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FLASHLIGHT

2,483,820

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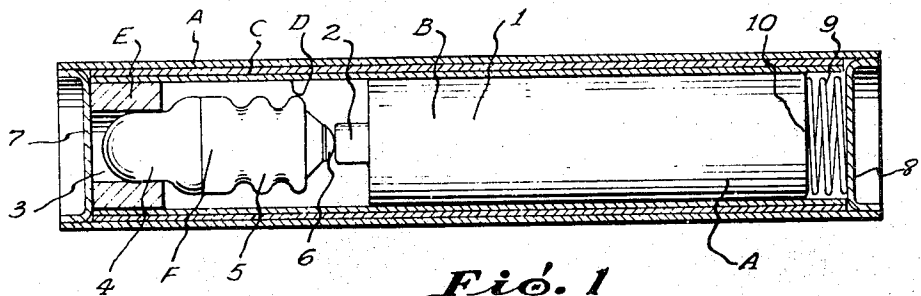


Fig. 1

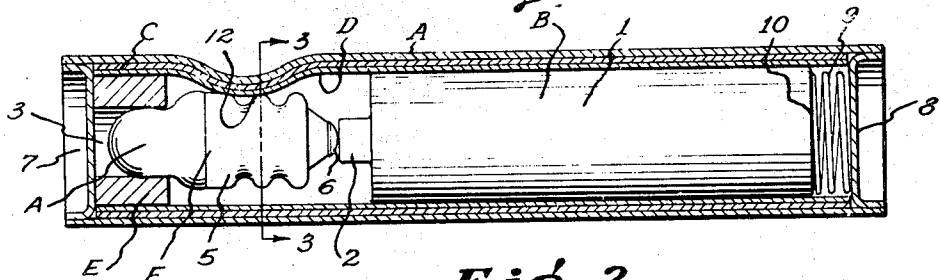


Fig. 2

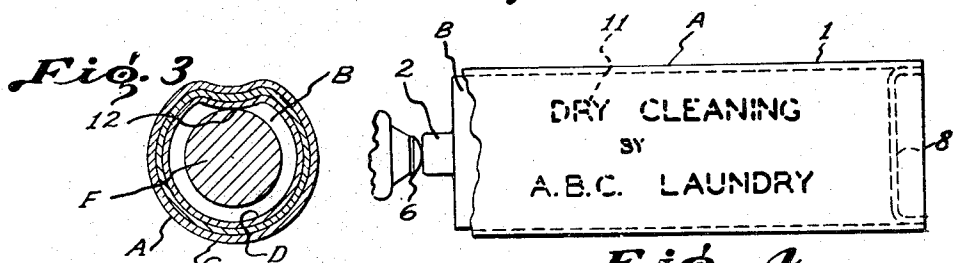


Fig. 3

Fig. 4

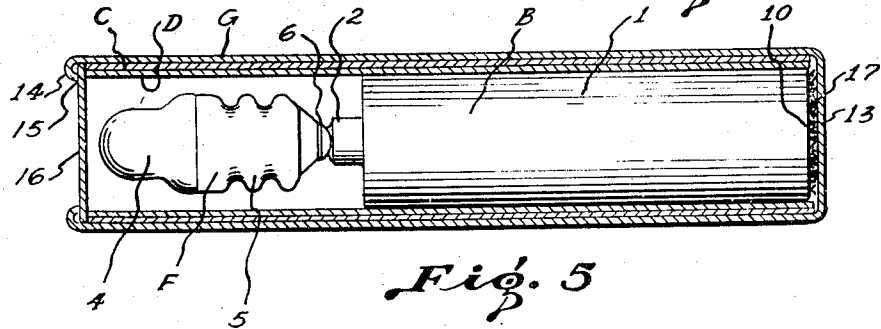


Fig. 5

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FLASHLIGHT

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3 Claims. (Cl. 240—10.68)

1

This invention pertains to "electric flashlights" and said term is intended to include portable electric illuminating devices of all kinds whether they be referred to as "torches" or "signal lights" or any other fanciful name.

More particularly and specifically the invention relates to what I call a "throw-away" electric flashlight which term is intended to mean a flashlight which can be produced and sold at a price sufficiently cheap to permit the device in its entirety to be discarded, that is, thrown away, when the electric battery has become exhausted.

The primary object of the invention is the provision of an efficient flashlight constructed of the minimum number of parts and which can be produced sufficiently cheap that it can be thrown away when the electric battery thereof has become exhausted.

A further object of the invention is the provision of a flashlight in which the light bulb thereof is supported in a simple yet novel manner and in which the closing of the electric circuit to illuminate the light bulb is accomplished in a novel, simple, yet highly efficient and positive manner.

Another object of the invention is the provision of a flashlight which is highly suitable as a novelty gift and can be effectively utilized for advertising purposes.

Another and still further object of the invention is the provision of a throw-away flashlight having an air and liquid-proof carrier or enclosing housing.

