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PORTABLE ELECTRIC LAMP

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FIG.1.

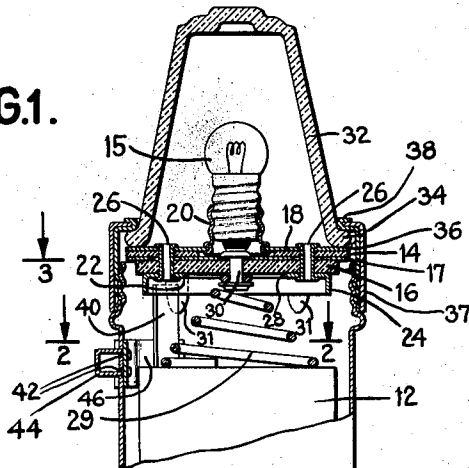


FIG.2.

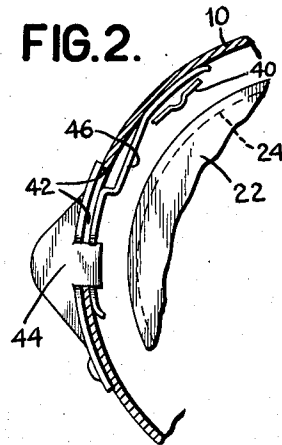
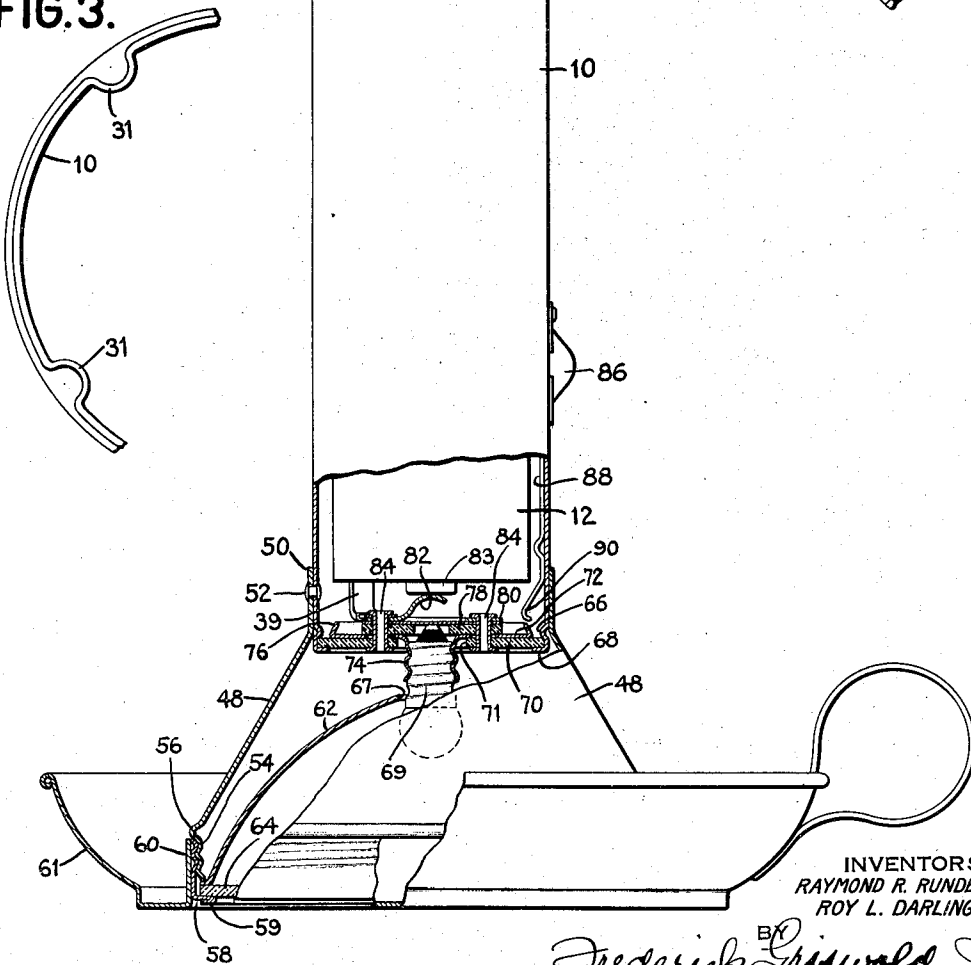


FIG.3.



