United States Patent [19]

Seecamp

[11] **3,845,688**

[45] **Nov. 5, 1974**

[54] **SEAR-DISCONNECTOR FOR FIREARMS**

[75] Inventor: **Louis W. Seecamp**, New Haven, Conn.

[73] Assignee: **O.F. Mossberg & Sons, Inc.**, North Haven, Conn.

[22] Filed: **Aug. 14, 1973**

[21] Appl. No.: **388,195**

Related U.S. Application Data

[63] Continuation of Ser. No. 220,063, Jan. 24, 1972, abandoned.

[52] **U.S. Cl.** **89/146**

[51] **Int. Cl.** **F41d 11/02**

[58] **Field of Search** ..... 89/141, 144, 145, 146; 42/69 B

[56] **References Cited**

UNITED STATES PATENTS

454,993	6/1891	Catlin	89/146
1,147,906	7/1915	Swebilius et al.	89/146
1,896,820	2/1933	Jolidon	89/145

Primary Examiner—Stephen C. Bentley
Attorney, Agent, or Firm—Steward & Steward

[57] **ABSTRACT**

A sear-disconnector for disengaging the trigger from the sear in the firing mechanism of a repeating firearm in order to ensure that only one cartridge is fired each time the trigger is pulled by rendering the trigger inoperative unless it is has been released after a cartridge has been chambered, characterized by mounting a disconnector-member on the trigger so that it is movable with the trigger to disengage the sear from the firing member and so that it is movable relative to the trigger to an inoperative position where it is incapable of disengaging the sear. An actuator operates each time the gun is reloaded to move the disconnector-member to its inoperative position so that it can not disengage the sear if the trigger is held in a retracted position when a fresh cartridge is being chambered, the trigger being rendered operative again when it is released. A particularly desirable feature of the invention resides in its use in connection with lever-action firearms, in which the actuator performs a dual function in disconnecting the trigger from the sear as the finger-lever begins to open and also of latching the finger-lever in its closed position.

