Nov. 9, 1948. A. W. CALDOW 2,453,683

SAFETY FOR FIREARMS

Filed Feb. 13, 1946

Fig. 1.

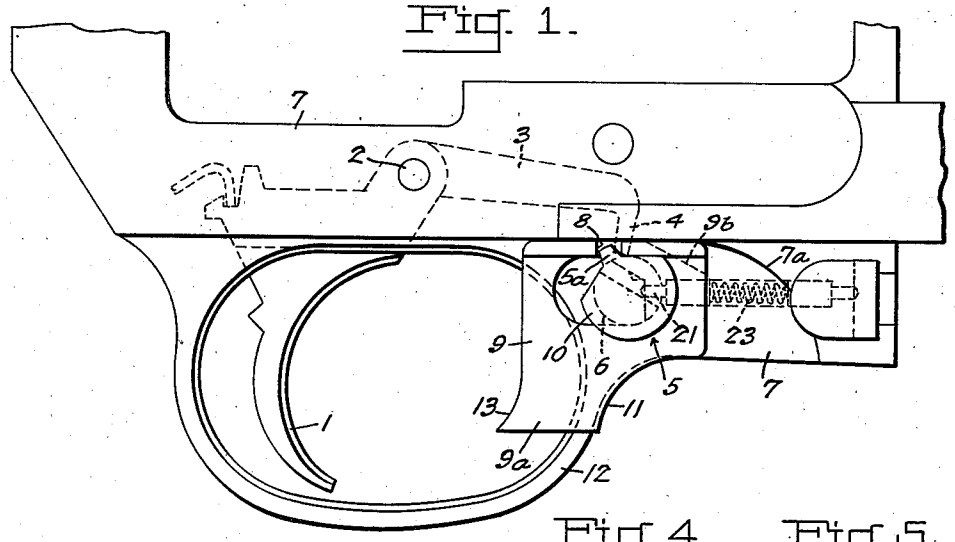


Fig. 2.

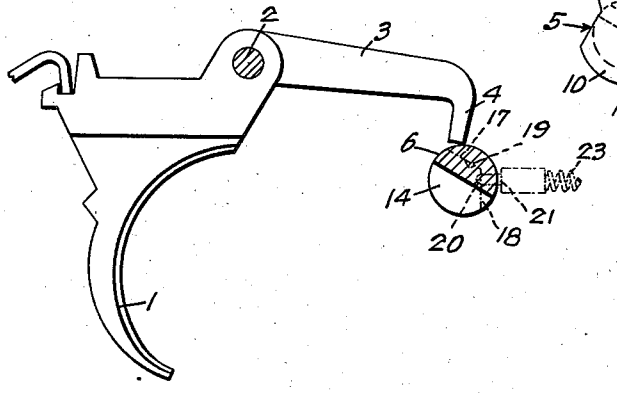


Fig. 4.

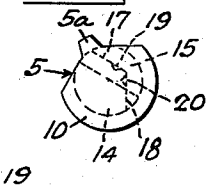


Fig. 5.

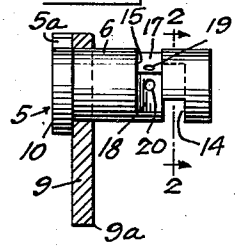


Fig. 6.

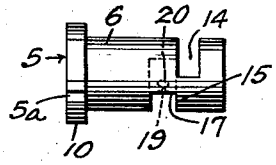


Fig. 3.

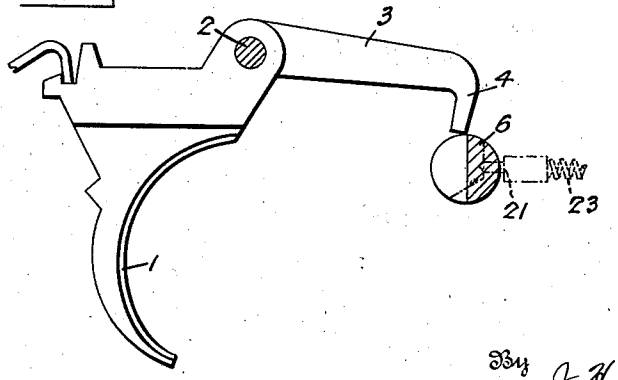
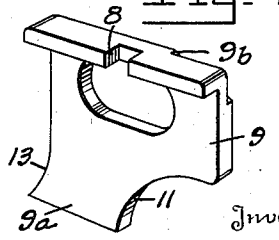


Fig. 7.



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SAFETY FOR FIREARMS

Alexander W. Caldow, Chicago, Ill.

Application February 13, 1946, Serial No. 647,389

1 Claim. (Cl. 42—70)

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The present invention relates to an improvement in firearms, and more particularly to an improvement in a safety catch for preventing accidental discharge of a firearm.

One of the objects of the present invention is to provide a simple structure having a minimum of parts and of rugged and durable construction.

Another object is to provide a safety catch which is positive and simple in its operation, and wherein rapidity of operation may be achieved by using the trigger finger to operate the catch.

Still another object is to provide a firearm safety catch wherein the safety condition is made known to the user by the act of inserting the finger into the trigger guard and wherein the safety can be put into the "on" position by motion of the finger similar to that of shooting the firearm. Still another object is to provide a safety catch such that dragging of the firearm by the barrel against an obstacle will tend to actuate the safety catch to prevent accidental discharge.

