

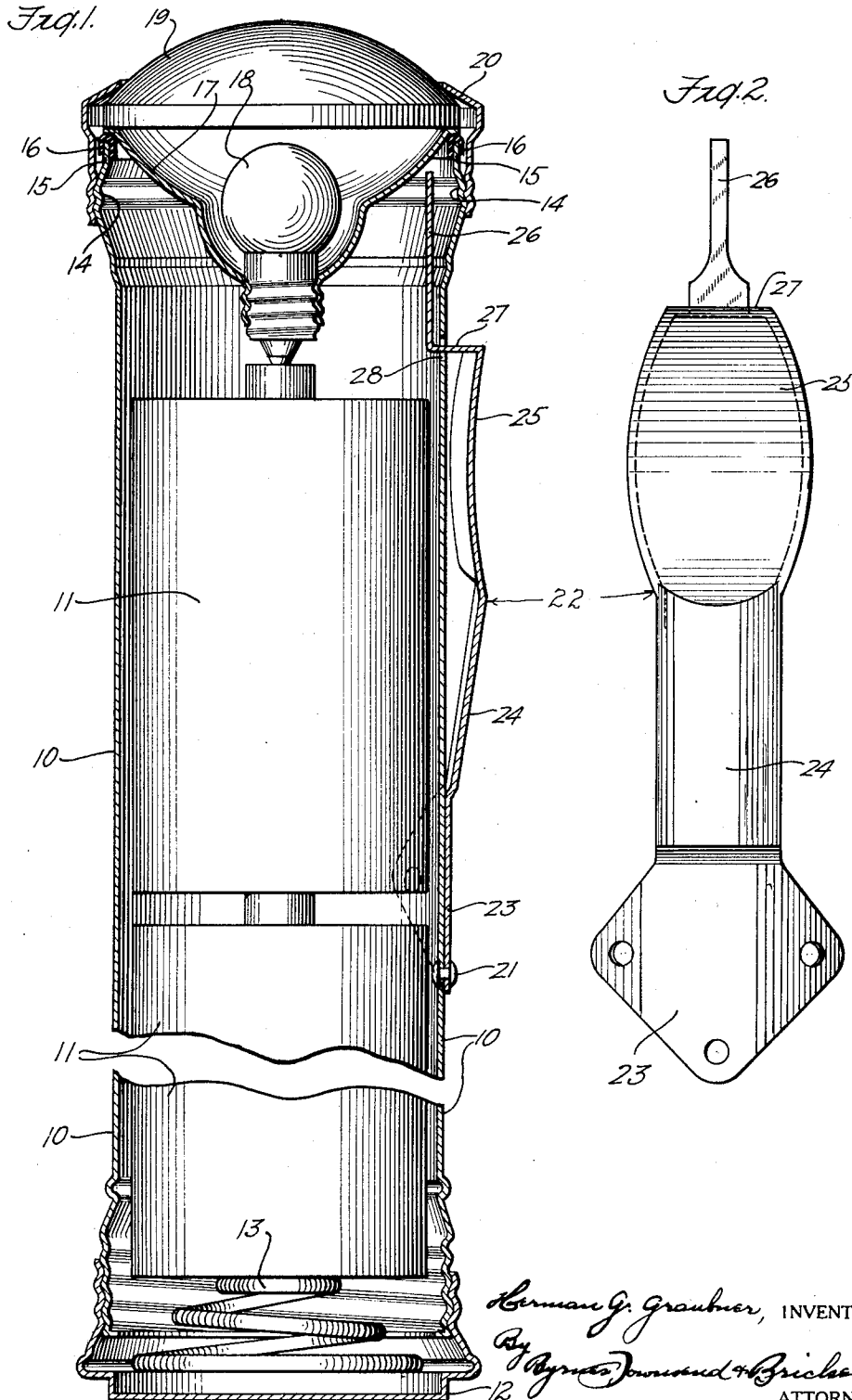
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FLASH LIGHT SWITCH

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FLASH LIGHT SWITCH

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3 Claims. (Cl. 200—60)

This invention pertains to flashlights and more specifically to an improved and simplified electric switch for use therewith.

Many of the simpler forms of tubular flashlights are provided with a metal casing having a lamp bulb carried by an insulated reflector that is clamped to the front end of the casing by a lens and lens ring. A tubular flashlight battery is usually held in the casing by a detachable bottom cap so that one terminal of the battery is in contact with the central terminal of the lamp bulb and the other terminal of the battery is connected to the casing. Therefore, all that is necessary to complete the path for the electric current through the battery and lamp bulb is to bridge the electrical gap between the reflector and casing. This is usually accomplished by means of a rather complicated switch that is riveted to the outside of the casing together with an insulated conductor lying within the casing with one end in contact with the reflector and the other connected to the switch by an insulated rivet that passes through an opening in the wall of the casing. This switch is usually a rather complicated and expensive piece of apparatus for performing such a simple operation, and the switch operating button is usually so small and its restoring spring so stiff that its continued or frequent operation soon becomes very tiresome.

Therefore, one object of this invention is to provide a switch of simpler design, cheaper and stronger construction, and easier action.

These and other aims, objects and novel features, are attained by the mechanism described in the following specification and shown in the accompanying drawing, in which:

Fig. 1 is a longitudinal section of a flashlight embodying my invention, and;

Fig. 2 is an enlarged plan of the switch member of Fig. 1.

