

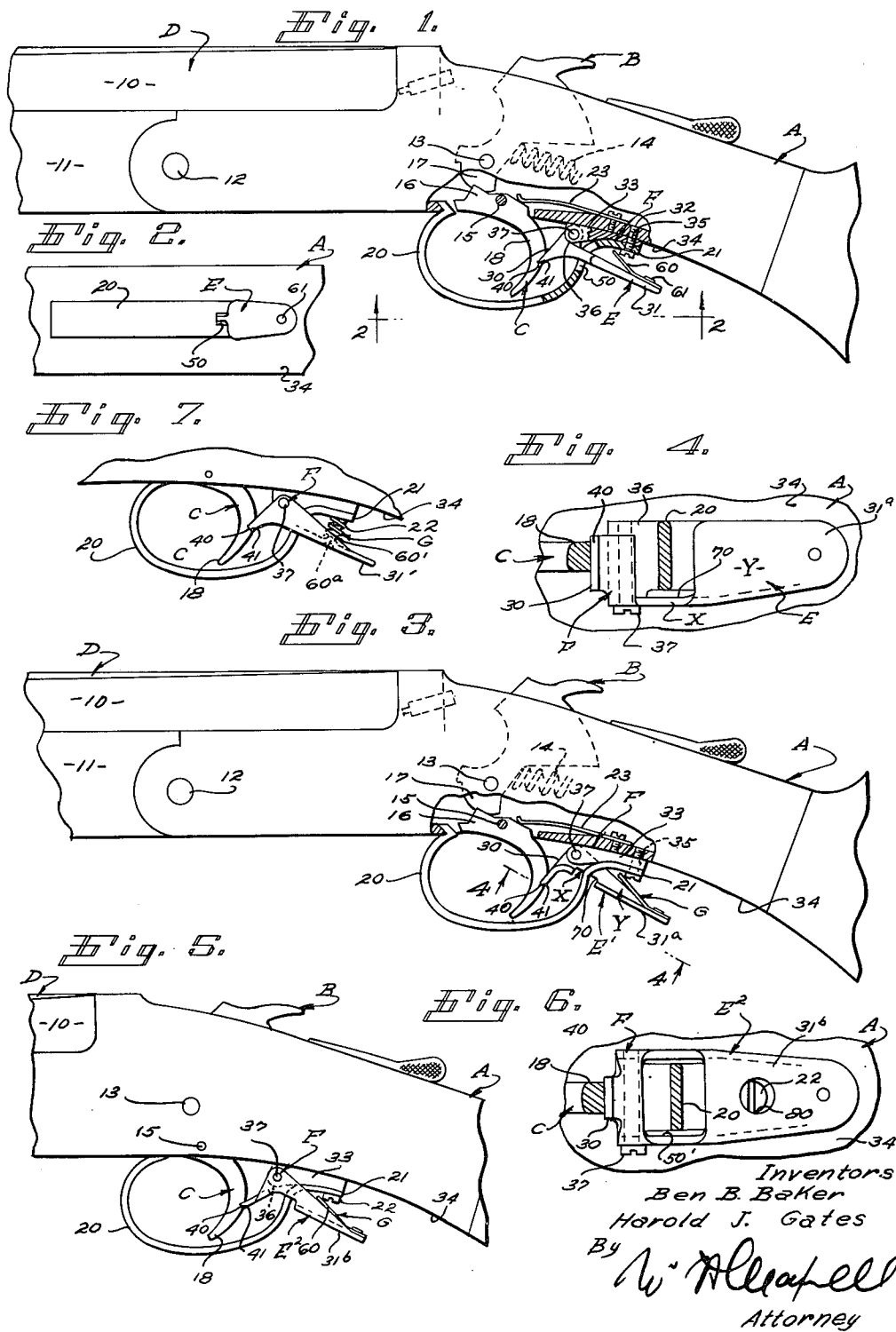
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TRIGGER SAFETY LATCH FOR FIREARMS

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TRIGGER SAFETY LATCH FOR FIREARMS

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1

This invention is concerned with a safety latch for firearms, it being a general object of the invention to provide a simple, effective, dependable latch applicable, generally, to fire arms and particularly useful as applied to shotguns, rifles, and like structures to co-operate with the triggers thereof.

Firearms are recognized as dangerous implements to handle and operate and since this is true it is common to construct them with various safety devices. For example, the ordinary shotgun or rifle, as manufactured, usually involves one or more safety bolts or hammer latches designed to prevent accidental tripping of the hammer. However, in spite of such precautions many fire arms are accidentally discharged. Furthermore, the usual safety bolt or safety catch incorporated in a shotgun or rifle is generally removed from the trigger and is in no way directly coordinated with the operation of the trigger, except of course that it must be released before the trigger serves to actuate the gun.

