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NIGHT LIGHT

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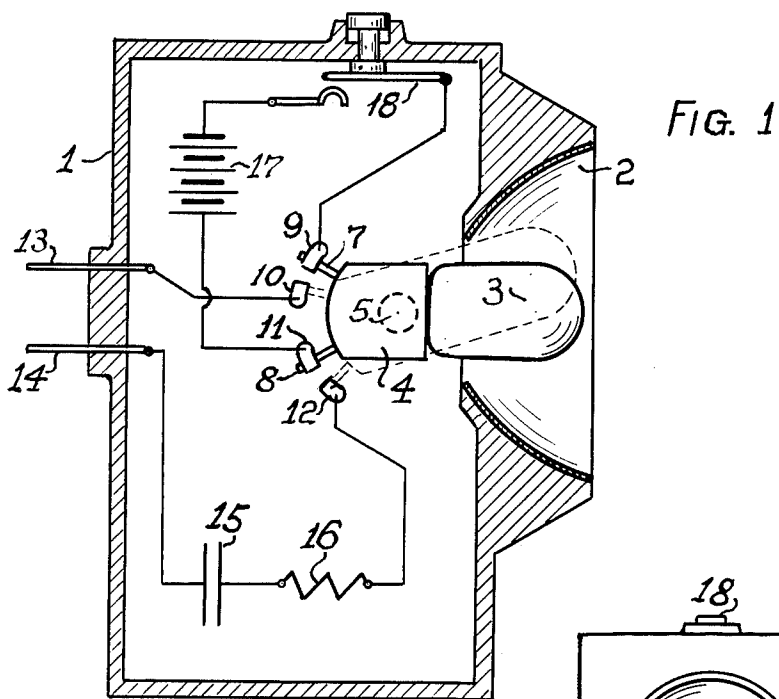
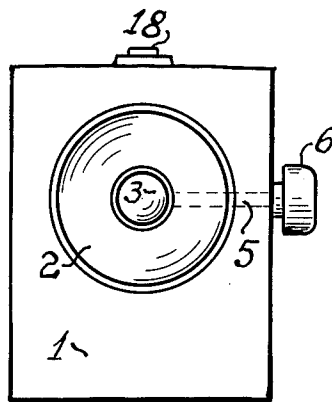
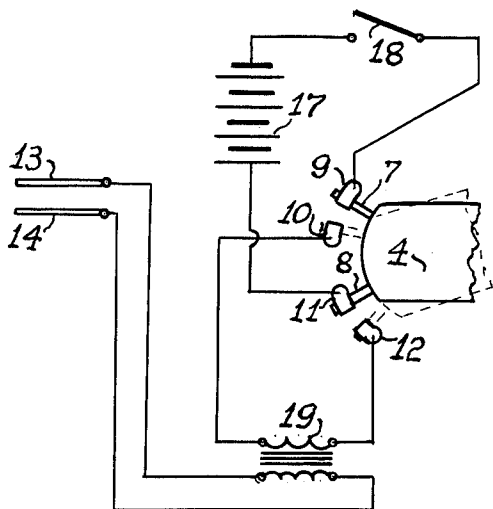


FIG. 3

FIG. 2

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3,222,513 NIGHT LIGHT

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My invention relates to night lights and more particularly to night lights which can serve also as emergency flashlights.

Night lights connected to the electric supply of the buildings are generally used in sick rooms, nurseries etc. Unfortunately, fires, storms, earthquakes and other serious emergencies are frequently accompanied by a temporary breakdown of the electric supply making these night lights inoperative. This difficulty is further increased by the fact that even when flashlights are kept in the building for such emergencies, quite often as a result of the general confusion these flashlights cannot be located without a long and dangerous delay.

One of the important objects of my invention is to provide a night light which is normally connected to the electrical supply of the building, but which is instantly available as a battery operated flashlight for stationary or portable application. The known location of this emergency flashlight is apt to eliminate serious delays in providing help in grave emergencies.

