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SAFETY MECHANISM FOR FIREARMS

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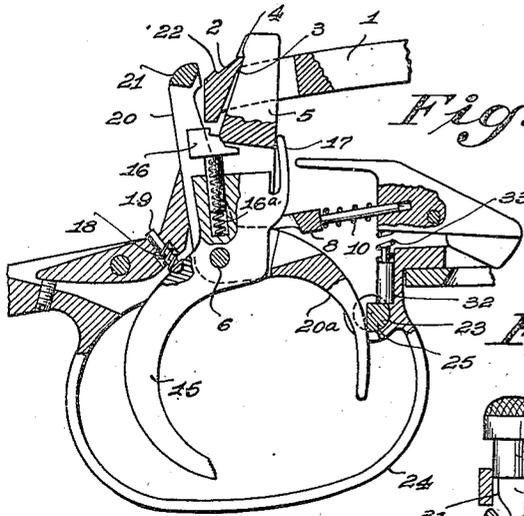


Fig. 1

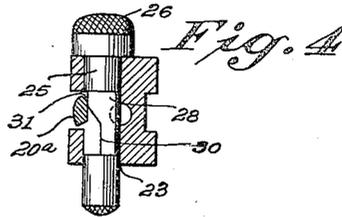


Fig. 4

Fig. 5

Fig. 3

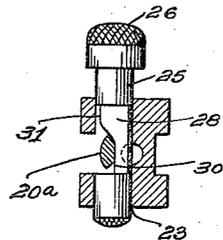
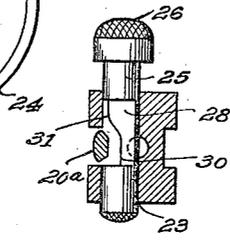


Fig. 2

Fig. 6

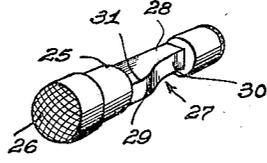
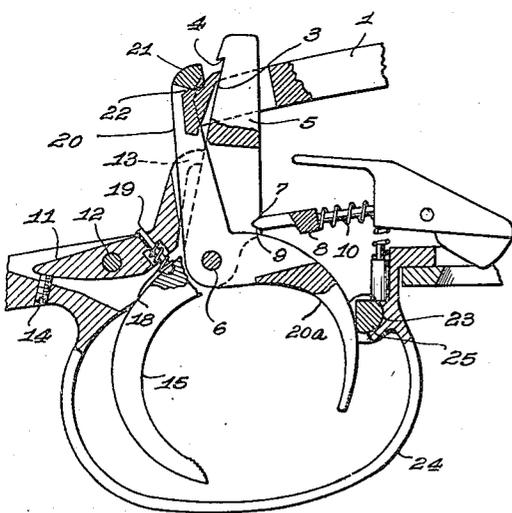
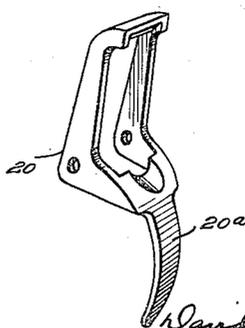


Fig. 7



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## UNITED STATES PATENT OFFICE

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## SAFETY MECHANISM FOR FIREARMS

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Original application February 7, 1931, Serial No. 514,252. Divided and this application August 21, 1937, Serial No. 160,323

3 Claims. (Cl. 42-70)

The present invention relates to a safety mechanism for firearms.

Safety mechanisms are ordinarily provided on substantially all firearms in present use. In general, these function to lock some moving part of the trigger, sear or striker mechanism to prevent the accidental discharge of a firearm when the trigger is moved or subjected to some shock. In general practice, the safety is said to be in the "on" position whenever it functions to prevent firing of the gun, and it is said to be in the "off" position whenever the gun is in a "ready to fire" position.

In the usual gun, whenever the safety is in the "on" position, it requires an appreciable period of time to move the same to the "off" position for firing. Under these circumstances, it is quite common for hunters and other persons who find it necessary to fire their guns quickly to leave the safety "off" in order that the gun may be always ready to fire. This is considered dangerous practice because the firearm may be accidentally discharged.

It is the purpose of the present invention to provide a safety mechanism that is capable of being set to a plurality of safety positions. In other words, it is the purpose of the safety mechanism, in accordance with the present invention, to provide a compound safety capable, in one position, of being quickly released so that the gun may be quickly fired. In another position, this safety is capable of being locked by an additional safety means.

In other words, a hunter having a gun equipped with a safety mechanism, in accordance with the present invention, can keep the safety in the quickly releasable or "intermediate on" position when carrying the gun under conditions where a quick shot is expected. In the event that the gun was being carried over rough terrain or otherwise handled so that a very positive safety is the primary essential, the mechanism, according to the present invention, may be set to a double locked or "on" position.

