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J. FRANK ET AL
PORTABLE FLASHLIGHT

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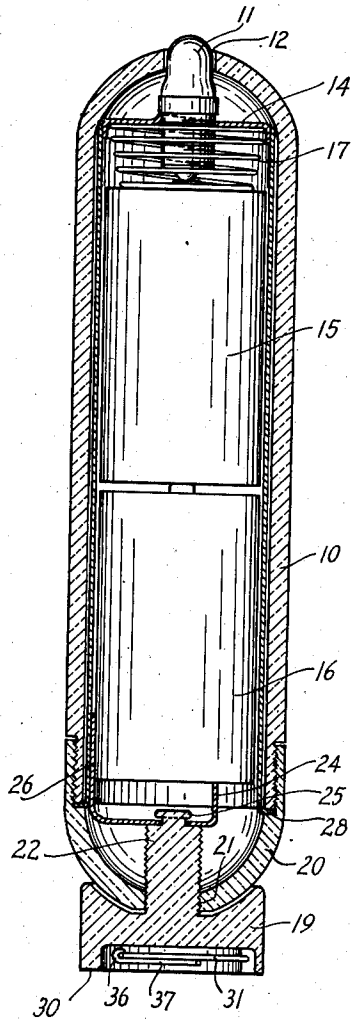


Fig. 1

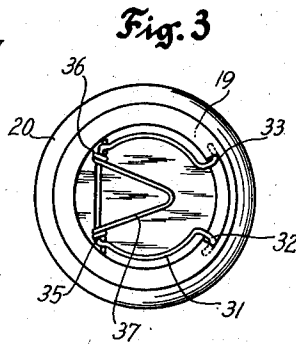


Fig. 3

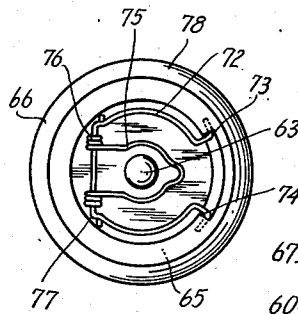


Fig. 4

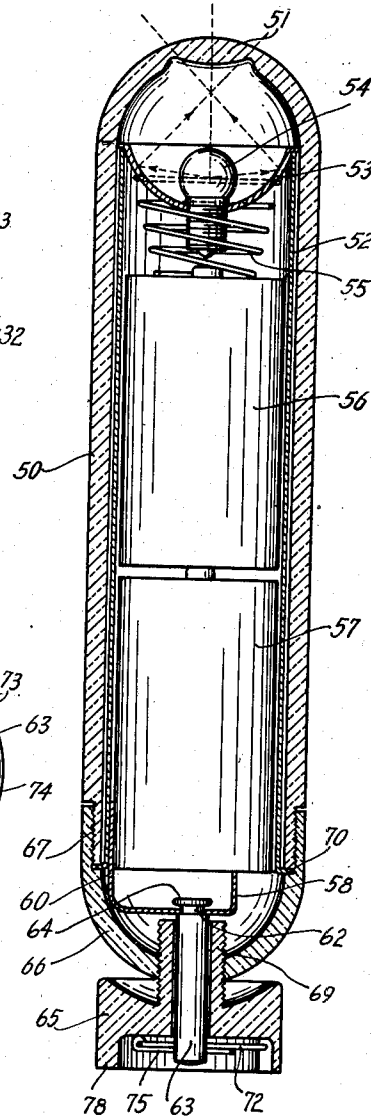


Fig. 2

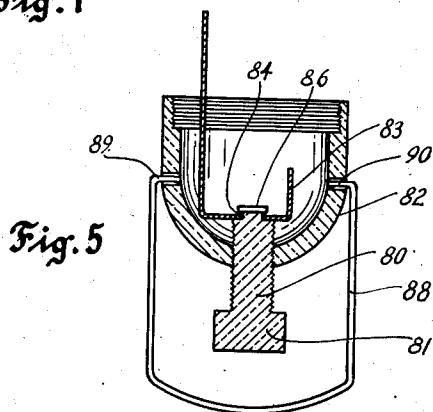


Fig. 5

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PORTABLE FLASHLIGHT

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Application December 24, 1941, Serial No. 424,310

2 Claims. (Cl. 177—329)

This invention relates to a plastic flashlight and more particularly this invention relates to a flashlight having certain new and unusual features of construction.

Flashlights are ordinarily formed of metal casings with a glass lens enclosing an incandescent bulb. It has been suggested that flashlights may be provided with plastic casings in the area of the light and such casings may be diffusely illuminated by the bulb.

We have now devised a novel flashlight and in the modified form a lantern which provides diffused illumination that is of particular utility when either direct or indirect illumination is required.

It is the object of the present invention is provide a novel flashlight which provides diffused and soft illumination.

