

April 24, 1945.

R. RICE

2,374,378

BOLT-ACTION FIREARM

Filed April 23, 1943

2 Sheets-Sheet 1

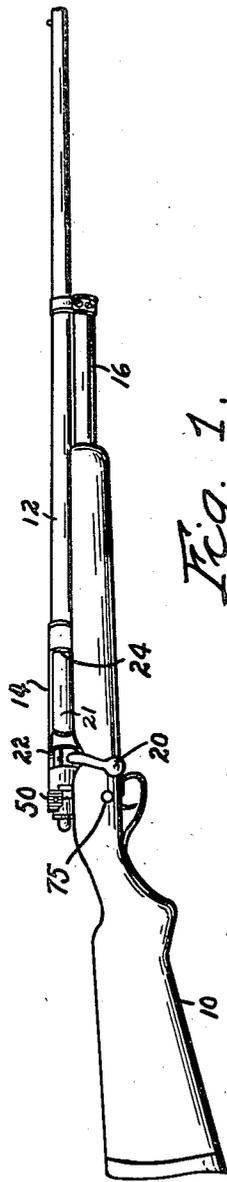


Fig. 1.

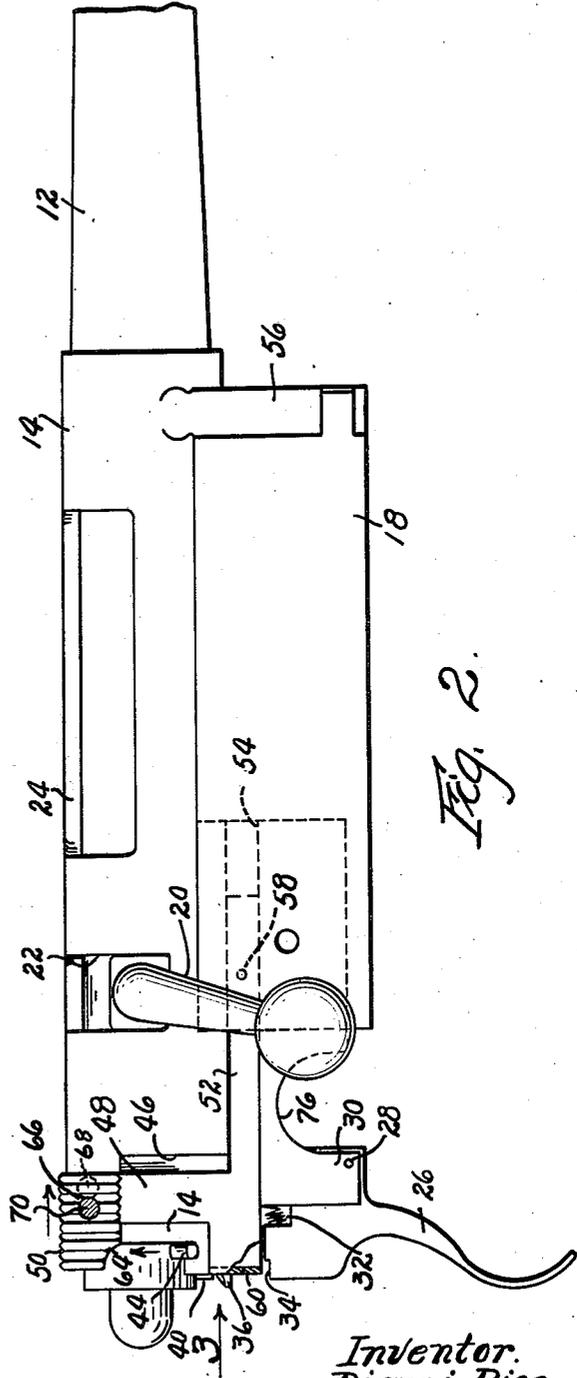


Fig. 2.

Inventor.  
Rienzi Rice.  
By attorney  
Charles R. Fay

April 24, 1945.

