

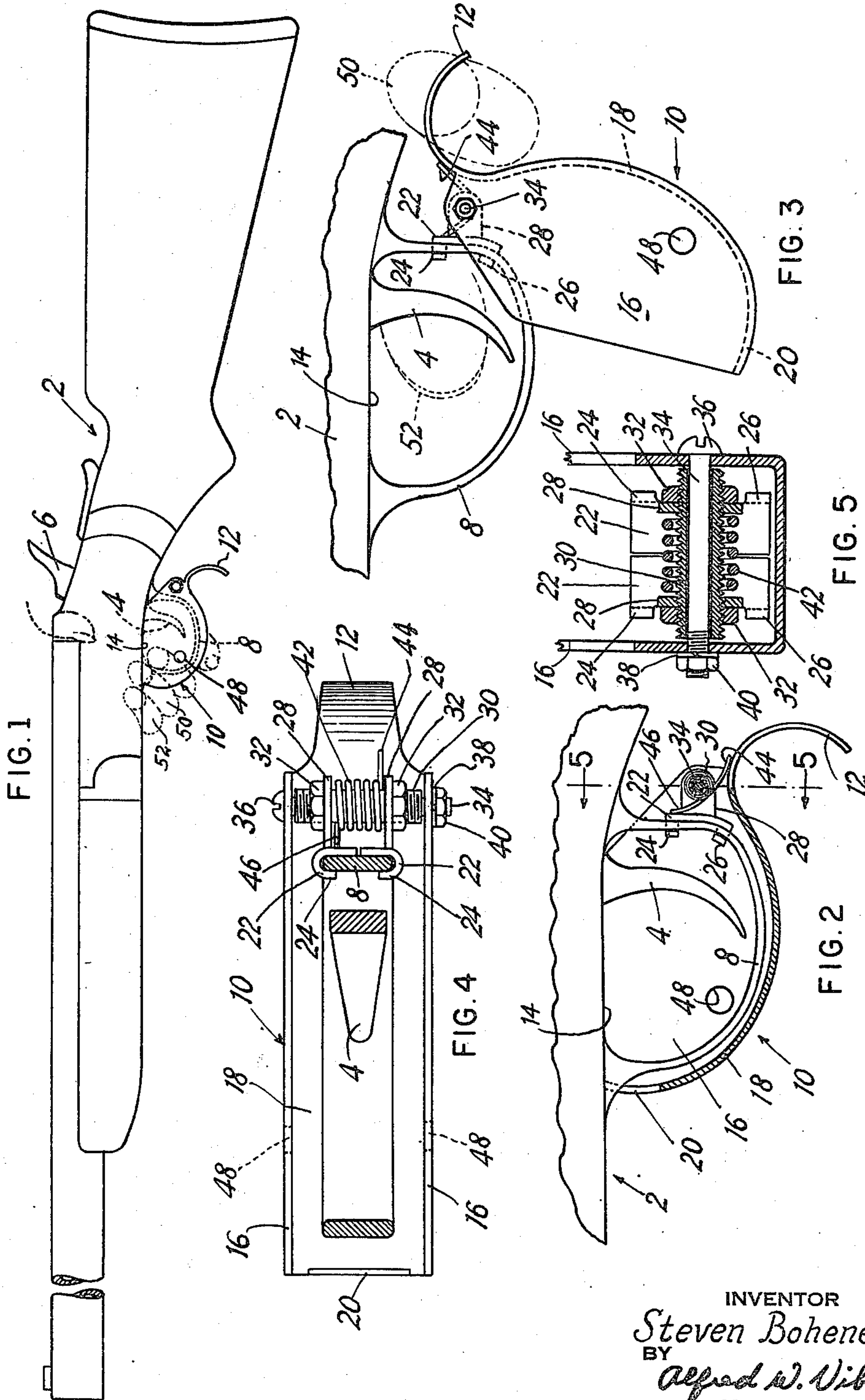
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SAFETY TRIGGER SHIELD FOR FIREARMS

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SAFETY TRIGGER SHIELD FOR FIREARMS

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4 Claims. (Cl. 42—70)

This invention relates to a safety trigger shield for firearms. More particularly, the invention relates to a shield of such type that it completely covers the trigger of the firearm, thereby precluding accidental discharge of such firearm, and further to a shield which is quickly operable to expose the trigger of the firearm for normal shooting of the gun.