It is a general object of this invention to provide a safety latch combined with the trigger and trigger guard of a gun and serving to provide a positive means of holding the trigger against operation entirely independent of safety bolts, catches, or latches that may be combined with or incorporated in the gun structure in the usual manner.

It is another object of this invention to provide a safety latch of the general character referred to which is such that it can be easily, quickly and securely applied to a gun as an attachment without requiring mutilation, reconstruction, or modification of the gun structure generally.

A general object of the present invention is to provide a safety attachment for a gun combinable with the trigger guard of the gun to be mounted with the trigger guard and having a trigger control behind the trigger normally holding the trigger against operation and so located that it does not in any way interfere with the proper engagement of the trigger by the finger of the operator.

It is another object of the present invention to provide a gun attachment of the general character referred to which is extremely simple and inexpensive of manufacture and which is also simple and convenient to apply to the ordinary gun such as a shot gun or rifle.

The various objects and features of our invention will be fully understood from the following detailed description of typical preferred forms and applications of the invention throughout

2

which description reference is made to the accompanying drawings, in which:

Fig. 1 is a side elevation of a portion of a typical gun showing the structure of the present invention applied thereto and showing certain parts in section to illustrate the details of construction. Fig. 2 is a view taken as indicated by line 2—2 on Fig. 1. Fig. 3 is a view similar to Fig. 1, showing parts of the gun structure in section and showing a modified form of the structure provided by the present invention in elevation. Fig. 4 is an enlarged view taken as indicated by line 4—4 on Fig. 3. Fig. 5 is a view similar to a portion of Fig. 3, showing another form of the invention, Fig. 6 is a view taken as indicated by line 6—6 on Fig. 5. Fig. 7 is a view similar to a portion of Fig. 5 showing a modified construction.

The structure provided by the present invention is preferably in the form of an attachment applicable to a gun such, for example, as a rifle or shotgun, and in its preferred form the attachment is engageable with the gun to be held by and with the trigger guard and has an element cooperatively engaging the trigger of the gun.

In the drawings I have shown a typical gun construction to which the present invention can be applied to advantage. The gun illustrated, being of typical construction, has a stock A, the forward portion of which carries the working parts of the gun such as the hammer B, the trigger C and the barrel D. In the case illustrated the barrel proper 10 is combined with the fore-end wood 11 forming a unit joined to the forward end of the stock A by a joint pin 12. The hammer B is pivotally supported in the stock by a hammer pin 13 and is operated by a main spring 14 encased in the stock.

The trigger C is pivotally supported by a trigger pin 15 and has a dog 16 engaging the notched segment 17 of the hammer to normally enter a notch therein so that the hammer is held retracted. The trigger has a finger piece 18 depending from the stock A, the finger piece being preferably curved or arcuate as shown in the drawings, to be comfortably engaged by the finger of the operator.

In accordance with conventional gun construction a trigger guard 20 is provided at the under side of the stock A extending over or guarding the trigger C so that it is protected against accidental engagement. The guard 20 being of typical construction is a suitably curved or looped part with its forward end hooked or otherwise engaged to the stock A immediately forward of the trigger, while its rear end is provided with a

flange 21 which normally abuts or bears against the under side of the stock A to which it is secured by a suitable fastening means, usually a screw 22.

In accordance with conventional construction the guard 20 is of such size and proportion as to accommodate the finger of the user forward of the trigger C and allows for movement of the trigger necessary to operate the gun.

The usual gun construction illustrated in the drawings further includes a trigger spring 23 carried in the stock A and engaging the trigger C to normally yieldingly urge it to a set or cocked position ready for operation.

The present invention is concerned with a safety latch or safety control for a gun construction such as is shown in the drawings, and it is to be understood that I have included in the drawings only the usual essential working parts of a gun, since my invention is in no way concerned with the details of construction of the gun itself, nor with safety features, latches, bolts, catches or other devices such as may be incorporated in the gun structure and which are not illustrated in the drawings.

Referring in particular to Figs. 1 to 4 of the drawings the structure provided by the present invention involves, generally, a safety lever E, mounting means F for lever E, and means G normally yieldingly holding the lever E in active or working position.

The safety lever provided by my invention is preferably a simple bell crank characterized by a trigger arm 30 and an operating arm 31. The lever E is of such form and construction that the trigger arm 30 is engageable behind or immediately to the rear of the trigger C while the operating arm 31 extends to and is engageable at a point rearward of the guard 20.