9 Claims, 9 Drawing Figures

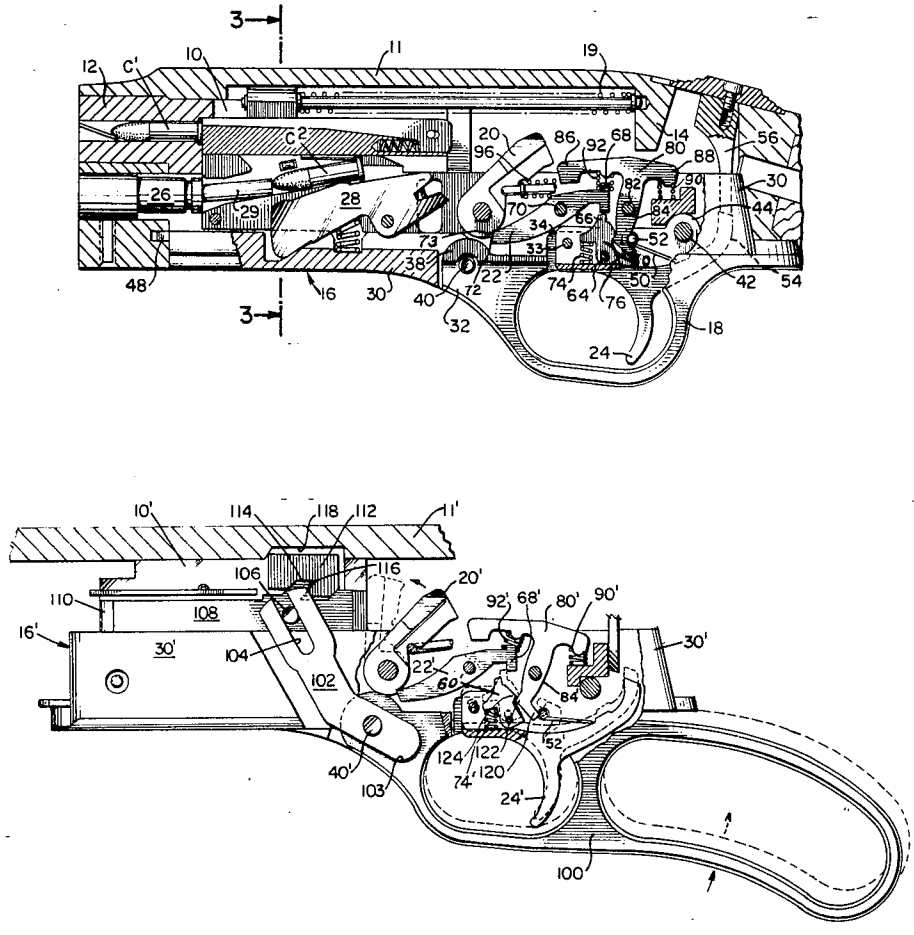


FIG. 1

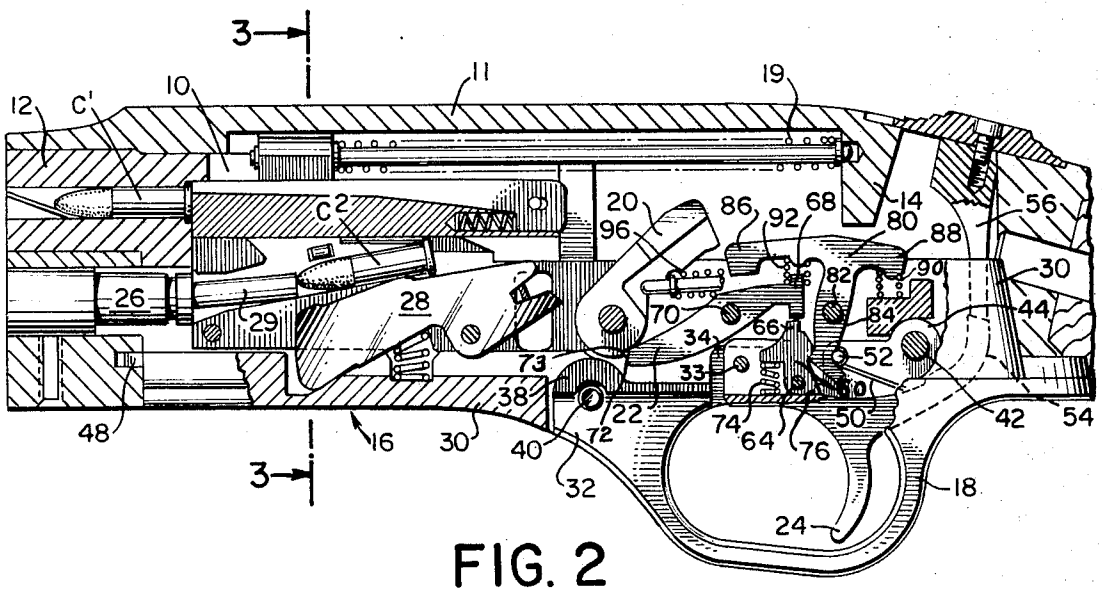


FIG. 2

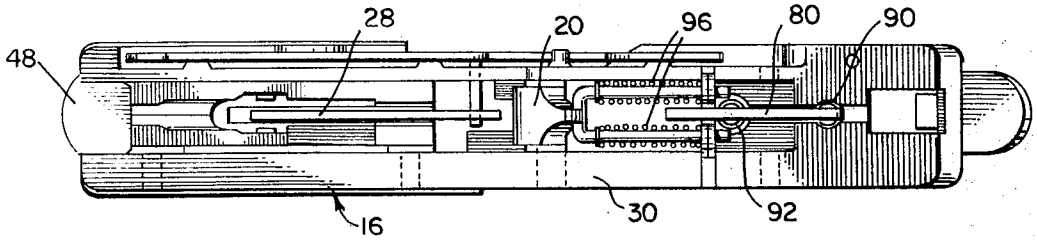


FIG. 3

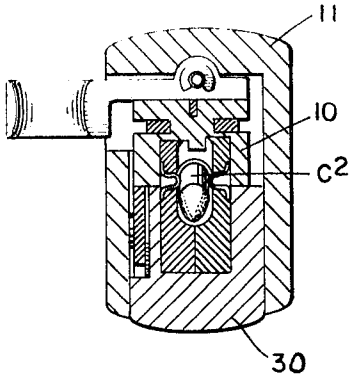
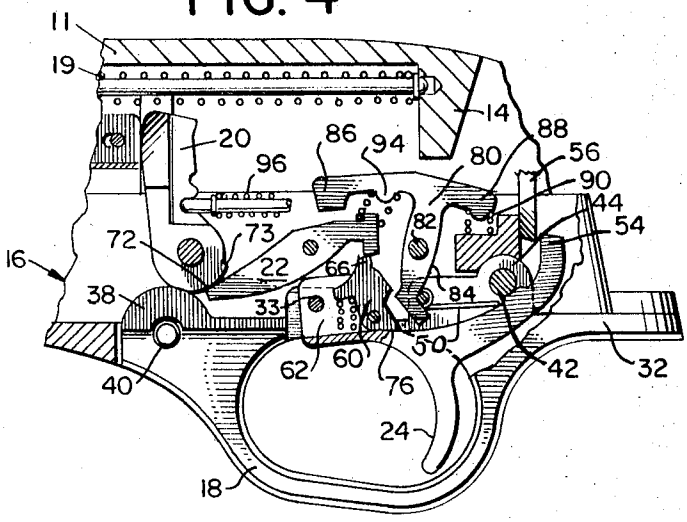


