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FLASHLIGHT

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FIG.1.

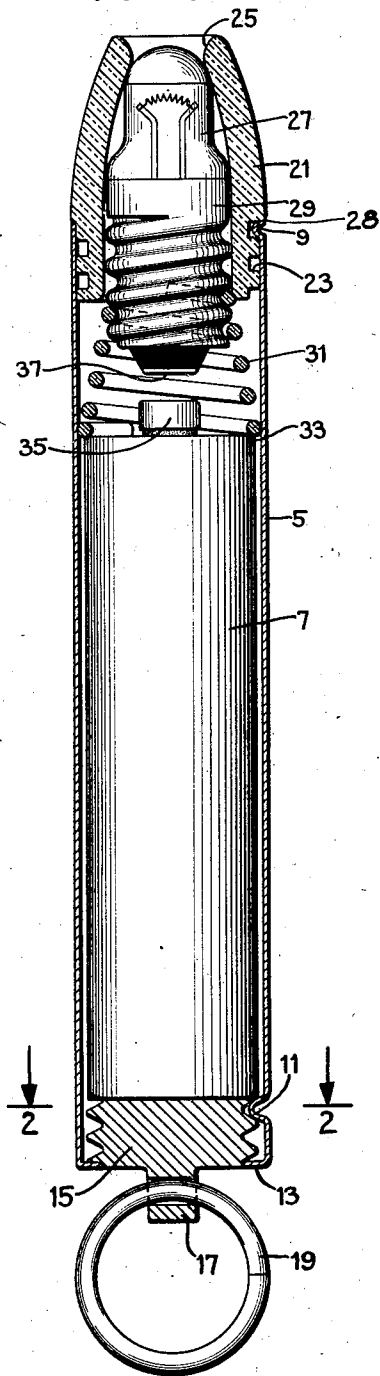
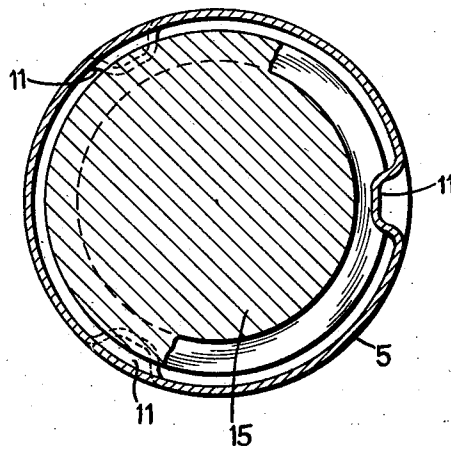


FIG.2.



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FLASHLIGHT

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5 Claims. (Cl. 240—10.68)

This invention relates to flashlights and hand lanterns of the kind in which the electrical circuit between an incandescent lamp and the battery is adapted to be completed at will.

One object of the invention is to provide a flash lamp of the kind which can be carried in the pocket without danger of inadvertent closing of the circuit.

Another object of the invention is to provide a light transmitting closure for one end of the flashlight casing which surrounds the incandescent lamp.

The invention also seeks a translucent closure for the end of the flashlight which surrounds the incandescent lamp whereby light rays emanating from the lamp pass through a translucent portion thereof while other rays emanating from said lamp are directed in a beam with undiminished intensity through a transparent portion.

It is also an object of the invention to provide a circuit closer for a lamp of the character described which comprises, in part, the movement of a battery terminal and a lamp terminal into electrical connection, which lamp terminal and battery terminal normally tend to be separated.

Yet another object of the invention is to provide a circuit closer of the character described in which the circuit is completed by the movement of the end closure relative to the axis of the battery.

The invention also seeks a flash lamp which is practical from the standpoint of ease and cheapness of manufacture and convenience and durability in use.

These and other objects of the invention and the means for their attainment will be more apparent from the following detailed description taken in connection with the accompanying drawing illustrating one embodiment by which the invention may be realized and in which:

Figure 1 is a view in longitudinal section and partly in elevation, showing the flash lamp of this invention in circuit open position;

Figure 2 is a transverse sectional view taken in the plane indicated by the line 2—2 of Figure 1, looking in the direction of the arrows.

The flash lamp casing of this invention comprises generally a tubular conductive member 5 adapted to contain the dry cell or battery 7. In the illustrated embodiment, the upper end of the casing 5 is formed with a plurality of indentations 9, suitably disposed about the periphery on a helical line to form portions of a thread on the interior surface of the casing

for a purpose hereinafter to be described in detail. At the other end of the casing, similar indentations 11 are formed to provide portions of a thread on the inner surface of the casing 5 and, if desired, the end of the casing may be turned as a flange 13 to define a circular orifice of a diameter less than the internal diameter of the thread portions 11.

The lower end of the casing 5 is adapted to be closed by a plug 15 threaded on a pitch to correspond with the pitch of the thread portions 11 and adapted to be threaded therewith for axial movement of the casing 5. This plug 15 is inserted through the upper end of the casing and is of a diameter such as to pass the thread portions 9, it being contemplated that the thread portions 11 will be so proportioned as to engage the plug 15 on the necessary smaller diameter. However, the plug 15 has, preferably, a sufficiently great diameter to be prevented from passing out the lower end of the casing by the flange 13. The plug may conveniently be provided with a perforated boss 17 adapted to carry on the outside of the casing, a ring 19 by which the flash lamp may be carried on a chain, for instance, hung on a nail and by which the plug may be turned to cause it to move axially of the casing for a purpose hereinafter to be described.