From the following description and reference to the accompanying drawing other objects, advantages and novel features of the invention will be ascertained and understood.

In the drawings:

Fig. 1 is a longitudinal sectional view through the flashlight, the electric circuit to the light being open.

Fig. 2 is a view similar to Fig. 1, the electric circuit to the light being closed.

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary side view of the flashlight of Fig. 1.

Fig. 5 is a longitudinal sectional view through a flashlight embodying a modified form of the invention.

Describing the invention in detail and referring first to Figs. 1 to 4 inclusive, A is an open-ended hollow tubular carrier of the proper diameter and cross sectional configuration to receive a conventional dry cell electric battery B. This battery

2

is of that type where one of its poles is its jacket 1 while its other pole 2 extends outwardly from one of the battery ends. Often times quite conventional batteries of the type illustrated, are provided with a wrapper composed of some dielectric material but in the present instance such a wrapper has been omitted and the jacket 1 of the battery which is composed of some suitable current conducting material is bare.

A wrapper C composed of paper, fibre or other suitable like material is of tubular form and of a length slightly less than the length of the carrier A and carries on its inner side a similar shaped sheet D which is composed of a material having electric current conducting characteristics such as for instance tin foil. The sheet D in reality constitutes a lining for the wrapper C. The battery B is snugly received by the wrapper and the metallic jacket of the battery has current conducting contact with the sheet or lining D, all as clearly appears in the drawings.

At one of its ends the wrapper C internally carries a plug or ring E composed of wood, fibre, plastic or other suitable material. This plug is centrally provided with a passageway 3 and is suitably secured in the wrapper by an adhesive or any other desirable means, against displacement.

An electric light bulb F is provided and is of conventional nature to those types of bulbs which do not require in combination with them a reflector. Such bulbs are well known and can be bought on the open market. The bulb comprises the usual globe 4 within which is positioned the light filament and a base 5 which is electrically connected to one end of the filament and constitutes one terminal of the bulb. The second terminal 6 of the bulb is in the bulb end and is suitably insulated away from the socket 5.

The purpose of the plug or ring E is to support the light bulb and center its end terminal 6 in respect to the battery terminal 2. The support of the bulb is obtained by inserting the globe 4 of the bulb into the passageway 3 of the plug. The fit between the passageway and the globe is sufficiently snug as to assure support for the bulb in the position illustrated in the drawings. Should it be desirable the plug E could be composed of rubber or some other resilient material so that there would be an actual resilient clamping action upon the globe of the bulb.

The end of the carrier in front of the light bulb is hermetically sealed by a cap 7 composed of a material which will permit the passage of light. At least that portion of the cap 7 closing the pas-

3

sageway 3 of the plug will permit the passage of light. The opposite end of the carrier is hermetically sealed by a cap 8. To assure electrical contact engagement between the end terminal 6 of the light bulb and the terminal 2 of the battery a coil spring 9 or other suitable resilient means is interposed between the cap 8 and the bottom end 10 of the battery.

The selection of the material of which the carrier and its end caps is composed is optional as is also the exact construction thereof. Instead of the caps telescoping the carrier the caps could telescopically receive the ends of the carrier. When the flashlight is intended for use for advertising purposes such as free distribution the carrier is made of a transparent material and advertising indicia such as illustrated at 11 is carried on the outer face of the wrapper C and is clearly visible for reading. The nature of the indicia 11 can vary widely. It can be advertising matter or if the flashlight is to be used as a signal the signal code could be placed upon the wrapper for convenient use of the signal light user. It is to be understood however that it is not essential that the carrier be transparent.

It is however essential that a part or area of the carrier immediately adjacent the socket 5 of the light bulb be resiliently flexible because to close the light circuit to illuminate the bulb pressure is exerted by the thumb or finger of the user, in the manner illustrated in Fig. 2 of the drawings, to depress and move the wrapper and current conducting sheet D inwardly until the sheet D engages the bulb socket, as illustrated at 12. The release of this pressure will permit the parts because of their resiliency to return to the positions illustrated in Fig. 1 of the drawings. It will be seen that it would be preferable to have the wrapper C composed of a flexible resilient material and to have the sheet D secured to the wrapper to move therewith. This however is not essential as the desired and required movement of parts would be accomplished by having resilient flexibility in the carrier and in the sheet D. Flexibility in the wrapper would be necessary but resiliency would not. The desired movement of parts could be obtained through having the carrier both flexible and resilient and the wrapper and sheet flexible only. This would be done by having the sheet secured to the wrapper and the wrapper in turn secured to the carrier.

Respecting flexibility and resiliency in the carrier it will be understood that this can be localized to a small area but if it were found desirable for any purpose the entire carrier could be composed of a flexible resilient material. The carrier can be composed of many different materials, as will be understood and obvious from the foregoing description. Acetate is a material found to work satisfactorily as in it can be found the desired flexible resiliency and also, when desired, the transparency which will permit the reading of any indicia appearing on the wrapper. The use of acetate simplifies the production of an air and liquid-tight flashlight. This material is impervious to the passage of air or liquid and by using it as the material for the end caps these caps can be quickly and simply fused or sealed into air and liquid-tight engagement with the carrier by the use of a suitable solvent.