FIG. 4



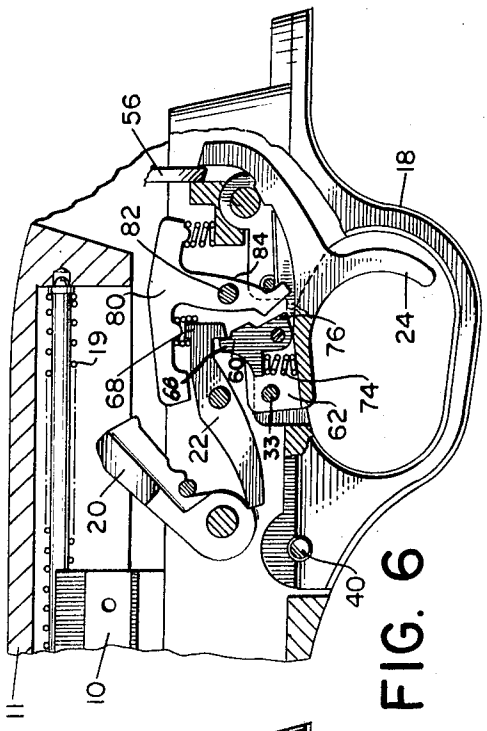


FIG. 6

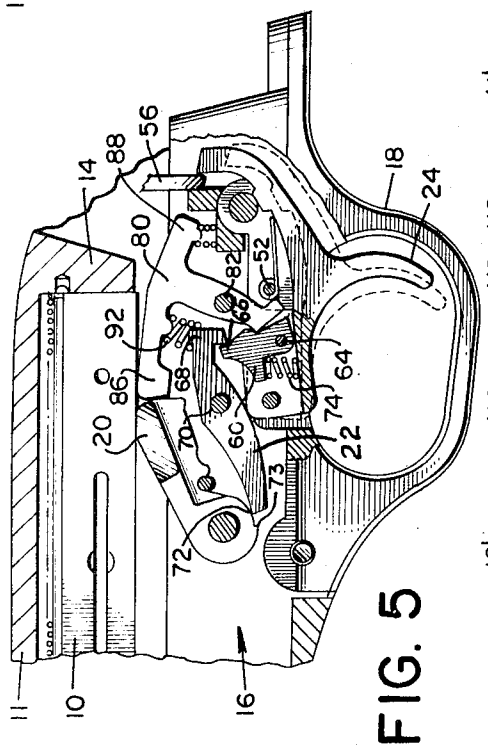


FIG. 5

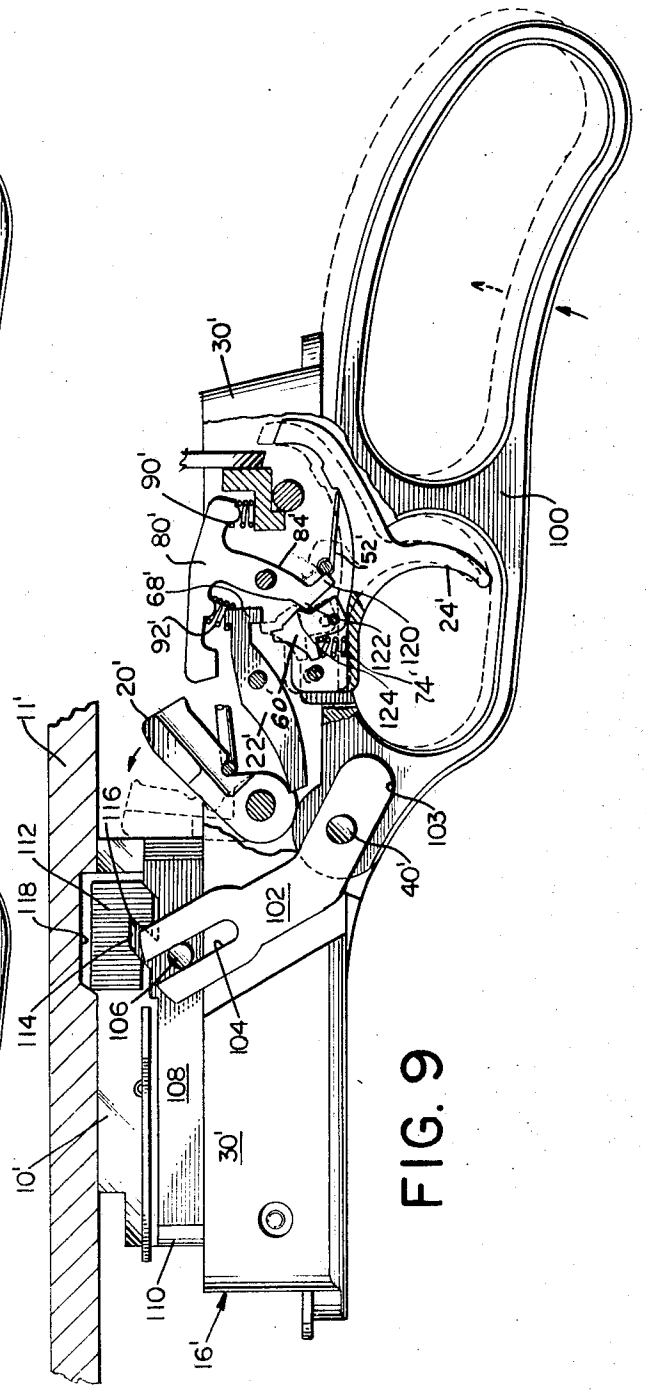


FIG. 9

FIG. 7

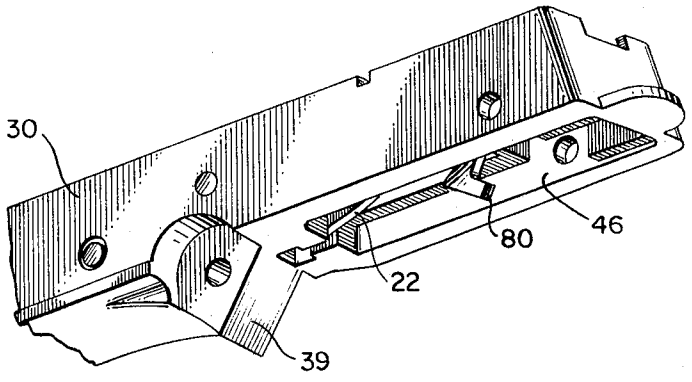
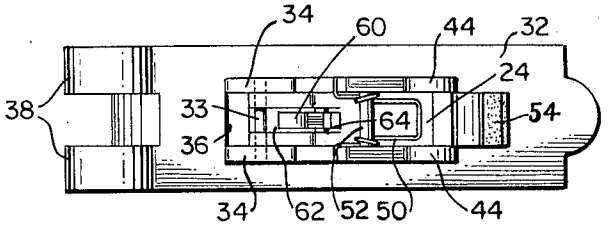


FIG. 8



SEAR-DISCONNECTOR FOR FIREARMS

This is a continuation of application Ser. No. 220,063, filed Jan. 24, 1972 now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates to trigger mechanisms for repeating firearms, and it relates more particularly to trigger mechanisms having a sear and trigger with means for disconnecting the sear from the trigger while the trigger is retracted, so that only one cartridge is fired each time the trigger is pulled.