The mounting means F provided by the present invention carries the lever E for pivotal movement and connects the lever with or to the gun structure so that it is properly related to the guard and trigger. In the preferred form of the invention the mounting means F is characterized by a base plate 33 applicable to or engageable with the stock A. In the preferred form of the invention the base plate is in the nature of an insert to be engaged between the flange 21 of the guard 20 and the lower side 34 of the stock in which case the plate has an opening 35 through it passing the screw 22 which connects the flange of the guard with the stock A. Through this construction the screw 22 positively prevents separation of the base plate 33 from the gun structure and when the screw 22 is properly tightened the base plate is clamped to the stock A so that it is firmly held in position through the clamping action.

The mounting means F includes, in addition to the base plate 33, an enlargement or boss 36 at the forward end of the base plate, which boss carries a pivot pin 37 by which the lever E is pivotally connected to the base plate. From the drawings it will be apparent how the portion of the lever E connecting the arms 30 and 31 of the lever may be related to or engaged with the boss 36 to be effectively held or carried by the pin 37 which is carried by the boss. In accordance with my invention the boss 36 of the mounting means F is located at the forward end of the base plate so that it occurs within the guard and somewhat to the rear of the trigger, so that it is clear of the trigger and in no way interferes with or limits the operation thereof.

In accordance with the present invention the trigger arm 30 of lever E occurs between the back or rear side of the trigger C and the rear portion of the trigger guard and the end 40 of the trigger arm 30 is located as to normally seat or engage in a notch 41 provided in the rear side of the trigger part 18 as shown in the drawings. When the trigger arm 30 is thus engaged in the notch 41 the trigger is effectively and positively held against operation regardless of and entirely independent of safety bolts, latches, catches or other safety structures that may be incorporated in the gun structure.

In the particular form of the invention illustrated in Figs. 1 and 2 of the drawings the operating arm 31 of the lever E extends rearwardly from the point of pivotal connection between the lever and the base plate 33 and in so doing it passes through an opening or aperture 50 provided or formed in the guard 20 adjacent the flange 21 thereof. The operating arm 31 extends a substantial distance to the rear of the guard to overlie the flange portion thereof and presents a part conveniently located to be engaged by the operator and depressed or moved upwardly when the operator desires to finally release the trigger for operation. The operating arm 31, being located as it is immediately rearward of the trigger guard is in the vicinity of the trigger and so located relative thereto that the operator can quickly operate it when desired without operating buttons, latches, triggers, or catches, at parts of the gun remote from the trigger. It will be apparent from the drawings how the operating arm 31 may, in practice, be extended any desired amount rearward from the pivotal connection between the lever and the base plate and how it may be shaped or proportioned in any suitable manner to suit the wishes of the user.

The means G serves to normally yieldingly hold the lever E in the engaged position and always urges it toward that position. In the preferred form of the invention the means G is a spring means and as shown in the drawings it may involve a simple leaf spring 60 carried by one arm of the safety lever to engage a suitable abutment such, for example, as a part of the gun structure. In the particular case illustrated the leaf spring 60 is shown secured or made fast to the arm 31 of the safety lever by means of a suitable fastener 61 and it extends or projects from the arm 31 to extend over the flange 21 of the guard. The spring is shown bearing on or engaged with the head of the screw 22 that fastens the guard and plate 33 to the stock of the gun. This particular construction is desirable in that it is simple and inexpensive and it so locates the spring as to make the spring inconspicuous and protected, yet at the same time gives it suitable mechanical advantage over the lever E.

In the form shown in Fig. 7 the spring 60' is a helical compression spring and when this form of spring is used it may be guarded or held by a boss 60^a on the arm 31' and by the head of screw 22.

In the form of the invention shown in Figs. 3 and 4 of the drawings the various parts of the attachment provided by the present invention may be the same as those hereinabove described and for convenience like parts bear like reference numerals. It is to be noticed, however, that in this form of the invention the operating arm 31^a of lever E' is slightly different in form from that first described and is so formed as to make it unnecessary to provide an opening or passage 50

through the guard to accommodate the lever or arm of the lever. In this form of the invention the inner portion X of arm 31^a is laterally offset from the guard to pass to one side of the guard in extending rearwardly from the pivotal connection, while the outer or rear end portion Y of the arm 31^a is so located as to be immediately to the rear of or behind the guard. In thus forming the lever E it has, in effect, a lateral side opening 70 accommodating the guard and making it unnecessary to form an opening in the guard in order to apply the structure to the gun.

In the form of the invention illustrated in Figs. 5 and 6 of the drawings the guard 20 of the gun is left intact or without an opening such as is shown in Fig. 1, but is the same as the guard shown in Fig. 3. In this case, however, the operating arm 31^b of the lever E² is provided with an aperture or opening 50' which passes the rear end portion of the trigger guard with suitable clearance. In applying this form of the structure to the gun the screw 22 is removed and the lever arm 31^b is slid or passed over the flange 21 of the guard so that the operating lever is, in effect, threaded onto the guard and when in place the mounting means is made secure by clamping the base plate 33 beneath the flange of the guard. To facilitate access to the screw 22 an opening 80 may be provided in the operating arm and when this structure is resorted to a registering or corresponding opening may be provided in the spring 60 of means G. It is to be observed that such openings are shown throughout the drawings, whereas in practice they may or may not be used as circumstances require.