The mechanism shown in the accompanying drawing and embodying this invention may comprise a tubular metal casing 10 containing a battery 11 composed of a plurality of cylindrical flashlight cells. The rear end of the casing 10 may be closed by a removable bottom cap 12 that is threaded thereto and also carries a battery supporting spring 13 that makes electrical connection between the bottom of the battery 11 and the casing 10 through the metal bottom cap 12. A portion 14 of the casing 10 just back of the front end 15 thereof may be slightly enlarged and threaded in such a manner that the end 15 is left unchanged. Surrounding the end 15 of

the casing 10 is a U shaped ring 16 of insulating material such as paper or fiber which may be cemented to the end 15 of the casing 10 by any suitable adhesive such as sodium silicate so that it will not become dislodged when the flashlight is disassembled. Resting on the ring 16 is a reflector 17 having a central aperture in which a lamp bulb 18 is threaded so that its central electric terminal is in contact with the central electrode of the uppermost cell of the battery 11. Covering the open end of the reflector 17 is a transparent lens 19 that is held in place by a lens ring or bezel 20 that is threaded to the enlarged portion 14 of the casing 10.

Attached to the outside of the casing 10 by means of a plurality of rivets such as that shown at 21 is a switch member 22 that is formed of a single piece of flexible metal in such a manner that it comprises an anchor plate 23; a comparatively wide and stiff resilient portion 24; a concave thumb pad 25; and a comparatively narrow and limber offset contact portion 26 lying inside the casing 10 and joined to the upper end of the thumb pad 25 by a connecting portion 27 narrower than said resilient portion but wider than said contact portion that extends through a lateral aperture 28 in the wall of the casing 10 just back of the enlarged and threaded portion 14.

The anchor plate 23 is of fairly large size so that the switch member 22 is rigidly secured to the casing 10; the resilient portion 24 is stiff enough so that the switch is not liable to be closed accidentally; and still the thumb pad 25 is large enough so that the switch may be easily closed when desirable, and so that it may be frequently closed or held in closed position for a considerable length of time without discomfort or fatigue.

The switch is closed by depressing the thumb pad 25 and moving the contact portion 26 of the switch member 22 into contact with the reflector 17 thereby bridging the electrical gap between the reflector 17 and the casing 10. Another feature that helps to eliminate fatigue when the switch is held in closed position for a long time is the fact that the offset contact portion 26 is reduced in area so that it is comparatively limber and bends under the pressure usually exerted in holding the switch closed. This feature gives the thumb pad 25 a considerable range of movement while the switch is closed and this movement prevents fatigue to a large extent as the operator can move the thumb pad in and out while the switch is closed and by this movement prevents his thumb from becoming fatigued and numb, as it is a well known fact that a human muscle under

rigid tension becomes fatigued more quickly than a muscle in motion. Therefore without this motion his thumb might soon become so numb that he could not tell by feeling whether the switch

5 was closed or not. This feature together with the size and shape of the thumb pad makes the switch especially easy to operate where it is used almost constantly by persons such as theater ushers. There is no provision for locking this
10 switch in closed position and this protects the battery from becoming exhausted unnecessarily by the switch being left in closed position when the light is not needed.

When the switch 22 is in closed position the
15 path of the electric current through the flashlight is from the battery 11 through the lamp bulb 18, reflector 17, switch member 22, casing 10, bottom cap 12, and battery supporting spring 13, back to the battery 11.

20 As this switch is composed of only one strong metal part it is simple in construction; not liable to become damaged with use; is very easy to operate; and as all insulation is eliminated it is not liable to become short circuited and inoperative.
25 It is understood, of course, that it may be altered in form, changed as to location, and attached to the casing by means other than that shown without departing from the spirit of the invention or sacrificing any of the rights thereunder.

30 I claim:

1. An electric switch, for a flashlight having a metal casing with an aperture therein, comprising, a unitary metal switch member having an anchor plate attached to the outside of said casing, a concave thumb pad outside said casing and
35 substantially parallel thereto, a connecting portion extending through said aperture at substantially right angle to said casing, and a resilient

contact portion within said casing and substantially parallel thereto adapted for being moved by a movement of said thumb pad to complete the flashlight circuit.

2. A switch for a flashlight having a metal casing with an aperture therein, comprising a unitary switch member having an anchor plate portion secured to the outside of said casing, a comparatively stiff manually flexible portion borne by said anchor plate portion and extending substantially parallel to said casing and outside thereof, a comparatively limber resilient contact portion within said casing, and a portion extending through the aperture in the casing and connecting said manually flexible portion and said contact portion whereby said contact portion is so positioned that it is moved to complete the flashlight circuit by a movement of said manually flexible portion and that the movement of said manually flexible portion may thereafter be continued for at least as great a distance as that necessary to cause the contact portion to complete the circuit. 80 85 90 95

3. A switch for a flashlight having a metal casing with an aperture therein, comprising a unitary switch member having an anchor plate portion secured to the outside of said casing, a comparatively stiff manually flexible portion borne by said anchor plate portion and presenting a concave thumb pad, a comparatively limber resilient contact portion within said casing, and a portion extending through the aperture in the casing and connecting said manually flexible portion and said contact portion whereby said contact portion is so positioned that it is moved to complete the flashlight circuit by a movement of said manually flexible portion. 100 105 110

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