pistols having a takedown pin, a commonly encountered problem concerns inadvertent release of the slide when its operating spring is compressed, whereby the slide may accidentally slam forward unchecked relative to the frame under the powerful bias of the compressed slide operating spring. Moreover, disassembly of many pistols requires compression of the operating spring during slide removal and necessitates a powerful grasp on both the frame and slide while manipulating the parts in a somewhat awkward fashion to disassemble the pistol under continuous strain.

Accordingly, a primary object of this invention is to provide an improved combination slide latch and takedown mechanism wherein a slide latch is automatically activated simultaneously with the conditioning of the slide for removal from the frame to prevent inadvertent forward release of the slide under the bias of its operating spring during disassembly.

Another object of this invention is to provide an improved slide latch and takedown mechanism having an interlock permitting the weapon to be conditioned for disassembly in only one preselected position of the slide relative to the frame to further minimize any possibility of inadvertent release of the slide.

A further object of this invention is to provide an improved mechanism of the type described having a slide latch which maintains a takedown lever in assembly with the frame and minimizes the number of different required parts normally associated with such components and which may be readily field stripped. Included in this object is the aim of providing an improved slide latch which additionally serves to continuously maintain a trigger pin in operative position within the frame.

Other objects will be in part obvious and in part pointed out in more detail hereinafter.

A better understanding of the objects, advantages, features, properties and relationships of the invention will be obtained from the following detailed description and accompanying drawing which sets forth an illustrative embodiment and is indicative of the way in which the principle of the invention is employed.

In the drawing:

FIG. 1 is a side view of an automatic pistol showing a slide in full lines in an extreme rear limit position relative to a frame and illustrating a slide latch and take-

down mechanism of this invention in activated position;

FIG. 2 is a fragmentary side view of a portion of the pistol of FIG. 1 showing the slide latch and takedown mechanism in normal position with the pistol conditioned for firing;

FIG. 3 is a side view, partly broken away and partly in section showing a portion of a barrel of the pistol of FIG. 1; and

FIG. 4 is a view, partly broken away and partly in section, taken generally along line 4-4 of FIG. 2.

Referring in detail to the drawing, a magazine fed, gas recoil operated automatic pistol 10 incorporating a preferred embodiment of this invention is shown in FIG. 1 having a frame 12 and a slide assembly 14. The slide assembly 14 includes a barrel 16 received within an elongated slide 18 supported for longitudinal reciprocating movements between a rear limit position, shown in full lines in FIG. 1, established by slide engagement with a frame abutment, not shown, and a forward limit position indicated by the broken lines 20.

As will be apparent to those skilled in the art, firing of a round upon squeeze of a trigger 22, pivotally supported by a laterally extending pin 24 mounted in the frame 12, will result in the by-products of combustion driving the slide 18 rearwardly from its forward limit position against the bias of a slide action or operating spring 26. Rearward slide movement automatically disengages the barrel 16 from the slide 18 and extracts and ejects the spent cartridge case from the barrel chamber 27 and cocks a hammer 28 of the firing mechanism during rearward slide movement. Thereafter, return of the slide 18 under the bias of its operating spring 26 into the forward limit position strips the next live round from the magazine 25 and chambers that round within the barrel 16 to condition the pistol 10 to be fired.

Upon firing of the last round, the slide 18 is driven rearwardly, and a slide stop-open latch such as at 30, shown supported on a rear arm portion of an operating lever 32 fixed to a laterally extending latch pivot pin or rear barrel lug camming pin 34 supported in the frame 12, will be automatically engaged by a spring biased magazine follower 36. The follower 36 moves the latch 30 upwardly against the bias of a wire latch spring 38 into an operative position engaging a shoulder 40 of a cutout notch in a longitudinally extending guide bearing rail 42 on the slide 18 to secure slide 18 in a rearward position (represented by broken lines at 44 adjacent the extreme rear limit position of the slide 18 shown in FIG. 1) with the chamber 27 open. The latch spring 38 normally maintains the latch 30 in a lower neutral position in noninterfering relation to the slide. The latch spring 38 additionally serves to maintain the latch 30 against undesired lateral displacement and is shown in FIG. 4 coiled about the trigger pin 24 with a terminal portion of the spring 38 confined in overlying relation to the latch 30 by a ledge 46 projecting upwardly from an interior upper latch surface 48 disposed within the confines of the frame 12.