It is a further object of the present invention to provide a flashlight completely encased in plastic and which has tough and resilient construction.

It is a further object of the present invention to provide a lantern in the general form of a flashlight having a stand integral therewith.

It is a further object of the present invention to provide a novel combination of an encasing metal container for the batteries of a flashlight which serves also as a reflector for the light travelling through the plastic casing of the flashlight.

It is a further object of the present invention to provide a novel combination of finger loop and belt clip which are set in at the control and stand portion of the flashlight.

These and further objects of the present invention will become apparent from a consideration of the drawing and the specific description thereof which here follows.

Figure 1 is a cross section of the flashlight of the present invention.

Figure 2 is a cross section of a modified form of the flashlight of the present invention.

Figure 3 is a bottom view of Figure 1 showing the finger loop and belt clip set in the control button of the flashlight of the present invention.

Figure 4 is a bottom view of Figure 2 showing the finger loop and belt clip arrangement contained in the control button of the flashlight.

Figure 5 is a cross sectional view showing a modified form of control button which may be used on the flashlight of this invention.

Referring now more specifically to the drawing, in Figure 1 is shown a flashlight having a casing 10, preferably formed of methyl methac-

rylate, sold under the trade name of "Lucite" and, alternatively, styrene or other so-called light piping plastics may be employed for this casing.

Light is supplied completely throughout this casing from the incandescent bulb 11 which is positioned in the opening 12 at the upper edge of the casing 10. From the incandescent bulb 11 the light travels into and down through the light piping plastic casing 10. The incandescent bulb 11 is screwed into the opening in the metal container 14 which also contains the dry cell batteries 15 and 16 which supply the current to illuminate the incandescent bulb 11. The circuit is completed between the batteries and the incandescent bulb 11 by pressing the batteries 15 and 16 against the reaction of the resilient spring 17 into contact with the bulb 11. The spring 17 is set in the upper end of the container 14 and upon compression allows contact between the battery 15 and the incandescent bulb 11. The resilient spring 17 is in the form of a coil of sufficient diameter both to be retained in place by the metal container 14 and so that it does not contact the base of the incandescent bulb 11 or the contact point of the battery 15.

As additional precaution we provide an insulating coating, as of some suitable insulating plastic, over the resilient coil spring 17. The completion of the light circuit is effected by means of the control button 19, which upon rotation, moving in screw thread engagement with the cap portion 20 in the screw thread area 21, moves the projection 22 inwardly, the plug portion 22 carrying upon its end in fixed engagement, the right angle metallic turn 24. The right angle turn 24 is set over the plug extension 25 which is swedged over to hold the right angle 24 permanently in place. In addition to the right angle turn 24 constituting the intermediate pressure area which transmits pressure from the control 19 to the battery 16, the right angle turn 24 which extends upwardly at 26 also contacts the metallic container 14 to complete the circuit between the bulb, metallic container, the right angle turn, the battery 16 and the battery 15.

The metallic container 14 is set into the plastic casing 10 and acts simultaneously as the electrical connection element, a reflector member for reflection of the light diffused and piped down through the plastic casing 10, and also as a container for the batteries 15 and 16 and the spring 17.

The metal container 14 is fixed in position by the right angle flange 28 thereon which bears against the bottom edge of the plastic casing 10.

This right angle flange 28 determines the exact location of the metal container 14 and the casing 10. The control button 19 is relatively wide in diameter and has a flat bottom 30 so that the flashlight can be stood upon the bottom portion 30 and used as a lantern.

For carrying the flashlight we provide, as more particularly shown in Figure 3, a wire finger loop 31 pivoted at 32 and 33 in the control button 19. The finger loop 31 also has hinged thereto and pivoted at 35 and 36 a belt clip 37 which may be rotated about and in rotated position acts together with the finger loop 31 as a means for suspending the flashlight on a belt.

In Figure 2 is shown a modified form of this invention in which the casing 50 contains integrally formed therewith a lens portion 51, the casing 50 and lens portion 51 comprising the light piping transparent plastic such as methyl methacrylate or its equivalent as set forth specifically above.

In this casing 50 is a metal container 52 and the reflector 53 in which is positioned the incandescent bulb 54. A resilient spring 55 which is coated with insulating material such as a plastic, normally maintains the batteries 56 and 57 in spaced relation from the incandescent bulb 54, but the batteries 56 and 57 may be pressed against the spring 55 by the right angle turn 58 in order to close the circuit and light the bulb 54, the circuit extending from the battery 57 through the right angle turn 58 and the extension 60 thereof to the metal container 52 and the reflector 53 into the bulb 54 and through the bulb 54 to the battery 56. The right angle turn 58 is mounted on the projection 62 of the plastic button 63, the projection 62 being swedged back at the head 64 to hold the right angle turn 58 permanently in place. Pressure upon the button 63 causes the right angle turn 58 to close the circuit as described.

