

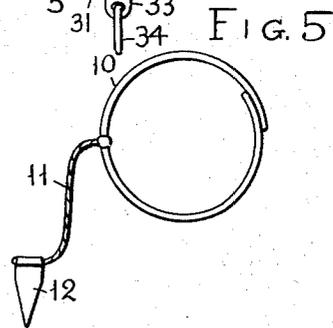
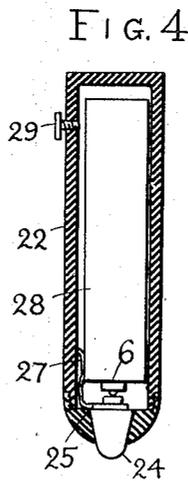
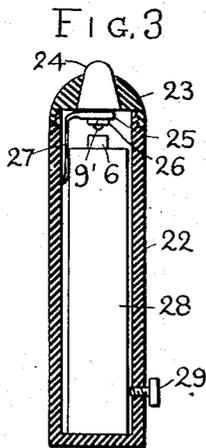
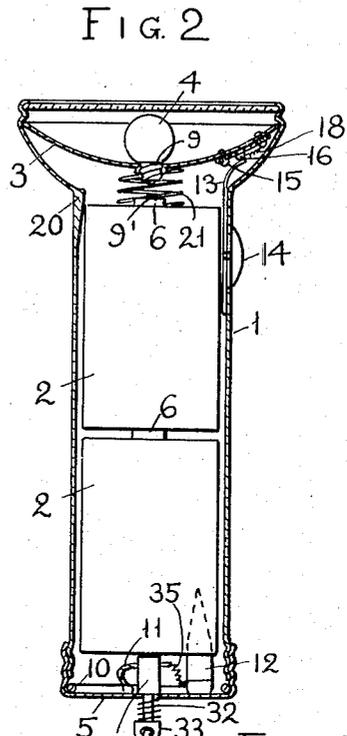
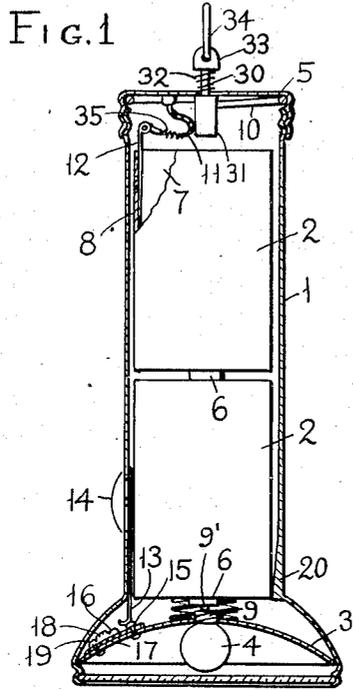
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2,363,825

FLASHLIGHT ATTACHMENT

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FLASHLIGHT ATTACHMENT

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2 Claims. (Cl. 240—10.6)

My invention relates to black-out flashlight attachments and has particular reference to flashlights or attachments to ordinary flashlights for rendering the flashlights suitable for use during black-outs.

My invention has for its object to provide a flashlight or flashlight attachment whereby the lamp bulb is automatically disconnected from the battery when the flashlight is turned upward, thereby preventing the flashlight from being placed in a position visible to airplanes overhead.

In my United States patent application Serial Number 423,703, filed December 20, 1941, I disclosed a flashlight in which the circuit is automatically disconnected by the action of a gravity-operated member, such as a pendulum or a captive conducting ball, when the flashlight is turned upward. In other types of flashlights a more expensive and complicated construction is employed with mercury switches.

I have found, however, that a very effective automatic switch can be provided by using batteries or dry cells in the casing of the flashlight as gravity-operated members for closing or opening the lamp circuit, depending on the position of the flashlight. In certain forms of my flashlight this object can be accomplished without any structural changes, by merely adding certain parts to a standard or ordinary flashlight.

Another object of my invention is to provide means to dim the lights when so desired; also to render the gravity-operated contacts inoperative by locking the batteries and preventing their movement.

My invention is more fully described in the accompanying specification and drawing, in which:

Fig. 1 is a sectional elevational view of my flashlights shown in an operative position;

Fig. 2 is a similar view of my flashlight in an inoperative position;

Fig. 3 is a similar view of a modified flashlight in an inoperative position;

Fig. 4 is a similar view of the modified flashlight in an operative position; and

Fig. 5 is a detail view of a removable contact member.

My flashlight consists of a casing 1 adapted to hold freely movable batteries 2 and provided with a metal reflector 3 at the front end, supporting a lamp bulb 4. A cap 5 is threaded on the rear end. These parts may be of an ordinary or standard type, the batteries having metal positive terminals 6 and zinc casings 7, forming nega-

tive terminals and enclosed in paper insulation tubes 8.

