United States Patent [19]

Small

[11] **3,711,979**

[45] **Jan. 23, 1973**

[54] **TRIGGER SAFETY LOCK FOR FIREARMS**

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[52] **U.S. Cl.** ..... **42/1 Y**
[51] **Int. Cl.** **F41c 27/10**
[58] **Field of Search** ..... 42/1 Y

[56] **References Cited**

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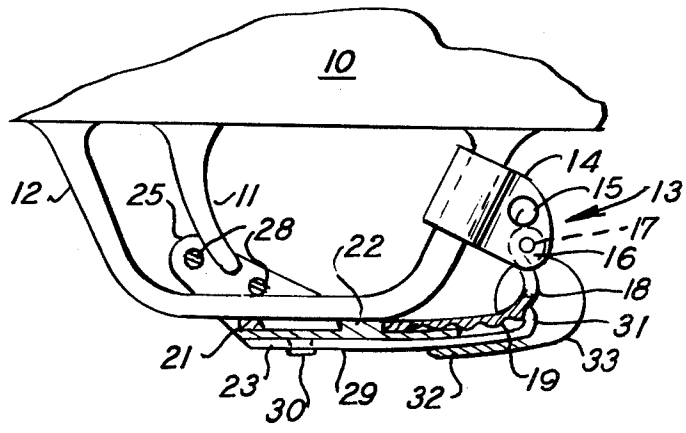
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Assistant Examiner—C. T. Jordan
Attorney—Kimmel, Crowell & Weaver

[57] **ABSTRACT**

A trigger safety lock for firearms consists of an attachment to the customary trigger guard. The trigger locking element is carried on a first component which has a guided sliding connection with a second component firmly attached to the trigger guard. Interengaging teeth on the first and second components secure the trigger locking element in an active or inactive position relative to the trigger, and yielding means maintain the teeth releasably engaged.

10 Claims, 6 Drawing Figures



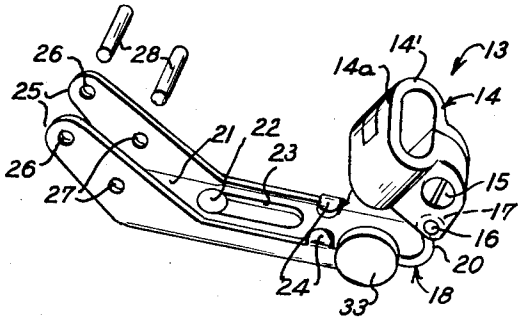


FIG. 1

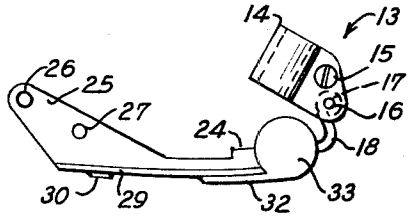


FIG. 2

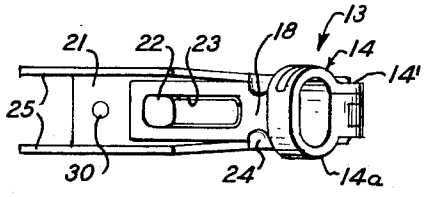


FIG. 3

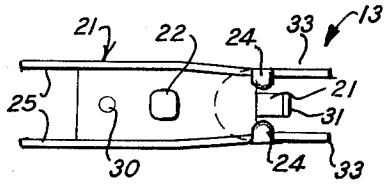


FIG. 6

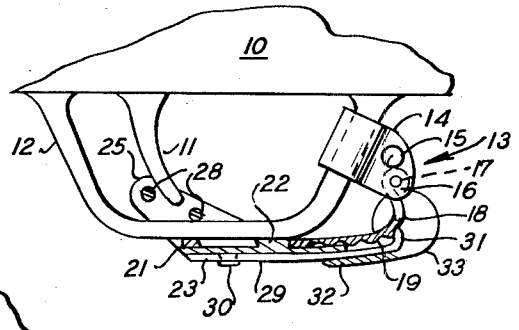


FIG. 5

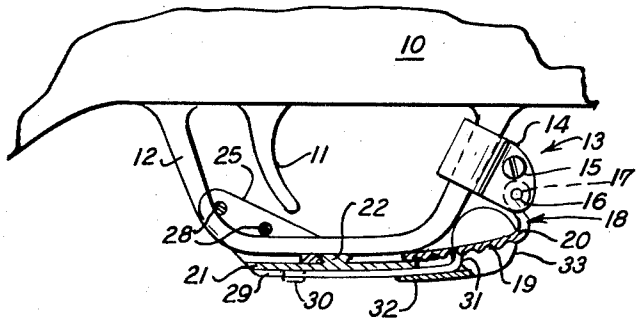


FIG. 4

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TRIGGER SAFETY LOCK FOR FIREARMS

The objective of the invention is to provide a simplified and economical trigger safety lock for rifles and other firearms in the form of a small attachment mounted bodily on the customary trigger guard and embodying simplified adjusting means which enable the shooter to shift the trigger locking element quickly with one hand from safety locking position to the release position when it is desired to fire the piece.