Firearms of the type to which the safety shield of the present invention is designed to be attached, such as rifles and shotguns, are ordinarily provided with a "safety," which effectively locks the hammer or firing pin of the firearm from operation. Such ordinary "safeties" are reliable, but it takes considerable training of the gunner to allow him to use the firearm, with proper use of the safety, while hunting in the field without undue loss of time in shooting. Furthermore, it takes conscious thought on the part of the gunner to retract the safety in order to be able to shoot with a gun on which the ordinary safety is maintained "on" while the gun is being carried.

Because of the time which it takes to release the ordinary safety before the gun is shot, many hunters are in the habit of leaving such safety off while in the field, so that they can shoot more quickly. This practice, however, is the source of many accidents which arise by the catching of the trigger of the gun upon objects such as twigs, the buttons on the hunter's coat, etc. Furthermore, the ordinary safety on a gun such as a rifle or shotgun cannot be locked from operation by children, as for instance when the gun is stored at home.

I have found that in every rifle and shotgun in good condition the system composed of the trigger and the hammer and/or firing pin is stable, that is, the gun when cocked cannot be discharged by appreciable mechanical shocks such as occur when the gun is dropped from a considerable height, unless the trigger is pulled in the firing direction by some object with which it comes in contact. Accordingly, the ordinary safety whereby the hammer and/or firing pin are locked is not necessary for complete assurance against accidental discharge of the gun if the trigger is covered so as to prevent its coming into contact with an object which will pull it to discharge the gun. The safety trigger shield of my invention covers the trigger of the firearm so that there is no possibility of actuating the trigger accidentally, the shield being of such construction that it may be locked in place. The shield of the invention is preferably automatically operable, that is, it is constantly urged into trigger covering position without the necessity of conscious thought on the part of the gunner. Such shield, however, is quickly operable by the hunter by a part of the same instinctive motion with which his trigger hand slides backwardly upon the gun to present the index finger to the trigger. Thus there is little or no additional time required to operate a gun equipped with the safety shield of the invention. In the shield shown in the specific illustrative embodiment, means is provided detachably to secure the shield to the trigger guard, so that no alteration of the

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gun itself is required, such attachment of the shield being effected with ordinary tools such as pliers and screw driver. The shield of the invention may, if desired, be made an integral part of the gun, as by being incorporated therein during manufacture of such gun.

It is among the objects of the invention to provide a safety trigger shield for firearms which is quickly and easily operated to move it from the trigger covering, safety, position to the open position wherein the gun trigger is exposed.

A further object of the invention resides in the provision of the above type of trigger shield which may be locked in safety, trigger covering, position.

Yet another object of the invention resides in the provision of a safety trigger shield for firearms which is quickly operable by the same instinctive motion by which the hunter places his finger on the trigger of the firearm.

Another object of the invention is the provision of a safety trigger shield for firearms which is automatically actuated to trigger covering, safety, position.

A still further object of the invention resides in the provision of such shield which may be quickly attached to a gun without alteration of the latter and without requiring special tools for so doing.

A further object of the invention is generally to improve safety devices for firearms.

Further objects and objects relating to details and economies of construction, manufacture, assembly, and use will more definitely appear from the detailed description to follow.

My invention is clearly defined in the appended claims. Where parts are, for clarity and convenience, referred to on the basis of their oriented position shown in the accompanying drawing, no limitation as to positioning of the entire structure is to be implied, since it will be understood that the entire structure may be inverted or that it may be used in any inclined position. Also in both the description and the claims, parts at times may be identified by specific names for clarity and convenience, but such nomenclature is to be understood as having the broadest meaning consistent with the context and with the concept of my invention as distinguished from the pertinent prior art. The best form in which I have contemplated applying my invention is illustrated in the accompanying drawing forming part of this specification, in which:

