

## UNITED STATES PATENT OFFICE

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## DISABLING GAS FIRING WEAPON

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This invention relates to improvements in safety devices for that class of weapons which fire irritating and disabling gases, for example, gases of the "tear" gas type, and more particularly to portable gas fired weapons which are carried by individuals, such as gas guns, gas pistols, gas pistol fountain pens, policemen's "billys", etc.

An object of the invention is to provide a safety device which will prevent the weapon from being discharged, should it be accidentally actuated.

A further object is to provide a gas fired weapon with a safety device which can be operated by the hand which discharges the weapon.

A further object is to provide a gas fired weapon which may be safely carried in the pocket.

Other objects of the invention will be apparent to those skilled in the art upon reading the specification.

In the accompanying drawings, Fig. 1 illustrates an enlarged view of one type of pocket gas pistol or gas gun with a preferred type of movable safety device in the "safe" position, and the firing pin knob in the retracted position recess;

Fig. 2 is the same as Fig. 1, with the firing pin knob against the safety device;

Fig. 3 is the same as Fig. 1, after the pistol or gun has been fired with the safety device turned back, and the firing pin knob in a discharge position;

Fig. 4 is a longitudinal sectional view on the line 4—4, of Fig. 2, showing a cartridge in the barrel, and the firing pin spaced therefrom and held back by the safety device;

Fig. 5 is a view partly in section on the line 5—5 of Fig. 3, showing the cartridge in the barrel with the firing pin against the end of the cartridge;

Fig. 6 is a view of a section on the line 6—6 of Fig. 1, showing the firing pin knob in the recess;

Fig. 7 is a view of a section on the line 7—7 of Fig. 2, with the firing pin against the safety device;

Fig. 8 is a view of a section on the line 8—8 of Fig. 3, with the safety device turned back, and the firing pin knob in the discharged position, and also showing a section of the spring which actuates the firing pin;

Figs. 9 and 10 are side and edge views of one type of safety device shown in Figs. 1 to 8 inclusive;

Fig. 11 is a broken view of the right hand portion of Fig. 1, with the firing pin knob pressed back in the small detent in the recess in which it is apt to be forced should the firing pin knob get caught in the clothing upon inserting the gun or pistol in one's pocket, and also showing a portion of a groove in which the safety ring is retained;

Fig. 12 is a plan view of a gas gun or pistol with another type of movable safety device, with the firing pin retracted.

Fig. 13 is a view partly in section of the gun or pistol shown in Fig. 12, showing a section of the safety device and the spring pressed steel ball which engages the safety device;

Fig. 14 is a sectional view on the line 14—14, of Fig. 13, showing a movable safety bar, which latter is provided with notches as described hereafter, and with a safety bar in the "safe" position and engaged by the spring pressed steel ball;

Fig. 15 is a sectional view on the line 14—14, of Fig. 13, with a safety bar in a discharge position, and engaged by the spring pressed steel ball, and with the large notch on the cartridge side of the safety bar in position to permit an unobstructed forward movement of the firing pin;

Fig. 16 is a broken view of still another type of safety device, which latter engages the knob of the firing pin, and showing the safety device withdrawn, in dotted lines;

Fig. 17 is a plan view of a gas pistol fountain pen, on which is placed a movable ring safety device as illustrated in Figs. 1 to 10 inclusive; and

5 Fig. 18 is a plan view of a gas firing policeman's "billy" with a movable safety ring thereon, such as illustrated in Figs. 1 to 10 inclusive.

10 In Fig. 1, a portable gas gun or gas pistol has a detachable barrel 1, and a handle portion 2. The handle 2 is provided with a slot 3 in which the firing pin moves, and an offset 4 in which the firing pin is normally retained; the knob 7 is shown in the off-set recess 4, and is secured to the firing pin 8. A movable safety device, in this modification shown as a knurled ring 9 surrounds the handle 2, and is shown as placed in a groove 10, which latter does not completely encircle the handle 2, as shown in dotted lines in Figs. 6, and 7. The ring 9 is preferably made of hard tempered steel and fits snugly in the groove 10 but which may be easily moved just before firing by the thumb or finger of the hand that holds the pistol. The ring 9 is normally moved to the safety position shown in Fig. 1, and when in this position the gun or pistol may be safely carried in the pocket without any risk of its being accidentally discharged. Upon inserting the gun or pistol in one's pocket, if the knob 7 should get caught upon the clothing it would probably first be pressed back along a straight line, and would be retained in the detent 5 as shown in Fig. 11, from which latter position it would later be released and spring back into the position shown in Fig. 1; if the knob 7 should be dislodged from its position shown in Fig. 1, and be moved into the long channel 6 of the slot 3, the knob would strike against the safety ring 9 as shown in Figs. 2, 4, and 7.