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PORTABLE ELECTRIC LAMP

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4 Claims. (Cl. 240—10.64)

This invention relates broadly to portable electric lamps of the kind in which a miniature incandescent lamp is adapted to be illuminated by connecting the same, at will, to a source of electrical energy in the form of a battery composed of one or more dry cells. More particularly the invention relates to a lamp adapted to stand upon a base and having in an upper portion thereof a source of light adapted to illuminate only the immediately surrounding area and to be, in effect, a so-called candle light.

One object of the present invention is to provide such a candle light with an additional source of light, normally hidden from view, by which a remote area may be illuminated, as desired. Accordingly, in the preferred embodiment, there is provided, within the base, and conveniently directed downwardly when the use of the device as a candle light is considered, a light source, surrounded by a reflector, which light source may be illuminated, say, when the candle light is carried in the hand in the same way that an ordinary tubular flashlight is used. Thus the candle light may be provided with a body simulating a candle and of the same relative proportions as a candle and an ornamental base, for instance, to simulate a candle stick, on which base it may stand and the source of light at the top be illuminated to illuminate the surrounding area much the same as the flame of a candle, while hidden from view within the base is another source of light at the focus of a reflector adapted to project the light in the axial direction of the body, when the latter light source is illuminated.

Another object of the invention is the selective energization of both sources of illumination from a common battery.

It is also an object of the invention to provide a lamp socket support for the light source functioning as the candle light which is removable to permit the insertion and removal of the battery and which lamp socket support is so constructed and arranged as to enable conductive elements thereof to be included in the two circuits comprising the respective light sources and the common battery.

A further object of the invention is a circuit closure adapted to cooperate with the removable lamp socket support to close the circuit through the lamp carried thereby.

The invention also seeks a portable electric lamp having the aforesaid multiple purpose, which is practical from the standpoint of simplicity and economy in manufacture and practicability and attractiveness 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 drawings, illustrating a preferred embodiment, and in which:

Figure 1 is a view showing the portable electric light of this invention in elevation, parts being broken away to show details of construction;

Figure 2 is a fragmentary transverse sectional view showing details of the circuit closer for the candle light feature, taken on the plane indicated by the section line 2 in Figure 1; and—

Figure 3 is a partial section on line 3 of Figure 1.

Referring to the drawing, the portable electric lamp of this invention comprises a generally tubular body portion 10, simulating, in relative proportions, some common object such as a candle. The body is conveniently of metal in order that it may comprise a portion of the electrical circuit although it may obviously be of non-conductive material and contain the necessary conductors, including annular conducting means at the end to serve as the counterpart of the metal and of the metal casing 10, as well known to those skilled in the art. The body contains a battery of dry cells 12.

Upon the upper end of the body 10 rests a removable lamp socket support for a lamp 15, comprising an insulating annulus 14, say, of fibre, of a diameter substantially that of the casing to rest thereon and an insulating disc 16 therebelow of slightly smaller diameter conveniently fitting within the casing 10 and thereby centering the lamp socket support in the casing. Between the discs 14 and 16 is an intermediate metallic conductive disc 17 of a diameter equal to that of the upper fibre annulus 14 and resting on the edge of the metal casing 10 to be in electrical contact therewith. Above the disc 14 is a conductive annulus 18 also of the diameter of the fibre annulus 14 and formed centrally with an aperture to the edge of which a lamp socket 20 is secured. Below the disc 16 is secured a conductive annulus 22 provided with a contact flange 24 and preferably of a diameter less than the disc 16. The upper conductive disc 18 and the lower conductive annulus 22 are secured together, say, by a pair of diametrically disposed metal eyelets 26, clamping the metal disc 17 and insulating discs 14 and 16 therebetween, so that the lamp socket 20, being carried by the upper metal annulus 18, is in electrical connection with the contact flange 24. The aperture 28 in the metal annulus 22 is of such diameter that it is out of

electrical contact with the upper end of a thrust member shown as an inverted conically shaped helical battery positioning and conducting spring 29, the upper end of which is secured at the center of the lower non-conductive disc 16 and metallic disc 17 immediately thereabove as by a rivet 30 exposed on the upper side of the lamp socket support within the lamp socket and within the fibre annulus 14 for contact by the central terminal of the lamp base. The spring 29 is conveniently wider at its base for contact with the negative terminal of the battery 12.

To facilitate the positioning of the lamp socket support the upper edge of the body 10 may be formed with several spaced inwardly directed ribs or lugs 31 conveniently pressed inwardly in the metal body within which the fibre disc 16 substantially fits.

The lamp itself may be ornamental or may be enclosed or surrounded by an ornamental light transmitting member.