Having described only typical preferred forms and applications of our invention, we do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to ourselves any variations or modifications that may appear to those skilled in the art and fall within the scope of the following claims.

Having described our invention, we claim:

1. An attachment for a gun having an elongate stock, a trigger depending from the stock and a fixed U-shaped trigger guard beneath the stock and defining a finger opening receiving the trigger including, a flat mounting plate insertable between the guard and stock to bear on the exterior of the stock rearward of the trigger and forming a rest for the guard, the plate having a part within the opening defined by the guard, and a latch carried by said part of the plate cooperatively engaging the trigger intermediate the stock and the terminal end of the trigger.

2. An attachment for a gun having an elongate stock, a trigger and a fixed, rigid, U-shaped trigger guard with front and rear legs and defining a finger opening including, a substantially flat plate insertable between the guard and stock to bear on the exterior of the stock and forming a rest for the rear leg of the guard while an end projects from between the stock and guide into the finger opening, and a latch pivotally carried by the said end of the plate and cooperatively engaging the trigger.

3. An attachment for a gun having an elongate stock, a curved trigger projecting downward from the stock and a U-shaped trigger guard having front and rear legs carried by the stock and encircling the trigger to define a finger opening, a plate insertable between the rear leg of the guard and the stock to bear on the exterior of the stock and form a rest for the said rear leg of the guard, a latch pivotally carried by the plate within the

confines of the guard, and a leaf spring fixed to the latch and engageable with the guard normally yieldingly holding the latch in cooperative engagement with the trigger, said trigger having a notch in its convex side substantially midway between the stock and the terminal end of the trigger to receive the said latch when the trigger is unactuated.

4. An attachment for a gun having an elongate stock, a curved trigger depending from the stock and having a notch in the center portion of its convex side, and a U-shaped trigger guard having front and rear legs carried by the stock and extending around the trigger defining a finger opening including, a substantially flat elongate plate insertable between the guard and stock to bear on the exterior of the stock and form a rest for the rear leg of the guard while the inner end of said plate projects from between the stock and said rear leg of the guard toward the front leg of the guard and into the confines of the guard, a spring loaded latch having two arms, and a pivot pin pivotally carried by the said end of the plate within the guard and adjacent the stock, one arm of the latch being at all times rearward of the trigger and in the path thereof as the trigger is operated and normally engaging the convex side of the trigger and yieldingly urging the trigger to an unactuated position and entering the said notch in the trigger, the other arm being accessible at the exterior of the guard for manual operation of the latch.

5. An attachment for a gun having an elongate stock, a curved trigger depending from the stock and a U-shaped trigger guard defining a finger opening with front and rear legs and enclosing the trigger including, a substantially flat elongate plate insertable between the stock and rear leg of the guard, a spring actuated latch having two arms, and a pivot pin carried by the plate within the confines of the guard connecting the plate and latch with one arm of the latch being at all times rearward of the trigger and in the path thereof as the trigger is operated, and normally engaging the convex side of the trigger urging it to an unactuated position, the other arm of the latch having a side recess receiving the rear leg of the guard and an accessible portion at the exterior of the guard rearward of the rear leg thereof.

6. An attachment for a gun having an elongate stock, a depending curved trigger and a U-shaped trigger guard defining a finger opening with front and rear legs and enclosing the trigger including, a plate insertable between the guard and stock, a latch having two arms, a pivot pin carried by the plate in the opening defined by the guard and connecting the plate and latch with one arm of the latch engaging the convex side of the trigger, the other arm of the latch having a hole passing the rear leg of the guard, and a spring carried by the last mentioned arm engageable with the stock and normally yieldingly urging the latch so the first mentioned arm is urged in the general direction in which the stock extends.

7. An attachment for a gun having an elongate stock, a curved trigger depending from the stock, a U-shaped trigger protecting guard defining a finger hole with a rear leg having a flange and a screw securing the flange to the stock including, a substantially flat plate insertable between the flange and stock to bear on the exterior of the stock and having an opening passing the screw, and a latch pivotally carried by the plate on an axis located in the space defined by the guard and

adjacent the stock, the latch having an arm engaging the convex side of the trigger and an arm at the exterior of the guard, a spring carried by the last mentioned arm of the latch and engageable with said flange urging the latch so that the first mentioned arm is urged in the general direction in which the stock extends and in bearing engagement with the trigger to yieldingly urge the trigger to its unactuated position.

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