20 The handle portion 2 of the gun, or pistol, is provided with a groove 10, shown in Fig. 11, into which is sprung the hard steel incomplete ring 9, which in this modification constitutes the safety device, the ring 9 fits sufficiently tight within the space 10 so as not to be too easily moved, but which may be moved by the thumb or finger of the hand which grasps the gun or pistol; normally, the safety ring 9 is in the position shown in Figs. 1 and 2, the ends of the ring 9 being separated by a space 11 greater than the diameter of the stem 13 of the firing pin knob 7 which permits the spring tempered ring 9 to be sprung into the grooves, and so that the stem 13 of said knob will have sufficient room to pass through said space 11 freely when it is desired to fire the gun or pistol, see Fig. 9; upon turning the safety ring 9 by the thumb or finger into the position shown in Figs. 3, and 8 the gun or pistol may be readily fired, and the firing pin 8 propelled 65 by the spring 14 will strike the primer of the

cartridge 12 as shown in Fig. 5, thereby firing said cartridge.

In the modification shown in Figs. 12 to 15 inclusive, a safety bar 20 is provided with small detents 22, 23, on one side, in either of which is adapted to rest a small steel ball 21 pressed by a spring 24 and retained in position by the screw 25; the other side of the safety bar 20 is provided with a large notch 26 shown in Fig. 14, the notch 26 being sufficiently large and positioned so that when the safety bar 20 is moved to the position shown in Fig. 15 the firing pin 8 will have an unobstructed movement towards the cartridge when the gun or pistol is fired as shown in Fig. 15; the safety bar 20 may be readily moved to either position shown in Figs. 14 and 15 by the thumb or finger of the hand which holds the gun or pistol.

In the modification shown in Fig. 16, a safety pin 30 is constructed to move through the metal wall of the handle, the inner end of the safety pin 30 locking the knob stem of the firing pin in the retracted recess; the safety pin 30 may be readily moved by the thumb or finger of the hand which holds the pistol, and upon withdrawing said safety pin to the position shown at 33, the knob 7 may be actuated to discharge the gun or pistol.

In Fig. 17, a gas fired fountain pen pistol is provided with a safety ring 9 of the type illustrated in Figs. 1 to 10 inclusive, and is operated by the thumb or finger in the same manner as described above. The safety devices shown in Figs. 12 to 16 may also be applied to gas fired fountain pen weapons.

In Fig. 18, is illustrated one type of a policeman's billy provided with a safety ring 9 of the type illustrated in Figs. 1 to 10 inclusive, and is operated in the same manner as described under said figures. The safety devices shown in Figs. 12 to 16 may also be applied to gas fired policeman's billy weapons.

I claim:—

1. A disabling gas firing weapon comprising a handle portion, a barrel portion, a firing pin in said handle, a knob on said firing pin, a slot in said handle, said knob passing through said slot, an off-set safety recess to said slot, two notches in said recess, a first notch adapted to normally receive said knob when said knob is in the safety retracted position, a second notch constituting a detent opposite said first notch and adapted to receive and temporarily retain said knob when said knob is accidentally displaced from said first notch.

2. A disabling gas firing weapon, comprising a spring actuated firing pin, a slot in said weapon, a firing pin handle passing through said slot, a split ring on said weapon, said ring constituting a safety device, means to limit the movement of said ring, said ring adapted to be moved across said slot to pre-

vent said firing pin from discharging said  
weapon, and also to be moved so that the split  
in said ring will register with said slot and  
permit said weapon to be fired, an off-set  
5 safety recess to said slot, two notches in said  
recess, a first notch adapted to normally re-  
ceive said knob when said knob is in the  
safety retracted position, a second notch op-  
posite said first notch and adapted to receive  
10 and temporarily retain said knob when said  
knob is accidentally displaced from said first  
notch.

In testimony whereof I hereby affix my  
signature.

ADRIAN S. AILES.

Feb. 21, 1933.

