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SAFETY DEVICE FOR GUNS

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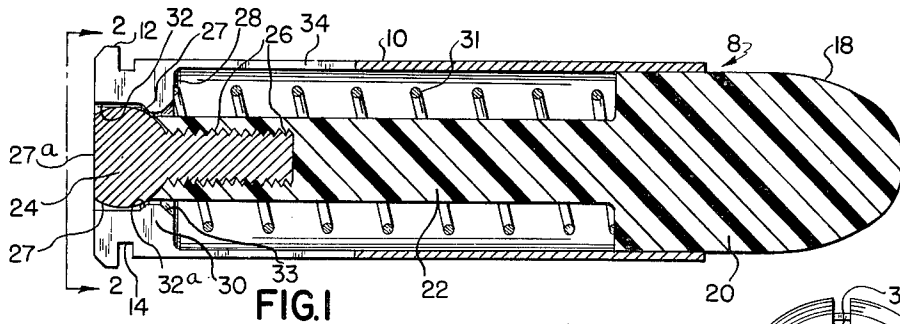


FIG. 1

FIG. 2

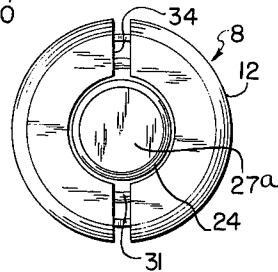


FIG. 3

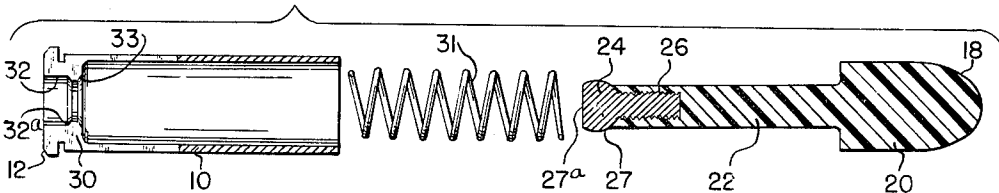


FIG. 4

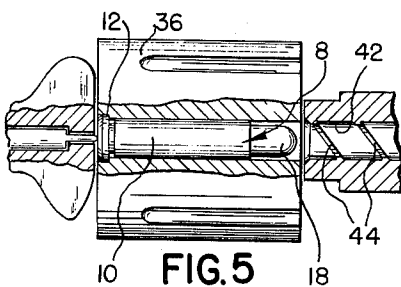
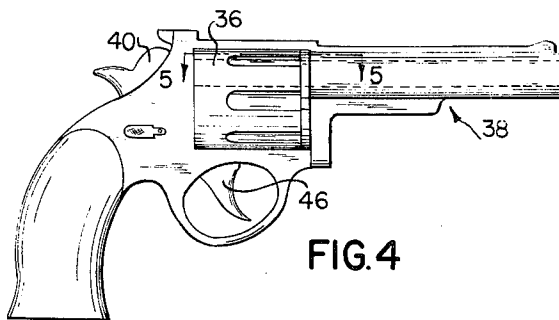


FIG. 5

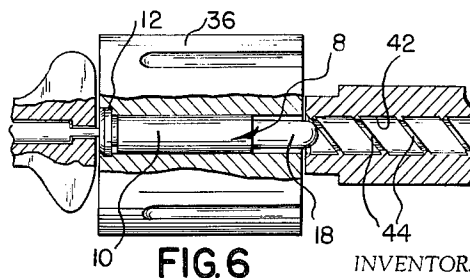


FIG. 6

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SAFETY DEVICE FOR GUNS

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This invention relates to a safety device for weapons, such as a revolver or an automatic type hand gun, and more particularly to a cartridge-like safety device for loading into the gun.

Many people presently own firearms for the protection of their person and property, and the hand gun is generally the most popular since it is effective at close range and is of a more convenient size. However, to be effective in emergencies, the weapon must be close at hand and loaded. Such a situation provides hazards in that a child or unthinking individual may handle the loaded weapon and fire it accidentally to cause unintentional injury or death.

Moreover, police officers, which carry loaded weapons in the performance of their duties, are sometimes wounded or killed by criminals who unexpectedly seize the officer's weapon and shoot such officer with his own gun.

