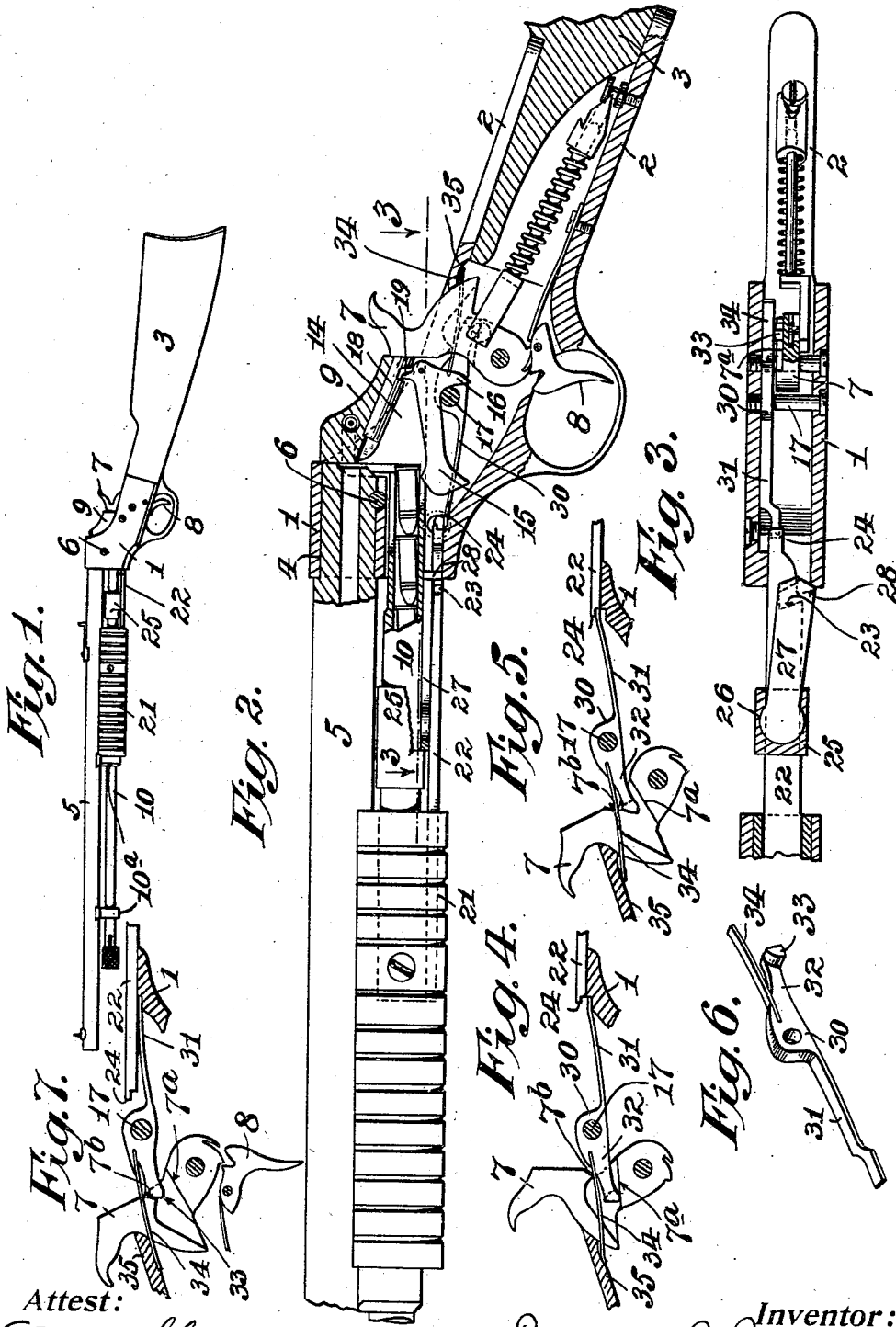


E. E. REDFIELD.
 REPEATING FIREARM.
 APPLICATION FILED MAY 1, 1909.

953,291.

Patented Mar. 29, 1910.