A. S. AILES

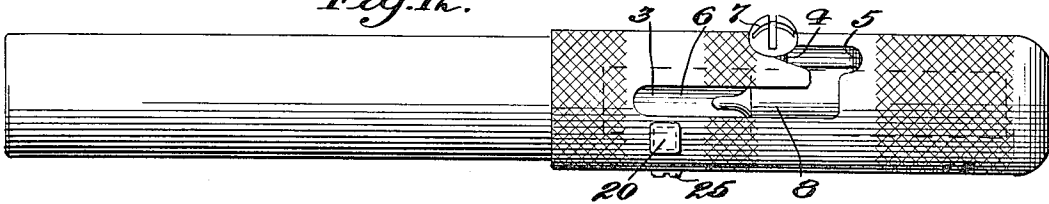
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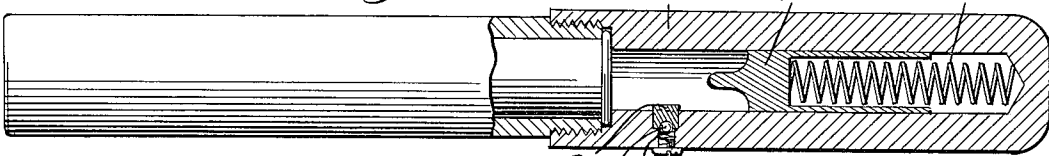
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2 Sheets-Sheet 2

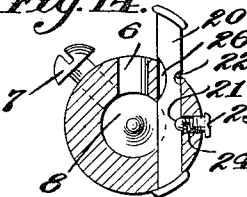
*Fig. 12.*



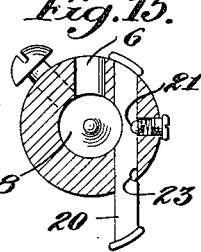
*Fig. 13.*



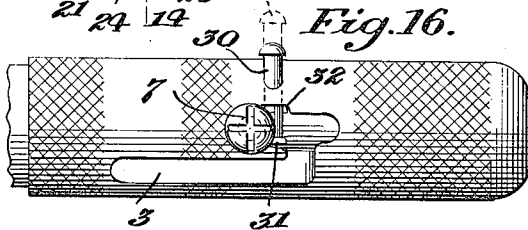
*Fig. 14.*



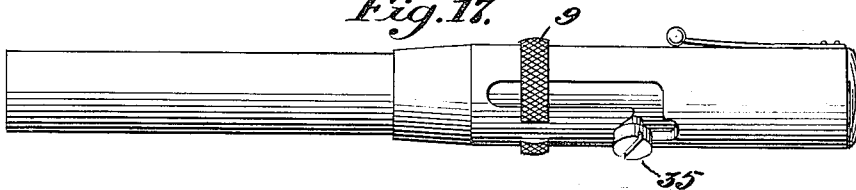
*Fig. 15.*



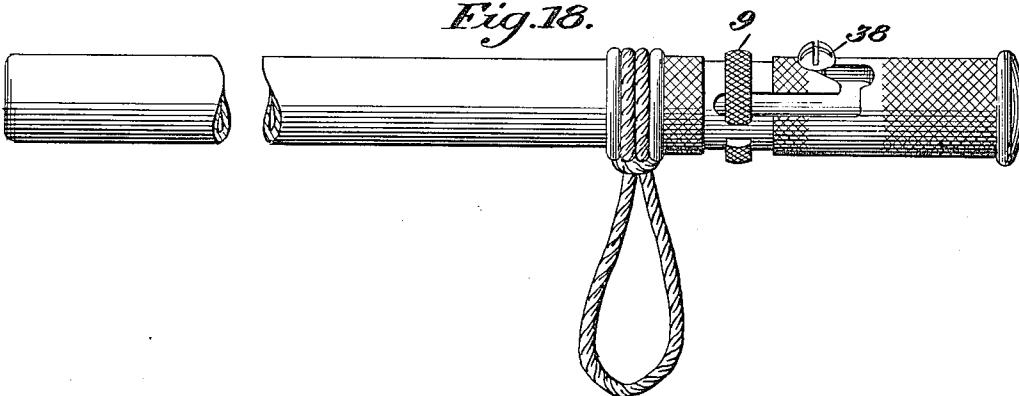
*Fig. 16.*



*Fig. 17.*



*Fig. 18.*



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Fig. 1.

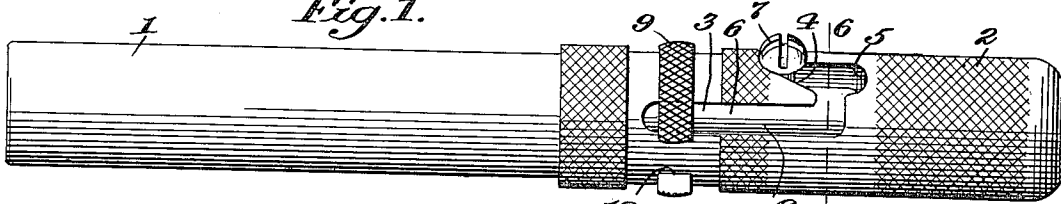


Fig. 2.