Fig. 1 is a view in side elevation of a single barrel shotgun of the hammer type, the safety shield of the invention being shown applied thereto, such shield being shown in closed, safety, position, and the hammer of the gun being shown in cocked position;

Fig. 2 is an enlarged view in side elevation of that portion of the gun in Fig. 1 at the trigger, trigger guard, and safety shield, portions of such shield being shown in vertical section;

Fig. 3 is a view somewhat similar to Fig. 2, the safety shield being shown in open, retracted position, portions of the gun being shown in side elevation;

Fig. 4 is a view in plan of the safety shield in applied, closed, position on a trigger guard, parts of the trigger guard and trigger of the gun being shown in horizontal section; and

Fig. 5 is a view in vertical section through the means for pivotally attaching the safety shield to the gun, the pivot pin being shown in elevation.

In Fig. 1 the gun designated 2 is a single barrel shotgun of the hammer type, the hammer being shown in cocked position. It will be understood, however, that the safety shield of the present invention may be applied as well to rifles, revolvers, automatic pistols, etc. The gun 2 is provided with the customary trigger 4 whereby the hammer 6

may be actuated, when it is cocked, to fire the gun. Located about the trigger 4 and attached to the body of the gun is the transversely-open trigger guard 8.

The safety shield, generally designated 10, is a trough-shaped body open at its top and having a bottom wall portion 18 generally corresponding in shape to, but somewhat larger than, the bottom portion of the trigger guard 8. Such bottom wall has upturned end portions, the forward portion thereof generally following the configuration of the trigger guard 8, whereas the rear portion is curved upwardly more gently, as shown more clearly in Figs. 2 and 3. Integral with the bottom wall 18 are the spaced parallel side walls 16 attached to the bottom wall along opposite side edges thereof and extending upwardly above the bottom wall to terminate in a generally straight upper edge designed to contact the generally flat under surface 14 of the gun at the location of, and forwardly of, the trigger 4.

The side walls 16 are spaced laterally of each other a distance sufficient to receive the trigger 4 and the trigger guard 8 within the thus formed hollow body 10 without contacting or binding upon either. The forward end of the bottom wall 18 is cut out in a U-shape, as shown at 20 in Figs. 2, 3, and 4, to accommodate trigger guards of at least slightly different lengths without binding upon them. The rear end of the bottom wall of the shield 10 is smoothly curved first upwardly and then rearwardly and downwardly into the auxiliary, shield operating trigger 12.

In the embodiment of the invention shown, the shield is designed to be attachable to the gun without alteration of the gun itself in any manner. This result is accomplished by the provision of a clamp which detachably secures the shield to the rear portion of the trigger guard of the gun. Such clamping means is composed of the two clamp body forming portions 22 which form, in effect, a split clamp, such bodies having opposing upper and lower C-shaped tangs 24 and 26 thereon for embracing the edges of the trigger guard, the bodies 22 and the tangs 24 and 26 making engagement with the trigger guard in the manner shown in Figs. 2 and 4. The two clamp parts are, as is evident, mirror images of each other. The clamps are further provided with rearwardly extending ears 28 through which extends the clamp securing sleeve 30 which, as shown, is threaded throughout its length.

In mounting the shield upon the gun in the manner shown herein, the two clamp portions are mounted upon opposite sides of the trigger guard in the location shown, after which the sleeve 30 is passed through the holes in the ears thereof. The clamp parts are then held firmly in gripping relationship on the trigger guard by applying the nuts 32 to the sleeve outwardly of the ears 28 and tightening them thereagainst. The body 10 of the guard provides at the rear end thereof spaced ears adapted to telescope over the ends of the sleeve 30, such spaced ears having opposed holes for the reception of a pivot pin. Body 10 is placed over the sleeve and clamp combination in the position shown in Fig. 2, the pivot pin 34 then being passed successively through one of the holes in the ears in the side walls of the shield, through the sleeve 30, and thence through the hole in the other ear on the side wall of the body 10. The pivot pin 34 is held in place by means of the lock washer 38 and the nut 40 on an end thereof opposite its head 36. If it is desired to prevent easy disassembly of the shield from the gun, the end of the pivot pin protruding past the nut 40 may be peened over or upset. In such manner tampering with the shield to remove it from the gun, as by children, is prevented.