The present invention provides a novel safety device comprising a dummy cartridge which may be inserted in a loaded weapon, and which when disposed in the firing chamber of the gun and actuated by the firing pin thereof, will lock or jam the gun against further use, but which may be readily and quickly moved or by-passed from the firing chamber of the gun to obviate jamming or locking of the latter, by one who is familiar with the operation of the device.

Accordingly, it is an object of the invention to provide a novel safety device for a gun.

Another object of the invention is to provide a novel and simplified safety locking device for causing inoperability of a loaded gun by one who is unfamiliar with the locking device, but wherein the gun can be readily operated by one who is familiar with the operation of the safety locking device.

Another object of the invention is to provide a novel safety device for use in a loaded weapon comprising, a dummy cartridge having a cartridge case and a dummy projectile disposed in the case and projecting forwardly therefrom, and with the dummy projectile being adapted to move forwardly into jamming or locking relation with the gun when the cartridge is actuated by the firing pin of the weapon, thus locking the weapon and preventing use thereof by unauthorized or criminal persons.

Another object of the invention is to provide a safety device in the form of a dummy cartridge for a loaded weapon, which includes a cartridge case and a spring loaded projectile disposed in the case together with means for holding the projectile in predetermined position in the cartridge case, but which is adapted for actuation by the firing pin of the weapon to cause movement of the projectile forwardly with respect to the case, and wherein such dummy cartridge is adapted to be installed in the weapon in such manner that it would be the next round to be fired when the trigger is pulled.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a lengthwise sectioned, elevational view illustrating the dummy cartridge mechanism of the invention;

FIG. 2 is an end elevational view taken generally along the plane of line 2—2 of FIG. 1, looking in the direction of the arrows;

FIG. 3 is a reduced size, exploded sectional view of the cartridge assembly of FIG. 1;

FIG. 4 is a side elevational view of a revolver in which

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the safety cartridge of the invention may be utilized;

FIG. 5 is an enlarged partially sectioned view, taken generally along the plane of line 5—5 of FIG. 4 and showing the safety cartridge of the invention in position in the firing chamber in the revolver, and prior to actuation of the safety cartridge by the firing pin of the gun;

FIG. 6 is a view generally similar to FIG. 5, but showing the position of the parts of the safety cartridge after it has been actuated by the firing pin; in such position the projectile of the safety cartridge has moved forwardly relative to the case of the cartridge, and into locking condition in the gun barrel to prevent rotation of the gun cylinder and thus prevent further firing of the gun.

Referring now again to the drawings, there is illustrated a safety cartridge 8 comprising a cartridge case 10 of cylindrical configuration, having a lip 12 at one end thereof, defined in part by annular recess 14 in the cartridge case. Disposed in the cartridge case 10 is a projectile member 18, which is preferably formed of plastic material, such as nylon, or some other suitable material.

Projectile 18 comprises a head or nose portion 20 which may be of the general configuration of a bullet of conventional type, and an integral rearwardly extending shank portion 22 of reduced diameter or thickness, compared to the thickness of the nose portion 20. Secured to the end of the shank portion 22 may be a ball-like member 24. Ball-like member 24 is preferably made of metal and may threaded as at 26 to the shank 22 of projectile 18. Member 24 may comprise generally arcuate or spherical side surfaces 27, and generally flat end surface 27a, for a purpose to be hereinafter described.

Disposed between the nose portion 20 of projectile 18, and an abutment surface 28 of end portion 30 of the cartridge case 10 is a light spring member 31 which is preferably under relatively light compression in the position of the parts illustrated in FIG. 1.

End portion 30 also includes an axial opening 32 there-through defining a generally circumferential shoulder 12a which coacts in engaged relation with the aforementioned ball-like member 24, to normally hold the projectile 18 in the position illustrated in FIG. 1 and against the force of the spring member 31. Shoulder 32a is also sloped as at 33 on the interior end thereof for a purpose to be hereinafter described. The cartridge case 10 is slit as at 34 lengthwise thereof and well beyond the shoulder 32a in the end portion 30, to provide for substantial resiliency of the cartridge 10 in the vicinity of portion 30.

