A. J. SAVAGE.

FIREARM.

APPLICATION FILED MAR. 27, 1913.

1,108,400.

Patented Aug. 25, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

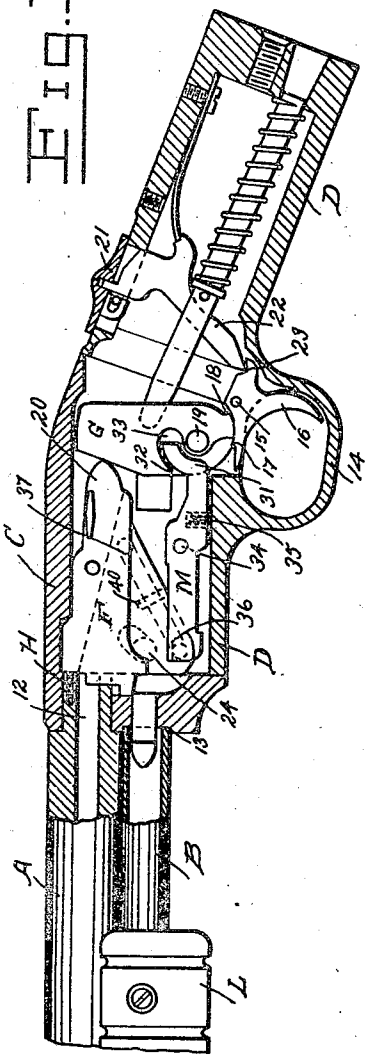


Fig. 2.

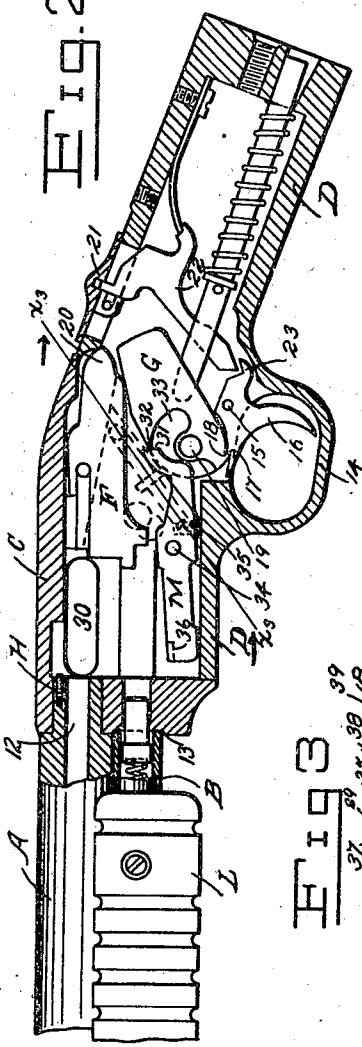
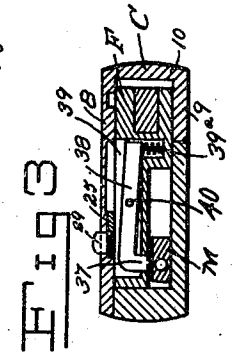


Fig. 3



Witnesses.

Alfred H. Daehler.

D. M. Cummings

Inventor,

Arthur J. Savage;

By Raymond Bell Blakeslee,

His Attorney.

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2 SHEETS—SHEET 2.

Fig. 6.

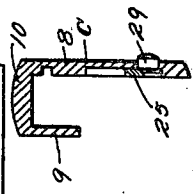


Fig. 4.

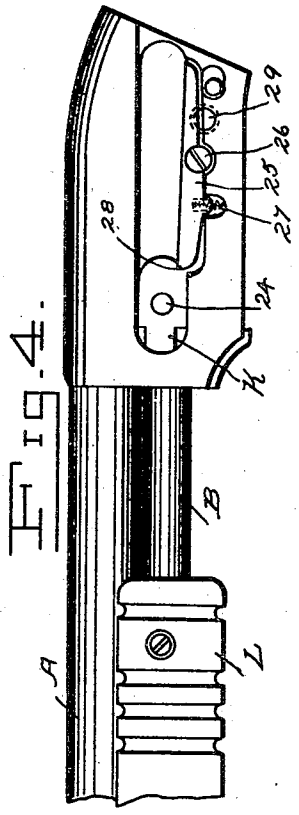


Fig. 7.

