

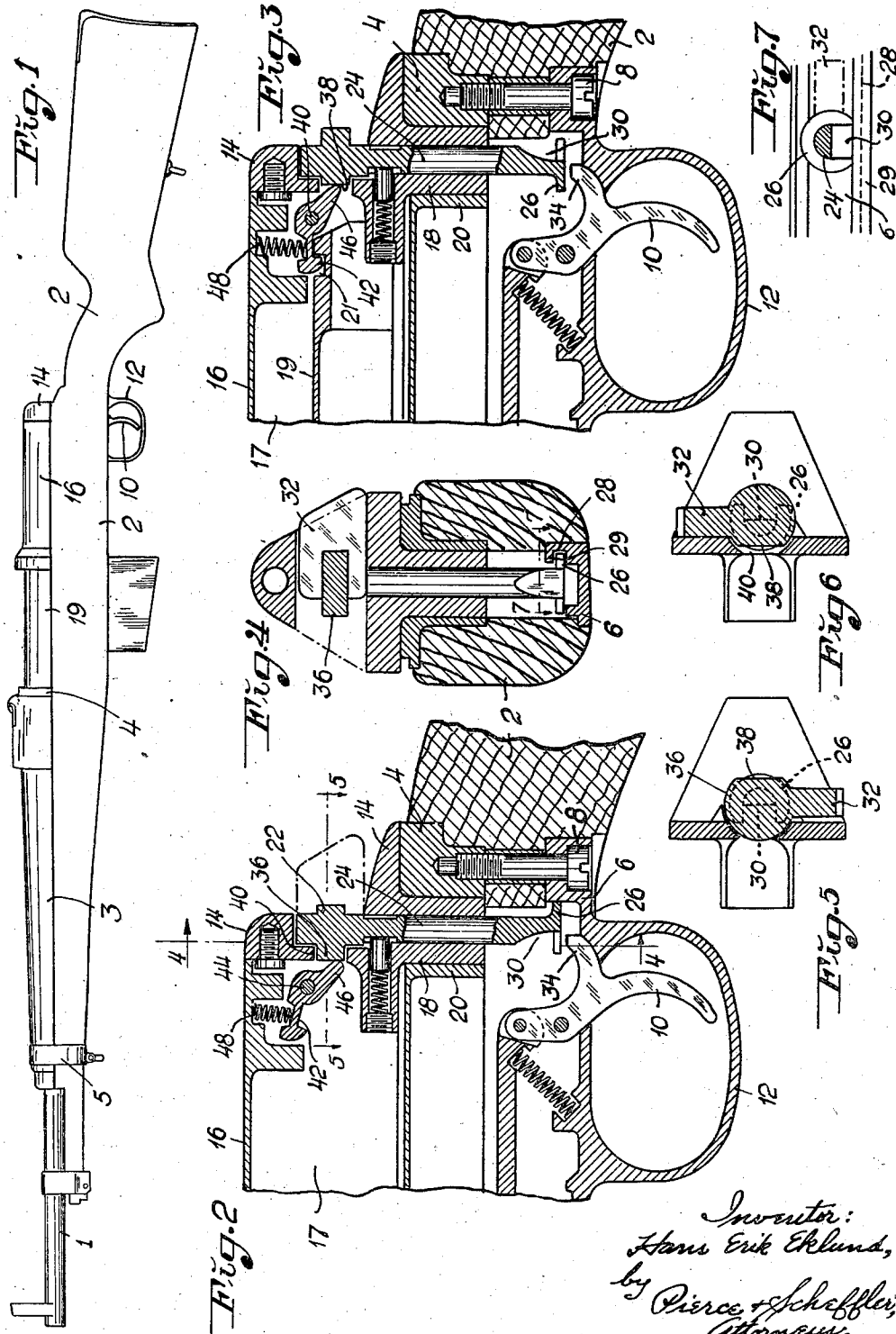
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SAFETY FOR SELF-LOADING FIREARMS

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SAFETY FOR SELF-LOADING FIREARMS

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My present invention relates to self-loading fire arms having a receiver and a rear member forming a rear wall on said receiver. The main object of the invention is to provide for a suitable disposition of the rear member and the safety mechanism of the fire arm.