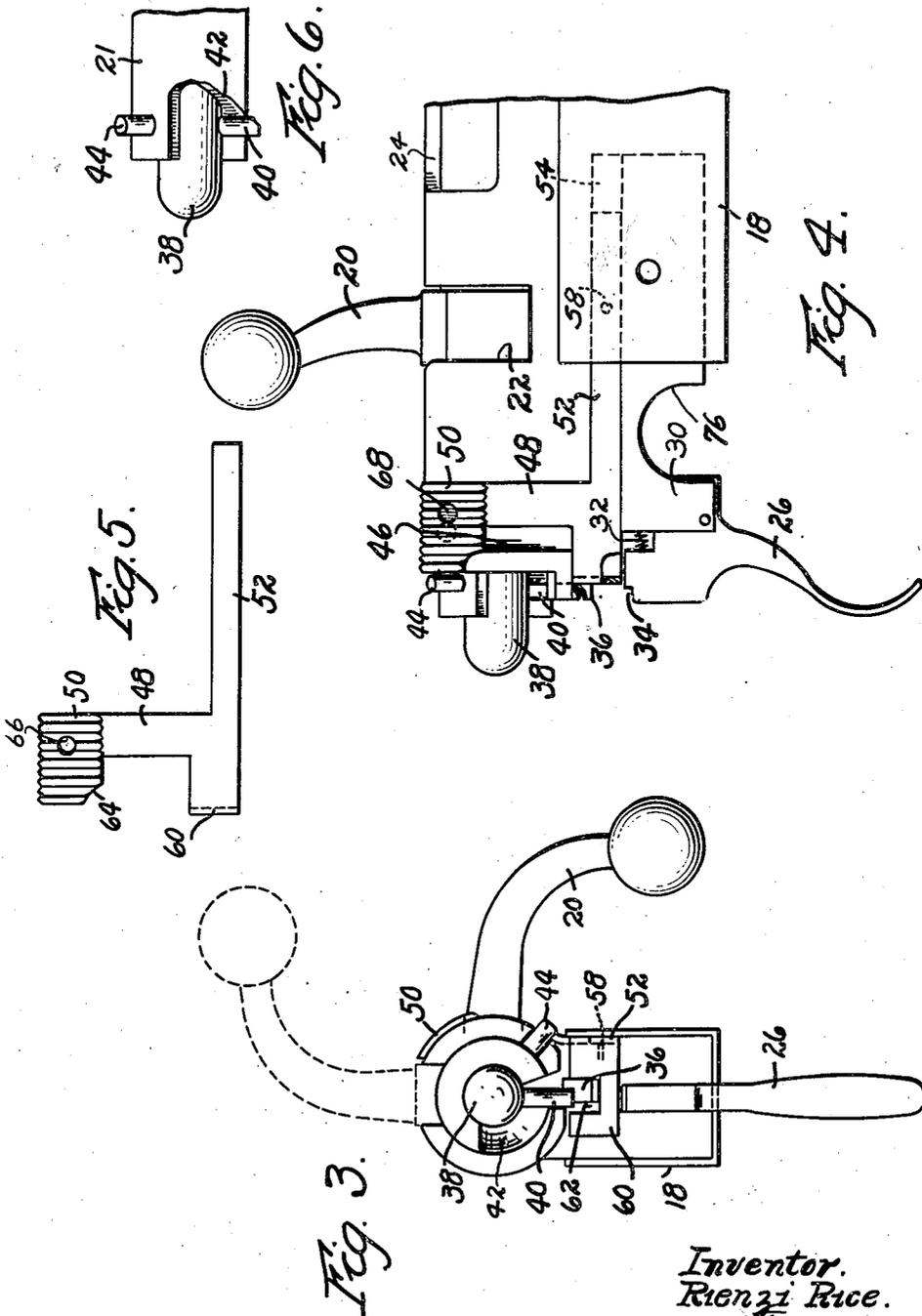
R. RICE

2,374,378

BOLT-ACTION FIREARM

Filed April 23, 1943

2 Sheets-Sheet 2



Inventor.  
Rienzi Rice.  
By Attorney  
Charles A. Fay

## UNITED STATES PATENT OFFICE

2,374,378

## BOLT-ACTION FIREARM

Rienzi Rice, Worcester, Mass., assignor to Harrington & Richardson Arms Company, a corporation of Massachusetts

