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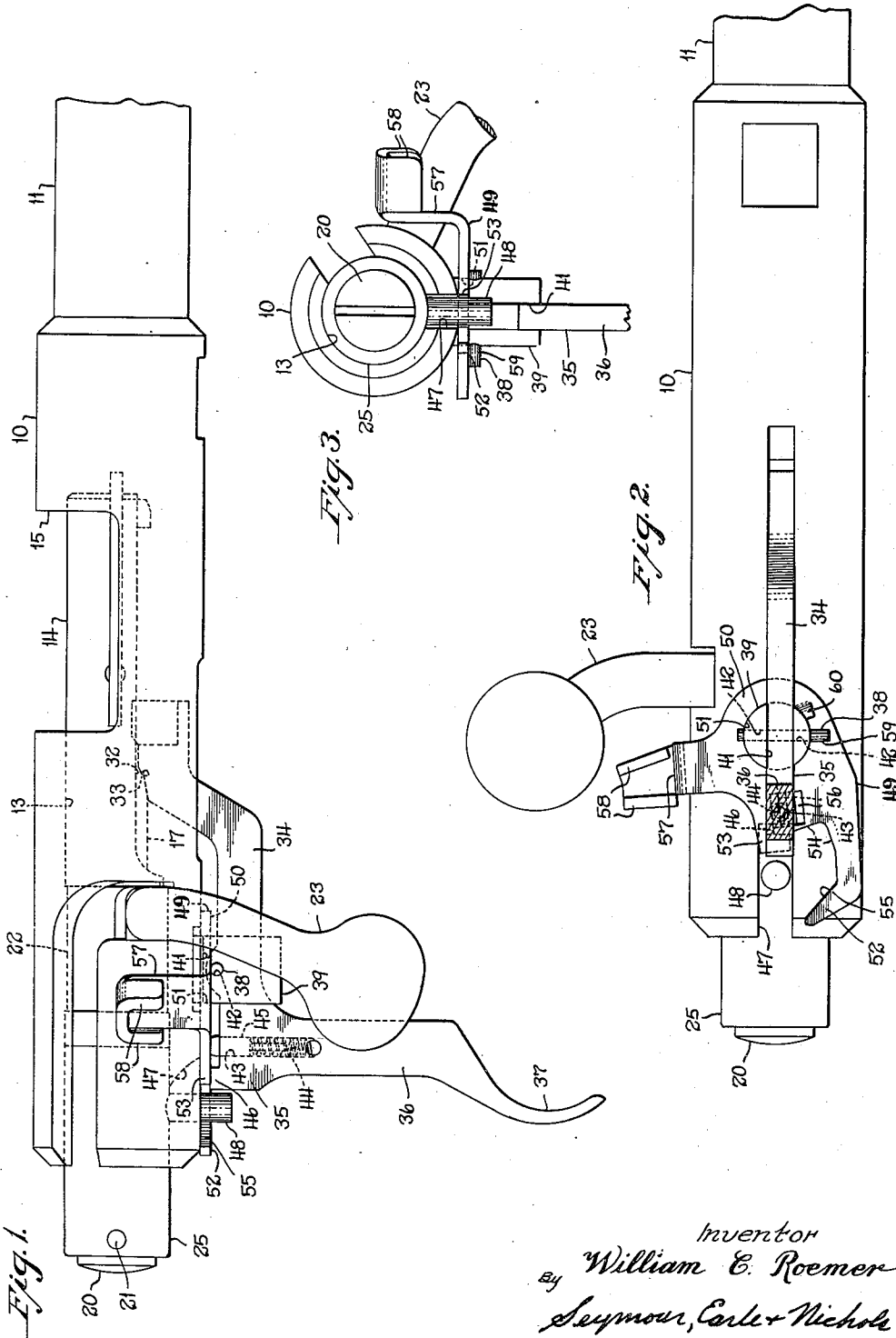
W. C. ROEMER

