Nov. 15, 1938. H. I. STEVENSON 2,136,647

TEAR GAS DEVICE

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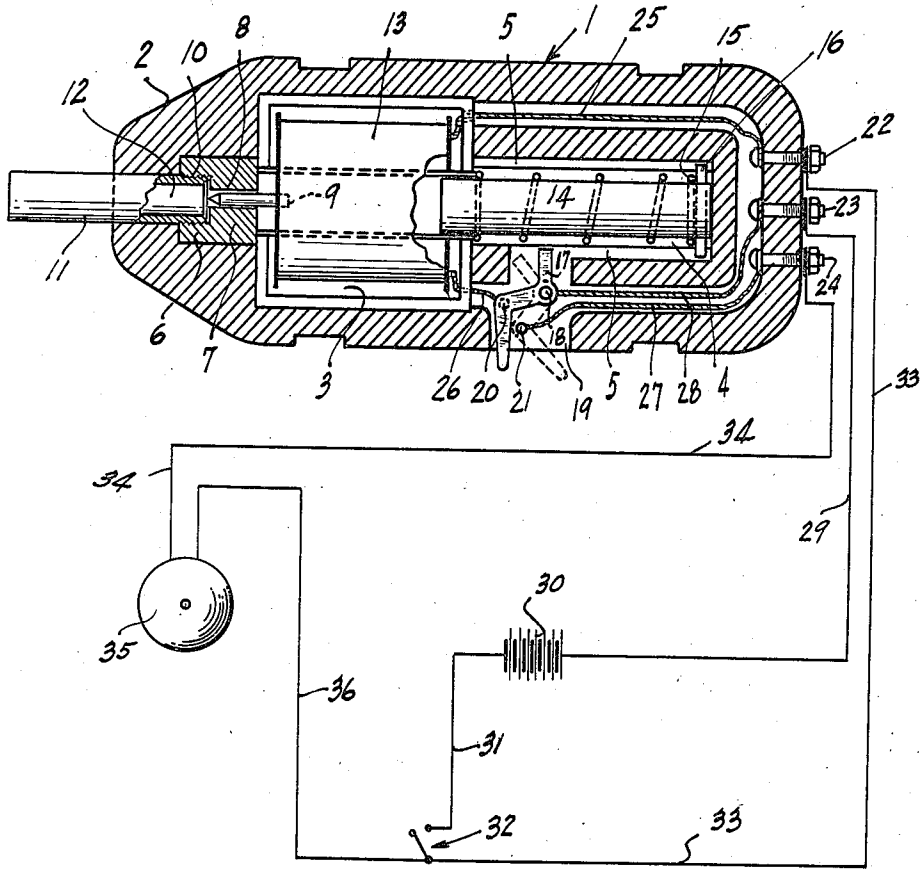


Fig. 1

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TEAR GAS DEVICE

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2 Claims. (Cl. 42—1)

This invention relates to improvements in tear gas devices, and more particularly to an automatic tear gas firing or discharging device adapted to be placed at various locations within a building or dwelling, and to be automatically fired by an actuating means to be hereinafter more fully described, and to be also manually actuated from a remote control.

Another object of the invention is the provision of an alarm to be sounded or actuated simultaneously with the discharge of the tear gas. The alarm may be so located with respect to a dwelling that neighbors as well as the occupants may be warned of the presence of intruders, and so that anyone within hearing distance of the alarm may call the police radio cars.

Still another object of the invention is the provision of a device of this character which is of simple, efficient, durable and inexpensive construction and wherein the several parts are readily accessible.

A still further object of the invention is the provision of a means or firing chamber for the tear gas cartridge which may be quickly and conveniently removed from the main body of the device for refilling, and the like.

These and other objects will appear as my invention is more fully hereinafter described in the following specification, illustrated in the accompanying drawing and finally pointed out in the appended claims.

In the drawing

Figure 1 is a sectional side elevation of my device showing the various elements thereof in working relation with respect to each other, and also a wiring diagram embracing an alarm, a switch, and a source of electrical energy.

Referring now more particularly to the drawing:

Reference numeral 1 indicates generally the main body of my device which is of substantially cylindrical form and tapered at one of its ends as at 2 toward the discharge end.

The interior of the body is formed with a main cavity 3 having a reduced portion 4 extending outwardly therefrom and lengthwise of the body. This extended portion is provided with key-ways 5. The opposite end of the cavity 3 opens into a smaller cavity 6 within which I mount a guide member 7, apertured as at 8 to form a guide for a firing pin 9. One end of the guide member 7 is internally threaded as at 10 to receive a firing cylinder or barrel 11, within which I place a tear gas cartridge 12. The firing end of the cartridge, it will be seen, is in the path of movement of the firing pin 9.