Application April 23, 1943, Serial No. 484,146

3 Claims. (Cl. 42—16)

This invention relates in general to bolt action firearms and the objects of the invention include the provision of a bolt action shotgun or the like firearm in which cartridges in a magazine are automatically inserted into the breech of the gun by the action of the bolt, which may be hand operated in the usual manner; the provision of a bolt action firearm in which the bolt is partially rotated manually for the purpose of cocking the firing mechanism, there being a safety slide which may be manually operated to be positioned selectively in substantial engagement with a trigger to prevent operation of the same so that the gun may not be fired, or the safety slide may be moved to trigger-free position so that the trigger may be actuated to fire the gun; the provision of a cam surface on the safety slide and a cooperating projection on the rotary bolt, the cam surface lying in the path of the projection during the cocking action whereby the safety slide is moved by a camming action of the projection to safe position, so that the gun is always automatically set on safe position when the bolt is actuated to cock the firearm mechanism; and the provision of a red and green visible signal in combination with the safety slide so that the red signal only may be seen when the safety slide is in safe position and the green signal only is visible when the slide is moved to a position wherein the trigger may be actuated to fire the gun.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which

Fig. 1 is a view in side elevation of a bolt action shotgun embodying the invention;

Fig. 2 is an enlarged view of the firearm with the stock removed and showing the safety slide in a position wherein the trigger is free;

Fig. 3 is an end view looking in the direction of arrow 3 of Fig. 2;

Fig. 4 is a view similar to Fig. 2 but showing the gun in cocked condition;

Fig. 5 is a side view of the safety slide; and

Fig. 6 is a detailed view of the end of the bolt on which the projection is mounted.

The present invention may be applied to many different types of firearms but it has been elected to illustrate it as applied to a bolt action shotgun. In Fig. 1 the stock of the firearm is shown at 10 and in this case the stock extends forwardly under the rear end of the barrel 12 and the receiver 14 to support the same. As illustrated, a tube 16 is secured in a position to guide shells therein into the breech by means of some form

of elevating mechanism not shown and forming no part of the present invention, but such mechanism may be contained within the separable housing 18. The bolt actuating lever 20 is secured to the bolt 21 and is guided in its upward movement in a slot 22 in the receiver, and as is well understood in the art the bolt lever is rotated in an upward direction to the dotted line position of Fig. 3 to cock the gun; and it may then be retracted rearwardly to eject the spent shell through opening 24 in the receiver and to permit the ejection thereof and the entry of a fresh shell into the breech.

The trigger 26 is pivoted as at 28 on a lug 30 and is spring pressed in a counter-clockwise direction by trigger spring 32 which may abut a part of the gun. The trigger is recessed at 34 for a purpose to be described. When the trigger is pulled it actuates a sear 36 in any desired or convenient manner for the purpose of releasing the firing pin 38, which is spring pressed as usual in firearms of this type. The sear mechanism forms no part of the present invention, and is not illustrated in detail.

The firing-pin 38 is provided with a depending lug 40 and this lug is engaged by the sear 36 to maintain the firing pin in retracted position against the tension of the firing spring so that upon release of lug 40 by the sear, under actuation of the trigger, the shell in the breech may be fired. A cam surface 42 on the bolt acts on lug 40 to retract the firing pin to cocked position and this is accomplished as is well known merely by rotating the bolt as is illustrated in Figs. 3 and 4.