The battery 7 is also inserted through the upper end of the casing 9, the casing being so proportioned that the battery 7 may pass the threads 9. Into the end of the casing 5 is adapted to be screwed a light transmitting and preferably translucent frusto-conical shield or globe 21 constituting a head to the flashlight as a whole and formed with a thread 23 at its lower end for engagement with the thread portions 9 and having a transparent portion, conveniently, an open end 25 through which light rays from the lamp 27 may pass with undiminished intensity. A shoulder 28 formed between the inner threaded end of the globe 21 and the exposed outer end acts as a stop to limit the inward screwing movement of the globe and thus limits the tension with which spring 31 (hereinafter described) holds the lamp 27 in the globe. Obviously, the light rays from the lamp 27 passing laterally through the translucent portion of the shield or globe 21 will have the intensity of the rays diminished dependent upon the degree of translucence of the shield 21. The inner end of the bore through the globe 21 is substantially cylindrical in that part which contains the base 29 of the lamp 27 and the bore

gradually reduces therefrom in diameter outwardly towards the opening 25 to form a socket for receiving the light source end of the lamp and for centering the advance active end of the lamp in the opening 25. The diameter of the constricted aperture or opening 25 in the end of the shield 21 is such as to prevent the passage of the lamp or, at least, of the base 29 of the lamp so as to retain the lamp within the flashlight structure as a whole. Extending between the base 29 of the lamp 27 and the battery 7 is a spring 31 preferably helical which is threaded at one end on the threads of the lamp base 29 thus forming a lamp socket and at the other end engages either the zinc terminal 33 of the battery or the interior of the wall of the casing or both whereby the circuit is completed between the cup electrode of the battery and the shell of the lamp base. The spring 31 also acts to force the lamp as a whole axially into the socket fashioned to receive it in the globe 21 and thus tends to maintain the lamp centered in the opening 25.

Thus when the plug 15 is screwed into the casing it advances the battery until the central terminal 35 thereof engages the central terminal 37 of the lamp to complete a circuit which also includes the spring 31, the shell of the lamp base 29 and the zinc cup 33 of the battery 7. When the plug is again screwed out of the casing, or toward the lower end thereof, the expansion of the spring 31 separates the terminals 35 and 37 and interrupts the circuit.

The diameter of the plug 15 is such that it will pass the thread portion 9 but engage the threads 11 but the plug is of such diameter that it cannot pass through the aperture defined by the flange 13.

Various modifications will occur to those skilled in the art in the configuration, disposition and composition of the component elements going to make up the invention as a whole and no limitation is intended by the phraseology of the foregoing description or illustrations in the accompanying drawing except as indicated in the appended claims.

What is claimed is:

1. In a flashlight, a tubular casing formed with interior threads at each end and an inturned flange at one end, the interior distance on a diameter between the threads at the other end being greater than that of the threads at the first named end, said inturned flange defining an aperture of a diameter less than the interior distance on a diameter between the threads at that end, a threaded closure threaded into one end thereof for movement axially of the casing, a light transmitting enclosure for the lamp surrounding the same and carried by the casing, a

battery within the casing and expansible means between the lamp and battery.

2. In a flashlight having a battery, a translucent light discharging head formed to produce a direct beam surrounded at its source by a corona of diffused light, said head comprising a light transmitting tapered globe that diffuses light from a source within the globe in all directions except axially of substantially uniform intensity, said globe having a restricted tapered throat narrowing to a diameter less than that of a bulb, a bulb, and conductive spring means engaging the base of the lamp and in electrical connection with the battery for pressing the bulb into the narrowed portion of the throat which provides annular contact and support for the bulb.

3. In a flashlight, a tubular casing of current conducting material, a lamp, a separable head of light transmitting insulating material of substantially uniform thickness provided in one end of said casing and threadedly engaging the same, said head being provided with an annular, forwardly and progressively converging interior surface, for direct supporting engagement with the forward end of said lamp, positioned within said converging interior surface, and means for holding said lamp in supporting engagement with said interior surface, said shape of the interior of said head permitting the accommodation of different lamps of unlike diameters.

4. A flashlight comprising a casing formed with threads at one end and an inturned flange at the other end, a hollow head member threadedly engaging said threads, a lamp secured in operative position in said head, a battery contained in said casing, circuit connecting means between said battery and lamp, a closure in the flanged end of the casing having a portion in said casing of a diameter greater than that of the opening defined by said flange and another portion normally protruding through said flanged end of the casing and having a diameter less than that of said opening, one of said portions being threaded to engage threads carried by said casing adjacent said flange whereby upon rotation of said closure, it will be axially moved to open and close the circuit.

5. A flashlight casing comprising a tubular shell, internal threads arranged at one end, a screw threaded plug in said end operatively engaging said casing threads, a flange projecting inwardly from the end of said casing and forming a limiting means for said plug whereby the same may not be screwed out of said flanged end of said casing, said plug being adapted to engage another component part of said flashlight disposed in said casing to open and close the circuit of the flashlight.

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