May 10, 1938. T. F. SANDERS 2,117,218

TRIGGER MECHANISM FOR FIREARMS

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Fig. 1.

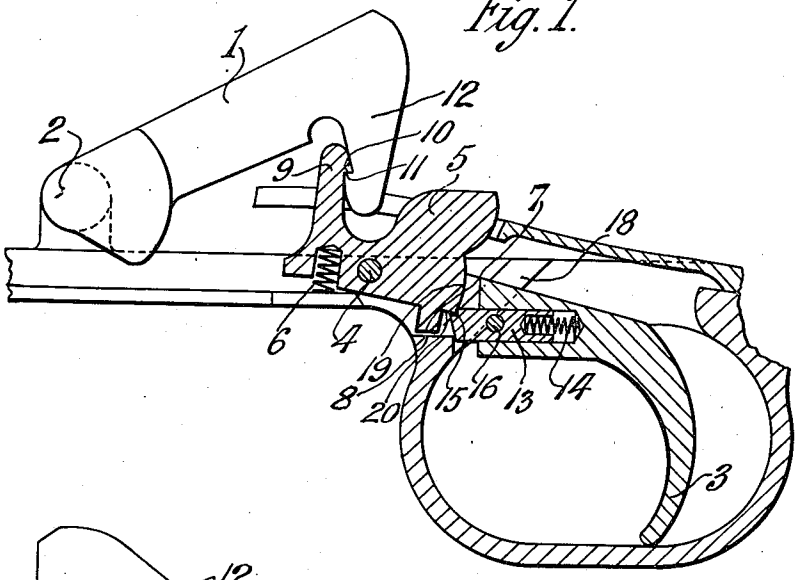
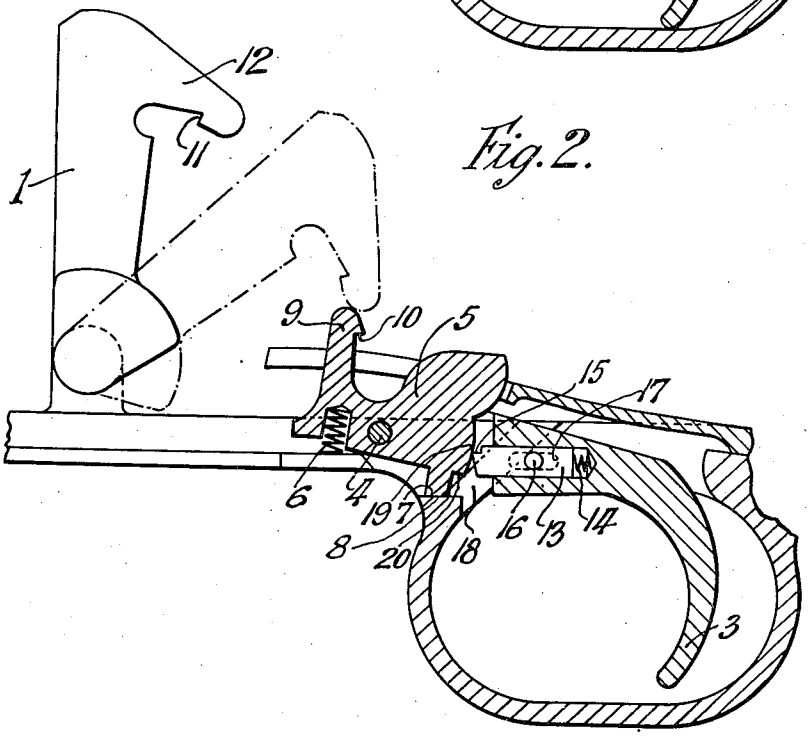


Fig. 2.



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TRIGGER MECHANISM FOR FIREARMS

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3 Claims. (Cl. 42—69)

The invention relates to trigger mechanism for firearms, more particularly as applied to recoil loading guns, and is directed to means for preventing a double discharge, such as is experienced by some persons when shooting with a gun of this type.

The invention in its preferred form may be regarded as a modification of the well-known Browning type mechanism, although it is by no means limited to such a constructional form. To fix ideas this mechanism will first be described briefly. A hammer is pivoted at its lower end and is spring urged to the upright position, in which it fires the gun. A rearward projection near the top of the hammer serves to hold the latter in the cocked position, which is a position sloping up and backwards from the pivot. The trigger comprises an arm extending more or less horizontally to the rear from a pivot and terminating in the usual projecting part adapted to be engaged by the finger. A U-shaped part of the trigger immediately above the pivot, which may be termed the trigger release, is provided on the rear edge of its front arm with a bent to engage a corresponding step on the rearward projection of the hammer. Disengagement of the bent permits the release of the hammer when the trigger is pulled. The rear arm of the U has on its forward edge a back bent also engaging a corresponding step on the rearward projection of the hammer, but engagement takes place with the hammer at a lower level than in the case of the bent on the front arm. The object of the back bent is to hold the hammer on its return if the trigger is still pulled. On release of the trigger the hammer rises a little but is retained by the first bent.

Now it has been found by some users of a gun with this type of mechanism that a double discharge is obtained, while another user of the self-same weapon only gets the normal single discharge. The cause may perhaps be found in physiological differences between individuals, but it is advantageous to devise a form of mechanism which will be independent of such differences in operation, and this is the fundamental purpose of the present invention.