The bolt is provided with a radial pin 44 fixed thereto, this pin of course moving with the bolt. There is provided a shallow slot 46 in a wall of the receiver for the reception of a plate 48, the latter being narrower than the width of the slot 46 so that plate 48 may be slid by means of thumbpiece 50 from a position wherein it engages the rear edge of the slot as in Fig. 2 to another position wherein it engages the forward wall of the slot as in Fig. 4.

Plate 48 together with the thumbpiece forms a part of a safety slide which includes an elongated forwardly extended element 52, this element being slidably mounted in a guideway 54 in the receiver. The housing 18 which is secured to a forward member 56 retains the element 52 in position within its guideway 54, and a spring pressed detent 58 releasably maintains the slide in whatever position it is placed.

The safety slide also includes a flange 60 at its

rear end, this flange having an aperture 62 to permit the passage therethrough of the sear 36 and the lug 40 on the firing pin. Flange 60 forms a stop which prevents firing movement of the trigger when the slide is in its forward position, see Fig. 4; and the recess 34 in the trigger permits the latter to be moved to firing position when the slide and therefore the flange 60 are located in rearward position as shown in Fig. 2. A cam surface 64 is provided on an overhanging part of thumbpiece 50.

It will be seen from the above description that the safety slide may be manually moved from safe position to firing position as desired, and in order to provide for a quick and easy ascertainment of such position the slide has an aperture 66 in the thumbpiece which aligns with a red element 68 on the receiver when the slide is in forward, trigger stopping position, and this aperture aligns with a green element 70 when the slide is in its rearward trigger free position. Thus the safety slide may be manually operated for the convenience of the operator of the firearm.

In addition however to the manual operation above described, the safety slide is also automatic in that it must be moved to safety position wherein the red element 68 is seen whenever the gun is cocked and a fresh shell is thrown into the breech, for the reason that the pin 44 moves upwardly upon raising the bolt lever 20; and as seen in Fig. 2 this pin has a path which impinges on cam surface 64 and will thus force the safety slide forwardly to the position of Fig. 4 wherein the gun cannot be fired. Hence the gun may not fire accidentally during cocking, and in fact the gun may not be fired at all, after one shot until the bolt lever is brought back to final position and the safety slide is thereafter manually retracted to show the green element 70.

The stock may be detachably secured to the receiver by means of a bolt passing through the stock into the element 56, and another bolt, as at 75 may be used to prevent splitting of the stock. Bolt 75 passes through a recess 76 in lug 30, and if desired, this bolt may be used to aid in securing the stock and receiver together by

providing a convenient bolt hole in this lug, instead of leaving recess 76 open as shown.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A bolt-action firearm comprising a receiver, a rectilinearly movable bolt therein, a rectilinearly movable safety slide, a trigger, said slide having a portion stopping firing motion of the trigger in one position of the slide, said portion being free of the trigger in another position, a lug mounting the trigger, a groove in the lug, an extension on the slide engaged in the groove, a housing maintaining the extension in the groove, and means on the bolt engaging the slide and moving the same to safe position during cocking movement of the bolt.

2. A bolt-action firearm comprising a receiver, a linearly and rotatably movable bolt therein, a slidable safety device, a trigger, said device having a portion stopping firing motion of the trigger in one position of the device, said trigger being free of the device in another position of the latter, a support for the trigger, inter-engaging means on support and safety device for guiding the latter by the former, means maintaining inter-engagement of said inter-engaging means, and means on the bolt engaging the safety device and moving the latter to trigger stopping position during cocking movement of the bolt.

3. A bolt-action firearm comprising a receiver, a rotary bolt in the receiver, a slidable safety device, a trigger mounting support, a trigger thereon, said safety device having a position stopping firing motion of the trigger and another position wherein the trigger is free, inter-engaging ways between the trigger mounting support and the safety device for guiding the latter, means maintaining the inter-engagement thereof, a cam on the safety device, and means on the bolt engaging the cam to move the safety device to its trigger stopping position during rotary cocking movement of the bolt.

RIENZI RICE.