2,490,474

SAFETY MECHANISMS FOR FIREARMS

Filed Nov. 6, 1948

2 Sheets-Sheet 1



Inventor
William C. Roemer
Seymour, Carter & Nichols
Attorneys

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2 Sheets-Sheet 2

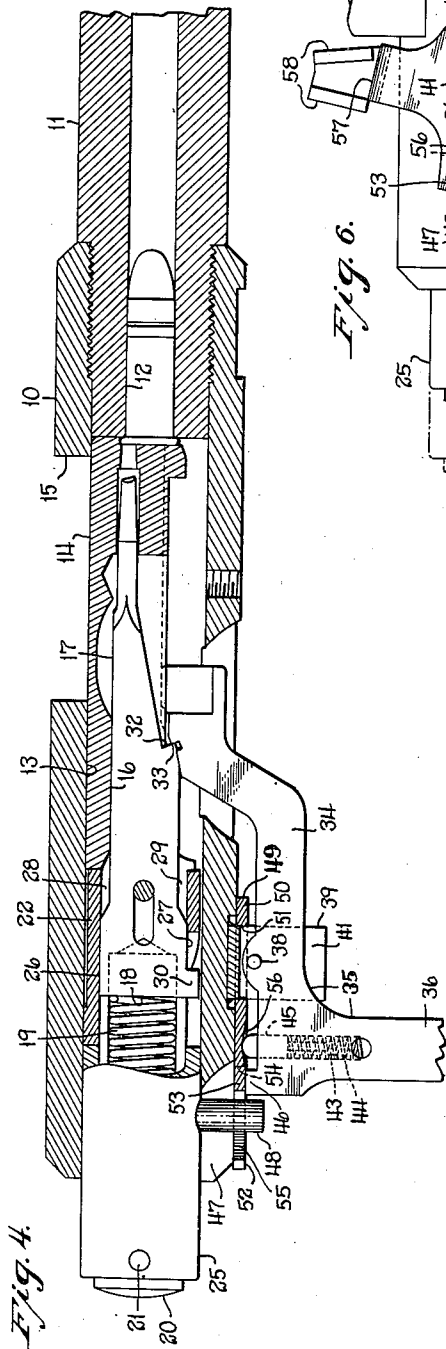
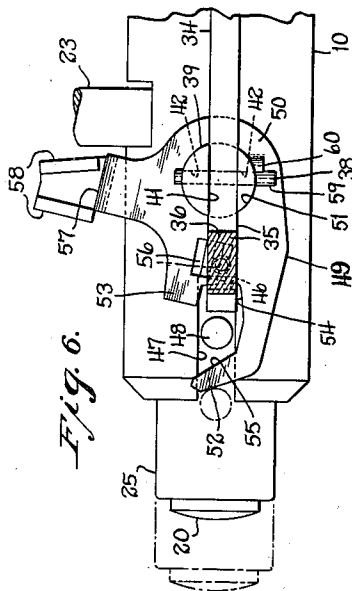
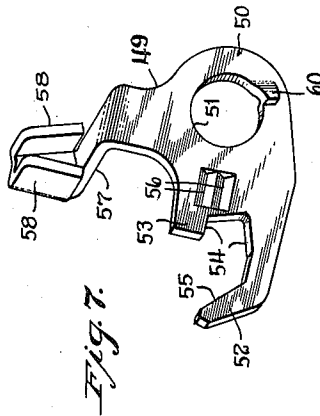
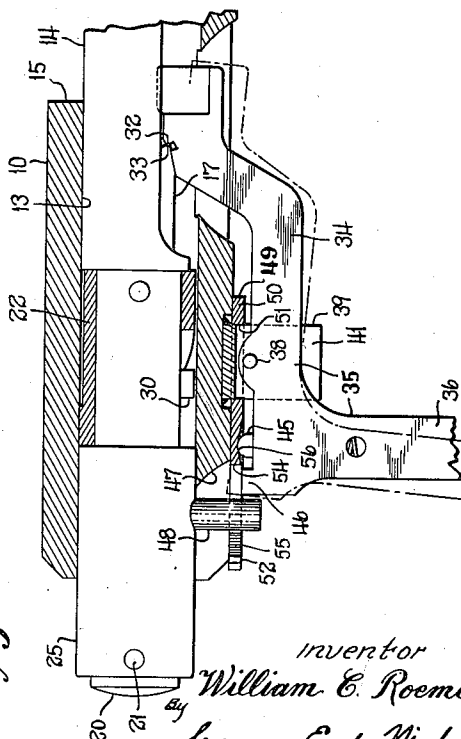


