

Dec. 31, 1957

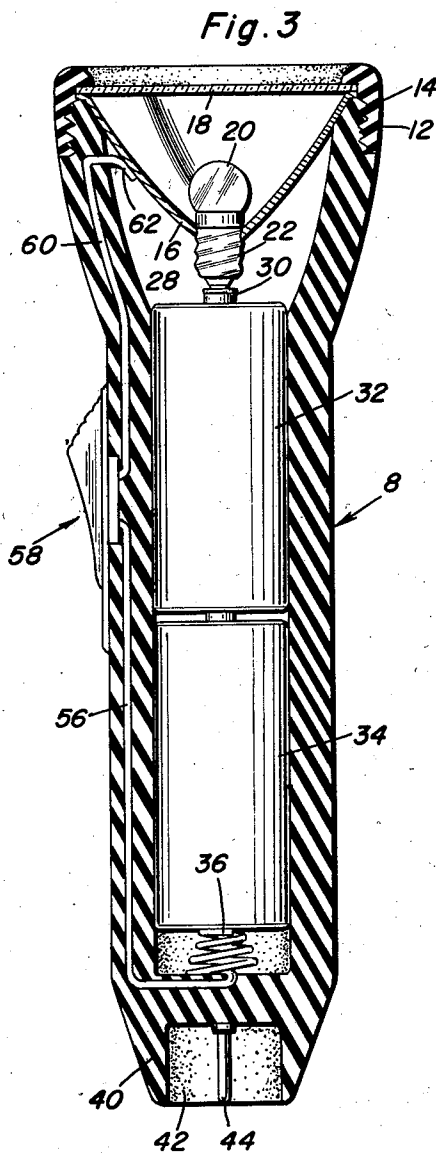
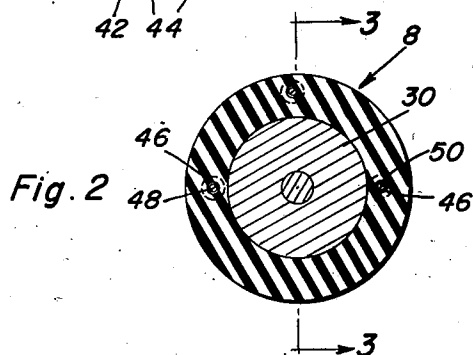
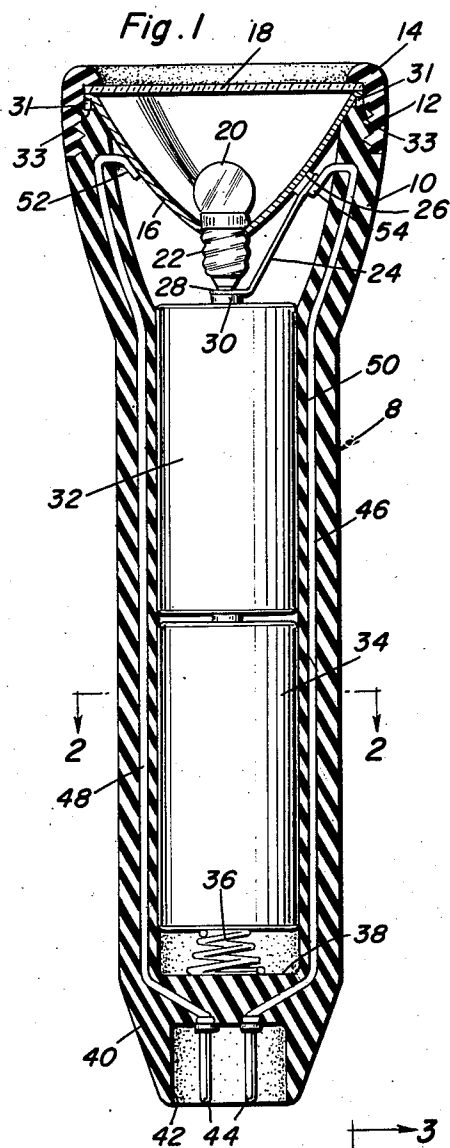
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2,818,498