In comparison with more complex and costly safety mechanisms known to the prior art, the present invention embodies only two basic components which are mounted bodily on the trigger guard and do not necessitate any structural alterations of the firearm whatsoever. Furthermore, the trigger locking device may be removed from the firearm any desired time. A simplified spring-urged quick-adjusting means is provided between the two relatively movable components of the device so that it may be quickly adjusted with the fingers between trigger locking and release positions. The device will not interfere with the normal use of the firearm nor does it make such use awkward or inconvenient. The safety lock attachment is small and very compact and lies close to the trigger guard so as to occupy very little space. In the prior art, many safety mechanisms are permanent devices built into the firearm during manufacturing without any means for removing them should this become desirable. In general, the invention satisfies the need for an attachment safety device which has not heretofore been available.

Other features and advantages of the invention will be apparent during the course of the following detailed description.

BRIEF DESCRIPTION OF DRAWING FIGURES

FIG. 1 is an exploded perspective view of a safety lock attachment for firearms embodying the invention.

FIG. 2 is a side elevation of the attachment.

FIG. 3 is a top plan view of the same.

FIG. 4 is a longitudinal vertical section, partly in elevation, through the safety lock attachment applied to the trigger guard of a rifle and shown in the inactive or release position.

FIG. 5 is a similar view showing the device adjusted to the active or trigger locking position.

FIG. 6 is a plan view of the adjustable trigger-engaging component.

DETAILED DESCRIPTION

Referring to the drawings in detail, wherein like numerals designate like parts throughout the same, the numeral 10 designates a fragmentary portion of a rifle having a trigger 11 and the customary fixed trigger guard 12. While the invention is illustrated in connection with the trigger and guard of a rifle, it will be understood that it is also applicable to pistols and to firearms in general which employ conventional triggers and trigger guards. The trigger safety lock attachment embodying the invention mounts in its entirety on the trigger guard 12 and is indicated by the numeral 13. This attachment comprises a two-part sleeve or clamp 14 which receives the forward bar of the trigger guard 12 therethrough and the clamp is secured firmly and fixedly to the guard by a clamping screw 15 which draws the two opposing parts 14' and 14a of the clamp together on the guard. The clamp 14 is pivotally connected through a pin 16 with a single knuckle 17 carried by the forward end of a longitudinal adjustment bar 18 which has a plurality of spaced adjusting teeth 19 on its lower side for a purpose to be described. The forward end of the bar 18 has a short upstanding extension 20 which carries the knuckles 17. The bar 18 is freely pivotal with respect to the fixed clamp 14 when the latter is secured to the trigger guard 12.

The attachment further comprises a relatively movable trigger-engaging component 21 which engages below the bar 18, such bar lying directly beneath the bottom of the trigger guard 12. The component 21 has sliding guided engagement with the bar 18 so as to be extensible and retractable longitudinally relative thereto between trigger release and locking positions. This engagement is achieved through an upstanding lug 22 on the component 21 near its longitudinal center, received slidably in a longitudinal slot 23 of the bar 18. The edge walls of this slot and the mating sides of the lug 22 are beveled to prevent separation of the parts while allowing them to slide freely longitudinally. Additional guidance between the bar 18 and component 21 is provided by a pair of inturned lugs 24 on the component 21 near its forward end.

The component or member 21 has a pair of rear laterally spaced parallel upstanding arm extensions 25 which straddle the trigger guard 12 and have aligned pairs of openings 26 and 27 adapted to receive pins 28. The forwardmost pin 28 rests slidably on the level portion of the trigger guard 12 to support the component 21 and the rearward pin 28 forms the element which contacts the trigger 11 and locks the same at required times to prevent firing of the rifle.