In sporting arms capable of being reloaded and fired rapidly, it is necessary to prevent inadvertent discharge of each cartridge immediately upon being chambered in the gun. This is accomplished by disconnecting the sear from the trigger so that the firing member is held in its cocked position by the sear even though the trigger is still retracted. A typical sear-disconnector for a semi-automatic pistol is shown and briefly described in U.S. Pat. No. 2,984,037 to Wilhelm.

Because of the speed at which reloading takes place in an automatic weapon, a sear-disconnector is essential in order to prevent more than one shot being fired each time the trigger is pulled. Moreover, due to the fact that pump guns and lever-actions can also be reloaded very rapidly, sear-disconnecting devices are usually provided on these types of guns as well. Some shooters keep their finger on the trigger as they reload by manipulating the forearm in the case of a pump gun or the finger-lever of a lever-action. The trigger may therefore be held in its retracted position at the instant that the breech-bolt chambers a new cartridge, and unless the sear has been disconnected from the trigger so that it is free to reengage the firing member, the hammer or striker will be inadvertently released and may fire a second cartridge accidentally. It is therefore almost as necessary to have a sear-disconnector in a lever-action or pump-gun as in a so-called automatic.

Different designs for sear-disconnectors, as well as for other parts of the gun, have been required for different types of firearms, such as semi-automatics which reload automatically, pump-actions which are manually operated by a forearm member under the barrel, or lever-actions which are operated by a pivoted lever located below and in back of the trigger. The reloading components, as well as firing and trigger mechanisms, have therefore generally differed substantially in design for each different type of gun, even in guns made by the same manufacturer. However, since manufacturing costs can be reduced considerably by standardizing the design of parts as much as possible, it is an object of the present invention to provide a trigger mechanism having a sear-disconnecting arrangement that is capable of being used in all types of repeating guns which have a reciprocating breech-bolt and where a disconnector is needed to prevent accidental discharge of a second cartridge each time the trigger is actuated.

Trigger mechanisms for which the sear-disconnecting device of the present invention is intended are provided with a sear, which is resiliently urged into cocking engagement with a firing member, such as a hammer or striker member, and a trigger mounted for limited movement relative to the sear for moving it out of cocking engagement with the firing member, thereby releasing the firing member to strike the cartridge directly or to strike a firing pin, which in turn fires the cartridge.

SUMMARY OF THE INVENTION

In general, the invention resides in the provision of a disconnector mounted on the trigger both for movement with the trigger and for limited movement relative to it. At one of its limits of movement relative to the trigger the disconnector is in a sear-actuating position, in which it is located such that when the trigger is pulled to discharge the gun, a portion of the disconnector engages the sear and moves it out of cocking engagement with the firing member. When the disconnector is moved to its other or inoperative position, it is out of alignment with the sear so that it will by-pass the sear if the trigger is pulled. The disconnector is continuously urged toward its sear-actuating position by a spring, so that unless it is positively moved to its inoperative position, it is ready to disengage the sear from the hammer upon actuation of the trigger.

A disconnector-actuator is mounted for reciprocal movement into and out of an actuating position and is provided with a disconnector-engaging portion which is so disposed with respect to the disconnector that when the actuating member is in its actuating position, it is in position to deflect the disconnector to its inoperative position, thereby preventing discharge of the cartridge. Means are provided for moving the actuating member to its actuating position at the desired point during the reloading cycle so that the gun is not discharged accidentally. For example, in a semi-automatic or pump action, the disconnector-actuator may be engaged directly or indirectly by the breech-bolt during its rearward stroke so that the disconnector is moved to its inoperative position and cannot release the sear until the trigger is released. In a lever-action on the other hand, the disconnector-actuator is moved during the initial and final increment of travel of the finger-lever so that the disconnector is deflected to its inoperative position as soon as the breech-bolt is unlocked and again just before the bolt is locked.

As will be more apparent hereinafter the sear-disconnector of the present invention is of particular advantage in connection with lever-actions, in which the trigger and disconnector are mounted on the finger-lever in such a manner that the disconnector-actuator and disconnector co-operate to provide a resilient latch that holds the finger-lever in its closed position.

These and other advantages of the invention will be more apparent from the detailed description hereinafter of certain desirable embodiments of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the accompany drawings,

FIG. 1 is a fragmentary, longitudinal vertical section of the action for a semi-automatic rifle embodying the invention;

FIG. 2 is a top plan view of the action mounting-plate assembly of the firearm shown in FIG. 1;

FIG. 3 is a vertical cross-sectional view taken on the line 3—3 of FIG. 1;

FIG. 4 is a view similar to FIG. 1 of only the rear portion of the action, showing the firing mechanism with its parts disposed in the positions assumed at the instant that a cartridge is fired and with the trigger retracted;

FIG. 5 is a view similar to FIG. 4, but showing the breech-bolt at its rearmost position of travel while the trigger is still retracted;

FIG. 6 is a view similar to FIG. 5, but with the breech-bolt moved forward to its battery position while the trigger is still retracted;

FIG. 7 is a perspective view of the rear portion of the action-mounting plate, looking at the left side thereof and from below with the trigger-plate removed and the portion forward of the trigger-plate broken away;

FIG. 8 is a top plan view of the trigger-plate assembly; and

FIG. 9 is a fragmentary side elevational view of a lever-action firearm in which the sear disconnector of the present invention is employed and performs the additional function of latching the finger-lever, only a part of the receiver of the gun being shown with portions of the mounting plate and finger-lever being broken away in order to expose the firing mechanism and with the finger-lever shown pivoted slightly open.