Another important object of my invention is to provide a device which gives automatically the right kind of illumination both as a night light and as a flashlight: a subdued diffused light as a night light, a sharp concentrated light as a flashlight.

A further object of my invention is to provide a night light which is inexpensive in manufacture, economical in operation and convenient in use.

Other objects and advantages of my invention will be apparent during the course of the following description.

In the accompanying drawing, forming a part of the present application, wherein for the purpose of illustration are shown a preferred and a modified form of my invention,

FIGURE 1 is a schematic cross-sectional view of the preferred form of my invention,

FIGURE 2 is a frontal elevational view of the same,

FIGURE 3 is a schematic view of a modified form of my invention.

Referring to the drawing, the numeral 1 designates the casing or housing of my device, a cross-sectional view of which is shown in FIG. 1. Mounted on this casing 1 is a reflector having a polished light reflecting surface so constructed that, when a light source is placed in the focus of the reflector surface the reflected light will be concentrated, and when said light source is moved out of said focus the reflected light will be dispersed by the reflecting surface. In the preferred form of my device, shown in FIGS. 1 and 2, this reflecting surface, represented by the numeral 2, has the shape of a paraboloid.

Located within said reflecting surface 2 is an electric light bulb 3, which has the novel and important characteristic of having a pivotal motion from the position shown by the full lines in FIG. 1 to the position indicated by the dotted lines in said FIG. 1. In the said full line position the light producing filament of the bulb 3 is located substantially in the focus of the paraboloid shaped reflecting surface 2 thereby producing a strong concentrated reflected light, which is an important requirement when my device is used as a flashlight. In the dotted line position, shown in FIG. 1, the light producing filament of the bulb 3 is out of focus with respect to the paraboloid of the reflecting surface 2, hence, the reflected light will be dispersed, which condition is desirable when my device is used as a night light.

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In the preferred form of my invention, shown in FIGS. 1 and 2, this pivotal motion of the electric light bulb 3 is obtained in the following manner. The bulb 3 is secured to the bulb holder 4 which, in turn, is secured to the shaft 5 which is rotatably mounted in the casing 1 (see FIG. 2). The outer end of this shaft 5 is provided with a knob 6, whereby the pivotal motion of said bulb and bulb holder can be manually actuated.

The bulb holder 4 is provided with the terminal studs 7 and 8, which are conductively connected to the two terminals of the electric light bulb 3. The function of the studs 7 and 8 is primarily to receive the electrical energy for the energization of the light bulb 3. These studs 7 and 8 have also another important function. As seen in FIG. 1, my device has four stationary contacts 9, 10, 11 and 12, which are secured to the case 1. These contacts are so located that in the full line position of the bulb and bulb holder the studs 7 and 8 engage the contacts 9 and 11, respectively, while in the dotted line position these studs engage the contacts 10 and 12, respectively. Hence, these studs 7 and 8 and the said four stationary contacts function as a rotary switch utilizing the pivotal motion of the electric bulb and the bulb holder.

It is an essential feature of my invention that it is provided with two independent sources of electrical energy which are selectively utilized for the energization of the electric light bulb 3 as governed by the position of said bulb 3 with respect to the focus of the reflecting surface 2. One of these sources of electrical energy consists of a battery or dry cells 17, connected to the contacts 9 and 11 through the pushbutton switch 18, supplying D.C. current to the bulb 3 in the in-focus position of said bulb, shown by the full lines in FIG. 1. The other source of electrical energy is A.C. obtained from the electric supply of the building by plugging in the connector blades 13 and 14 of my device into a customary outlet box of the room. This A.C. supply is connected to the contacts 10 and 12, shown in FIG. 1, and will energize the bulb 3 when said bulb is in its out-of-focus position, shown by the dotted lines in said FIG. 1. As the A.C. supply voltage of the building is usually higher than the operating voltage of the bulb 3, in the preferred form of my device a properly dimensioned capacitor 15 and a resistance 16 are inserted into the A.C. circuit to limit the current and the terminal voltage of the bulb 3.

