June 19, 1951 T. S. DAYTON 2,557,415

TRIGGER FOR RIFLES

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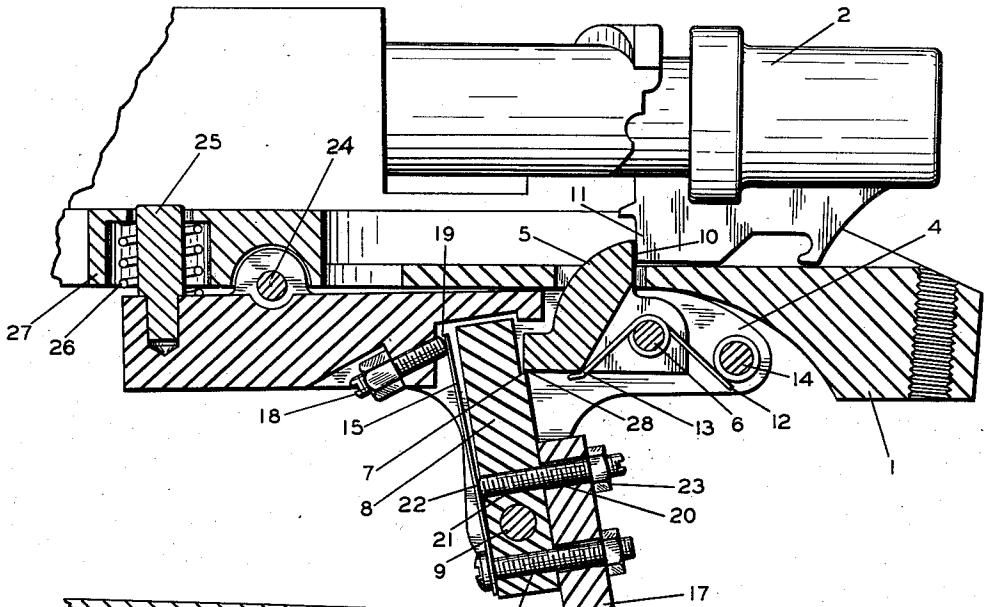


Fig. 2

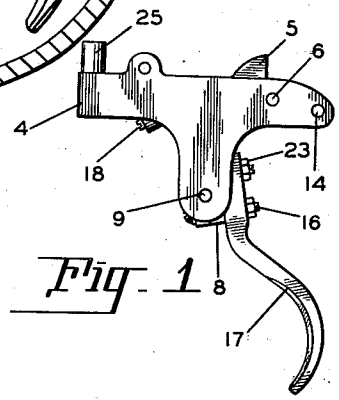


Fig. 1

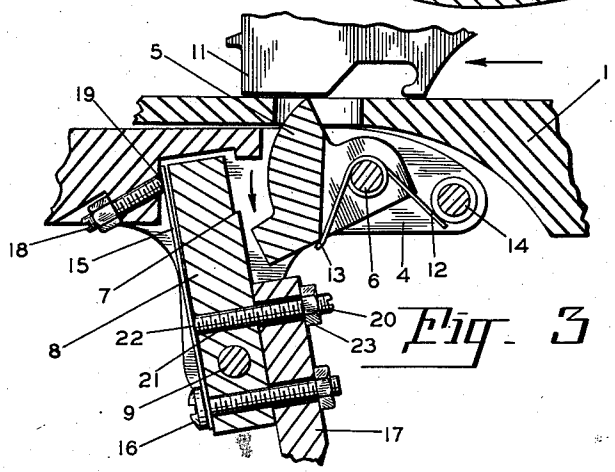


Fig. 3

INVENTOR.
THEODORE S. DAYTON
BY

ATTORNEY

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TRIGGER FOR RIFLES

Theodore S. Dayton, Portland, Oreg.

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1 Claim. (Cl. 42—69)

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This invention relates to improvements in triggers for rifles and is particularly adapted to be used in connection with bolt action military rifles.

Where bolt action rifles are in use in their present form they are satisfactory for military use, but the sportsman desires to eliminate the heavy pull on the trigger, which requires considerable travel of the trigger before the firing pin is released.

The sportman's preference is to have a trigger action with a short pull and a very accurate release feature for releasing the firing pin through a special precision trigger mechanism for releasing the said firing pin.

In the construction of military bolt action rifles the trigger mechanism is constructed for safety for the average user, providing a positive action at all times not requiring a hair trigger action that is demanded by the sportsman, therefore, the primary object of my invention is the provision of a trigger mechanism that will release the standard firing pin on the bolt action rifle by the hair trigger action demanded by the sportsman.

A further object of my invention is the provision of a trigger unit that is interchangeable with the present trigger assembly on bolt action rifles.

A further object of my invention is the provision of an adjustment within the trigger assembly for adjusting the trigger pull pressures, therefore providing for the different requirements required between target shooting and game shooting.

A further object of my invention is the provision of adjustment for back lash of the trigger after releasing the firing pin.

A still further object of my invention is the provision of a sear within my trigger assembly that rolls with the cocking piece when released by the trigger eliminating the grinding and shaping of the contact surfaces between the sear and the cocking piece.

These and other incidental objects will be apparent in the drawings, specification and claim.

Referring to the drawings:

Figure 1 is an assembly view of my new and improved trigger unit.