Fig. 5.



Inventor
William C. Roemer
Seymour, Carlo Nichols
Attorneys

UNITED STATES PATENT OFFICE

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SAFETY MECHANISM FOR FIREARMS

William C. Roemer, New Haven, Conn., assignor
to Olin Industries, Inc., New Haven, Conn., a
corporation of Delaware

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9 Claims. (Cl. 42—70)

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The present invention relates in general to firearms and more especially to safety-mechanism by means of which the fire-control mechanism of the firearm may be rendered inoperative automatically after each discharge of the firearm.

An object of the invention is the provision of superior safety-means which is of simple and economical construction, durable and dependable in use, and operable automatically and manually for rendering the firearm safe.

A further object of the invention is to provide a superior safety-mechanism for firearms which is operable manually for rendering the fire-control mechanism inoperative or operative, at the option of the user, and which is actuated automatically on opening the breech of the firearm to render the fire-control mechanism ineffective until such time as the action is again closed and locked in breech-closing position and the safety-mechanism has been operated manually to release the fire-control mechanism.

A still further object of the invention is to provide an action-operated safety-mechanism movable on opening the breech of the firearm from its normal position into a position to render the fire-control mechanism inoperative, the safety-mechanism serving also when in its "off" position and the breech is open, to prevent movement of the action into breech-closing position.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

In the accompanying drawings, in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is a broken right side elevation of the barrel-unit of an upturn-and-pullback type of bolt-action firearm embodying the superior safety-mechanism of this invention, the bolt being shown in breech-closing position and the safety in its "on" position;

Fig. 2 is a bottom plan view of the barrel-unit illustrated in Fig. 1 showing the safety-mechanism mounted on the underside thereof;

Fig. 3 is a fragmentary left-end elevation of the barrel-unit and safety-mechanism assembly of Fig. 1;

Fig. 4 is a broken right-side elevation, in section, of the barrel-unit of Fig. 1 showing details of the bolt-action, the safety-mechanism being in its "on" position;

Fig. 5 is a fragmentary side elevation in section similar to Fig. 4 but showing the safety-mechanism in its "off" position and indicating by broken lines the displacement of the fire-control mechanism for releasing the firing-plunger;

Fig. 6 is a fragmentary bottom plan view of the

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barrel-unit of Fig. 5 showing the safety-mechanism in its "off" position, and indicating by broken lines the action of the safety to prevent the breech-bolt from returning into breech-closing position; and

Fig. 7 is a perspective view of the superior safety-mechanism of this invention.

The drawings illustrate the invention as applied to an upturn-and-pullback type of bolt-action firearm and while the particular embodiment of the invention shown herein is especially suitable for use with this type of firearm, it will be understood that the invention includes all modifications of the embodiment shown herein within the scope of the appended claims.

Since the safety-mechanism of this invention is assembled on the rear end of the receiver of the fire arm and associated in its entirety with this portion of the receiver and the adjacent elements of the breech-bolt and the fire-control mechanism, the present disclosure will relate primarily to these specific elements of the firearm, as shown in the drawings, and will forego a detailed description of the firearm as a whole. For a more complete disclosure of an upturn-and-pullback type of firearm for which the safety-mechanism of this invention is particularly adapted, reference may be made to the Crocket Patent No. 2,174,971, Oct. 3, 1939.