The cap 5, instead of an ordinary spring for pressing the batteries against the base 9 of the lamp bulb 4, is provided with a removable resilient metal ring 10 to which is soldered a flexible metal cable 11, attached at the other end to a metal wedge or clip 12. The latter is inserted between the paper tube 8 and the zinc battery casing 7, thereby establishing electric connection between the casing 1 through the cap 5 and the shell or negative terminal of the rear battery.

It is evident that with my arrangement the circuit for the lamp bulb is closed only when the flashlight is turned more or less downward, as shown in Fig. 1, because only then will the batteries press against the lamp base 9, establishing the contact between the terminal 6 of the battery and inner terminal 9' of the lamp, thereby closing the circuit for the latter. If the lamp is turned upward, however, as shown in Fig. 2, the weight of the batteries will cause them to slide downward, away from the base 9, thereby disconnecting the circuit.

A manually operable switch may be provided for disconnecting the circuit when it is not desired to use the flashlight and particularly for preventing its operation when the flashlight is carried in a pocket. The switch comprises a resilient contact bar 13 which closes the circuit when moved by a handle 14 by engaging a contact button 15 connected with the reflector 3 or directly with the rear surface of the reflector. The circuit is disconnected by moving the bar 13 away from the reflector. The bar 13 may be moved still further against the reflector, causing the bar to be deflected sidewise, as shown in Fig. 2, in which position the bar engages a contact button 16, mounted on an insulation plate 17 and supporting one end of a resistance element 18. The other end of the resistance element 18 is attached to a button 19, connected with the reflector. In this position of the switch the light is dimmed, the current passing through the resistance element 18.

Tapering wedges or blocks 20 may be provided in the casing 1 at its front end for causing the front cell to be deflected sidewise when the flashlight is held in a horizontal position, thereby causing the cells to slide away from the lamp base 9 and disconnecting the circuit. The lamp, therefore, begins to burn only when the flashlight is slightly tilted downward. A spring 21 may be provided for moving the batteries away from the

lamp when the casing is placed in a horizontal position, the spring being very light, so that it does not prevent the batteries from moving against the lamp when the casing is inclined downward.

A modified flashlight is shown in Figs. 3 and 4. The casing 22 is made of a plastic or insulating material and has a threaded cap 23 with a tapering hole for a lamp bulb 24, the latter being also tapered to fit the hole in the cap. A metal ring or collar 25 is fitted over the base 26 of the lamp bulb and has a resilient extension 27 engaging the side of a dry cell or battery 28. The latter has no insulation on the outside, so that the extension 27 establishes the electric connection between the shell of the battery or its negative terminal and the outer terminal or base 26 of the lamp bulb. The pressure of the extension 27 is relatively light, so that the cell 28 can freely slide in the casing, closing the circuit when the flashlight is turned downward as shown in Fig. 4 and opening the circuit when the flashlight is turned upward, as shown in Fig. 3, in the latter case the positive terminal 6 of the battery moving away from the inner terminal 9' of the lamp bulb.

A thumb screw 29 is provided in the wall of the casing 22 for locking the battery in an inoperative position with the circuit disconnected, as, for instance, for carrying the flashlight in a pocket.

A similar set screw can be provided with the casing 1, Fig. 1.

An added attachment may be provided for rendering the light operative when the flashlight is directed upward. This attachment is shown in Figs. 1 and 2 and consists of a plunger 30 with an enlarged portion 31. A spring 32 is placed on the plunger between the cap 5 and a head 33, urging the plunger outward. A ring 34 is pro-

vided for supporting the flashlight on a belt or chain. By pressing the plunger inward against the spring, the enlargement 31 engages the cells, pushing them forward and closing the circuit in any position of the flashlight. Such an attachment is particularly useful for air-raid wardens.

A portion of the flexible connector 11 may be made as a resistance element 35, so that the light is always dimmed, except when the plunger 30 is moved forward.

It is understood that my flashlight may be further modified without departing from the spirit of the invention, as set forth in the appended claims.

I claim as my invention:

1. An attachment for a battery operated flashlight having a metal casing for the battery, said attachment comprising an outwardly expanding resilient ring of a diameter corresponding to the inside diameter of the bottom portion of the metal casing; a flexible conductor extending from the ring to the bottom end of the battery in the casing; and a sharp-pointed wedge-shaped conducting member at the end of the conductor arranged to be inserted between the metal shell of the battery and its outer insulating tube.

2. An attachment for a battery operated flashlight having a metal casing, including a threaded bottom cap for the battery, said attachment comprising an outwardly expanding resilient ring of a diameter corresponding to the inside diameter of the threaded bottom cap of the metal casing; a flexible conductor extending from the ring; and a sharp-pointed wedge-shaped conducting member at the end of the conductor arranged to be inserted into the bottom end of the battery between the metal shell of the battery and its outer insulating tube.

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