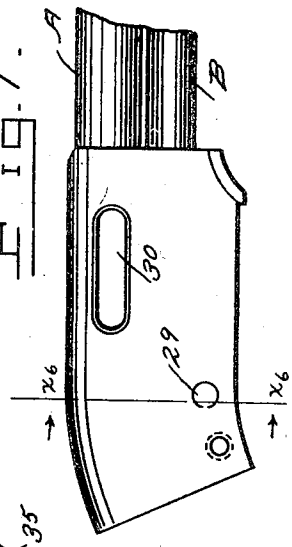


Fig. 5.

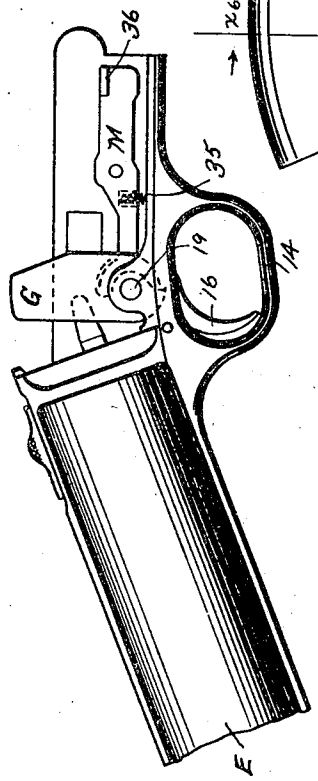


Fig. 8.



Witnesses.
Alfred H. Daehler.
D. M. Cummings

Inventor,
Arthur J. Savage,
By Raymond & Blakeslee,
His Attorney.

UNITED STATES PATENT OFFICE.

ARTHUR J. SAVAGE, OF MERIDEN, CONNECTICUT, ASSIGNOR TO SEARS, ROEBUCK AND COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FIREARM.

1,108,400. Specification of Letters Patent. Patented Aug. 25, 1914.

Application filed March 27, 1913. Serial No. 757,203.

To all whom it may concern:

Be it known that I, ARTHUR J. SAVAGE, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Firearms, of which the following is a specification.

This invention relates to fire arms, and more particularly to repeating rifles; and specifically it concerns departures from and improvements with relation to fire arms such as disclosed in Letters Patent of the United States issued to Basil H. Savage, May 28, 1912, Number 1,027,773, as assignor.

The particular departure and improvements concerned in the present invention relates to the provision, construction and operation of a hammer lock which acts to prevent inadvertent movement of the hammer prior to the restoration of the breech bolt to its forward and elevated position after the extraction and ejection of an exploded cartridge and the introduction of a fresh cartridge within the firing chamber; and also relates further to a firing chamber protector arranged in position to receive the impact of the firing pin when the breech bolt is in operative position and no cartridge is within the firing chamber; and also further relates to an action bar lock release whereby the action bar may be freed to permit the retraction of the breech bolt and the hammer for ejection of a loaded shell, thus permitting the shell in the firing chamber to be withdrawn without exploding the same; and likewise and still further relates to the formation and inter-relation of the trigger and the safety means whereby pulling of the trigger is prevented until such safety means have released it. In other respects, the rifle in general follows standard practice modified in accordance with the invention of said issued Letters Patent, the general construction, inter-relation and mode of operation of the parts and members being unaltered, but only supplemented, by the provision and utilization of the features of the present invention.

The invention has for particular objects the provision of improvements of the general nature stated, which will be superior in point of relative simplicity and inexpensiveness of construction and formation, positiveness in operation, durability and facility in assemblage and use, and which will be generally superior in efficiency and serviceability.

With the above and other objects in view, the invention consists in the novel and useful provision, formation, construction, combination, association and relative arrangement of parts, members and features all as hereinafter described, shown in the drawing, and finally pointed out in claims.