Referring to Figs. 1 and 3, the firearm embodies, in brief, a frame comprising a tubular receiver 10 having a barrel 11 threadedly secured in its forward end, the barrel being provided at its rear end with a cartridge-chamber 12. The bore of the tubular receiver constitutes a substantially-cylindrical action-receiving passage 13 for guiding the action, and is provided adjacent its forward end, rearwardly of the cartridge-chamber 12, with a loading-end-ejection opening 15. For purposes of brevity, the receiver-and-barrel assembly will be hereinafter referred to as the "barrel-unit."

Mounted in the action-receiving passage 13 of the receiver, with capacity for reciprocation therein, is the action which, in this instance, comprises a cylindrical breech-bolt 14 having an axle firing-pin passage 16 for reception of the firing-plunger 17. The latter is a substantially blade-like member the rear end of which provides an abutment 18 for the forward end of a firing-spring 19, the rear end of which engages against an end-plug 20 mounted in the rear end of the breech-bolt and secured therein by a transverse pin 21. The rear end of the breech-bolt 14 is of reduced diameter and provides a smooth cylindrical exterior surface upon which turns a bolt-operating sleeve 22 having a laterally offset bolt-operating handle 23. The aforesaid bolt-operating sleeve 22 is held on the reduced rear end-portion of the bolt by means of a retaining-

sleeve 25 mounted thereon and held in place by the aforesaid transverse pin 21 of the end-plug 29.

Formed on the upper and lower edges of the firing-plunger are guides 26 and 27 respectively, the upper guide 26 being engageable in a longitudinal groove 28 in the upper wall of the reduced rear end-portion of the breech-bolt. The lower guide 27 of the firing-plunger is engaged in a longitudinal slot 29 in the bottom wall of the reduced rear end-portion of the breech-bolt, and is provided with a downwardly-extending finger 30 adapted to engage in a cam-slot formed in the aforesaid bolt-operating sleeve 22.

The firing-plunger 17 is also provided on its underside adjacent its forward end with a forwardly-facing cocking-shoulder 32 which is adapted to be engaged by a rearwardly-facing cocking-shoulder 33 of the substantially-horizontal sear-arm 34 of fire-control mechanism indicated generally at 35. As shown especially well in Fig. 1, the latter constitutes a sear-and-trigger unit embodying a substantially-vertical trigger-arm 36 terminating at its lower end in a trigger or finger-piece 37.

The sear-and-trigger unit is formed from substantially-flat sheet-metal stock and is adapted to be pivotally supported on the underside of the receiver by a pivot-pin 38 extending transversely through the horizontal sear-arm 34 of the sear-and-trigger unit substantially intermediate the cocking-shoulder and finger-piece thereof, and mounted in a post 39 welded or otherwise secured to the underside of the receiver, the post 39 depending substantially vertically therefrom and having a vertical slot 41 extending upwardly therein in a plane coincident with the longitudinal axis of the receiver. The width of the vertical slot 41 is only slightly greater than the thickness of the aforesaid sear-arm of the trigger-and-sear unit so that the latter may make a close fit therein but be free for pivotal movement about the pivot-pin 38 which extends across the slot 41 and is engaged at its opposite ends in transverse axially-aligned apertures 42—42 in the upper part of the post 39.

Rearwardly of the pivot-pin 38, and extending substantially vertically through the sear-arm 34 into the trigger-arm 36 of the sear-and-trigger unit, is an aperture 43 for the reception of a coil-spring 44 and its plunger 45, the upper end of which is adapted to engage against the underside of the safety-mechanism of this invention, in the manner hereinafter described, both to control the operation of the latter and normally to hold the rearwardly-facing cocking-shoulder 33 of the sear-and-trigger unit up in position for engagement with the forwardly-facing cocking-shoulder 32 of the firing-plunger 17. With respect to its former function, the spring-and-plunger assembly constitutes detent-means to releasably hold the safety in either of two selected positions in the manner hereinafter described; and as to its latter function, the spring-and-plunger assembly will be seen to serve as a trigger-spring.