Within the cavity 3 I place a solenoid 13 having a movable core or armature 14 associated therewith. The armature is normally disposed within the reduced portion 4 of the cavity 3 under the influence of a spring 15 interposed between the pin 16 at one end of the armature and the end of the solenoid 13. Both ends of the pin 16 work back and forth within the guide-ways 5. In the path of movement of the lower end of the pin 16, I provide a switch 17 pivotally mounted as at 18 within a recess 19 in the main body 1. The switch is shaped as shown, and is adapted to alternatively come into contact with a pair of contacts 20 and 21. This switch may be disposed at some distance from the location of the device itself, and should remain open, as a safety measure, until setting the device for operation.

At one end of the main body 1, I provide a plurality of electric terminals 22, 23 and 24. From the terminal 22, a wire 25 connects, at its opposite end, with the solenoid 13. Another wire 26 extends from the opposite side of the solenoid to the contact 20. Another wire 27 extends from the contact 21 to the terminal 24, and an intermediate wire 28 extends from the terminal 23 to the switch 18.

From the terminal 23, I extend a wire 29 to any convenient source of electrical energy, such, for instance, as a battery 30. From the opposite side of the battery, I extend a wire 31 through a switch 32 and from the switch wire 33 connects with the terminal 22.

From the terminal 24, I extend a wire 34 to any desired type of alarm, such, for instance, as a bell 35. From the alarm, I connect with the switch 32 by a wire 36.

The operation of the device is as follows; the armature 14, as shown, is in an extended position with respect to the solenoid, the switch 17 interconnects wires 26 and wire 28. The wire 28, of course, connects with terminal 23. The wire 25 from the opposite side of the solenoid connects with the terminal 22 into the circuit represented by wires 29, 31 and 33 which embraces the battery 30 and switch 32. Upon closing the switch 32, the solenoid becomes energized and instantly throws the armature 14 against the firing pin 9 with a resultant firing of the cartridge 12. Upon movement of the armature into the solenoid, the pin 16, at the outer end of the armature, will strike one end of the switch 17 causing it to rock around its pivot point 18 and

will switch the circuit from contact **20** over to contact **21**, which closes the alarm circuit as follows; through wires **27** and **28**, wires **34** and **29**, through the battery wire **31**, the now closed switch **32**, wire **36**, through the alarm **35** thence back into wire **34**.

It is to be understood that the switch **32** may be of any approved type to function when placed in the path of an opening or closing door, window, or any other closure which is to be guarded against intruders. Moreover, the alarm **35** may be placed anywhere on the interior of a building or on the exterior thereof to sound an alarm wherever intended.

The source of electrical energy, while shown as a battery, may be in the form of a transformer, or any other source, but I prefer to use batteries of the dry cell type which may be conveniently incorporated with the invention so that it all may be handled as a unit, and also so that the batteries may be concealed to prevent their circuit being tampered with, as it is well known in many instances, an unauthorized intruder might cut or otherwise disconnect the regular electrical circuit within a building in anticipation of rendering alarms, and the like, inoperative.

While I have described a particular form of embodiment of my invention, I am aware that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention. What I claim as new and desire to protect by Letters Patent is:—

1. A burglar alarm comprising a body member, a single tear-gas cartridge removably secured in one end of the body member, electrically actuated means for firing the cartridge, a double-throw switch disposed within the body member and within an electrical circuit embracing said cartridge firing means, an alarm circuit connected with said switch, an alarm embraced within said alarm circuit and adapted to be actuated by said double-throw switch simultaneously with the firing of the cartridge.

2. A burglar alarm comprising a body member, a single cartridge removably secured in one end of the body member, electrically actuated means for firing the cartridge, a double-throw switch disposed within the body member and within an electrical circuit embracing said cartridge firing means, an alarm circuit connected with said switch, an alarm embraced within said alarm circuit and adapted to be actuated by said double-throw switch simultaneously with the firing of the cartridge, said double-throw switch adapted to break the circuit embracing the electrically actuated cartridge firing means and to maintain the alarm circuit closed until manually broken.

HENRY I. STEVENSON.

CERTIFICATE OF CORRECTION.

Patent No. 2,137,647. November 22, 1938.

EDWARD B. GRAVES.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, first column, line 3, claim 3, for "coating" read coacting; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 27th day of December, A. D. 1938.

(Seal)

Henry Van Arsdale
Acting Commissioner of Patents.