A takedown pivot pin or forward barrel lug camming pin 50 extends transversely of the frame 12 in forward longitudinally spaced and downwardly offset relation to the latch pivot pin 34. The barrel lug camming functions of the rear latch pivot pin 34 and forward takedown pivot pin 50 are fully described in the above referenced patent application. It will be sufficient for a

clear understanding of this invention to state that the rear pin 34 not only serves to guide the barrel 16 downwardly by engaging a rear arcuate portion 52 of its barrel lug 54 to disengage the slide 18 during automatic recoil and permit continued uninterrupted slide retraction for cartridge extraction and ejection, but also assists in stopping rearward barrel movement. The forward pin 50 not only normally guides forward barrel movement by its engagement with a forward contact portion 56 of the barrel lug 54, but also effectively stops forward movement of the barrel 16 and the slide 18, thereby to establish the forward limit position of the slide assembly 14 with the pistol 10 conditioned for firing the next live chambered round.

As best seen in FIG. 4, the takedown pin 50 includes an intermediate portion of reduced cross section providing a recessed flat surface 58 of sufficient width or provide clearance for the barrel lug 54. One axial end of the takedown pin 50 is provided a pivotable actuating lever 60 having a thumbpiece 62 on one end of the lever 60 and a contoured portion 64 of reduced thickness on an opposite end of the lever 60 with the pin 50 secured intermediate the opposite ends of the lever 60.

FIGS. 1 and 2 respectively show the takedown pin 50 with its actuating lever 60 in a slide release position and a slide stop position. In the slide release position of FIG. 1, the recessed flat surface 58 of the pin 50 is disposed generally parallel to the path of movement of the slide 18, permitting the barrel lug 54 to pass freely over the takedown pin 50 for removal of the slide assembly 14 relative to the frame 12. In the normal slide stop position, the takedown pin 50 is in interfering relation to the barrel lug 54 as described above, establishing the forward limit position of the slide assembly 14.

In the pistol 10 of this invention, the latch operating lever 32 is secured intermediate its forward and rearward ends to the latch pin 34 shown having a spring biased plunger 66 projecting laterally outwardly of the frame 12 in coaxial relation to the latch pin 34. The plunger 66 serves as a detent upon engagement with a corresponding notch 68 (FIG. 4) formed on an interior surface of the thumbpiece 62 of the actuating lever 60 for securing the takedown pin 50 in its slide stop position under normal conditions shown in FIG. 2.

To provide continuous control over both the slide assembly 14 and frame 12 during disassembly even when the slide operating spring 26 is compressed, and to temporarily lock the slide assembly 14 to the frame 12 upon conditioning the slide 18 for removal, the contoured end portion 64 of the takedown lever 60 has an engagement finger 70 formed thereon for engaging an abutment shoulder 72 formed on the forward terminal end portion of the latch operating lever 32 to activate the slide stop-open latch 30 automatically upon simply rotating the takedown lever 60 from its slide stop position (FIG. 2) to its slide release position (FIG. 1).

Accordingly, rotation of the takedown lever 60 by movement of its thumbpiece 62 downwardly in a clockwise direction will automatically operate the slide stop-open latch lever 32, urging it counterclockwise about its pivot pin 34 to move the latch 30 upwardly against its spring bias from its lower neutral position to be positioned within the cutout notch in the slide 18 in locking engagement with the shoulder 40 to secure the slide 18 relative to the frame 12 at precisely the time the slide assembly 14 is conditioned to be removed from the frame 12, thereby to preclude inadvertent slide release,

slide release thereafter being effected simply by pushing down operating lever thumbpiece 78 to disengage latch 30 with inappreciable movement of pin 40.

To ensure against accidental actuation of the takedown lever 60, the guide bearing rail 42 on the slide 18 is formed with a relieved portion best seen at 74 in FIG. 1 adjacent the forward end of the slide 18 which allows the contoured end portion 64 of the takedown lever 60 to be rotated within a recess underlying the frame formed by a cutout portion (represented by the broken lines at 76) and through the relieved portion 74 of the slide 18.

By such construction, the guide bearing rail 42 on the slide 18 itself serves as an interlock, as best seen in FIG. 2, permitting the takedown lever 60 to be operated only when the slide assembly 14 is in a preselected position relative to the frame 12, preferably in its extreme rear limit position in the design shown. Accordingly, the slide operating spring 26 must be manually compressed to the fullest extent possible within the slide assembly 14 by the required positioning of the slide 18 before actuation of the takedown lever 60 may be effected, thereby tending to ensure its actuation is intentional.

Reassembly of the slide assembly 14 and frame 12 is readily accomplished by engaging the guide bearing rails such as at 42 in guideways 41 on the frame 12 and then simply moving the slide assembly 14 into its rear limit position (FIG. 1). The takedown lever 60 may then be rotated counterclockwise into normal position (FIG. 2) and the slide 18 may be released to be driven into its forward limit position under the influence of its operating spring 26 with the takedown pin 50 once again establishing the forward limit position of the slide assembly 14.