Figure 2 is a fragmentary detailed sectional view of the action of the rifle having my new and improved trigger assembly mounted thereto, parts of the rifle being eliminated for convenience of illustration.

Figure 3 is a detailed fragmentary view illustrating the action in operation after releasing the sear of my trigger assembly allowing the firing pin to go forward in the direction of the arrow.

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Referring more specifically to the drawings:

The receiver of the rifle is generally indicated by numeral 1, having the usual bolt assembly 2 as found in bolt action rifles, all bolt action rifles having the same overall construction. The trigger guard is indicated at 3, the stock, barrel and magazine being eliminated in the drawings for convenience of illustration.

My invention consists of the trigger assembly indicated in Figure 1, which consists of a frame 4 which houses my specially constructed sear 5, which is pivotally mounted to the said frame by the cross pin 6. The sear is held in the position shown in Figure 1 by the shoulder or ledge 7 formed on the sear release bar 8, which is pivotally mounted to the frame 4 by the cross pin 9. The face 10 of the sear 5 bears against the cocking piece 11 of the firing pin, best illustrated in Figure 2, holding the firing pin in cocked position.

The sear is continuously forced against the cocking piece by the action of the spring 12 bearing against the sear at 13 and to the cross pin 14 within the frame 4. This spring is provided for returning the sear to cocked position. A trigger loading spring 15 is clamped to the sear release bar 8 by the bolt 16. The bolt 16 also cooperates in securing the trigger 17 to the said sear release bar.

The opposite end of the loading spring 15 contacts the end 19 of an adjusting screw 18, which determines the amount of movement of the sear release bar 8 away from the sear 5. I have provided an adjusting screw 20 for adjusting the amount of pull required on the trigger to release the sear. This screw is threaded within the sear release bar at 21, its inner end 22 contacting the spring 15. This screw also cooperates in securing the trigger 17 to the sear release bar by the nut 23. By adjusting this screw within the sear release bar 8 more or less pressure will be applied to the spring 15 relative to the sear release bar, varying the amount of pull required on the trigger 17 to release the release bar from the sear.

With my construction of trigger assembly there is always a full bearing of the shoulder 7 under the edge 28 of the sear. This is never changed, but if the set screw 20 were withdrawn from the spring 15 less pressure will be required on the trigger 17 to pull the sear release bar away from the sear. On the other hand, if the set screw is moved towards the spring 15 a greater pull will be required on the trigger to release the firing pin. This is one of the important features of my invention.

My trigger assembly is mounted to the gun by the cross pin 24 in the usual manner. There are slight variations in different makes of rifles. In this particular arrangement, I illustrate an upstanding dowel pin 25 for seating within the socket 27 of the receiver. A spring 26 is located in the socket 27 and around the pin 25 to bias the front of the frame 4 away, thereby maintaining the rear of the trigger assembly in contact with the receiver.

I will now describe the operation of my new and improved trigger action. Referring to Figure 2, it will be noted that the sear 5 has a considerable amount of engaging surface 10 contacting the cocking piece 11. This is due to the fact that there is usually considerable play between the cocking piece 11, bolt 2 and the receiver 1 of the gun. Due to the construction of the present type of sear action on the market a hair trigger action is almost impossible due to the fact that the sear has to be moved a substantial distance relative to the cocking piece in order to release the same.

With my new and improved trigger action the sear 5 is rotatably mounted to the cross pin 6 and is held in cocked position by the ledge 7 of the sear release bar 8. The ledge 7 is relatively narrow and requires but little movement of the sear release bar 8 and the trigger 17 to release the sear. This can be a fine adjustment due to the fact that the sear release bar 8 and the sear 5 are precision mounted within the frame 4 of my trigger assembly, which as stated above would be impossible to achieve between the sear and the cocking piece 11.

When the trigger 17 is pulled the sear release bar 8 is moved to pull the ledge 7 from under the edge 28 of the sear 5, permitting the sear to rotate in the direction of the arrow with the movement of the cocking piece 11. When the bolt 2 is pulled back for cocking the firing pin, the sear 5 is revolved by the action of the spring 12 to the position shown in Figure 2. When the sear is fully returned to cocked position, the spring 15 forces the ledge 7 of the sear release bar 8 under the sear edge 28, locking the sear in cocked position.

What I claim is:

In trigger mechanism for bolt action rifles of the type wherein a bolt having a cocking piece is slidably mounted in a receiver and biased toward the cartridge chamber, the combination with said cocking piece of the improvements comprising a frame, a sear pivotally mounted on said frame, means resiliently biasing said sear to cocking position in the path of the bolt cocking piece, a release bar pivotally mounted on said frame, a ledge on said release bar for cooperating with said sear to retain said sear in cocked position against the action of the bolt cocking piece, a trigger member removably mounted on said release bar and extending therefrom, a leaf spring extending longitudinally of said release bar and biasing said release bar and trigger member to sear-cooperating position, a bolt at one end of said release bar clamping said spring, release bar and trigger member together, an adjustable screw securing said release bar and trigger member together and adjustably abutting said spring adjacent said bolt to tension said spring away from said release bar, and a second adjustable screw on said frame for adjustably abutting the free end of said spring to vary the tension of said spring to regulate the pull necessary for moving said trigger.

THEODORE S. DAYTON.

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