The simplicity and cheapness of the flashlight can be obtained without making the carrier air and liquid-proof but making it so is particularly desirable as will be obvious to those familiar with

4

and skilled in this art. Among some of those advantages of an air and liquid-proof flashlight are the following: irrespective of existing climatic or similar conditions the flashlight will positively operate as long as there is sufficient current from the battery to illuminate the light bulb and the life of a battery is multiplied several times when in an air and liquid-proof container and the flashlight can be actually used under water which greatly widens the field of utility of the flashlight. An air and liquid-proof carrier assures that positive operation of the flashlight will be neither impaired nor destroyed through accidental immersion of the flashlight in water or some other liquid.

The modified form of the invention appearing in Fig. 5 is of even more simplified construction in that the number of parts comprising the flashlight is reduced. There is the same battery B with its terminals 1 and 2 but in this instance the light bulb is supported by having its end terminal 6 soldered or otherwise suitably secured to the terminal 2 of the battery. The carrier G is formed with an integral bottom 13 and at its front end is rolled over as at 14 to provide a shoulder 15 to which the front closure cap 16 is suitably secured. There is the same wrapper 6 and current conducting sheet D. There is also the necessary resilient flexibility, previously described, in the carrier, the wrapper and the sheet to permit the electric circuit to be closed in the manner previously described and clearly illustrated in Fig. 2 of the drawings. Endwise movement of the battery and light bulb is prevented by securing the lower end 10 of the battery to the bottom 13 of the carrier by a suitable adhesive 17 or its equivalent. As in respect to the previously described form of the invention it is optional whether or not the carrier is made transparent, whether it is flexibly resilient in its entirety or only in a localized area, and whether it is made air and liquid-proof.

The entire carrier of the flashlight indicated in the drawings is composed of flexible resilient material with the result that inward pressure at any point of the circumference of that part of the carrier surrounding the socket 5 of the light bulb will result in the closing of the electric circuit. To provide for this operation it is not necessary that the entire carrier be flexible and resilient. The flexible resiliency in the carrier could be provided by having in the carrier a band of flexible resilient material surrounding the socket of the light bulb.

The flashlight is not limited to the use of a single battery. A plurality of batteries arranged in end to end relationship, as is common in flashlights, could be provided without departing from the spirit of the invention and would necessitate such small modification of the construction illustrated and described as not to require inventive concept.

Departures from the precise arrangements illustrated and described can be made without departing from the inventive concept and the invention is to be limited only within the scope of the hereinafter following claims.

I claim:

1. In a portable electric flashlight, a carrier having flexible side walls and an end which will permit the passage of light therethrough, said carrier constituting an enclosing housing for the following: an electric battery having a metallic jacket constituting one of its poles and having its other pole at one of its ends, an electric light bulb

5

having a current conducting base and at one of its ends a terminal electrically insulated from said base, the terminal of the light bulb having current conducting engagement with the pole in the battery end, an elongated metallic flexible tubular resilient current conducting element having one end encircling and in current conducting contact with the jacket of the battery, the other end of said element completely encircling the current conducting base of the light bulb but being disposed normally in spaced relationship thereto, and the parts operating whereby an inward pressure upon the carrier at any point in its circumference about the current conducting base of the light bulb will move said tubular flexible current conducting element inwardly to electrically contact said bulb base to cause the closing of the electric circuit to the bulb and the illumination thereof.

2. A construction as defined in claim 1 wherein, means is provided within the carrier for supporting the light bulb to hold the terminal thereof in the recited current conducting engagement with the pole in the battery end, said bulb supporting means comprising an apertured block immovably secured within the container, and the glass bulb portion only of the light bulb being disposed and secured in the aperture of said block.

3. In a portable electric flashlight, a tubular carrier having closed ends and having in its length a flexible portion which extends throughout the circumference of the carrier and a portion which will permit the passage of light therethrough, said carrier constituting an enclosing housing for the following: an electric battery having a metallic jacket constituting one of its poles and having its other pole at one of its ends, an electric light bulb having a current conducting base and at one of its ends a terminal electrically insulated from said

6

base, the current conducting base of the light being positioned so that it is surrounded by but spaced from the flexible portion of the carrier, the terminal of the bulb having current conducting engagement with the pole in the battery end, an elongated metallic current conducting element having one end in current conducting contact with the jacket of the battery and a flexible resilient portion completely encircling the current conducting base of the light bulb but being disposed normally in spaced relationship thereto, and the parts operating whereby an inward pressure upon the flexible portion of the carrier at any point in its circumference about the current conducting base of the light bulb will move the flexible portion of said tubular flexible current conducting element inwardly to electrically contact said bulb base to cause the closing of the electric circuit to the bulb and illumination thereof.

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