Resting upon the lamp socket 14-30, there is shown an ornamental enclosure for the lamp 15 illustrated as a glass globe 32, substantially frusto-conical in shape, formed at its base with an outwardly directed flange 34 by which, in the illustrated embodiment, the globe is held in position by a tubular globe retaining ring 36, the inwardly directed flange 38 on the upper end of which overlies the flange 34 on the globe. The ring 36 is formed with threads adapted to engage corresponding threads formed in the upper edge of casing 10. Conveniently, a plain ring 37 overlies the threaded ring to conceal it from view, and is secured thereto preferably by pressing the one ring into the other. Since the metal annulus 18 forms part of the circuit, as does the casing 10, it will be observed that the non-conductive flange 34 serves to insulate the upper annulus 18 from the body 10 and prevents short circuiting of the lamp 15.

As the incandescent lamp 15 is adapted to afford an illumination when the portable light of this invention is used as a stationary lamp or candle light, it will be obvious that any ornamental enclosure of any character, shape or composition for the incandescent lamp 15 is within the ambit of the invention.

Whether the casing 10 be made of metal or non-conductive material, it is preferred to provide, running lengthwise, on the inner wall of the casing, an insulated conductive strip 39 secured to the wall but whereof its upper end 40 is free and terminates in the transverse plane of the contact flange 24. The end 40 is thus free to be moved into electrical connection with flange 24 but is normally out of contact with the flange 24 by reason of its inherent resiliency.

Proximate the free upper end 40 of the contact strip 39, the casing 10 is formed circumferentially with two parallel slots 42 receiving the intumed flanges of a slide 44 forming the actuating member of a circuit closure for lamp 15 and adapted to move circumferentially about the outer surface of the tube 10 between "on" and "off" positions. Inwardly, there is secured to the slide 44, as by the intumed flanges, a wedge shaped actuating member 46 movable with the slide 44 and adapted in "on" position to be interposed between the free contact end 40 and the casing 10 to force the free end 40 into electrical contact with the contact flange 24 of the lamp socket support 14-30 to close the circuit.

While any type of base for this portable elec-

tric lamp which is ornamented is within the purview of the invention, there is illustrated, for convenience, a base in simulation of a candle-stick. A substantially frusto-conical sheet metal base member 48, the upper end 50 of which is tubular to receive the lower end of the casing 10 is preferably permanently secured thereto, as at 52. The lower end 54 of the conical base is also preferably cylindrical and threaded, a bead 56 being formed between the cylindrical and tapering parts as a stop for a threaded lens retaining ring 58 flanged at 59 and threaded on the cylindrical portion of the base. This also may be concealed, if desired, by a plain ring 60. There is shown, for the purpose of illustrating an ornamental type of base applicable to this invention, a dish or bowl shaped portion 61 simulating a candle-stick which may, if desired, be integral with the concealing ring 60.

Within the ornamental base 48 is disposed a reflector 62 provided with a flange at its outer edge to rest on the edge of the base member 54 and support a lens or plane transparent plate 64, the lens ring 58 clamping the reflector and lens against the end of the base. The portable lamp, as a whole, may stand on this flange 59 and/or the bottom of the dish 61. The reflector 62 is apertured axially, as at 67, to receive the lamp 69.

The lamp socket support 70-84 for lamp 69 within the lower end of the casing 10 may be fixed between a bead 66 or the equivalent formed in the wall of the casing and an inwardly directed flange 68 formed on the end thereof. It comprises generally a disc 70 of insulating material, say, fibre, of a diameter equal to the interior diameter of the casing 10 and is held against the bead 66 by the flange 68. This disc is formed with a central aperture 71. Above this disc 70 is secured a metallic annulus 72 to the edge of the aperture of which is secured the lamp socket 74, which passes through the aperture 71 in the fibre disc 70. Metallic annulus 72 also has an upwardly directed contact flange 76. Above the metallic annulus 72 is disposed another non-conductive annulus 78 and above that a contact plate 80 for the central terminal of the lamp base. The contact plate has struck out therefrom and, therefore, in electrical connection therewith, a battery positioning and contact tongue 82, which contacts with the central or positive terminal 83 of the battery. The contact plate 80 and fibre discs 70 and 78 are secured together, say, by the rivets 84 passing through oversize holes in the metal disc 72, so as to be out of electrical connection therewith. One of these rivets 84 also secures the lower end of the conductive strip 39 in electrical connection with the lamp socket 74.

To illuminate the lamp 69, an axially movable slide 86 is provided. Here again, the slide is formed with intumed flanges passing through parallel longitudinal slots in the casing 10, which flanges secure a metallic contact member 88 whereof the lower end 90 is adapted, in "on" position to contact with the contact flange 76 to complete the circuit through the lamp 69.