FLASH-LIGHT AND EXTENSION-LIGHT COMBINED

Filed Aug. 30, 1955

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 4

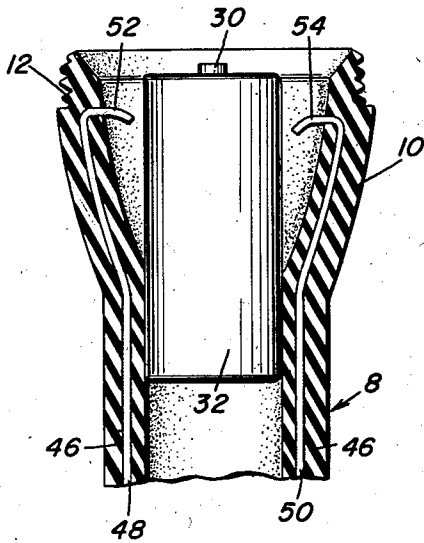


Fig. 5

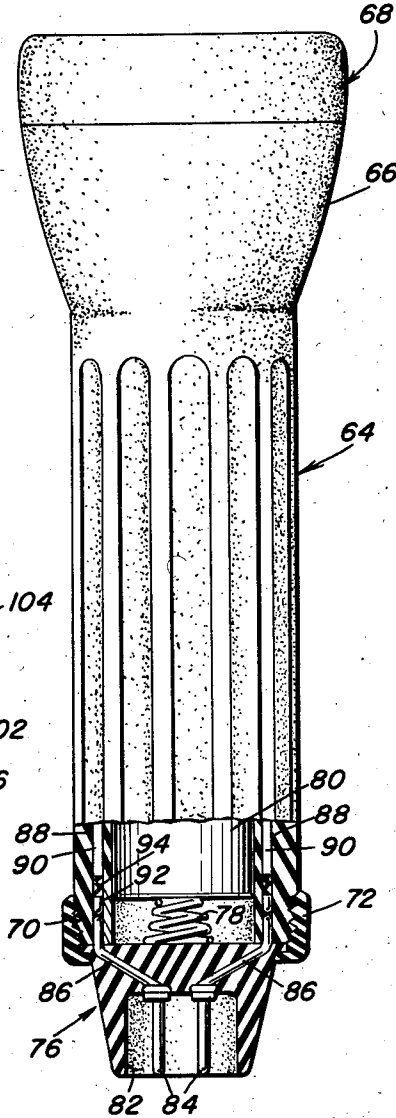


Fig. 6

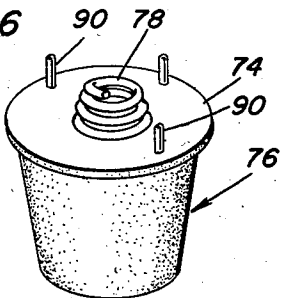
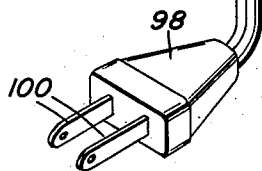


Fig. 7



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FLASH-LIGHT AND EXTENSION-LIGHT COMBINED

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2 Claims. (Cl. 240—10.66)

The present invention relates to a multi-purpose light, generally speaking, and has reference in particular to an improved flash-light having extension cord light facilities incorporated therein whereby to provide a unified structure which is herein designated as a flash-light and an extension-light combined.

In carrying out the principles of the invention a flash-light is provided which is substantially conventional and operates on two dry primary cells functioning as a three volt battery, and includes the necessary structural parts to accommodate a resistor cord which receives its supply of current from 110 and 120 volt house current outlets either D. C. or A. C.

Although the herein revealed multi-purpose light may be appropriated for use wherever necessary or desired it is primarily intended to be used on board ships and locomotives by supervisors, inspectors, craftsmen and shop workers of all classifications.

To appreciate the significant advantages of a dual-purpose light it is well to take into consideration the use of the invention on board ship, for example as a flash-light. Under normal conditions by using a .5 ampere bulb, a renewal of the cells is generally required or necessary every hour. Using the invention as a so-called extension-light, there will, obviously, be a saving of cells. At the same time there will be present a constant reserve of light power available. Assuming that a power failure occurs onboard, it is easy to picture a workman with all of his tools spread on an oily floor, gears or other pieces of machinery pitching and rolling and in motion and perhaps in the dark. With this two-way light all that is then necessary is to close the switch whereupon the emergency light source of the flash-light may be brought into play.