In the specific applications of the invention illustrated in the drawings, the breech-bolt **10** reciprocates within the receiver **11** of the gun between its forward position (FIG. 1) where it is in closing relation with the cartridge-chamber in the barrel **12**, and its fully retracted position (FIG. 5) where the rear of the bolt engages a fixed abutment **14** on the receiver. The bolt **10** is guided in the usual manner by engagement with the inner walls of the receiver and is supported on its underside by a mounting plate **16**, in which the firing and trigger mechanisms are mounted, and from the underside of which the trigger guard **18** projects. In the semi-automatic gun shown in FIGS. 1 through 6, bolt **10** is actuated for reloading the gun by the firing of a cartridge C^1 in the chamber, the rearward force of which is exerted on the bolt, imparting sufficient energy to the bolt so that it is driven rearward against the abutment **14**. A bolt-return spring **19**, which is compressed between bolt **10** and abutment **14**, drives the bolt forward on the return stroke. During the rearward movement of bolt **10**, a hammer **20** is pivoted into cocking relation with a sear **22** which is actuated by a trigger **24** for firing the gun.

The cartridges are transferred from a tubular magazine **26**, which extends parallel to and below the barrel **12**, onto a cartridge lifter or carrier **28** by means of a spring-loaded cartridge follower **29** within magazine **26**. As the bolt **10** is retracted the cartridge-carrier **28** lifts the next cartridge C^2 to a feeding position in front of the bolt, so that when the bolt returns to battery position, it drives the new cartridge forward into the chamber. Carrier **28** is operated in the manner shown and described in my copending United States application Ser. No. 37,529, now U.S. Pat. No. 3,688,640.

Mounting plate **16** consists of two parts, an action-mounting plate **30**, on which the cartridge lifter **28**, hammer **20** and sear **22** are each pivotally mounted, and a trigger-plate **32**, with which trigger guard **18** is integrally formed. Trigger **24** is pivotally mounted on a pivot pin **33** supported at its ends in upstanding mounting tabs **34, 34** (FIG. 8) on either side of a horizontal access slot **36** in the upper part of the trigger-plate **32**, through which trigger **24** extends. Trigger-plate **32** is provided with a pair of trunnion-like mounting lugs **38, 38** at its front end which are spaced apart to receive a tongue **39** (FIG. 7) on the underside of the action-mounting plate **30**. An assembly pin **40** fits through holes in lugs **38, 38** and tongue **39** and holds the front end of the trigger-plate **32** in place on the action-mounting plate **30**. Trigger-plate **32** is also fastened in place by means of a second assembly pin **42**, which passes through another set of upstanding tabs **44, 44** on opposite sides of access slot **36**. The outer sides of both sets of lugs or tabs **34, 34** and **44, 44** fit closely within the side walls of the recess **46** in the underside of action-mounting plate **30** so that the trigger-plate can not move laterally. The ends of pin **42** extend through both sides of recess **46** in the action-mounting plate and through aligned holes in the sides of receiver **11**, thereby functioning as the assembly pin both for holding the trigger-plate **32** in action-mounting plate **30** and for holding the mounting-plate **16** as a whole within receiver **11**. A tongue **48** at the front end of action-mounting plate **30** fits within a groove in the receiver, so that when assembly pin **42** is in place, mounting plate **16** is securely supported within the receiver.

As may be seen in FIG. 8, trigger **24** is provided with a wire spring **50** having a U-shaped central portion which presses against the upper surface of the trigger. Trigger spring **50** is coiled around a pin **52** adjacent the inner sides of tabs **44, 44** and has its ends extending forwardly and then outwardly so that they rest on the upper surfaces of the trigger-plate **32** on both sides of access slot **36**. The U-shaped portion of trigger spring **50** urges trigger **24** in a clockwise direction as viewed in FIGS. 1 and 4 through 6, about pivot pin **33**. Pivotal movement of the trigger in that direction is limited by engagement of an upwardly directed tail **54** on trigger **24** with the rear wall of access slot **36**. The upper end of tail **54** will also contact the lower end of depending finger on a safety **56**, when the safety is on, as shown in FIG. 1. Safety **56** is slidable forward out of alignment with the tail **54** of the trigger as shown in FIG. 4-6 so that the gun can be fired.

Mounted on trigger **24** rearwardly of its pivot pin **33** is a disconnector **60**, which fits in a slot **62** in the upper front portion of the trigger for pivotal movement about a pin **64** supported at both ends in the walls of slot **62**. Disconnector **60** has an upwardly extending nose **66** that is in alignment with a mallet-shaped end **68** on sear **22** when the disconnector is in its sear-actuating position shown in FIG. 1. Sear **22** is pivoted intermediate its ends on a pivot pin **70** such that its sear-nose **72** at its end opposite the mallet head **68** is in position to engage a sear notch **73** on hammer **20**.