As shown especially well in Figs. 4 and 5, the upper rear end of the horizontal sear-arm 34 of the sear-and-trigger unit is provided with an upwardly-projecting lip hereinafter referred to as a stop-abutment 46. The latter is arranged substantially opposite the forward end of a longitudinal substantially-vertical slot 47 formed in the bottom wall of the receiver and extending rearwardly to intersect the rear end thereof. The

slot 47 is provided for accommodating a safety-operating pin 48 which is fixedly secured in any suitable manner on the underside of the retaining-sleeve 25 of the breech-bolt and projects downwardly substantially vertically therefrom into the aforesaid slot 47 to engage and operate the safety-mechanism as and in the manner hereinafter described. The diameter of the aforesaid safety-operating pin 48 is less than the transverse dimension of the longitudinal slot 47 whereby the pin is free to move longitudinally therein during movement of the breech-bolt to and from breech-closing position.

The aforesaid safety-operating pin 48 and the upwardly-projecting stop-abutment 46 of the sear-and-trigger unit are adapted to cooperate with the improved safety-mechanism of this invention, in the manner hereinafter described, for automatically rendering the fire-control mechanism 35 inoperative whenever the breech-bolt is moved rearwardly to open the cartridge-chamber of the barrel; and for blocking the return of the breech-bolt into breech-closing position in the event the safety-mechanism has been inadvertently moved into its "off" position.

Referring especially to Fig. 7, the improved safety-mechanism or safety of this invention is indicated generally at 49 and comprises a sheet-metal member embodying a lobe-portion 50 having a vertical aperture 51 therein, the diameter of which is only slightly greater than the diameter of the aforesaid post 39 whereby the safety may be rotatably mounted thereon, in the manner hereinafter described. Extending from the lobe-portion 50 of the safety is a crooked finger-portion 52 and a substantially square-ended thumb-portion 53, the finger-and-thumb portions of the safety being arranged in substantially the relationship of the finger and thumb of the hand, that is to say, the thumb-portion being considerably shorter than the finger-portion and spaced therefrom by a clearance-aperture 54. The inside edge 55 of the finger-portion constitutes a cam-surface for cooperation by the safety-operating pin 48 of the breech-bolt. Formed integrally on the underside of the safety at substantially the base of its thumb-portion 53, is a pair of substantially-rectangular indentations 56—56 arranged in juxtaposition and each substantially inverted V-shaped in cross section. The indentations 56—56 constitute elements of the aforesaid detent-means, and to this end are adapted to be engaged by the spring-loaded plunger 45 thereof for releasably holding the safety in any selected position.

Extending from the outer edge of the lobe-portion 50 of the safety at substantially right angles to its thumb-and-finger portions, is an operating-arm 57, the outer reach of which is bent upwardly at substantially right angles and provided at its upper extremity with a pair of laterally-spaced ears 58 which are pinched together at their outer ends to form a convenient finger-grip for operating the safety.

The latter is adapted to be mounted on the aforesaid post 39 of the receiver between the underside of the latter and the upper edge of the sear-arm 34 by engaging the apertured lobe 50 of the safety over the lower end of the post prior to mounting the sear-and-trigger unit in the slot thereof, and sliding the safety upwardly until it engages against the bottom of the receiver. The safety is held in this position by means of the pivot-pin 38 which is employed to mount the sear-and-trigger unit in the slot

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of the post, following assembly of the safety thereon. To this end, the oppositely-disposed ends of the pin project beyond the corresponding sides of the post and engage with the underside of the lobe-portion of the safety, as shown especially well in Figs. 2 and 6. One end of the aforesaid pin 38 is extended to serve also as a fixed abutment or step 59, adapted to be engaged by a protuberance 60 struck down from the underside of the lobe 50 of the safety adjacent the periphery of its central aperture 51, to limit rotation of the safety in a clockwise direction about the post 39, as seen in Fig. 2.