In the drawing: Figure 1 is a fragmentary longitudinal sectional view of a rifle constructed and organized in accordance with the invention, the parts being shown in positions prior to the retraction of the breech bolt; Fig. 2 is a similar view, the breech bolt being shown in retracted position and the hammer set and held by the hammer lock; Fig. 3 is a detail transverse sectional view taken upon the line x^3—x^3, Fig. 2, and looking in the direction of the appended arrows; Fig. 4 is a fragmentary elevation showing the action bar and action bar lock and the releasing means for unlocking the action bar; Fig. 5 is a further fragmentary elevation, with the parts reversed end for end, showing the improved hammer lock and the hammer at the sides thereof opposite to those shown in the other figures; Fig. 6 is a detail fragmentary vertical sectional view taken upon the line x^6—x^6, Fig. 7, and looking in the direction of the appended arrows; Fig. 7 is a further fragmentary side elevation taken at the same side of the rifle as Fig. 5; and Fig. 8 is a detail fragmentary view, partly in section, showing a portion of the barrel of the rifle and the chamber protector upon an enlarged scale.

Corresponding parts in all the figures are designated by the same reference characters.

Referring with particularity to the drawings, A designates the barrel, B designates the magazine, C designates the barrel portion of the receiver to which the barrel A is screwed; D designates the stock portions of the receiver, and E designates the butt stock. The barrel portion of the receiver consists in the main of the side walls 8 and 9 and a top wall or portion 10, the same inclosing a space within which the breech bolt F is confined and guided, being mounted for both longitudinal and vertical movements incidental to the ejection of fired cartridges and the transference of fresh cartridges from the inner end of the magazine to the

firing chamber 12. The inner end of the tubular magazine fits into a recess at 13 within the forward portion of the barrel portion C of the receiver. The stock portion D of the receiver carries the trigger guard 14. Within the receiver, at 15, is pivotally supported the trigger 16, having a shoulder 17 which co-acts with a shoulder 18 on the hammer G, which is mounted upon the take-down screw 19 by which the receiver parts are held in assembled relation. This hammer contacts with the firing pin 20 when the hammer is released from retracted position shown in Fig. 2, and the firing pin and breech bolt are in the positions shown in Fig. 1. The safety button 21, movable longitudinally upon the stock portion D of the receiver at the top of the same, controls the position of the spring pressed safety bar 22 which at its lower angular end seats in a transverse angular relatively enlarged notch 23 upon the trigger 16 rearward of its point of pivotal support 15. When the button 21 is in rearward position, as shown in Fig. 3, the trigger cannot be pulled, but when the button is in forward position the trigger can be pulled, the safety bar 22 being then free to swing. Set into the barrel just above the firing chamber 12 is a chamber protector H which consists preferably of a relatively harder metallic pin projecting slightly within the receiver rearward of the inner end of the barrel, and receiving the impact of the firing pin 20 at its forward end when there is no cartridge in the firing chamber, and thus protecting the barrel and the firing chamber at the inner end thereof against the disruptive action of the firing pin in the absence of the cartridge of rim fire type.

K designates the action bar which is reciprocated longitudinally of the receiver, at its inner end, by the grip L which is attached to the action bar and mounted for reciprocation exteriorly of the magazine B. At its inner end the action bar is provided with a stud 24 which co-acts with the breech bolt to cause the longitudinal and vertical movement thereof in the well known manner, to cause the extraction and ejection of the exploded cartridge and withdrawal of fresh cartridges from the magazine and the insertion thereof in the firing chamber. With the inner end of the action bar K co-acts an action bar lock 25 mounted upon a pivot screw 26 and spring actuated into locked position by a coil spring 27 forward of the screw 26. The action bar lock at its forward end takes into a notch 28 in the rearward end of the action bar K. An action bar releasing button 29 is mounted to play laterally in the side wall 8 of the receiver barrel portion C, and to have cam action beneath the action bar lock 25 rearward of the pivot screw 26 thereof, so that the action bar K may be released, when the parts are in firing position, and a cartridge is in the firing chamber, to permit the breech bolt to be retracted and the cartridge removed from the firing chamber and ejected through the ejection opening 30, without first exploding the cartridge. The releasing button 29 is shouldered so that by engagement with the action bar lock it is held in position for its play in its cam action on the lock.