Briefly, the preferred embodiment of the invention is characterized by a flash-light casing providing a hollow handle and also a receiver and holder for dry cells, said casing being open at at least one end and provided at the opposite end with a socket means and complementary current conducting prongs, a bulb assembly removably mounted on said open end and embodying a reflector, a flash-light bulb carried thereby, a lens and clamp means for the lens and reflector separably connectible with the open end portion of said casing, conductors embedded in said casing and connected at like ends to their respective prongs, conventional dry cells contained for use in the receiver space of said casing, the cell closest to the usual screw base of said bulb having electrical cooperation with said base, one of said conductors having electrical contact with said reflector, a contact finger having one end fixed to but insulated from said reflector, the other end thereof being interposed between said bulb base and the last mentioned dry cell, a third conductor also embedded in said casing, including a manually and optionally usable switch and having circuit connection with said reflector and dry cells, whereby the same bulb assembly functions for operation from said cells or from a source of either A. C. or D. C. house current.

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Other objects, features and advantages will become more readily apparent from the following description and the accompanying sheet of drawings.

In the drawings wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a view in section and elevation showing a dual purpose "flash-light" constructed in accordance with the principles of the present invention and detailing the added facilities and circuits converting the flash-light into an extension-light;

Figure 2 is a cross section on the plane of the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 1 the section being on the line 3—3 of Figure 2;

Figure 4 is a fragmentary in section and elevation with the cover or lamp bulb assembly off and illustrating how the dry cell batteries are inserted or removed;

Figure 5 is a view in elevation and section showing the modified bottom construction characterized by an attachable and detachable adapter;

Figure 6 is a perspective view of the adapter by itself; and

Figure 7 is a perspective view of the extension cord.

Referring now to the drawings and particularly to Figs. 1 to 4 inclusive, the insulated flash-light casing is denoted by the numeral 8. It is of customary elongate form and the upper end is flared and enlarged into a head 10. This may be described as the upper open end and the head is externally screw-threaded at 12 to accommodate the screw-threaded clamping ring 14 of the bulb assembly. This includes a regular reflector 16, lens 18 and lamp or bulb 20 with the usual screw-threaded base 22. This is provided with a permanent conductor finger 24 one end of which is permanently secured to the exterior of the reflector by way of a block of insulation 26. The free end is laterally disposed at 28 and is interposed between the adjacent contact button 30 and the contact on the base 22 as shown in Fig. 1. On the edge of the reflector flange are two prongs 31 of different sizes fitting into two grooves 33 of different sizes also, located on the upper end of the casing 10 and diametrically opposed. This, to permit the spring finger conductor 24 to remain in perfect contact with the conductor end 54 while attaching (screwing) the threaded clamping ring 14. This figure also shows the dry cells or batteries 32 and 34 in customary end-to-end arrangement with a coil spring 36 interposed between the bottom of the cell 34 and the permanent bottom 38 of the casing. Here this integral bottom is denoted as including an extension 40 having a recess defining a socket 42 housing rigid prongs 44. Connected with the prongs and extending through lengthwise bores 46 are the diametrically opposite high voltage conductors 48 and 50. The upper laterally directed end 52 of the conductor 48 is in the base of the head and is in electrical engagement with the reflector 16. The corresponding laterally directed upper end 54 is also in this space and is in contact with the spring finger or conductor 24. This therefore provides the added or additional circuit required in this flash-light to convert it into an extension-light. Incidentally, the device may be treated as an extension cord light with flash-light facilities or vice versa. To complete the flash-light, appropriate conductor means, a third conductor is provided and includes a portion 56 connected with the coil spring as shown in Figure 3 and with a manually operable switch 58 joined to the other conductor part 60 having a laterally directed end 62 in contact with the reflector. Thus Fig. 3 illustrates a complete flash-light. The purpose of Fig. 4 is merely to show how by removing the cover or lamp assembly the receiver space of the hollow handle is ready for insertion or removal of the batteries 32 and 34.