Operation of the device is preferably as follows:

The safety cartridge 8 is loaded along with live ammunition, in, for instance, the conventional cylinder 36 of a revolver 38, and the cylinder is closed in such a manner that the safety cartridge will be the next one to move into the firing position in alignment with the bore of the barrel when the trigger of the weapon is pulled. Thus if a criminal or one unschooled in the method of operation of the device seizes the weapon and pulls the trigger, the cylinder 36 will revolve in the conventional manner moving the safety cartridge to "firing position" and in alignment with the firing pin of hammer 40 and the bore 42 of the barrel in the conventional manner. The firing pin strikes the surface 27a of ball detent 24, and drives the detent out past the relatively shallow shoulder 32a in the opening 32. Since the cartridge case is split as at 34 to provide resiliency to the case, and since the nose portion 20 of projectile 18 may slide relatively easily with respect to the case 10, such projectile moves readily beyond the shoulder 32a upon being hit by the firing pin, and as urged by the spring 31. However, the projectile 18 upon movement into the bore 42 of the barrel, engages the conventional rifling 44 in the barrel and is stopped therein, part of the projectile be-

ing in the barrel and part being in the firing chamber of the cylinder. In other words, the diameter of nose portion 20 of projectile 18 is slightly greater than the minimum diameter of the rifling. Thus the cylinder is prevented from rotation, and since the gun cannot be placed in firing condition unless the trigger 46 can be depressed, and since the trigger can be depressed only if the cylinder 36 is rotated, the gun is rendered inoperative. This is accomplished without damage to the gun, since the projectile is preferably, as aforementioned, of relatively soft material.

To render the gun operative, or in other words to unlock the gun by removal of the safety cartridge, a rod or other suitable device, such as a pencil, may be inserted into the barrel from the muzzle, to force the projectile 18 rearwardly against the resistance to compression of spring 31 and out of interlocking coaction with the barrel, back to the position illustrated in FIG. 5. In this connection, the aforementioned cam-like surfaces 33 on shoulder 32a engaging arcuate surface 27 on detent 24, spring or force the end portions 30 apart to permit passage of member 24 past the shoulder 32a and once again place the cartridge in the condition shown in FIG. 1. Case 10 is preferably of sufficient length so that even when the projectile 18 is in the extended locking condition of FIG. 6, the inner end of nose portion 20 still is disposed in the case, so that the projectile is positively maintained in alignment with the case.

While the safety cartridge has been shown and described in connection with a revolver, it will be understood that it also may be used in automatic weapons or in any other breech loading gun. With such a safety cartridge, and for instance if it were used in a semi-automatic weapon such as the government model 45, the gun would be jammed or locked upon forward movement of the projectile 18 pass the shoulder portion 32a on the end section 30 even if an unauthorized person tried to work the slide manually so as to feed a live round into the firing chamber. The projectile portion 18 once it is past the shoulder 32a on the end portion 30 is free of the case for all practical purposes, and upon the ejection of the case in an automatic weapon, the projectile will remain in the gun, probably together with the spring.

Now when the weapon is to be used by someone who is familiar with the operation of the safety cartridge, such individual can quickly index the cylinder past the safety cartridge round or rounds by either pulling back on the hammer 40 slightly and turning the cylinder to a position so as to feed a live round into alignment with the firing pin and the bore of the barrel of the revolver, or the user could ride the hammer with his thumb as he pulls the trigger the first time so that the hammer is let down easily enough that it does not activate the safety cartridge. In other words, the firing pin does not hit detent member 24 sufficiently hard so as to move the latter past the shoulder 32a. In an automatic, the authorized user would manually work the slide so as to eject the dummy cartridge including the projectile so as to feed a live round into the chamber prior to firing. Thus, the gun can be quickly placed in condition for use or for firing, by one who is familiar with the operation of the safety cartridge.

From the foregoing description and accompanying drawings it will be seen that the invention provides a novel arrangement of safety cartridge for use with a weapon, so that the weapon may be kept loaded with live ammunition and convenient to the user, without the danger of injury to some innocent person by the use of the weapon by an unauthorized individual, and wherein the safety cartridge can be readily indexed past its safety position by one familiar with its operation and use, but which safety cartridge will lock or jam the weapon when the trigger is pulled by an unauthorized individual.

The terms and expressions which have been used are used as terms of description and not of limitation, and

there is no intention in the use of such terms and expressions of excluding any equivalents of any of the features shown or described, or portions thereof, and it is recognized that various modifications are possible within the scope of the invention claimed.

I claim:

1. A safety device for a gun having a firing pin, a barrel and a firing chamber for receiving ammunition into alignment with the bore of the barrel, said safety device comprising a dummy cartridge, said dummy cartridge comprising a case and a projectile portion mounted for generally axial movement relative to the case, means coacting between said projectile portion and said case to releasably hold the projectile portion in the case, and means operative to render the first-mentioned means inoperative upon predetermined impact of the first mentioned means by the firing pin.