With the safety and sear-and-trigger unit assembled on the post in the manner hereinabove described, the spring-loaded plunger 45 of the sear-and-trigger unit is adapted to engage at its upper end against the underside of the safety and in particular in one or the other of the V-shaped indentations 56—56, to resiliently hold the safety in either of two selected positions of rotation both with respect to the stop-abutment 46 of the sear-and-trigger unit and the safety-operating pin 48 of the breech bolt. Moreover, the spring 44 and its plunger 45 act also as a trigger-spring means normally to urge the sear-and-trigger unit to rotate in a counterclockwise direction, as seen especially well in Figs. 4 and 5, to resiliently hold the cocking-shoulder of the sear-arm in position for engagement with the cocking-shoulder of the firing-plunger; and to permit disengagement of the mutually-engaging cocking-shoulders when the finger-piece of the sear-and-trigger assembly is pulled rearwardly, as indicated by the broken lines in Fig. 5, thereby to release the cocked firing-plunger.

The safety is in its normal or "on" position when the finger-grip 58 has been pulled rearwardly, as seen in Figs. 1 and 2, to bring the thumb-portion 53 of the safety immediately above and substantially in engagement with the upper edge of the stop-abutment 46 of the sear-and-trigger unit. Consequently, when an effort is exerted on the finger-piece of the trigger to pull the latter rearwardly for releasing the cocked firing-plunger, it is effectively resisted by engagement of the upper edge of the stop-abutment 46 of the sear-and-trigger unit with the underside of the thumb-portion 53 of the safety. The sear-and-trigger unit of the fire-control mechanism is thus locked against inadvertent release. To release the sear-and-trigger unit preparatory to discharging the firearm, the finger-grip 58 of the safety is pushed forwardly, as indicated in Fig. 6, against the resistance of the detent-means hereinabove described, to swing the thumb-portion of the safety out of alignment with the upper edge of the stop-abutment of the sear-and-trigger unit so that the stop-abutment is free to move upwardly into the forward end of the clearance-slot 47 of the receiver and hence permit disengagement of the mutually-engaging cocking-shoulders of the sear-arm and firing-plunger when the trigger is pulled rearwardly to discharge the firearm.

Under the latter set of conditions, the finger-portion of the safety will be seen to have been swung inwardly from its normal outwardly-displaced position of Fig. 2, to a position such that its cam-surface 55 extends across the longitudinal clearance-slot 47 in the underside of the receiver directly in the path of the safety-operating pin 48 and rearwardly thereof, as shown especially well in Fig. 6. Now, when the breech-bolt is unlocked and begins its rearward move-

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ment in the receiver to open the breech, the safety-operating pin 48 of the breech-bolt is moved immediately into engagement with the cam-surface 55 of the finger-portion of the safety, thereby camming the finger-portion of the safety in a counterclockwise direction, as viewed in Fig. 6, out of the path of the safety-operating pin and concurrently swinging the thumb-portion of the safety automatically back to its normal or safety "on" position immediately above and substantially in engagement with the upper edge of the stop-abutment of the sear-and-trigger unit where it is resiliently held by the detent-means hereinabove described. The thumb-portion of the safety thus effectively locks the sear-and-trigger unit against release even before the breech is sufficiently open to load a fresh cartridge into the chamber of the barrel. After the firing-plunger has been cocked and the breech-bolt returned to breech-closing position the safety must be operated manually, in the manner hereinabove described, to again permit actuation of the sear-and-trigger unit.

A further safety-factor of the improved safety of this invention is the function of the safety-finger 52 to block the return of the breech-bolt from its rearward position in the receiver into breech-closing position whenever the safety has been inadvertently moved to its "off" position while the breech is open. Should the latter circumstance exist, the finger-portion 52 of the safety will have been swung across the longitudinal slot 47 of the receiver forwardly of and directly in the path of the rearwardly-displaced safety-operating pin 48 of the breech-bolt and hence will constitute a stop to positively hold the breech-bolt, as shown by broken lines in Fig. 6, from returning into breech-closing position while the safety is in its "off" position. By moving the safety to its "on" position, the finger-portion of the safety may be swung out of the path of the safety-operating pin 48 of the breech-bolt thereby allowing the breech-bolt to move forwardly into breech-closing position.