According to the invention the safety member is connected with the rear member and is removable therewith as a unit from the receiver, means being provided to lock said unit to the receiver in its mounted position. By combining the rear member and the safety mechanism it is possible to utilize the safety mechanism to removably lock the rear member in its mounted position. Further it is possible due to this combination to construct the safety member in a simple manner to control the loading or bolt mechanism of the fire arm. Because the safety member can be set to maintain the rear member in its mounted position or to release said member, the bolt mechanism will be easily available for dismounting, i. e. by removing the rear member.

The invention further consists in the novel details and combination of parts, more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming part of this specification and illustrating the application of the invention to a self-loading rifle,

Fig. 1 is a left side elevation of the completely assembled rifle with the bolt mechanism in the closed position;

Fig. 2 is a longitudinal sectional view of a fragment of the rifle at the rear portion of the receiver;

Fig. 3 is a similar view to Fig. 2 but showing the safety member in a different position;

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 2;

Figs. 5 and 6 are similar sectional views on the line 5—5 in Fig. 2 and illustrate two different positions of the safety; and

Fig. 7 is a sectional view on the plane of line 7—7 in Fig. 4 but showing the locking flange in the position in which the rear member can be removed.

In the illustrative construction of the drawing, referring first to Fig. 1, the barrel is indicated at 1, the stock at 2, the fore stock at 3, the receiver or frame at 4 and a strap, holding the fore stock at 5. With reference also to Fig. 2 the trigger guard plate is designated by 6, a rear clamp screw for such plate by 8, the trigger by 10 and the trigger guard proper with 12.

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The rear member referred to above forms a rear wall for the receiver cavity 17, which contains the bolt mechanism. The detailed construction of said mechanism forms no part of the present invention but an element thereof is shown at 19 in Figs. 1 and 3. The top of the receiver cavity is confined by a protecting cover or slide 16 which is slidably mounted upon the receiver. The rear member 14 is mounted removably on the receiver and to this end it is provided with a cylindrical boss 18 which is fitted removably in a corresponding transversely arranged cylindrical socket 20 of the receiver, the axis of the socket being vertical when the rifle is in normal firing position. The safety member 22 of the fire arm is carried by the rear member which to this end has a bore extending axially through the cylindrical boss 18 and through which the safety pin 24 is carried. The safety member is formed as a lock to maintain the rear member in the receiver. At its lower end the safety pin 24 has a locking flange 26 which in a certain position engages a groove 28 formed in a lateral marginal flange 29 on the guard plate 6 but in another position is moved out of this groove to permit elevation of the rear member as will be more particularly described hereinbelow.

At the lower end the safety pin 24 has a notch 30 beginning at the end surface thereof and which when the safety lever or handle 32 secured to the safety pin takes the position illustrated in Figs. 2, 4 and 5 is located opposite to a projection 34 which extends rearward from the trigger 10 and in such position permits the trigger to be actuated for firing the arm; in other words the safety member then is in its unlocking position, as illustrated in Fig. 2. In this position the safety lever 32 is turned over to the right in Fig. 4. If it is turned over half of a revolution from the latter position, as illustrated in Figs. 3, 4 and 6 the rifle is locked because the lower end surface of the safety pin then stands opposite to the projection 34 and thereby blocks the trigger as illustrated in Fig. 3. In consequence, the safety member here has also the usual function of securing the fire arm to prevent accidental firing.