The above and other objects, as will appear to those skilled in the art, are attained by the construction shown in the accompanying drawings; essentially by the use of a single tooth gear and rack. The rack is so positioned with respect to the lock frame that in the "safe" position the rear extremity of the rack projects into the trigger guard opening. The single tooth gear fits into a lock frame hole such as is occupied by a conventional transverse push button safety commonly used on firearms. In order to place the safety in the "fire" position the rack is pushed forward, thus rotating the gear through an angle of 60°. When the mechanism is in the "safe" position, a portion of the gear is in contact with the lower end of the trigger safety arm thus preventing the rearward motion of the trigger safety arm thus preventing the rearward motion of the trigger necessary to fire the weapon. As the gear rotates through the "fire" position a cut therein is brought into alignment with the said lower end of the trigger safety arm, thus permitting firing of the weapon.

In the drawing.

Figure 1 is a view in side elevation of part of a firearm showing the trigger housing and trigger with a safety catch embodying my invention.

Figure 2 is a detailed view of the trigger with a cross section of the safety catch in the "safe" position taken on line 2—2 of Figure 5.

Figure 3 is a view similar to Figure 2 but showing the safety catch in the "fire" position.

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Figure 4 is an end view of the safety catch in the "safe" position.

Figure 5 is a side elevation of the safety catch with the safety trigger plate, shown in cross section.

Figure 6 is a plan view of the safety catch in the "fire" position, and

Figure 7 is a perspective view of the safety trigger plate.

The invention may be applied to any firearm having the conventional trigger 1, shown in Figure 1. Trigger 1, pivots on trigger pin 2, in trigger housing 7. Trigger safety arm 3 is integral with Figure 1, so that if safety nose 4 on arm 3 is restrained from downward motion, the trigger 1 cannot be pulled back to fire the weapon. Safety catch 5 is provided with a single gear tooth 5a of a gear 10, and has a cylindrical body 6 rotatably seated in a suitable hole in trigger housing 7.

The single tooth 5a meshes with a single recess 8 cut out of safety trigger plate 9, as more fully shown in Figure 7. The lower portion in 9a of safety trigger plate 9 constitutes a safety trigger. Plate 9 is held between the trigger housing on one side and gear 10 of gear 5 on the other side, and is permitted a limited sliding motion to the right and left as viewed in Figure 1. A corner 9b is partially cut away from the safety trigger plate, as shown in Figure 7, to permit motion of the upper forward corner of the safety trigger plate past raised surface 7a of trigger housing 7. In the extreme left hand position as shown in Figure 1 (the "safe" position) the front edge 11 of safety trigger 9a conforms generally to the shape of the front edge of the trigger guard 12. In the extreme right hand position of safety trigger plate (not shown) the rear edge 13 of safety trigger plate 9 will conform to the shape of the inside of the trigger guard so as not to obstruct the trigger in the "fire" position of the safety.

The cylindrical portion 6 of safety catch 5 is slotted as shown at 14 to permit unobstructed downward motion of safety nose 4 when the catch is in the "fire" position, as shown in Figure 3. When the safety trigger is pulled back to the "safe" position shown in Figures 1 and 2, cylinder 6 is rotated 60° counterclockwise, as viewed in Figure 1–4, and the solid portion of the cylinder 6 blocks firing movement of trigger nose 4. Cylinder 6 is so cut at 15 (Figure 6) as to present two bearing surfaces 17 and 18, which are recessed at 19 and 20 respectively to accommodate plunger pin 21, which is thrust toward cyl-

inder 6 by spring 23 to act as a detent to hold the safety mechanism in either the "safe" or the "fire" position.

It will thus be seen that I have provided a safety means which partially blocks the trigger guard aperture when in the "safe" position so that the user will be instantly aware by feel that the safety is on. A slight forward motion of the back of the trigger finger suffices to release the safety so that the weapon may be fired. A triggering motion of the trigger finger resets the safety with ease and positiveness, even if the user is wearing gloves or if his hands are stiff with cold; under such conditions the more difficult act of locating a small inconspicuous safety button is often neglected or not carried out to completion, leaving the user to believe that the weapon is in a safe condition when actually it is in a dangerous condition. Furthermore, if a firearm containing the present invention is dragged by the barrel through a fence or underbrush, contact of the trigger guard with an obstruction will tend to lock the safety on rather than to discharge the weapon, and if the safety is so locked on, the user will be instantly apprised when he comes to fire the weapon that the safety is on so that he will not find, after aiming the weapon, that he cannot fire it until he has released the safety thus spoiling his shot, with possibly dangerous consequences.

I claim:

In a trigger actuated firearm having a trigger

provided with an integral safety nose portion, a trigger housing including a trigger guard, and a rotatably mounted locking body in the path of the trigger safety nose, said locking body having a gear fixed thereto for motion therewith, and being arranged to obstruct said safety nose portion in one rotational position of said gear and to provide a "fire" position in another rotational position of said gear, and a manually operated rack slidably mounted with relation to said trigger housing and cooperatively associated with said gear to rotate same by sliding motion, the rearward portion of said rack extending into the trigger guard opening in the "safe" position and clearing the trigger guard opening when slid forward into the "fire" position.

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