Disconnector **60** is continuously urged in a clockwise direction as shown in the drawings by a coil spring **74**, one end of which presses upwardly against a finger-portion at the front of the disconnector. The other end of spring **74** seats on the bottom of slot **62** in the trigger. A foot **76** on the opposite side and at the bottom of disconnector **60** limits its pivotal movement in a clockwise direction beyond its position shown in FIG. 1. On the other hand, disconnector **60** can be pivoted in the opposite (counterclockwise) direction against spring **74** to the position shown in FIGS. 5 and 6 where it is out of alignment with the mallet head **68** of sear **22**, rendering trigger **24** inoperative and permitting sear **22** to pivot into cocking engagement with hammer **20** when the firing mechanism is rearmed.

Disconnector **60** is pivoted into its inoperative position by a rocker-arm **80**, hereinafter referred to as the "disconnector-actuator" or simply "actuator." Discon-

nector-actuator **80** is pivoted on a pin **82** in the action-mounting plate **30** and has a central, more-or-less vertically disposed leg **84**, by which it is pivoted on pin **82** about midway between its upper and lower ends. The cross-piece at the upper end of the actuator **80** has a hammer-engaging end **86**, which extends into the path of hammer **20**, and a rear end **88**. A coil spring **90**, compressed between a seat in the upper surface of the mounting plate **30** and the underside of the rear-end portion **88** of actuator **80**, resiliently urges actuator **80** counterclockwise as viewed in the drawings. Pivotal movement of actuator **80** in this direction is positively limited by engagement of the rear edge of its vertical leg **84** with the pin **52**. A second coil spring **92** is compressed between the upper end of the mallet head **68** on sear **22** and a spring-retainer **94** on the underside of the cross-piece of actuator **80** adjacent its hammer-engaging end **86**.

The moment of rotation or torque resulting from the pressure exerted on actuator **80** by spring **92** is desirably less than that exerted in the opposite direction by spring **90**, so that the lower end of leg **84** is normally urged into engagement with pin **52**. Spring **92** presses downward against the mallet-head end of sear **22**, continuously urging the sear nose **72** toward cocking-engagement with hammer **20**.

Hammer **20** is cocked in a conventional manner as it is pivoted back beyond its cocked position (FIG. **5**) by the breech-bolt **10** against hammer springs **96, 96** during its rearward stroke in the reloading cycle. Toward the end of the rearward travel of bolt **10**, hammer **20** is pivoted beyond the point at which its sear-notch **73** is disposed for engagement by the nose **72** of sear **22**. During such movement beyond its cocked position, the outer rear end of the hammer engages the end **86** of disconnector-actuator **80** and cams it clockwise to the position shown in FIG. **5**. With clockwise movement of actuator **80**, the lower end of its leg **84** pivots disconnector **60** against its spring **74** into its inoperative position where its nose **66** is out of alignment with the mallet head **68** on sear **22**.

It will be apparent from the foregoing that if trigger **24** is held in its retracted position as shown in full lines in FIGS. **4** to **6** during the reloading cycle of breech-bolt **10**, disconnector **60** will be pivoted by disconnector-actuator **80** to its inoperative position, permitting the mallet head **68** on sear **22** to drop down behind the nose **66** of disconnector **60** (FIG. **5**), so that the sear-nose **72** at the other end of the sear will engage sear notch **73** on the hammer as the latter moves forward to its cocked position during the return stroke of breech-bolt **10**. The hammer **20** is therefore cocked and can not be released to fire the next cartridge until the trigger is released so that the disconnector **60** can return to its normal position where its nose **66** is disposed in its operative position as shown in FIG. **1**.

As illustrated in FIG. **9** a lever-action gun may also be provided with a sear-disconnector identical with that shown in FIGS. **1–8** for a semi-automatic. To this end, it is only necessary to substitute a finger-lever **100** for the trigger-plate **32** and to allow the finger-lever **100** to pivot about pin **40'** with respect to the action-mounting plate **30'**. One end of a bolt-actuating lever **102** is rigidly mounted in an elongated recess **103** on one side of finger-lever **100** with pivot pin **40'** passing through a hole in lever **102**, thereby preventing it from moving longitudinally out of recess **103**. As in the case of the semi-automatic shown in FIG. **3**, the mounting-assembly **16'** as a whole fits within the receiver **11'** through an opening in its underside, so that the side walls of the receiver fit snug against the sides of mounting-assembly **16'**. Lever **102** is therefore retained laterally within recess **103** in finger-lever **100**, so that they move together as a unit.

Actuating lever **102** has a bifrucated outer end forming an open-ended slot **104**, which fits around a lug **106** projecting laterally from the side of a slide-bar **108** mounted for reciprocal movement both with breech-bolt **10'** and relative to it. The lower edge of slide-bar **108** rests on the horizontal upper edge of action-mounting plate **30'** in sliding engagement therewith and is disposed within an elongated recess **110** in the adjacent side of bolt **10'** for limited movement relative thereto. Adjacent lug **106** is provided a U-shaped bolt-locking member **112** which straddles bolt **10'** and slides vertically thereon into and out of bolt-locking position in a manner generally similar to the bolt-lock shown and described in U.S. Pat. No. 2,863,247 to Benson. In this instance, one leg of the bolt-lock **112** is provided with a cam slot **114**, within which rides a cam lug **116** on the upper edge of slide-bar **108**.

In the condition illustrated in full lines in FIG. **9**, the finger-lever **100** is shown pivoted slightly in a clockwise direction out of its closed or bolt-locking position shown in broken lines. During such initial pivotal movement of finger-lever **100**, actuating lever **102** is pivoted a corresponding amount, so that the slide-bar **108** is moved somewhat to the right (as viewed in the drawing) with respect to bolt **10'** from its forward position. Bolt-lock **112** has, therefore, been cammed down out of a locking recess **118** in the top of receiver **11'**. Further movement of finger-lever **100** in the same direction will complete the unlocking and retraction of breech-bolt **10'** by means of the interaction of cam-lug **116** and cam-slot **114**.