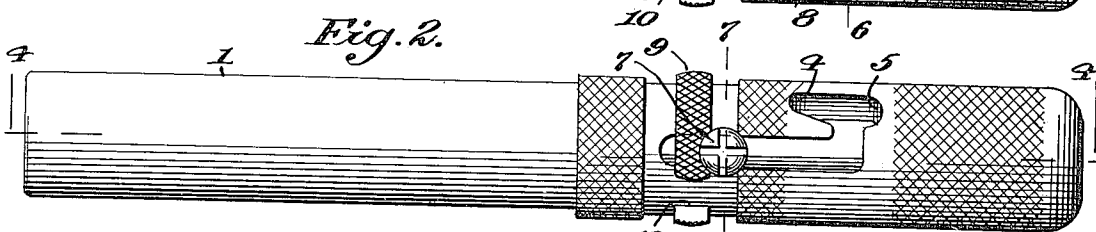


Fig. 3.

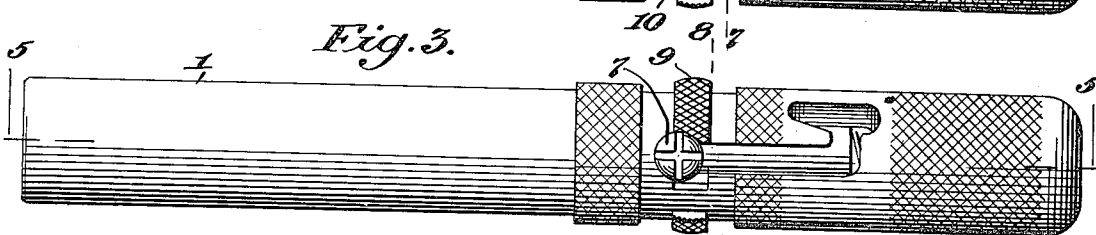


Fig. 4.

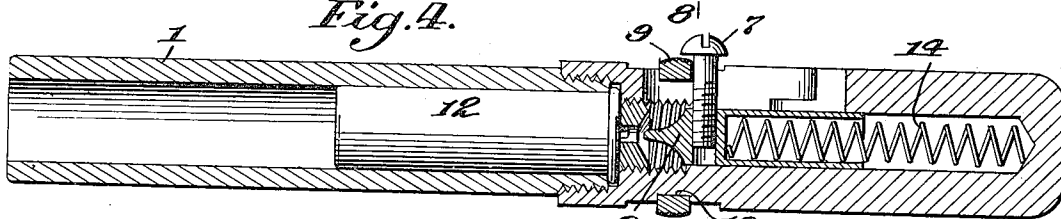


Fig. 5.

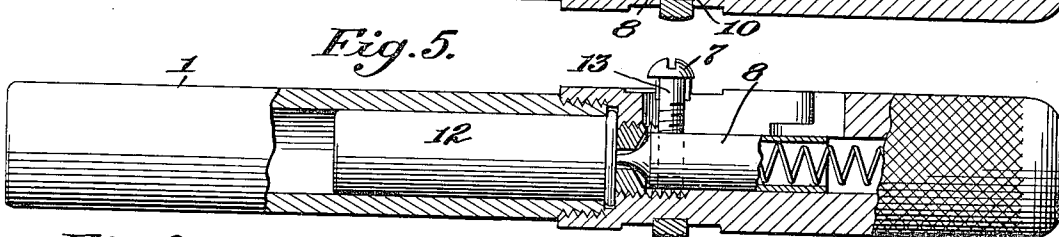


Fig. 6.

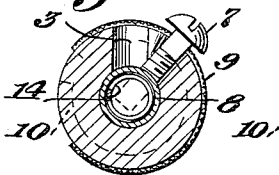


Fig. 7.

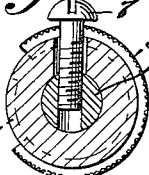


Fig. 8.

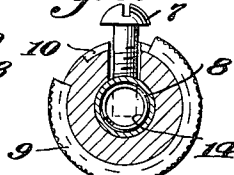


Fig. 9.

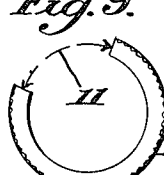


Fig. 10.

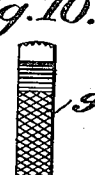
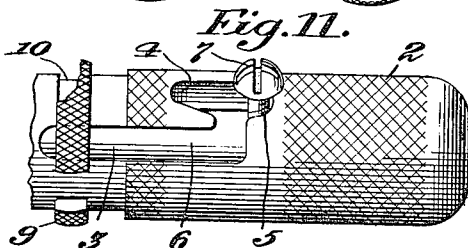


Fig. 11.



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