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UNITED STATES PATENT OFFICE.

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REPEATING FIREARM.

953,291.

Specification of Letters Patent.

Patented Mar. 29, 1910.

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To all whom it may concern:

Be it known that I, EDWARD E. REDFIELD, a citizen of the United States, residing at Glendale, in the county of Douglas, in the State of Oregon, have invented certain new and useful Improvements in Repeating Firearms, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates generally to repeating firearms of the type of that shown in Letters Patent of the United States No. 852,241, dated April 30, 1907, in which the breech block is moved backward and forward to extract the empty shell, cock the hammer and insert a fresh cartridge in the chamber of the barrel, through connection with a grip piece which slides longitudinally with respect to the barrel.

The object of the invention is to provide improved locking devices for the hammer and for the slide by which the movement of the breech block is accomplished, so that the breech block cannot be released except when the hammer is down and so that the hammer cannot be released except when the breech block is in firing position.

In the accompanying drawings the invention is illustrated as embodied in a repeating rifle which is constructed and organized generally as shown and explained in said Letters Patent, and as residing in a structure which comprises a single piece which performs both the function of locking the breech block and the function of locking the hammer.

In the drawings—Figure 1 is a view in side elevation of a repeating rifle which embodies the invention. Fig. 2 is a detail view, on a larger scale, partly in side elevation and partly in longitudinal section, of so much of the rifle shown in Fig. 1 as is necessary to enable the application of the invention thereto to be understood. Fig. 3 is a detail view in section, on the plane indicated by the line 3—3 of Fig. 2, looking in the direction of the arrows. Fig. 4 is a detail view showing the relations of the hammer, the slide and the lock when the hammer is down. Fig. 5 is a view similar to Fig. 4 but showing the relations of the parts when the hammer is in its cocked position. Fig. 6 is a detail view in perspective of the hammer and slide lock. Fig. 7 is a detail view similar to Fig. 5, but

showing the relations of the parts when the slide has started back.

In order that the nature of the invention may be the more readily understood, especially in its relation to known features of construction, as embodied in the rifle shown and described in said Letters Patent, the same reference characters will be employed herein as are employed in the specification of said Letters Patent to indicate like parts.

The frame 1, provided with the usual tangs 2 for attachment of the stock 3, has a socket 4 to receive the shouldered end of the barrel 5, which is held in place by the screw 6. In the frame are pivoted, as usual, the spring actuated hammer 7 and trigger 8. The breech block 9, arranged to slide in the frame 1, is formed with or secured to the magazine tube 10, which slides in guides 10^a on the underside of the barrel 5. The breech block is slotted vertically, as at 14, and has pivoted in such slot a lifter 15, the rear lug 16 of which coöperates with the hammer 7 to cock the same and to throw the forward end of the lifter up to eject the empty shell and place the fresh cartridge in position in line with the chamber of the barrel, in the rearward movement of the breech block, and with the abutment 17, in the forward movement of the breech block, to throw the forward end of the lifter down into position to receive a fresh cartridge from the magazine. The firing pin 18 is located in the breech block, as usual, and coöperates with a projection 19 on the upper surface of the lifter, near its rear end. All of the parts thus far referred to are constructed and operate substantially as shown and described in said Letters Patent, and further explanation thereof is not necessary.

The grip piece 21, having a limited range of movement with respect to the magazine tube 10, is, by such limited relative movement, connected with the magazine tube and breech block to unlock the breech block and to effect the rearward and forward movement thereof and is disconnected therefrom, at the end of the forward movement, to lock the breech block in firing position. The means by which the grip piece is connected with the breech block are somewhat similar to the corresponding means shown and described in said Letters Patent, and so far as they differ therefrom do not form part of