M designates a hammer lock which co-acts with the hammer G, through a finger 31 at the rearward end of the hammer lock and which co-acts with a nose 32 upon the hammer above its pivotal point of support and above a curved opening 33 formed in the forward portion of the hammer and substantially concentric with the curved path of motion of the hammer. The finger 31 is similarly curved and is accommodated within the opening or chamber 33 in the hammer when such finger is in lowered position. The hammer lock M is pivoted intermediate of its ends as at 34, within the receiver, and its rearward end terminating in the finger 31 is normally elevated by a coil spring 35; and the forward end of the hammer lock is provided with an inwardly directed lip 36 with which co-acts a stud 37 on the forward end of a releasing dog 38 pivotally mounted within a chamber 39 in the breech bolt F, as at 40, to play transversely of the receiver, such stud 37 normally clearing the adjacent inner side of the hammer lock M, but coming under the lip 36 at the forward end of the hammer lock when the breech bolt is moved to firing position, after its retraction to set the hammer G. The stud 37 is normally held outward of the chamber 39 in position to contact with the side of the hammer lock M, through an opening in the breech bolt F, by a spring 39^a, and upon the final forward and upward movement of the breech bolt the stud 37 elevates the hammer lock through the lip 36 at its forward end and releases the finger 31 from the nose 32, freeing the hammer, so that when the trigger is pulled it may fall upon the firing pin 20, the finger 31 being accommodated in such hammer movement in the chamber 33. When the breech bolt is moved rearwardly to set the hammer, the spring 35 forces the finger 31 up against the nose 32 and thus locks the hammer, the dog 37 being withdrawn from beneath the lip 36.

The further mode of operation of the small caliber rifle fragmentarily disclosed in the drawing, and above described with relation to the particular features of improvement constituting the invention, will be readily understood by those skilled in the art, as will the mode of operation of the parts and features embodying the present improvements. The chamber protector H effectively protects the firing chamber and

the inner end of the barrel from the impact of the firing pin during the absence of a cartridge from the firing chamber. The hammer lock M prevents inadvertent lowering of the hammer until the breech bolt has been brought forward and upward into firing position.

The nose 23 insures a more positive engagement of the safety bar 22 with the rearward portion of the trigger, so as to hold these parts together under control of the safety button 21. The button 29 may be pressed, whenever the parts of the fire arm are in firing position, to release the action bar K from the action bar lock 25 and permit the retraction of the breech bolt and the ejection of the fresh cartridge from the firing chamber, without the necessity of first exploding such cartridge which ordinarily precedes the retraction of the breech bolt. This button 29 cams under the rear portion of the action bar lock 25, lowering the forward end thereof from the notch 28 in the inner end of the action bar, and allowing the said inner end of the action bar to ride over the action bar lock as the breech bolt is retracted.

I do not desire to be understood as limiting myself in the interpretation of the invention to any particular features of construction or formation, further than as specified in the following claims.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. In a magazine fire arm, in combination with a vertically and longitudinally movable breech bolt; a hammer retracted in the rearward movement of the breech bolt, a hammer lock holding the hammer in retracted position, and releasing means actuated in the forward and upward movement of the breech bolt to disengage the hammer lock from the hammer; said releasing means being carried by the breech bolt.

2. In a magazine fire arm, in combination with a vertically and longitudinally movable breech bolt; a hammer retracted in the rearward movement of the breech bolt, a hammer lock holding the hammer in retracted position, and releasing means actuated in the forward and upward movement of the breech bolt to disengage the hammer lock from the hammer; said hammer lock comprising a pivoted member provided at one end with a finger disposed for engagement with the hammer adjacent to an opening in the hammer arranged to accommodate the finger when out of engagement with the hammer; said member being provided at the other end with a lateral projection; and said releasing means including a projecting member adapted to be engaged with said lateral projection upon said member.

3. In a magazine fire arm, in combination with a vertically and longitudinally movable breech bolt; a hammer retracted in the rearward movement of the breech bolt, a hammer lock holding the hammer in retracted position, and releasing means actuated in the forward and upward movement of the breech bolt to disengage the hammer lock from the hammer; said hammer lock comprising a pivoted member provided at one end with a finger disposed for engagement with the hammer adjacent to an opening in the hammer arranged to accommodate the finger when out of engagement with the hammer; said member being provided at the other end with a lateral projection; and said releasing means including a projecting member adapted to be engaged with said lateral projection upon said member; said finger being curved and the opening in the hammer being similarly curved.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR J. SAVAGE.

Witnesses:
RAYMOND IVES BLAKESLEE,
H. H. HARRIS.