The safety-mechanism is characterized by its simplicity of construction and operation, whereby a single member is arranged in cooperative relationship with the breech-bolt and fire-control mechanism of the firearm to automatically shift into its "on" or safe position whenever the breech-bolt is moved rearwardly in the receiver, and which serves also to prevent closing of the breech-bolt when the safety is in its "off" position.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. In a firearm, including in combination: a frame; an action reciprocable in said frame; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said frame, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-and-trigger unit; safety-means rotatably supported on said frame and movable laterally to and from engaging relationship with the stop-

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abutment of said unit; and safety-operating means carried by said action, said safety-operating means being arranged to be displaced rearwardly in said frame by retraction of said action therein, to engage and automatically rotate said safety-means into position for engagement with the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member while said action is retracted in said frame.

2. In a firearm, including in combination: a frame; an action reciprocable in said frame; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said frame, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-and-trigger unit; safety-means; fastening-means arranged to rotatably support said safety-means on said frame between the underside thereof and the stop-abutment of said sear-and-trigger unit for movement laterally to and from engaging relationship therewith; and safety-operating means carried by said action, said safety-operating means being arranged to be displaced rearwardly in said frame by retraction of said action therein to engage and automatically rotate said safety-means into position for engagement with the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member when said action is retracted in said frame.

3. In a firearm, including in combination: a frame; an action reciprocable in said frame; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said frame, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-arm of said unit; safety-means; fastening-means arranged to rotatably support said safety-means on said frame between the underside thereof and the stop-abutment of said sear-and-trigger unit for movement laterally to and from engaging relationship therewith; safety-operating means carried by said action, said safety-operating means being arranged to be displaced rearwardly in said frame by retraction of said action therein to engage and automatically rotate said safety-means into position for engagement with the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member when said action is retracted in said frame; and a protuberance on said safety-means arranged to be moved into engagement with said fastening-means to limit rotation of said safety-means about said fastening-means.

4. In a firearm, including in combination: a frame; an action reciprocable in said frame; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said frame, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; supporting-means projecting from the underside of said frame for pivotally mounting said sear-and-trigger unit thereon for movement in a substantially-vertical plane; a stop-abutment on the sear-arm of said

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unit; safety-means mounted on the said supporting-means of said sear-and-trigger unit for rotation in a substantially-horizontal plane between the underside of said frame and the stop-abutment of said sear-and-trigger unit and to and from engaging relationship with the stop-abutment of said sear-arm; and safety-operating means carried by said action, said safety-operating means being arranged to be displaced rearwardly in said frame by retraction of said action therein to engage and automatically rotate said safety-means into position for engagement with the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member when said action is retracted in said frame.

5. In a firearm, including in combination: a frame; an action reciprocable in said frame; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said frame, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-and-trigger unit; safety-means rotatably supported on said frame and movable laterally to and from engaging relationship with the stop-abutment of said unit; safety-operating means carried by said action, said safety-operating means being arranged to be displaced rearwardly in said frame by retraction of said action therein, to engage and automatically rotate said safety-means into position for engagement with the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member while said action is retracted in said frame; and detent-means engageable with said safety-means to releasably hold said safety-means in position for engagement by the stop-abutment of said sear-arm.

6. In a firearm, including in combination: a frame; an action reciprocable in said frame; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said frame, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-arm of said unit; safety-means rotatably supported on said frame and movable laterally to and from engaging relationship with the stop-abutment of said sear-arm; safety-operating means carried by said action, said safety-operating means being arranged to be displaced rearwardly in said frame by retraction of said action therein, to engage and automatically rotate said safety-means into position for engagement with the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member while said action is retracted in said frame; and safety-detent means carried by said sear-and-trigger unit, said detent-means being arranged to releasably hold said safety-means in position for engagement by the stop-abutment of said sear-arm and to releasably hold said sear-and-trigger unit in position for engaging said firing-member.