One of the objects of the present invention, therefore, is the provision of a novel compound safety mechanism for a gun.

Another object of the present invention is the provision of a safety mechanism having two different locking actions.

Still another object of the present invention is the provision of a safety mechanism for firearms capable of being quickly released.

Other objects and advantages of the invention

will be obvious from the detailed description which follows.

Referring to the accompanying drawing:

Figure 1 is a side elevation partially in section of a trigger and safety mechanism, in accordance with this invention, the safety mechanism being shown in the "off" or released position, and the trigger mechanism shown in the cocked position ready to fire.

Figure 2 is a side elevation partially in section showing the safety mechanism in the "on" position.

Figure 3 is a detail partly in section of a portion of the safety mechanism in the "off" or released position.

Figure 4 is a detail, partly in section, of a portion of the safety mechanism in the "on" position.

Figure 5 is a detail, partly in section, of a portion of the safety mechanism in the "intermediate on" position.

Figure 6 is a perspective view of the safety pin.

Figure 7 is a perspective view of the safety lever.

Referring to Figure 1 of the drawing, 1 indicates a lever which is normally spring pressed in an upward direction. As is clearly understandable, this lever is merely indicative of a moving part of a firearm or striker release member. For the purposes of the present disclosure, it may be assumed that lever 1, when moved in an upward direction, releases the striker of a firearm in any suitable fashion, and when held in the position shown in Figure 1 prevents the firing of the gun.

Lever 1 carries a lug 2 having a pawl engaging nose 3 which engages the hook 4 of the pawl 5. Pawl 5 is pivoted on a pivot 6 carried by a suitable portion of a firearm, as for example, the trigger guard 24. Nose 7 carried by the pawl plunger 8 engages the pawl 5 in a notch 9. Pawl plunger spring 10, through the medium of the nose 7 and notch 9, urges the pawl in a backward or counterclockwise direction, serving to keep the pawl hook 4 in firm engagement with the nose 3.

The depth of engagement of the pawl hook and nose is determined by the position of the adjusting lever 11, pivoted at 12, on a suitable portion of the firearm. Adjusting lever 11 carries a finger 13, which bears against the pawl 5 limiting the counter-clockwise movement of the pawl and thus limiting the engagement of hook 4 and nose 3. The position of the adjusting lever is determined by a screw indicated at 14.

Trigger 15 carried on pivot 6 has a dual engagement with the pawl 5. The trigger carries a plunger 16 (Figure 1) which is capable of sliding movement in the trigger. This plunger 16 is urged into pawl engaging position by a spring 16a. The action of this plunger positions the trigger so that the pawl is held between the plunger 16 and finger 17 carried on the trigger. Trigger spring 18 acting on plunger 19 serves to retain the trigger in its forward position.

The safety mechanism of the firearm comprises a safety lever 20 carried on a pivot 6 having a bow 20a on the lower portion thereof and a cam lug 21 on its upper portion. The cam lug 21 is adapted to seat in a notch 22 in the lever lug 2. Slidably mounted in a hole 23 in the trigger guard 24 of the firearm is a safety pin 25. The safety pin comprises a knurled head 26 and a cut away portion indicated in general at 27. This cut-away portion comprises a flat upper face 28 and a cam face 29 having a relieved portion 30 and a rise 31.

Plunger 32 urged into a downward or safety pin engaging position by spring 33 engages the flat face 28 and serves to retain the safety pin either in "on" or "off" position.

The safety pin 25 is shown in Figures 1 and 3 in the "off" position. In this position, the safety lever bow 20a, is in its extreme forward position, bearing against cut-out portion 30 and the cam lug 21 is in rear, disengaged position.

In this position the trigger can be operated to fire the gun. A pull on the trigger 15 will move pawl 5 by means of plunger 16 to a forward position to disengage hook 4 and nose 3. In order to set the safety mechanism to "on" position and prevent firing of the gun, knurled head 26 is pushed in, thereby sliding relieved portion 30 from the position shown in Figure 5 to the position shown in Figure 4. Cam face 29 forces bow 20a rearwards about its pivot 6, causing the upper portion of the safety lever carrying the cam lug 21 to move in a forward or in a clockwise direction. The cam lug 21 in moving into the forward position shown in Figure 2, forces the lug 2 in a downward direction and seats in the notch 22. In this position, due to the positive engagement of the cam lug 21 and the notch 22, the gun cannot be fired since the lever 1 cannot move in an upward direction.

In this position, the safety is said to be "on" and in order to fire the gun, it is necessary not only to push the safety pin "off" but it is also necessary to move the safety lever bow 20a forward. If, however, it is desired to leave the safety mechanism in what is termed the "intermediate on" position, as shown particularly in Figure 5, it is only necessary to push the safety pin to the position shown in Figure 5, without moving the safety lever.