It should be noted here that in a so-called pump-gun model for which the present invention is also well suited, a bolt-actuating assembly similar to that shown in FIG. **9** for the lever-action may be used, but instead of moving the slide-bar **108** by means of a finger-lever, the slide-bar can be extended forward through the receiver and connected with an action-bar on a slidable fore-arm in conventional manner. Furthermore, since the finger-lever **100** is not used in pump-actions, the trigger-plate for the pump-model would be similar to that shown in FIGS. **1–8** for the semi-automatic.

Referring again to FIG. **9**, it will be noted that the hammer **20'**, sear **22'**, trigger **24'**, disconnector **60'** and disconnector-actuator **80'** are all identical to the correspondingly numbered parts of the firing mechanism of the semi-automatic shown in FIGS. **1–8**. The firing-mechanism for the lever-action and pump-gun models is accordingly identical to that for the semi-automatic. Thus, with the finger-lever **100** of the lever-action fully closed as indicated in broken-lines in FIG. **9**, the disconnector **60'** functions in exactly the same manner described hereinbefore in connection with the semi-automatic of FIGS. **1–8**. However, since the trigger **24'** is mounted on the finger-lever **100**, actuation of the finger-lever in order to reload draws the trigger and disconnector out of their normal positions with respect to sear **22'** and disconnector-actuator **80'**.

It will also be noted that insofar as the semi-automatic and pump-action models are concerned, the

lower portion of the vertical leg **84** of the disconnector-actuator **80** could be of any desired configuration that ensures movement of the disconnector **60** to its inoperative position upon retraction of bolt **10.** In the lever-action of FIG. **9,** however, the disconnector-actuator **80'** performs a second function by resiliently latching the finger-lever **100** in its closed (broken-line) position. Thus, leg **84'** is provided at its lower end with a rearwardly extending toe **120** which snaps under pin **52'** on the finger-lever **100** when the finger-lever is fully closed. It is important, therefore, that spring **90'** at the back end of actuator **80'** be strong enough, not only to over-come the force exerted by the sear spring **92',** but also to exert adequate force in a counterclockwise direction so that the toe **120** holds the finger-lever **100** firmly closed through its engagement with pin **52'.**

Opposite toe **120** at the lower end of leg **84'** is a heel portion **122** normally disposed below a hump **124** on the back side of disconnector **60'** for engagement therewith upon pivotal movement of disconnector-actuator **80'** clockwise as described hereinbefore in connection with FIGS. **1–8.** In the lever-action, however, disconnector **60'** is completely withdrawn from any association with either sear **22'** or disconnector-actuator **80'** as soon as the finger-lever is moved out of its "action-closed" position. When the finger-lever is returned to the closed position, trigger **24'** and disconnector **60'** are brought back into operative relation with the sear and disconnector-actuator when the breech-bolt **110** is nearly closed. It is at this point during the operating cycle of the gun that the disconnector must be actuated so that it does not release the sear from cocking engagement with the hammer, rather than when the breech-bolt is fully retracted as in the case of the semi-automatic described in connection with FIGS. **1** through **6,** or in the case of a slide-action firearm which is manipulated by means of a forearm slide.

As illustrated in FIG. **9,** if the trigger **24'** is held in its retracted position at the instant that finger-lever **100** closes, the disconnector **60'** must be prevented from moving into engagement with the mallet-head on sear **22'** in order to prevent accidental release of the hammer. This is accomplished by simultaneous engagement of pin **52'** on finger-lever **100** with the toe **120** on one side of disconnector-actuator **80'** and of the hump **124** on disconnector **60'** with the heel **122** on the other side of actuator **804 .** Consequently, at the instant that the disconnector **60'** is about to engage sear **22',** it is pivoted out of alignment with the engagement surface of the sear by actuator **80',** which in turn is deflected in clockwise direction by pin **52'.** During the final increment of movement of finger-lever **100** from its full-line position to its closed (broken-line) position, pin **52'** on finger-lever **100** moves to its upper-most position shown in broken-lines, permitting actuator **80'** to rock back to its normal position. If the trigger is held retracted when finger-lever **100** is being closed, the nose-portion of disconnector **60'** first moves along side (to the left in FIG. **9**) of the depending portion of the mallet-head **68'** on the sear without engaging or pivoting the sear. When actuator **80'** rocks back to its normal position with movement of pin **52'** above the toe **120,** the nose-portion of disconnector **60'** is held in its inoperative position by the mallet-head **68'** on the sear so that the heel **122** on actuator **80'** moves out of engagement with disconnector **60'.**

With release of trigger **24',** disconnector **60'** is lowered far enough to clear the mallet-head **68'** on sear **22'** so that it can pivot back in a clockwise direction under the resilient pressure of its spring **74'** in alignment with the engagement surface on the sear. Consequently, only after the trigger is released is the trigger mechanism again rearmed for discharge of the next cartridge in the chamber. However, if before firing the next cartridge the finger-lever **100** is actuated in order to extract the live cartridge from the chamber, the trigger mechanism is immediately disarmed upon clockwise movement of the actuator **80'** by pin **52'** and consequent movement of disconnector **60'** to its inoperative position before bolt-lock **112** moves out of recess **118** in the receiver unlocking bolt **10'.** It should be noted that in the usual situation where the trigger is released before reloading the gun by manipulation of the finger-lever, disconnector **60'** is in a lower position.