2. A safety device for a gun having a barrel, a firing pin and a firing chamber for receiving ammunition into alignment with the bore of the barrel, said safety device comprising a dummy cartridge, said dummy cartridge comprising a case, a projectile portion mounted for axial movement within said case, means disposed between said projectile portion and said case for urging said projectile portion outwardly of said case, means coacting between said projectile portion and said case to releasably hold the projectile portion in said case, and means operative to render the second mentioned means inoperative upon predetermined impact of said second mentioned means by the firing pin.

3. A safety device for a gun having a firing pin, a barrel and means for carrying a plurality of rounds of ammunition sequentially into alignment with the bore of the barrel, said safety device including a dummy cartridge, said cartridge comprising a case, a forwardly oriented projectile mounted for axial movement in said case, resilient means for resisting movement of said projectile in a direction inwardly of the case, means releasably holding said projectile from movement in a direction outwardly of said case, the last mentioned means being adapted for striking engagement by the firing pin, and means operative to render said last mentioned means inoperative upon said striking engagement to cause outward movement of the projectile with respect to the case.

4. A safety device in accordance with claim 3, wherein said case comprises a rear end portion having an axial opening extending therethrough, said projectile having a portion extending into said opening, and said last mentioned means including a shoulder on said end portion in said opening coacting with a detent on said projectile portion.

5. A safety device in accordance with claim 3, wherein said projectile is formed of a plastic material.

6. A safety device in accordance with claim 3, wherein said projectile comprises a nose portion projecting outwardly of the forward end of the case and a reduced size shank portion projecting toward the other end of the case, said last mentioned means including a detent mounted on the rearward end of said shank portion.

7. A safety device in accordance with claim 3, wherein said case comprises a rear section having an axially disposed opening extending therethrough, said projectile including a portion extending through said opening, and said last mentioned means including a shoulder on said rear section in said opening engageable with a shoulder on said projectile portion for releasably holding the projectile in place in the case, said means to render said last mentioned means inoperative including a slit in said case extending in a generally axial direction commencing at the rearward end of said case to increase the resilience of the case and permit release of said shoulder on the projectile portion from interlocking coaction with the shoulder on the case upon impacting engagement of the projectile portion by the firing pin.

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8. A safety device in accordance with claim 3, wherein said last mentioned means includes a detent on the rearward end of said projectile adapted for engagement with the firing pin, and said detent having a generally planar rear surface extending substantially flush with the rear end surface of the case, said detent being detachably connected to the projectile and being formed of a harder material than said projectile.

9. In combination, a gun having a firing pin, a barrel and movable means including a firing chamber for carrying a plurality of rounds of ammunition sequentially into alignment with the bore of the barrel, and a safety locking device including a dummy cartridge disposed in said moveable means for use in preventing movement of said moveable means upon actuation of said cartridge, said safety locking device comprising a casing, a projectile mounted for axial movement in said casing, means for resisting movement of said projectile in direction inwardly of the casing, means for releasably holding said projectile from movement in a direction outwardly of the casing, the last mentioned means normally preventing the projectile from extending beyond the firing chamber, and means operative to render said last mentioned means inoperative upon predetermined impact of said last mentioned means by the firing pin, said projectile being adapted upon impact of said last mentioned means by said firing pin to extend inwardly into the bore of the barrel of the gun and prevent further movement of the first mentioned means.

10. In combination, a gun having a barrel with rifling,

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a firing pin, a trigger, and a rotatable cylinder provided with chambers to carry rounds of ammunition into alignment with the bore of said barrel, and a safety device including a dummy cartridge disposed in one of the chambers of said cylinder, said dummy cartridge comprising a casing, a forwardly disposed projectile disposed for axial movement in said casing and having a portion extending through the rearward end thereof, means for resisting movement of the projectile inwardly of the casing, means on said projectile portion coacting with means on said casing to releasably hold the projectile in said casing, and a slit in said casing extending generally lengthwise thereof and being operative to render the holding means coacting between said projectile portion and said casing inoperative upon impacting of said projectile portion by the firing pin of the gun whereby said projectile will move outwardly with respect to the casing and into engagement with the rifling of said barrel, said cylinder being oriented so that said cartridge is next to move into alignment with the barrel's bore upon pulling of the gun's trigger.

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