In order constantly to urge the shield 10 into the closed, safety, position shown in Figs. 1 and 2, there is provided, in the embodiment of the shield illustrated, a coil spring 42 disposed about the sleeve 30, one end 44 of such spring protruding outwardly into a position above a portion of the auxiliary trigger 12, the other end 46 of such spring continuing upwardly into contact with the rear of

one of the portions 22 of the clamp. The coil spring has such torque that it firmly thrusts the shield into the closed position but does not impose undue resistance to the retraction of the shield into the position shown in Fig. 3 when it is desired to shoot the gun.

Means is provided whereby the safety shield 10 may be locked substantially in the closed, safety, position shown in Figs. 1 and 2, thereby to prevent unwanted tampering with and discharge of the gun. The side walls 16 of the shield are provided with opposed openings 48 therethrough at a position, when the shield is closed, well forward of the trigger 4 and lying slightly above the inner surface of the trigger guard 8. When it is desired to lock the shield in the position shown in Figs. 1 and 2, it is necessary only to slip one leg of a padlock through the opposed holes 48 and above the trigger guard 8 and to fasten the lock. When so locked, the shield 10 can be pivoted downwardly very little, if at all, and thus prevents access to the trigger 4. In the field, when the padlock is removed, the holes 48 are far enough removed from the location of the trigger 4 so that no body or object can pass through either one or both such holes and engage the trigger to discharge it accidentally.

From the above, it is believed that the manner of operation of the safety shield and of the firearm equipped with it will be obvious. However, the use of such devices will be briefly described for clarity. Ordinarily, in the field, a right-handed gunner will carry his gun, in "ready" position, with his left hand beneath the barrel forwardly of the trigger and with his right hand so positioned that the fingers thereof are beneath the gun, at least some of the fingers being forward of the trigger and trigger guard position. In Fig. 1 the fingers of the gunner's trigger or right hand are shown in such "ready" position. In such position, with the safety guard 10 attached to the gun as shown, the rear fingers of the trigger hand are disposed, at least to some extent, over the body of the shield 10 and thus tend to aid the spring 42 in maintaining the shield in closed position, although the spring 42 is sufficient for such purpose.

When the hunter wishes to shoot, he raises the gun, at the same time slipping his right hand rearwardly along the gun toward the position in which the index or first finger 52 of the trigger hand will engage the trigger 4. Before this takes place, and in the same natural, instinctive, motion of the trigger hand, the middle or second finger 50 of the same hand first engages the auxiliary trigger 12 by the safety shield as such finger 50 slips rearwardly along the bottom surface of the shield 10. Further backward motion of the trigger hand carries the finger 50 rearwardly and upwardly to impel the safety shield to open position as shown in Fig. 3. When the middle finger 50 has reached such position that the shield 10 is fully open, the index finger of the same shooting hand is opposite the trigger 4 so that it may be thrust slightly sidewardly into engagement with such trigger to pull it and to discharge the gun. After the gun has been shot, when the trigger hand is removed therefrom, the shield 10 immediately returns to the closed, safety, position shown in Figs. 1 and 2. This is particularly important, when the gun is either a double barrel shotgun or an automatic firearm such as an automatic shotgun or rifle, because it means that no other safety means need be employed with the gun to render the gun safe from accidental discharge but ready for instant shooting.

Comparative time trials in the field with (1) a single barrel shotgun provided with a safety shield in accordance with the present invention and with (2) a similar gun used under the same circumstances, and with the ordinary safety "off" but without such safety shield, show that a gunner, after a short period of training in the use of the present safety shield, can get off practically the same number of shots in succession with gun (1) as with gun (2). Such trials further show that with a gun equipped with the shield of the invention there is little, if

any, difference between guns (1) and (2) in the interval from the gunner's perception of a game bird or animal to his getting off an accurate shot at it.