7. In a bolt-action firearm, including in combination: a receiver having a chamber and a substantially-vertical slot in the rear end thereof; a breech-bolt reciprocable in the chamber of said receiver; a spring-actuated firing-member

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carried by said breech-bolt; a sear-and-trigger unit for releasably holding said firing-member in cocked position in said receiver, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on said sear-arm, said stop-abutment being substantially opposite the vertical slot of said receiver for movement therein when said sear-and-trigger unit is moved into its firing-member releasing position; safety-means rotatably supported on said frame between said vertical slot and the abutment of said sear-and-trigger unit, said safety-means being movable laterally over and away from the said vertical slot of said receiver; and a pin carried by said breech-bolt, said pin being movable rearwardly in the vertical slot of the receiver by displacement of said breech-bolt rearwardly in the chamber thereof to engage and automatically rotate said safety-means over the slot of said receiver thereby positively blocking the said stop-abutment of said sear-arm from moving upwardly into said slot whereby said sear-and-trigger unit is restrained from releasing said spring-actuated firing-member while said breech-bolt is retracted in said receiver.

8. In a firearm, including in combination: a receiver; a breech-bolt reciprocable in said receiver; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said receiver, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-arm of said unit; safety-means comprising a thumb-portion and a finger-portion; fastening-means arranged to rotatably support said safety-means on said receiver for movement laterally between the underside thereof and the stop-abutment of said sear-and-trigger unit; and safety-operating means carried by said breech-bolt, said safety-operating means being arranged to be displaced rearwardly in said receiver by retraction of said bolt therein to engage the finger-portion of said safety-means and automatically rotate said safety-means about said fastening-means so as to swing the thumb-portion of said safety-means into position for engagement by the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member while said breech-bolt is retracted in said receiver, said safety-means being movable manually from its sear-and-trigger-unit-

restraining position and while said breech-bolt is retracted in said receiver, to withdraw the thumb-portion of said safety-means from its sear-and-trigger-unit-restraining position whereupon the said finger-portion of said safety-means is moved into the path of the said safety-operating means of said breech-bolt to positively hold said breech-bolt rearwardly in said receiver.

9. In a firearm, including in combination: a receiver; a breech-bolt reciprocable in said receiver; a spring-actuated firing-member; a sear-and-trigger unit for releasably holding said firing-member in its cocked position in said receiver, said sear-and-trigger unit having a substantially-horizontal sear-arm and a trigger-arm at substantially right angles thereto; a stop-abutment on the sear-arm of said unit; safety-means comprising a thumb-portion and a finger-portion; fastening-means arranged to rotatably support said safety-means on said receiver for movement laterally between the underside thereof and the stop-abutment of said sear-and-trigger unit; safety-operating means carried by said breech-bolt, said safety-operating means being arranged to be displaced rearwardly in said receiver by retraction of said bolt therein to engage the finger-portion of said safety-means and automatically rotate said safety-means about said fastening-means so as to swing the thumb-portion of said safety-means into position for engagement by the stop-abutment of said sear-and-trigger unit to positively restrain the said unit against movement into position to release said spring-actuated firing-member while said breech-bolt is retracted in said receiver, said safety-means being movable manually from its sear-and-trigger-unit-restraining position and while said breech-bolt is retracted in said receiver, to withdraw the thumb-portion of said safety-means from its sear-and-trigger-unit-restraining position whereupon the said finger-portion of said safety-means is moved into the path of the said safety-operating means of said breech-bolt to positively hold said breech-bolt rearwardly in said receiver; and detent-means engageable with said safety-means to releasably hold said safety-means in engagement with the stop-abutment of said sear-arm to restrain the release of said spring actuated firing member, said detent-means being mounted in the said sear-and-trigger unit to releasably hold said unit in position for engaging said firing-member.

WILLIAM C. ROEMER.

No references cited.