The right angle turn 58 may also be impelled forward to close the circuit to light the lamp by rotation of the control button 65 which is in screw thread engagement with the cap 66. The cap 66 is as shown in screw thread engagement with the plastic casing 50 at 67. Upon rotation of the control button 65 the inwardly projecting portion 69 thereof presses against the intermediate portion of the right angle turn 58 and carries forward both the right angle turn 58 and the plastic button 63 to which the right angle turn 58 is secured.

The button 63 is employed when a temporary lighting is desired and the control button 65 is rotated when a continuous lighting is desired.

The metal container 52 is secured in position by right angle flange 70 thereon which contacts the bottom edge of the casing 50.

As more particularly seen in Figure 4, in the control button 65 there is provided a finger loop 72 pivoted at 73 and 74. A belt clip 75 is pivotally mounted on the finger loop 72 at 76 and 77. This belt clip 75 is shaped to extend about the push button 63. The bottom portion 78 of the control button 65 is flat and of relatively large extent so that the flashlight may be stood upon this bottom 78 and used as a lantern.

In Figure 5 we show a modified form of control in which a control button 80, which is adapted to be rotated by the serrated surface 81 thereon in screw thread engagement with the cap 82 so as to advance or retract the right angle turn 83 mounted on the extension 84 of the push button 80 and secured thereon by the swedging 86,

The finger loop 88 is pivotally mounted in the cap 82 at 89 and 90.

The construction thus shown and described above provides a wear resistant flashlight adapted for a multiplicity of uses. Because of the complete plastic encasement of the operative parts of this invention and the protection afforded by it for the incandescent bulb, the flashlight may be subjected to rough handling without destruction. Further by the particular construction of the control button we provide means both for securing the flashlight to a belt or holding it in one's hand as well as providing a desirable base for using the flashlight as a lantern.

The metal container which contains the various parts including the spring and the battery as pointed out above serves both as a conducting member, a protecting element and a reflector to reflect light widely through the casing 10.

With particular reference to the form of the invention shown in Figure 2 it will be noted that the lens is provided therein which is integral with the casing of the flashlight and is relatively indestructible, while at the same time provides for predetermined focusing of the light from the incandescent bulb.

Various other modifications of this invention will suggest themselves to those skilled in the art. Accordingly we desire that in construing the breadth of the appended claims that they shall not be limited to the specific details shown and described in connection with the above explanation.

We claim:

1. A portable, manually operated combination flash light and signalling device comprising in combination a translucent casing comprising a light piping plastic having an opening in one end thereof, said opening forming exposed edges in said casing, said casing having an appreciable thickness at said opening, a light bulb positioned in said opening in close proximity to the edge of said opening, said light bulb upon illumination supplying direct illumination in the form of emitted light and indirect illumination in the form of light picked up by the edge of said casing of light piping plastic and distributed throughout said casing, and a metal container having an external reflecting surface which acts as a reflecting shield positioned within said casing and locked in position therein, said shield increasing the light sidewardly diffused from said casing, batteries located in said casing, said light bulb having two terminals, one of said terminals electrically engaging said metal container at its upper end and the other of said terminals positioned to electrically engage said batteries, a control button, and means fixed on said control button for pressing said batteries into contact with said light bulb, said means comprising a right angle shaped metal pressing member, one portion of said right angle shaped member being positioned to press said batteries toward said light bulb, a second portion of said right angle member being positioned in sliding electrical engagement with said metal container.

2. A portable, manually operated combination flash light and signalling device comprising in combination a translucent casing and a cap comprising a light piping plastic having an opening in one end thereof, said opening forming exposed edges in said casing, said casing having an appreciable thickness at said opening, a light bulb positioned in said opening in close proximity to the edge of said opening, said light bulb upon

illumination supplying direct illumination in the form of emitted light and indirect illumination in the form of light picked up by the edge of said casing of light piping plastic and distributed throughout said casing, and a metal container having an external reflecting surface which acts as a reflecting shield positioned within said casing and provided with a lug projecting over the edge of said casing and locked in position therein by said lug, said shield increasing the light sidewardly diffused from said casing, batteries located in said casing, said light bulb having two terminals, one of said terminals electrically engaging said metal container at its upper end and the other of said terminals positioned

5 to electrically engage said batteries, a control button extending through said cap, and means fixed on said control button and in constant contact with said metal container for pressing said batteries into contact with said light bulb, said means comprising a right angle shaped metal pressing member, one free end of said right angle shaped metal pressing member resting upon and being adapted to press said battery toward said light bulb, the second free end of said right angle shaped metal pressing member being positioned in sliding electrical engagement with said metal container.

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