the present application. Nevertheless, in order that the application of the present invention may be understood such means will now be described, the reference characters employed to indicate parts to be referred to hereafter not being applied in the same manner as in the specification of said Letters Patent or to indicate corresponding parts. The grip piece 21 has connected thereto a slide 22 formed near its rear end with a cam slot 23 and at its rear end with an overhanging lip 24 for a purpose to be described. A sleeve 25 secured on the magazine tube has in its underside a seat 26 for the end of a latch 27 which swings in a horizontal plane, having on its underside, at its rear end, a lug 28 which coöperates with the cam slot 23. At the last of the forward movement of the grip piece the cam slot 23 acts upon the lug 28 to swing the latch 27 outward so that the lug 28 shall stand in front of the frame 1 and thereby lock the breech block, which is connected with the latch 27 through the magazine tube 10 and the sleeve 26, in firing position. The slide 22 is locked in its forward position, when the hammer is up, by means presently to be described, but when released the first of the rearward movement of the grip piece, through the coöperation of the cam slot 23 and the lug 28, throws in the latch and the lug 28 from in front of the frame so that the grip piece, slide, magazine tube and breech block may then be moved rearwardly.

The means for locking the slide against rearward movement and therefore preventing the disengagement of the latch 22 from the frame and the rearward movement of the breech block, will now be described. In the frame 1 is pivoted a lock 30 which may be mounted, for convenience, on the same screw 17 which forms the abutment for the lifter 15. As indicated hereinbefore, this lock 30 performs the double function of locking the slide except when the hammer is down, and of locking the hammer except when the slide is in its extreme forward position and the breech block therefore locked in its firing position. Furthermore, it is so constructed and combined with the co-operating elements that the locking of the slide is simultaneous with the unlocking of the hammer so that there is no danger of premature discharge through the unlocking of the hammer even slightly before the locking of the slide, the locking of the slide and the unlocking of the hammer being effected by a single movement of the locking device. As shown, the lock consists of a lever, the forward arm 31 of which is slightly yielding while the rear arm 32 is rigid and is provided with a laterally projecting lug 33, to coöperate with the hammer as hereinafter described, and with a flat spring 34 which bears against an abutment 35 on the frame for the purpose of pressing the rear end of the locking lever downward. The hammer 7 is recessed laterally, as clearly shown in Figs. 4 and 5, to form, below the projecting lug 33 of the locking lever, an upwardly projecting cam shoulder 7^a, the function of which is to throw the rear end of the locking lever up as the hammer goes down and, above the lug 33, with a downwardly projecting locking shoulder 7^b, the function of which is to engage the lug 33 as the hammer goes back locking the hammer back of cocked position and holding the cock notch clear of the trigger until the grip piece and slide reach their extreme forward position when the breech block is locked in firing position. The extreme forward end of the arm 31 coöperates with the end of the slide 22 to lock the slide in its extreme forward position, the spring 34 causing the forward end of the arm 31, as soon as the slide reaches its extreme forward position, to snap up behind the end of the slide to hold it from rearward movement until released as hereinafter explained, the lip 24, above referred to, preventing the movement of the end of the arm upward beyond the end of the slide. To release the slide, the arm 31 is thrown down, as hereinafter described, leaving the slide free to be moved rearwardly over the end of the arm 31. As the hammer is cocked and the rear end of the arm 32 is freed from the cam shoulder 7^a, the spring 34 is free to act upon the rear arm 32, so that when the slide reaches its extreme forward position, the end of the arm 31 snaps up behind the end of the slide as already stated. As the hammer reaches its full cocked position the nose formed back of the locking shoulder 7^b slips over the lug 33, the arm 31 yielding to permit this, so that the lug 33 therefore stands in front of the locking shoulder 7^b and holds the hammer from falling until the slide reaches its extreme forward position when the forward extremity of the arm 31 snaps up behind the slide. This, as herein explained, can take place only when the breech block is locked in firing position by the latch 27, so that the hammer may then with safety be free to fall. At the end of the forward or firing movement of the hammer, the shoulder 7^a coöperates with the lug 33 to raise the arm 32 against the spring 34 and thus to throw down the forward end of the arm 31, so that when the hammer has fallen the slide may then be moved back, carrying with it the breech block. The upward movement of the forward end of the arm 31, which locks the slide, takes place simultaneously with the downward movement of the rear end of the arm 32, which unlocks the hammer, and in the same movement of oscillation of the lever 32 about its fulcrum, so that there is no period of time, however short, when the slide and the ham-

mer are unlocked together and consequently no danger point such as exists when one movement of the locking lever is required to unlock the hammer and another to lock the slide, leaving both unlocked for a brief period in which it is possible to release the hammer before the slide is locked.