The manner in which the portable lamp of this invention is used will be apparent from the foregoing description. Suffice it to say, that it may be stood up on its base 48 on a table or other flat surface. When the immediately adjacent area is to be illuminated, the switch slide 44 may be moved to "on" position to illuminate the lamp 15. In this instance, the circuit from the negative pole of the battery 12 comprises the contact spring 29, rivet 30, central lamp base terminal, 75

filament and peripheral lamp base terminal of lamp 15, lamp socket 20, metal annulus 18, eyelet 26, metal disc 22 and contact flange 24, conductive member 39, 40, eyelet 84 at the lower lamp socket support and battery contact tongue 82 to the positive terminal 83 of the battery.

When it is desired to use the portable lamp to illuminate a more remote area, as when carrying it about in the hand, (the lamp 15 not necessarily being illuminated) the slide 86 is moved to "on" position thereby illuminating the lamp 69, the light rays from which being projected by the reflector 62. The circuit, in this instance, commencing at the positive pole 83 of the battery, comprises the contact tongue 82, contact plate 80, central terminal of lamp 69, filament, lamp socket 74, metal annulus 72 and contact flange 76, contact member 88, metallic casing 10, metallic disc 17, rivet 30 and battery thrust spring 29 to the negative pole of the battery 12.

It will thus be seen that an entirely novel and useful concept of portable electric hand lamp is provided by this invention in which a body of casing simulating some common article or device is surmounted on an appropriate base of ornamental appearance and carries at its top a source of light from which the light rays extend in substantially all directions. Such ornamental lamp may be used for decorative purposes and yet have concealed within its base a light source of purely utilitarian character provided with a reflector by which the light rays may be directed at will substantially in the axial direction of the body and capable of being used when the lamp is carried in the hand to illuminate a selected and more remote area.

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

What is claimed is:—

1. A portable electric lamp comprising a tubular metallic casing, a substantially flaring base therefor upon which the casing may stand, a lamp socket support mounted in the upper end of the casing, having a central lamp contact in electrical connection with both the casing and a battery terminal and a lamp socket in electrical connection with a contact carried thereby, a lamp socket support in the lower end of the casing within the base having a contact for a central lamp terminal in electrical connection with a battery contact and a lamp socket in electrical connection with a contact carried thereby, a conducting member having an end movable into contact with the contact on the first named lamp socket support and in electrical connection with the battery contact of

the second named lamp socket support and a circuit closing contact in electrical connection with the casing and movable into contact with the contact on the last named lamp socket.

2. In an electric hand lamp, in combination, a cylindrical battery containing casing, annular conducting means carried with the end of the casing, a lamp socket support comprising conductive means adapted to make electrical connection with said conducting means, a lamp socket of conductive material carried thereabove and insulated from said conductive means, insulating means carried below the first conductive means and of a diameter less than the diameter of the conducting means to fit there- within, a contact member carried below the insulating means, means to electrically connect the contact means and the lamp socket and a battery terminal contact carried with the conductive means.

3. In an electric hand lamp, the combination, with a metallic tubular battery containing casing, of a lamp socket support comprising a metal disc adapted to rest on the edge of the casing, a non-metallic annulus thereabove, a metal annulus above the non-metallic annulus having a lamp socket secured to the edge of the aperture therein, a non-metallic disc of a diameter less than the diameter of the metal disc and secured therebelow, a flanged metal annulus below the non-metallic disc, metallic connecting means securing the two metal annuli together, a battery contact member below the lamp socket support, rivet means securing the contact member to the metal disc axially of the lamp socket and a switch contact carried with the casing and movable into contact with the flange of the annulus.

4. In an electric hand lamp, the combination, with a metallic tubular battery containing casing, of a lamp socket support comprising a metal disc adapted to rest on the edge of the casing, a non-metallic annulus thereabove, a metal annulus above the non-metallic annulus having a lamp socket secured to the edge of the aperture therein, a non-metallic disc of a diameter less than the diameter of the metal disc and secured therebelow, a flanged metal annulus below the non-metallic disc, metallic connecting means securing the two metal annuli together, a battery contact member below the lamp socket support, rivet means securing the contact member to the metal disc axially of the lamp socket, a switch contact carried with the casing and movable into contact with the flange of the annulus, a flanged lamp socket support retaining ring threaded on the casing end whereof the flange overlies the metal annulus and insulating means disposed between the flange and the metal annulus.

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