In order to adjust the attachment conveniently and releasably secure it in either the trigger locking or releasing positions, there is provided on the component 21 a resilient leaf spring 29 secured thereto by a rivet 30 or the like near the rear end of the leaf spring. The leaf spring 29 lies immediately below the lower face of the member 21. The forward end of the leaf spring 29 which projects slightly forwardly of the component or member 21 has a single upturned detent tooth 31 for coaction with the teeth 19 on the bar 18. The leaf spring 29 has its tooth 31 resiliently biased toward the bar 18 so that it will automatically engage and interlock with selected ones of the teeth 19, as required, to properly adjust the device. For conveniently manipulating the detent tooth 31 and for shifting the entire component 21 longitudinally, there is provided on the forward part of the leaf spring a plate element 32, welded or otherwise fixed thereto, and this plate element is equipped at its leading end and opposite sides with a pair of finger-engaging enlargements 33 which may be gripped by the fingers of one hand for releasing the detent tooth 31 and shifting the component rearwardly relative to the bar 18. When released by the fingers, the spring 29 will return the tooth 31 automatically into locking engagement with the bar 18. Thus, a very simple adjusting mechanism is provided between the two major relatively movable components of the attachment.

In use, when it is desired to lock the trigger 11 for safety purposes, the elements 33 are gripped and urged downwardly to release the detent tooth 31, the spring

29 yielding to permit this. At the same time, the entire unit 21 is shifted forwardly and the rear cross pin 28 will engage behind the trigger 11, as shown in FIG. 5, to lock it securely. The release of the elements 33, FIG. 5, will cause the single tooth 31 to interlock with one of the leading teeth 19 on the bar 18. In order to release the trigger 11 for firing, the elements 33 are gripped with the fingers and the tooth 31 is disengaged downwardly from teeth 19 and the component 21 is slid rearwardly to the position of FIG. 4, where the rearward pin 28 is spaced from the back of the trigger and the latter may move for firing the rifle. Again, the single tooth 31 will interlock with one of the rearward teeth 19 in FIG. 4 to secure the rearward pin 28 in the inactive position.

It is now apparent that a very simplified, yet positive, trigger safety lock is provided consisting essentially of only two main relatively movable units. The entire device attaches to the trigger guard 12 without damaging or altering the structure of the firearm in any way or interfering with its normal usage. The advantages of the simple device should now be apparent to those skilled in the art.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or scope of the subjoined claims.

I claim:

1. A trigger safety locking attachment for firearms comprising a clamping element adapted to embrace fixedly a portion of a firearm trigger guard, a toothed bar pivotally connected with the clamping element and adapted to underlie a trigger guard closely, a trigger locking unit having guided sliding engagement with the toothed bar and having a resilient detent element releasably lockable with selected teeth on the bar for securing said unit in selected adjusted positions relative to a trigger, and a trigger engaging element on said unit movable therewith and relative to the trigger between forward trigger locking and rearward trigger releasing positions.

2. The structure of claim 1, and said toothed bar having a longitudinal slot, and a lug on said unit engaging within the slot movably, the unit including a body portion closely and slidably underlying said bar.

3. The structure of claim 2, and a pair of rising laterally spaced arm extensions on the unit adapted to straddle a trigger guard, said trigger engaging element comprising a cross pin mounted on and extending between said rising arm extensions.

4. The structure of claim 1, and said resilient detent element comprising a single upturned tooth on said unit, a leaf spring on said unit carrying said tooth and urging it upwardly toward said toothed bar, the teeth of said bar downwardly facing for interlocking engagement with said upturned tooth.

5. The structure of claim 4, and side finger grip elements on the forward end portion of said leaf spring to aid in releasing said single tooth from the teeth of said bar and for shifting said trigger locking unit longitudinally.

6. The structure of claim 3, and an additional cross pin extending between said rising arm extensions and riding on top of the level portion of said trigger guard to support the rear end of the trigger locking unit.

7. The structure of claim 2, and said body portion of the trigger locking unit consisting of a one piece channel-like formation having a bottom wall and a pair of upturned side walls, said trigger engaging element comprising an abutment pin mounted on and extending between the side walls, and said resilient detent element comprising a leaf spring attached to the bottom wall of the body portion and having a forward end upturned tooth adapted to interlock with selected teeth of said toothed bar.

8. The structure of claim 1, and said clamping element comprising a two part clamp adapted to fit over trigger guards of varying thickness and a clamping screw securing said two parts in clamping relationship.

9. The structure of claim 1, and the pivotal connection between the toothed bar and clamping element comprising a forward upturned extension on the toothed bar, a hinge knuckle carried by the upturned extension, and a pivot pin engaging through said knuckle and through aligned openings in said clamping element.

10. The structure of claim 1, and said toothed bar and trigger locking unit being of generally equal length and lying close to the bottom of the trigger guard and being generally coextensive therewith lengthwise when said unit and toothed bar are relatively extended.

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