According to the invention the trigger mechanism for a recoil loading firearm comprises a trigger, a separate trigger release biased to the cocked position and arranged normally to hold the hammer and to release the latter at a certain point of its movement, and a driving connection between the trigger and the trigger release which is broken when the trigger release has been brought to the position in which it releases the hammer. The most convenient arrangement is to have the trigger and trigger release pivoted on the same axis.

An embodiment of the invention is illustrated in the accompanying drawing showing the trigger and hammer of a recoil loading gun partly in section, Figure 1 in the cocked position and Figure 2 during the re-loading.

A hammer 1 pivoted at 2 is urged by a spring to the full-line position of Figure 2 in which it fires the cartridge. The recoil not only effects re-loading of the weapon but returns the hammer 1 to the cocked position of Figure 1, where it is held until the trigger 3 is pulled again. The above mechanism is of any known or suitable kind and it has therefore not been considered necessary to show any of the parts except the hammer 1, pivot 2 and trigger 3. Moreover the usual blade spring for returning the trigger to the cocked position has been omitted for the sake of clarity.

A description will now be given of the parts more closely concerned with the present invention. The trigger 3 is pivoted on a pin 4, and the pin also constitutes the pivot for a trigger release 5. A helical spring 6 located in a hollow in the trigger release and having one end resting against the gun casing tends to keep the trigger release in the position shown in the figures. The trigger release is prevented from moving in a clockwise direction beyond the position shown by the contact of a projecting part 7 of it with an abutment surface 8 on the lock casing or guard.

The trigger release also comprises an upright arm 9 with a bent 10 on its rear surface. A step or ledge 11 in an arm 12 extending rearwards from the hammer 1 engages the bent 10 in the cocked position of Figure 1. The hammer is released for firing by the rocking of the trigger release 5 about its pivot pin 4 in a counter-clockwise direction, and the manner in which this rocking is effected by the pulling of the trigger 3 will now be described.

A plunger or slip tooth 13 is capable of sliding longitudinally in the body of the trigger 3 and is urged forwards by a helical spring 14 let into a recess of the plunger and pressing against the bottom of the recess in the trigger accommodating the plunger. The forward face of the plunger is provided with a step 15, which in the cocked position of Figure 1 engages a ledge 20 of the trigger release 5, so that the pulling of the

trigger 3 rotates the trigger release 5 and releases the hammer 1.

A transverse pin 16 is attached to the plunger 13 and projects through the metal of the trigger by slots 17, one of which is shown dotted in Figure 2. The pin 16 makes contact at either end with an oblique rib 18 projecting inwards from the side of the trigger guard. Only one of these ribs can be seen in the figures as the section is taken on the centre. As the trigger is pulled the pin 16 slides up the ribs 18 and draws the plunger 13 back against the action of the spring 14, and the dimensions of the various parts are so arranged that just when the hammer 1 is released from the bent 10 the ledge 20 of the trigger release clears the step 15 and the trigger release 5 is returned at once to the cocked position by the spring 6. The hammer 1 meantime flies up to the full line position of Figure 2 and is brought back by the recoil mechanism to the cocked position. The chain dotted outline in Figure 2 shows the hammer about to engage the trigger release 5 on its return journey. It clicks past and is held by the bent 10 no matter what position the trigger 3 is in.

No further shot can be fired until the trigger 3 is allowed by the user of the weapon to return to the position of Figure 1. As the trigger is returned the plunger 13 is kept pressed back by contact with the rounded surface 19 of the trigger release until the step 15 passes the ledge 20 and the plunger springs back into engagement ready for another shot.

What I claim is:—

1. In a recoil loading firearm of the kind having a hammer, and means for returning the same to the cocked position as re-loading is effected, trigger mechanism comprising in combination a trigger, a separate trigger release, a plunger slidably mounted in the trigger, a spring to urge the plunger forwards, a ledge on the trigger release and a step on the forward end of the plunger located to enter normally into mutual engagement, and guiding means to draw the plunger back at a predetermined position in the movement of the trigger from engagement with the trigger release.

2. In a recoil loading firearm of the kind having a hammer and means for returning the same to the cocked position as re-loading is effected, trigger mechanism comprising in combination a trigger, a separate trigger release, a plunger slidably mounted in the trigger, a spring to urge the plunger forwards, a ledge on the trigger release and a step on the forward end of the plunger located to enter normally into mutual engagement, a transverse pin projecting from the plunger through slots in the body of the trigger, oblique ribs on the inside of the trigger guard to engage the pin and withdraw the plunger from engagement with the trigger release at a predetermined position in the movement of the trigger.

3. In a recoil loading firearm of the kind having a hammer and means for returning the same to the cocked position as re-loading is effected, trigger mechanism comprising in combination a pivoted trigger, a separate trigger release pivoted on the same axis as the trigger, a step on the trigger release to hold the hammer, a spring to bias the trigger release to the position engaging the hammer, a projection on the trigger release to limit its movement under the action of the spring by contact with an abutment surface on the guard, a plunger slidably mounted in the trigger, a spring to urge the plunger forwards, a ledge on the trigger release and a step on the forward end of the plunger located to enter normally into mutual engagement, a transverse pin projecting from the plunger through slots in the body of the trigger, oblique ribs on the inside of the trigger guard to engage the pin and withdraw the plunger from engagement with the trigger release, the arrangement being that the plunger is disengaged from the trigger release at the same time as the hammer is released from the step on the trigger release.

THOMAS FREDERICK SANDERS.