In the modified form of my invention illustrated in FIG. 3 an iron core transformer is employed to reduce the A.C. supply voltage of the building to the desired operating voltage of the bulb 3.

The preferred form of the switch 18, shown in FIG. 1, is of the pushbutton type which closes the D.C. circuit only as long as the pressure on the button is maintained and automatically returns into its open position when the pressure on the push button is relieved. In alternative forms of my invention the switch 18 may remain in the closed position until manually moved into the open position. Generally, it is within the spirit of my invention to employ as switch 18 any practical type of switch known in the art, and also to actuate the pivotal motion of the bulb 3 and the connected parts by other equivalent manual means than the knob 6 shown in FIG. 2.

The operation of my invention is as follows:

When operating as a night light, my device is plugged into an outlet box of the electric supply of the building and, by turning the knob 6, the bulb is moved into the out-focus position, producing a dispersed illumination. The night light may be turned off any time by turning the knob 6 back so as to move the bulb into the in-focus position. In this position of the bulb my device can be used as a battery operated flashlight by the closing of the

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switch 18, whether the device is left plugged in the outlet box or was removed from the box and used as a portable flashlight. Due to the in-focus position of the bulb this flashlight will give a concentrated illumination.

It is to be understood that the forms of my invention herein described and illustrated are only examples of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the subjoined claims.

I claim:

1. The combination comprising an alternating current electric supply; a direct current electric supply; a paraboloid shaped light reflecting surface having a focus and an opening; an electric light bulb inserted through said opening being pivotally mounted and having two positions: in one position producing light substantially in said focus, in the other position producing light out of said focus; an electrical switch mechanically connected to said bulb and having two positions, each corresponding to, and used with, one of said positions of the bulb; electrical connecting means, connecting said bulb through said switch to said direct current supply when said bulb is in said focus and connecting said bulb to said alternating current supply when said bulb is out of said focus; actuating means adapted to move said bulb and the connected switch from one of said positions to the other.

2. The device of claim 1 in which said direct current supply is produced by a battery and controlled by manual switch.

3. The device of claim 1 in which said alternating current supply is provided with a capacitor reducing the voltage impressed on the bulb to a predetermined value.

4. The device of claim 1 in which said alternating current supply is provided with a transformer reducing the voltage impressed on the bulb to a predetermined value.

5. The combination comprising an alternating current supply; a direct current supply; a reflector, paraboloid shaped and having a focus; an electric light bulb having a light producing filament, said bulb being movably supported and having two positions, said bulb being so disposed that in one of said positions said light producing filament is located in said focus of the reflector, and in the other of said positions said filament is located out of said focus; a two position electric switching means, each

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of its positions corresponding to one of said positions of said bulb, said switching means having a mechanical connection with said bulb insuring their simultaneous moving into corresponding positions; electrical connecting means connecting said bulb, through said switching means, to said direct current supply when said filament is in said focus, and connecting said bulb to said alternating current supply when said filament is out of said focus; actuating means for moving said bulb and the connected switching means from one position to the other position.

6. The combination comprising an alternating current supply; a direct current supply; a light reflecting surface having a focus; an electric bulb having a light producing filament and being movable between two positions, said bulb being so disposed that in one of said positions said filament is located in said focus and in the other of said positions said filament is located out of said focus; electric switching means, having two positions corresponding to said two positions of said bulb, and having mechanical connection with said bulb causing corresponding changes in the positions of said bulb and switching means; electrical connecting means connecting said bulb, through said switching means, to said direct current supply when said filament is in said focus, and connecting said bulb to said alternating current supply when said filament is out of said focus; actuating means for moving said bulb and the connected switching means from one position to the other position.

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