It is also possible to provide the construction so that

the batteries may be inserted from the bottom as is evident from Figure 5 which illustrates a slight modification. Here the insulated handle or casing is denoted by the numeral 64, the head at 66 and the removable cover means generally at 68. The lower end of the casing is open and screw-threaded at 70 to accommodate an assembling and clamping ring 72 which is also of insulated material and which engages the extending marginal flange 74 on the attachable and detachable adapter 76. This includes a coil spring 78 bearing against the lower battery or cell 80 and has a socket 82 and prongs 84 therein which prongs have extensions 86 projecting into the open end of the bores 88. Here the added conductors are denoted by the numeral 90 and located in the bores and have associated spring-pressed contact elements 92 projected by the springs 94. The terminal ends of the extensions 86 project into the bores and contact the elements 92 to complete the circuit in an obvious manner.

In Fig. 7 the extension resistance cord is denoted generally by the numeral 96 and has a conventional plug 98 on one end with usual prongs 100 for engagement with an A. C. or D. C. outlet ordinary house current (not detailed). On the other hand, there is a suitable plug 102 having a portion 104 which is fitted frictionally and telescopically into the recess or socket 82 and has accommodating socket 106 for the prongs 84.

It will be evident that this dual purpose or combination light construction works on three volt battery means, A. C. or D. C. house lighting current. Although usable in many places it is highly adaptable to use onboard ships and locomotives where only D. C. current is available in most cases. An average of 95% of ships and 100% of locomotives operate on D. C. The construction shown provides an additional circuit enabling the use of high voltage (110-120 volts) with the conventional flash-light facilities, the same bulb being employed for both purposes. When the flash-light is in use it functions as any ordinary flash-light as will be evident from Fig. 2 merely by opening and closing the switch. When the extension-light is employed the extension cord 96 is brought into play in an obvious manner and the plug means 102, 104 and 106 is fitted into the socket 42 or 82, respectively, as is clear from the drawings.

It is to be pointed out here that the battery switch should obviously be off when an outside source of current is used.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A flash-light embodying a casing of insulation material, said casing being open and screw-threaded at its

bottom and having a switch-equipped flash-light current conductor embodied therein and having a pair of diametrically opposite lengthwise bores containing added current conductors cooperable at their upper ends with the usual bulb assembly, the lower ends of said bores opening through the bottom of said casing, spring-pressed contact elements mounted in the lower end portions of said bores, a readily applicable and removable adapter of insulation material having a flanged portion abutting the bottom end of said casing, said adapter having an axial socket for reception of a cord plug and also having prongs including extensions projecting into said bores and electrically abutting their respective spring-pressed contact elements.

2. A flash-light comprising a casing providing a hollow receiver and holder for dry cells, said casing being open at at least one end and formed at the opposite end with an integral socket and complementary current conducting prongs projecting into said socket, a bulb assembly removably mounted on said open end and embodying a reflector, a flash-light bulb carried thereby, a lens and clamp means for the lens and reflector separably connectible with the open end portion of said casing, a pair of current conductors embedded in said casing and operatively connected at like ends to their respective prongs, conventional dry cells contained for use in the receiver space of said casing, the cell closest to the base of said bulb having cooperating electrical contact with said base, one of said conductors having electrical contact with said reflector, a flexibly resilient contact finger electrically connected to the other of said conductors and supported by having one end fixed to but insulated from said reflector, the other end thereof being cooperatively interposed between said bulb base and the last mentioned dry cell, a third current conductor also embedded in said casing and including a manually and optionally usable switch arranged accessibly on the exterior of said casing and having circuit connection with said reflector and dry cells, whereby the one bulb assembly functions for selective operation from said cells on the one hand or from a source of either A. C. or D. C. house current on the other hand, and in combination, a readily attachable and detachable voltage dropping extension cord having a pronged plug on one end of the cord for connection with a conventional A. C. or D. C. outlet and having a plug on the other end which fits removably into said socket.

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