It will now be understood that although the improved locking device is shown and described herein as embodied in a particular form which is specially adapted for cooperation with the other features of construction of the rifle, as shown and described, nevertheless the form and construction of the locking device may be changed to suit different types of structure and may be employed with other features of construction than those shown and described herein.

I claim as my invention:

1. In a repeating firearm, the combination of a movable breech block, a reciprocating slide moving with the breech block, a hammer having a downwardly projecting cam shoulder and a spring-pressed lever having its forward end adapted to stand in the path of the slide to prevent movement thereof and having an upwardly projecting lug to cooperate with the cam shoulder on the hammer, whereby as the hammer is cocked the lever is moved by its spring so that its forward end shall be in readiness to engage the slide when the latter reaches its forward position and as the hammer falls the forward end of the lever is moved out of the path of the slide.

2. In a repeating firearm, the combination of a movable breech block, a reciprocating slide moving with the breech block, a hammer having a downwardly projecting cam shoulder and a locking shoulder and a spring-pressed lever having its forward end adapted to stand in the path of the slide to prevent movement thereof and having an upwardly projecting lug to cooperate with the cam shoulder and the locking shoulder on the hammer, the forward arm of the lever being relatively resilient and the rearward arm relatively rigid, whereby as the hammer is cocked the lever is moved so that its forward end shall be in readiness to engage the slide when the latter reaches its forward position and the hammer is engaged by the lug and held from falling and as the hammer falls the forward end of the lever is moved out of the path of the slide.

3. In a repeating rifle, the combination of a movable breech block, a hammer having a downwardly projecting locking shoulder, a locking lever with a lug to engage from below the locking shoulder on the hammer, and means to hold the locking lever with its lug in position to engage the locking shoulder on the hammer when the breech block is out of firing position.

4. In a repeating rifle, the combination

of a movable breech block, a hammer having a locking shoulder, a spring-pressed locking lever having its forward arm relatively resilient and its rearward arm relatively rigid and provided with a lug to engage the locking shoulder on the hammer, the locking lever, when the breech block is out of firing position, being held with the lug in position to engage the locking shoulder on the hammer and the resilient arm of the lever permitting the locking shoulder on the hammer to pass over the lug on the lever into locking position, and means to hold the lever in such position when the breech block is out of firing position.

5. In a repeating firearm, the combination of a frame, a longitudinally movable breech block, a slide moving with the breech block, a hammer and a spring-pressed lever pivoted between its ends on the frame and adapted at one end to stand in the path of the slide to prevent rearward movement thereof and having an upwardly projecting lug at the other end to stand in the path of a downwardly projecting shoulder on the hammer to prevent forward movement thereof, the lever being held by the slide when out of firing position in position to engage the hammer and being held by its spring except when the hammer is down in position to engage the slide.

6. In a repeating firearm, the combination of a frame, a longitudinally movable breech block, a slide moving with the breech block, a hammer and a lever pivoted between its ends on the frame, the forward arm of the lever being relatively resilient and adapted to engage the slide to prevent movement thereof and the rearward arm of the lever being relatively rigid and provided with a lug to engage a locking shoulder on the hammer.

7. In a repeating firearm, the combination of a frame, a barrel, a longitudinally movable breech block, a latch carried with the breech block, and adapted to engage the frame to prevent rearward movement of the breech block, a slide movable with the breech block and also having a limited movement with respect to the breech block to engage and disengage the latch with and from the frame, a hammer and a locking lever pivoted on the frame and adapted to engage the slide to prevent movement thereof except when the hammer is down and to engage the hammer to prevent forward movement thereof except when the slide is in its extreme forward position.

This specification signed and witnessed this 10th day of April A. D., 1909.

EDWARD E. REDFIELD.

Signed in the presence of—

L. L. HURD,
K. A. MILLER.