When the safety is in this position it is capable of being quickly released or moved to "off". This "intermediate safe" position is, therefore, particularly adapted where a quick shot is desirable, as hereinbefore explained.

It may, therefore, be seen that the safety pin 25 functions as a primary locking safety means capable of assuming safe and ready to fire positions, and the safety lever 20 functions as a secondary quick releasing means. It may be further noted that the primary means or safety pin 25 is adapted to lock the secondary means or safety lever 20 against release when the safety pin is in the safe or "on" position.

This application is a division of my prior ap-

plication Serial No. 514,252, filed February 7, 1931, Patent No. 2,090,656, August 24, 1937.

I claim:

1. In a gun of the class described, a firing mechanism including a striker, a lever movable in and out of striker releasing position, a pivoted safety lever manually movable into safety position to engage the first mentioned lever and prevent the movement of said lever to striker releasing position, said safety lever being manually movable out of position to engage the first mentioned lever to permit movement thereof to striker releasing position, and manually operable means engaging the safety lever to move and lock the same against manual accidental movement to release the first mentioned lever.

2. In a gun of the class described, a firing mechanism including a striker, a lever movable into and out of striker releasing position, a pivoted safety lever movable into "on" position to engage the first mentioned lever and hold it out of striker releasing position, and movable to "off" position to permit movement of the first mentioned lever to striker releasing position, and manually operable means engaging the safety lever to move and lock the same against accidental movement to release the first mentioned lever, said first mentioned lever having a finger engageable arm projecting downwardly for engagement by the firing finger of the gunner, and acting to move the safety lever to the first mentioned lever releasing position upon forward movement of said arm by the gunner.

3. In a gun including a striker mechanism for firing a cartridge and means movable to release said striker mechanism, a compound safety mechanism comprising quickly movable safety means movable to "off" and "on" position and constructed and arranged to prevent movement of said striker release means in said "on" position and to permit movement of said striker release means in "off" position, and an additional safety means manually movable to "off" and "on" positions and constructed and arranged to move the quickly releasable safety means to "on" position when moved to "on" position and to permit movement of the quickly releasable safety means to "off" position when moved to "off" position and means to retain said additional safety means in either position.

4. In a gun including a striker mechanism for firing a cartridge and means movable to release said striker mechanism, a compound safety mechanism comprising a quickly releasable safety lever movable to "on" and "off" position, said safety lever coacting with said first mentioned means so as to prevent movement of said first mentioned means in "on" position and allow movement of said first mentioned means in "off" position, and an additional safety means manually movable to "on" and "off" positions and constructed and arranged to move the safety lever to "on" position when moved to "on" position and to permit movement of the safety lever to "off" position when moved to "off" position and means to retain said additional safety means in either position.

5. In a gun including a striker mechanism for firing a cartridge and means movable to release said striker mechanism, a compound safety mechanism comprising a quickly releasable safety lever movable to "on" and "off" position, said safety lever coacting with said first mentioned means so as to prevent movement of said first mentioned means in "on" position and allow move-

ment of said first mentioned means in "off" position, and an additional safety means comprising a manually movable sliding pin having a cam portion comprising a rise and cut-out portion constructed and arranged to cooperate with said safety lever, so as to move the safety lever to "on" position when the rise of said cam cooperates with said safety lever, and to allow movement of said safety lever to "off" position when the cut-out portion of said cam cooperates with the safety lever and means to retain said sliding pin in "on" and "off" position.

6. In a safety mechanism for guns, a pivoted safety lever movable to "on" and "off" positions, and a pin manually slidable transversely to said safety lever and constructed and arranged to move said safety lever to "on" position when manually moved in one direction and allow movement of said safety lever to "off" position when manually moved in an opposite direction.

7. In a gun, in combination, a movable firing mechanism, safety means movable to "off" and "on" position and constructed and arranged to prevent movement of said firing mechanism in "on" position and permit movement of said firing mechanism in "off" position, an additional safety means manually movable to "off" and "on" position and constructed and arranged to move the

first mentioned safety means to "on" position when moved to "on" position and to permit movement of the first mentioned safety means to "off" position when moved to "off" position and means to retain said additional safety means in either position. 5

8. In a gun of the class described, a firing mechanism including a trigger and a lever movable into and out of firing mechanism releasing position, a pivoted safety lever movable to "on" position to engage the first mentioned lever and hold it out of firing mechanism releasing position and movable to "off" position to permit movement of the first mentioned lever to firing mechanism releasing position and a pin manually slidable transversely to said safety lever and having a cam portion thereon cooperating with said safety lever to move the same to "on" position when the pin is manually slid in one direction and allow movement of said safety lever to "off" position when slid in an opposite direction, said safety lever having a finger engageable arm projecting downwardly for engagement by the firing finger of the gunner so as to move the safety lever to the first mentioned lever releasing position upon forward movement of said arm by the gunner. 10 15 20 25

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