The above described construction additionally ensures that the operating lever 32 for the stop-open latch 30 is uniquely suited to maintain the trigger pin 24, the takedown pin 50 and its lever 60 in operative assembled relation to the frame 12 without requiring spring biased plungers, retaining rings and other additional parts normally associated with components of this general type. The latch operating lever 32 is shown overlapping the contoured end portion 64 of the takedown lever 60 in its slide release position to maintain it in operative association with the frame 12 and also in overlying relation to the head of the trigger pin 24. The contoured end portion 64 of the takedown lever 60 is dimensioned and configured to ensure that upon its being rotated downwardly beyond the frame 12 in clearance therewith, the end portion 64 will be in underlying confined relation to the forward end arm portion of the latch operating lever 32. The latch operating lever 32 thus serves as a one-way stop when the trigger pin 24 is mounted within the frame 12 and prevents unintended lateral displacement of the associated parts. When the takedown lever 60 is in a position other than its slide release position, the contoured end portion 64 remains at least in part confined within the underlying recess formed in the cutout portion 76 of the frame 12.

Accordingly, when it is desired to disassemble the above described components of the pistol 10, the slide 18 is first removed from the frame 12 to expose the interior components carried by the frame. The latch spring 38 is then simply dislodged from the upper latch surface 48, permitting the latch 30 and its associated operating lever 32 and pivot pin 34 to be laterally re-

moved outwardly of the frame 12 by pulling outwardly on thumbpiece 78. This action permits both the trigger pin 24 and the takedown lever 60 and pin 50 to be simply removed laterally outwardly of the frame 12 and thereafter reassembled in reverse sequence in a particularly quick and easy operation readily accomplished in the field.

An automatic pistol incorporating the above described latch and takedown mechanism will be seen to provide not only facile and safe disassembly of the slide and barrel relative to the frame, but additionally to ensure that activation of the slide latch may be automatically accomplished upon operation of the takedown lever. The slide assembly is accordingly temporarily locked relative to the frame during the act of disassembly to positively ensure against inadvertent forward release of the slide. In addition, such highly desirable features are provided in a minimum number of compact parts which releasably interlock to normally retain the components in assembled operative relation.

As will be apparent to persons skilled in the art, various modifications, adaptations, and variations of the foregoing specific disclosure can be made without departing from the teachings of the present invention.

I claim:

1. An automatic pistol comprising a frame, a slide assembly including a slide and a barrel having a barrel lug thereon, the slide assembly being supported for longitudinal reciprocating movement on the frame between a forward position and a rearward position, the slide assembly being continuously biased toward said forward position, a manually operable slide stop latch mounted on the frame for movement between a normal position in noninterfering relation to the slide assembly and an operative position wherein the latch is in obstructing relation to forward movement of the slide assembly toward its said forward position, and a releasable takedown pin pivotally supported on the frame for rotation between a normal slide stop position, wherein said pin is engageable with the barrel lug of the slide assembly and defines its said forward position, and a slide release position in angularly displaced relation to its normal slide stop position, the takedown pin in its slide release position being in noninterfering relation to the slide assembly to permit its removal from the frame, the takedown pin having a manual actuating lever engageable with the slide stop latch simultaneously upon rotation of the takedown pin into its said slide release position to automatically activate the slide stop latch and move

it into said operative position for temporarily latching the slide assembly to the frame during slide removal prior to manual return of the slide stop latch to its normal position to permit slide removal.

2. The pistol of claim 1 further including spring means supported on the frame and engaging the slide stop latch for continuously urging it toward said normal position.

3. The pistol of claim 2 wherein the spring means additionally maintains the slide stop latch against lateral displacement relative to the frame.

4. The pistol of claim 1 wherein the slide stop latch includes a pin supported for pivotal movement in the frame and an operating lever secured to the pin and having an abutment shoulder engageable with the actuating lever of the takedown pin upon movement thereof into said slide release position.

5. The pistol of claim 4 wherein the operating lever of the slide stop latch maintains the actuating lever of the takedown pin in its slide release position in operative position relative to the frame.

6. The pistol of claim 4 further including a trigger pin supported in an opening in the frame, and wherein the operating lever of the slide stop latch overlies said opening in the frame and serves as a one-way stop continuously maintaining the trigger pin in assembled relation to the frame.

7. The pistol of claim 1 wherein the slide assembly includes interlock means thereon having a relieved portion for receiving at least part of the actuating lever for rotation upon movement of the slide assembly to a preselected position relative to the frame, the interlock means preventing inadvertent actuation of the takedown pin to said slide release position and permitting its being actuated solely when the slide assembly and frame are relatively disposed in said preselected position.

8. The pistol of claim 7 wherein said preselected relative position of the slide assembly and frame wherein the interlock means solely permits actuation of the takedown pin is provided with the forwardly biased slide assembly is disposed rearwardly of its forward position.

9. The pistol of claim 7 wherein said preselected position of the slide assembly relative to the frame, permitting actuation of the takedown pin is provided with the forwardly biased slide assembly disposed in an extreme rearwardmost position relative to the frame.

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