What is claimed is:

1. In a firing mechanism for a repeating firearm having a frame, a breech-bolt supported for reciprocal movement into and out of a breech-closing position, a spring-loaded firing member adapted and arranged to be moved into and beyond a cocked position by said breech-bolt on retraction thereof, a sear resiliently urged into cocking engagement with said firing member, and a trigger for moving said sear out of such cocking engagement, a sear-disconnecting device comprising in combination therewith

a disconnector mounted on said trigger for movement therewith upon retraction and release of said trigger and for movement with respect to said trigger between a sear-actuating position and an inoperative position in which said sear is free to move into its cocking position independently of the action of said trigger,

said disconnector in its sear-actuating position being disposable so as to move said sear out of cocking engagement upon retraction of said trigger in order to discharge the firearm,

means for resiliently urging said disconnector into its sear-actuating position, and

a disconnector-actuator mounted on said frame for movement into and out of an actuating position and having a disconnector-engaging surface for positioning said disconnector in its inoperative position when said disconnector-actuator is in its actuating position and a bolt-actuated portion disposed for engagement with and movement by said firing member into said actuating position when said firing member is moved beyond its cocked position, thereby preventing inadvertent discharge of the firearm.

2. The combination defined in claim **1,** wherein said firing member is a hammer mounted on said frame for pivotal movement into its cocked position by retraction of said breech-bolt, said disconnector-actuator being pivotally supported intermediate its said disconnector-engaging surface and said bolt-actuated portion.

3. In a firing mechanism for a repeating firearm having a frame, a spring-loaded firing member, a pivotally mounted sear resiliently urged into cocking engagement with said firing member, and a trigger for moving said sear out of such cocking engagement, a sear-disconnecting device comprising in combination therewith

a disconnector mounted on said trigger for movement therewith upon retraction and release of said trigger and for movement with respect to said trigger between a sear-actuating position and an inoperative position in which said sear is free to move into its cocking position independently of the action of said trigger,

said disconnector in its sear-actuating position being disposable so as to move said sear out of cocking engagement upon retraction of said trigger in order to discharge the firearm,

means for resiliently urging said disconnector into its sear-actuating position,

a disconnector-actuator pivotally mounted on said frame for movement into and out of an actuating position and having a disconnector-engaging surface for positioning said disconnector in its inoperative position when said disconnector-actuator is in its actuating position, said disconnector-actuator having a projection disposed on the opposite side of its pivot point from said disconnector-engaging surface,

a sear-spring mounted between said sear and said projection for urging said sear into its cocked position while simultaneously urging said disconnector-actuator toward engagement with said disconnector, the pressure of said sear spring being insufficient to overcome said means for resiliently urging said disconnector into its sear-actuating position, and

means for moving said disconnector-actuator into its said actuating position in order to prevent inadvertent discharge of the firearm.

4. In a firing mechanism for a repeating firearm having a frame, a breech-bolt supported for reciprocal movement into and out of a breech closing position, a spring-loaded firing member, a sear resiliently urged into cocking engagement with said firing member, and a trigger for moving said sear out of such cocking engagement, a sear-disconnecting device comprising in combination therewith

a disconnector mounted on said trigger for movement therewith upon retraction and release of said trigger and for movement with respect to said trigger between a sear-actuating position and an inoperative position in which said sear is free to move into its cocking position independently of the action of said trigger,

said disconnector in its sear-actuating position being disposable so as to move said sear out of cocking engagement upon retraction of said trigger in order to discharge the firearm,

means for resiliently urging said disconnector into its sear-actuating position,

a disconnector-actuator mounted on said frame for movement into and out of an actuating position and having a disconnector-engaging surface for positioning said disconnector in its inoperative position when said disconnector-actuator is in its actuating position,

a finger-lever pivoted on said frame for reciprocating said breech-bolt and having a part disposed for engagement with said disconnector-actuator when said finger-lever is pivoted slightly out of its breech-closing position, and

said disconnector-actuator having a toe-portion with which said part engages and by which said disconnector-actuator is moved into and then out of its said actuating position during both the initial and final increments of pivotal movement of said finger-lever.

5. The combination defined in claim **4,** wherein said part is disposed in latching relationship with said toe-portion when said finger-lever is closed in order to releaseably retain said finger-lever in its closed position, said toe-portion and latch-part being formed and disposed when in latching relationship with each other such that said disconnector-actuator is movable out of its disconnector-actuator position so that said disconnector can move into its sear-actuating position.

6. The combination defined in claim **5,** wherein said disconnector-actuator is pivotally mounted, and which further includes a spring for pivotally urging said disconnector-actuator in a direction for engagement with said latch-part.

7. The combination defined in claim **6,** wherein said firing member comprises a hammer pivotally mounted on said frame and having a sear-notch disposable when said hammer is pivoted into a cocked position for engagement by said sear, said sear being also pivoted on said frame and having a sear-nose for engaging said sear-notch when both said hammer and said sear are pivoted into their cocked and cocking positions, respectively, and which further includes a sear spring disposed between said sear and a portion of said disconnector-actuator for urging said sear into its cocking position.

8. The combination defined in claim **7,** wherein said trigger is mounted on said finger-lever such that said disconnector is movable out of operative relationship with said sear upon actuation of said finger-lever beyond its said initial increment of movement.

9. The combination defined in claim **4,** wherein said trigger is mounted on said finger-lever such that said disconnector is movable out of operative relationship with said sear upon actuation of said finger-lever beyond its said initial increment of movement.

* * * * *