However, the safety member has also the object to control the loading of the fire arm to a certain extent. To this end it has a rounded flange 36, situated on a level with the safety lever 32 and having a flattened surface 38 at one side thereof. This flange is extended laterally through an aperture 40 in the rear member so that its peripheral edge lies substantially flush with the front of the rear member. Opposite

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to the aperture 40 there is a pawl 42 which is pivoted on a horizontal pin 40 in the protecting cover 16 and has a rear projection 46 which is pressed against the flange 36 by the spring 48. In the position shown in Figs. 2 and 5 of the safety member, the projection 46 engages the arc shaped periphery of the flange 36, and the pawl is held in its elevated position. This corresponds to unlocked rifle (Figs. 2 and 5). The pawl 42 is intended to cooperate in a certain manner with the bolt mechanism of the rifle, but is now maintained in its elevated position out of any actuation thereof. On the other hand, if the safety lever 32 is turned about half of a revolution to the position illustrated in Figs. 3 and 6 the flattened surface 38 of the flange 36 comes opposite to the aperture 40 and the projection 46 so that this projection permits the pawl to move down to a certain extent. The pawl then takes a locking position in which it may have influence on the bolt mechanism. In this position the pawl can in fact catch hold of the element 19 of the bolt mechanism to keep said mechanism in its open position. In Fig. 3 the pawl 42 engages a notch 21 in the element 19. In any automatic or semi-automatic fire arms of similar type having a locking member or action slide which is actuated by a powder gas actuated member operating the loading mechanism, and in turn actuates the bolt of the fire arm, the pawl can be constructed to maintain this locking member or action slide and thereby keep the mechanism in its open position.

Because the pawl 42 is journaled in the protecting cover or slide 16, it is carried forwardly with the cover 16 when the latter is moved forwardly. The rear member 14 may be lifted from the receiver when the cover or slide 16 is manually moved forwardly; and the cover 16 and bolt mechanism 19 may then be removed as a unit from the receiver. Since the rear member may be removed only when the safety member takes a certain position the safety mechanism is thus also a key, which enables or prevents the mechanism from being dismounted.

In the unlocked as well as the locked position of the safety mechanism the locking flange 26 engages the notch 28 in the guard plate and blocks the rear member to the receiver. The notch 30 situated in the safety pin 24 and also extending out through the flange 26 and forming an opening therein is directed forward and rearward respectively as illustrated at the bottom of Figs. 5 and 6 respectively (dotted lines). However, if the safety pin 24 is turned so that the notch 30 will face to the groove 28, the locking flange does not prevent elevation of the rear member and the safety member because the locking flange 26 is free beyond the marginal flange 29 containing the groove 28 on the guard plate. The safety lever 32, the locking flange 26 and the notch 30 then take the position relatively to the marginal flange 29 as illustrated in Fig. 7.

What I claim is:

1. In a self-loading fire arm, a receiver, a bolt mechanism in said receiver, a spring pressed latch for retaining the bolt mechanism in retracted position, firing mechanism for said bolt mechanism, a rear member removably mounted in said receiver to form a wall for the receiver back of said bolt mechanism, and a safety member rotat-

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ably mounted in the rear member; said safety member including safety means operable to block actuation of said firing mechanism upon adjustment of said safety member to one position, means operable upon adjustment of said safety member to render said safety means inactive and to actuate said spring pressed latch to inoperative position, and means carried by said safety member and operative in both of said adjustments of the safety member to lock said rear member against removal from said receiver.

2. In a self-loading fire arm, a receiver, a firing mechanism within said receiver, a rear member removably mounted on said receiver to form a rear wall thereof, a safety member adjustably carried by said rear member and formed with a circumferentially incomplete locking flange, said safety member including means co-operating with said firing mechanism to lock or alternatively to unlock the same upon adjustment of said safety member into one or the other of two significant positions, a guard plate at the bottom of the receiver having a groove to be engaged by said locking flange in the locking and unlocking adjustments of said safety member, said safety member being movable into a third position in which the circumferentially incomplete flange is clear of said groove, thereby to permit removal of the rear member and safety member as a unit from the receiver.

3. In a self-loading fire arm, a receiver, a bolt mechanism in said receiver, a spring pressed latch for retaining the bolt mechanism in retracted position, a rear member removably mounted in said receiver to form a wall for the receiver back of said bolt mechanism, and a safety member rotatably mounted in the rear member; said safety member including means operable upon adjustment of said safety member into one or the other of two significant positions to actuate said spring pressed latch to operative and inoperative position respectively, and means carried by said safety member and operative in both of said adjustments of the safety member to lock said rear member against removal from said receiver.

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