I claim as new the following:

1. In combination with a gun having a trigger and a trigger guard, a selectively operable shield for covering the trigger comprising a body open at its top and having spaced generally parallel side walls extending upwardly, said body fitting about the trigger guard in housing relation thereto for preventing accidental contact of a finger or other object with the trigger, means attaching the shield for pivoting at its rear on the gun about a horizontal axis, spring means constantly urging the shield upwardly into housing relation to the trigger guard, an auxiliary trigger for retracting the shield downwardly from such housing relation, the auxiliary trigger extending rearwardly and downwardly from the shield rearwardly of the pivot, the auxiliary trigger being so spaced relative to the shooting trigger that the two triggers are simultaneously engageable by two fingers on the trigger hand with such hand in normal shooting position, the auxiliary trigger being engageable by a finger other than the index finger of the trigger hand, the shield when thus retracted allowing access of the index finger of the shooting hand to the trigger of the gun.

2. In combination with a gun having a trigger and a trigger guard, a selectively operable shield for covering the trigger comprising a body open at its top and having spaced generally parallel side walls extending upwardly, said body fitting about the trigger guard in housing relation thereto for preventing accidental contact of a finger or other object with the trigger, means attaching the shield for pivoting at its rear on the gun about a horizontal axis, spring means constantly urging the shield upwardly into housing relation to the trigger guard, an auxiliary trigger for retracting the shield downwardly from such housing relation, the auxiliary trigger extending rearwardly and downwardly from the shield in the vicinity of the pivot, the auxiliary trigger being so spaced relative to the shooting trigger that the two triggers are simultaneously engageable by two fingers on the trigger hand with such hand in normal shooting position, the auxiliary trigger being engageable by a finger other than the index finger of the trigger hand, the shield when thus retracted allowing access of the index finger of the shooting hand to the trigger of the gun.

3. A selectively operable shield for covering the trigger of a gun having a trigger and a transversely-open trigger guard, said shield comprising a trough-shaped body open at its top and having a bottom wall formed with upturned end portions and spaced generally parallel side walls integrally united to the bottom walls along opposite side edges thereof and extending upwardly above the bottom wall, said body being adapted to fit about the trigger guard in housing relation thereto for preventing accidental contact of a finger or other object with the trigger, clamping means adapted to attach the shield at its rear to the gun, said last named means including a horizontal pivot pin for

allowing the shield to pivot downwardly and rearwardly about a horizontal axis, spring means adapted constantly to urge the shield upwardly into housing relation to the trigger guard, and an auxiliary trigger for retracting the shield downwardly from such housing relation, the auxiliary trigger extending rearwardly and downwardly from the shield rearwardly of the pivot pin, the auxiliary trigger being adapted to be operated by a finger of the trigger hand in normal shooting position for retracting the shield downwardly from such housing relation to permit access of the index finger of the trigger hand to the trigger of the gun, the shield being so constructed and arranged that the auxiliary trigger of the thus mounted shield is so spaced from the trigger of the gun that such triggers are simultaneously engageable by the aforesaid fingers of the trigger hand without shifting such hand.

4. A selectively operable shield for covering the trigger of a gun having a trigger and a transversely-open trigger guard, said shield comprising a trough-shaped body open at its top and having a bottom wall formed with upturned end portions and spaced generally parallel side walls integrally united to the bottom walls along opposite side edges thereof and extending upwardly above the bottom wall, said body being adapted to fit about the trigger guard in housing relation thereto for preventing accidental contact of a finger or other object with the trigger, clamping means adapted to attach the shield at its rear to the gun, said last named means including a horizontal pivot pin for allowing the shield to pivot downwardly and rearwardly about a horizontal axis, spring means adapted constantly to urge the shield upwardly into housing relation to the trigger guard, and an auxiliary trigger for retracting the shield downwardly from such housing relation, the auxiliary trigger extending rearwardly and downwardly from the shield in the vicinity of the pivot pin, the auxiliary trigger being adapted to be operated by a finger of the trigger hand in normal shooting position for retracting the shield downwardly from such housing relation to permit access of the index finger of the trigger hand to the trigger of the gun, the shield being so constructed and arranged that the auxiliary trigger of the thus mounted shield is so spaced from the trigger of the gun that such triggers are simultaneously engageable by the aforesaid fingers of the trigger hand without shifting such hand.

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