

Dec. 12, 1972

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3,706,004

COMBINATION LIGHT AND SWITCH

Filed Aug. 2, 1971

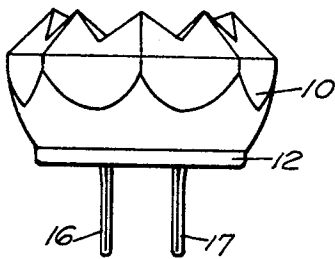


FIG. 1

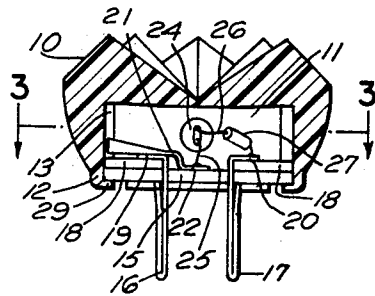


FIG. 2

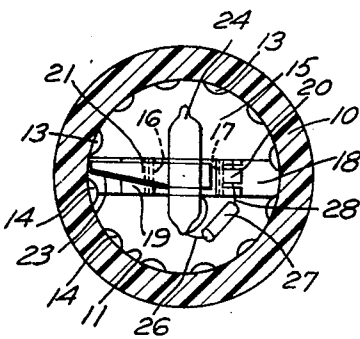


FIG. 3

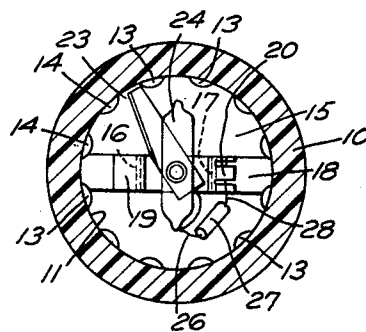


FIG. 4

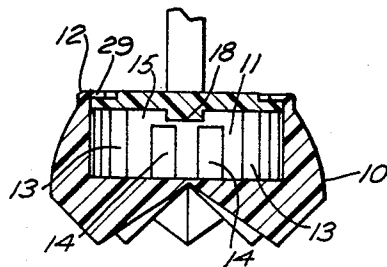


FIG. 5

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COMBINATION LIGHT AND SWITCH

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Filed Aug. 2, 1971, Ser. No. 168,190

Int. Cl. H01j

U.S. Cl. 315—71

10 Claims

ABSTRACT OF THE DISCLOSURE

A combination light and switch suitable for a night light. An outer translucent housing, clear or in colors, is provided with an annular recess on one side. The walls of the recess are provided with spaced, integral, vertical ribs. On diametrically opposed sides, at least two of the ribs on each side are shortened so that they do not reach the outer edge. A circular dielectric disc is mounted over the recess, resting on the outer ends of the ribs and locked in place by swedging over the edge of the housing. A pair of contact prongs are mounted on the disc with each prong having one leg extending through the disc and bent over. At the point where the prongs are bent over, the disc is provided with a thicker portion forming a rib across the diameter of the disc. Mounted on this side of the disc is a conventional neon lamp, resistance, and wiring so that they are hooked electrically to one of the prong legs. The other end of the lamp circuit is tied to a pivoted member which is designed to slide over and away from the turned over end of the other prong. This forms a switch for opening and closing the circuit to the lamp. With the parts assembled, the rib on the disc extends over the shorter ribs of the housing and can turn in both directions until the longer ribs are reached. The switch member extends between two of the ribs and is confined between them. Thus, when the prongs are pushed into a wall receptacle, turning movement of the housing will actually turn the bent over portion of the prong away from the switch member, which cannot turn because of the ribs. Reverse movement puts the switch on by contacting the parts.

My present invention relates to the electrical art, and more particularly to a novel construction of a combination light and switch.

The principal object of the present invention is to provide a combination light and switch construction in which turning movement of a light will actuate the switch for operating the light.

Another object of the present invention is to provide a combination light and switch which is usable as a night light.

A further object of the present invention is to provide a combination light and switch which utilizes a minimum number of readily assembled parts.

Another object of the present invention is to provide a combination light and switch which is simple in construction and easy and economical to manufacture and assemble.

With the above and other objects and advantageous features in view, my invention consists of a novel arrangement of parts, more fully disclosed in the detailed description following, in conjunction with the accompanying drawings, and more particularly defined in the appended claims.

In the drawings,

FIG. 1 is a side elevation of a combination light and switch embodying my present invention;

FIG. 2 is a vertical section thereof;

FIG. 3 is a section taken on line 3—3 on FIG. 2, with the switch in "on" position;

FIG. 4 is a view similar to FIG. 3 with the switch in "off" position; and

FIG. 5 is a section of the device with the electrical circuitry removed to show the interior of the housing.

Night lights and other small lights are frequently used in children's rooms or stairways or other dark places. These usually provide a small lamp which is plugged into a wall receptacle and is provided with a switch. When applied wall type fixtures such as in a bathroom, it is often inconvenient to reach the switch or the light. The present invention provides a small light in the form of a knob having conventional contact prongs extending therefrom. After insertion into a wall receptacle, turning movement of the knob operates a switch mounted within the light. This provides a small compact construction in a combination light and switch which is easily used at any electrical outlet.

Referring more in detail to the drawings illustrating my invention, the device comprises a housing 10 in the form of an annular knob-like member. The housing 10 may be suitably ornamented such as the gem-like faceted construction illustrated in FIGS. 1 and 2. The housing 10 is translucent and may be of a molded plastic material either clear or in colors. As viewed in FIGS. 1 and 2, the bottom end of the housing 10 is provided with an annular recess 11, the housing wall tapering to a thin bottom end 12.

The inside wall of the recess 11 is provided with spaced integral ribs 13 extending from the bottom of the recess to a point just short of the outer edge 12 of the housing. On diametrically opposite sides of the recess 11, there are two adjacent ribs 14 which are shorter than the ribs 13 as shown in FIG. 5.

I now provide a dielectric disc 15 which can be stamped or molded from a suitable plastic material. The disc 15 is provided with a pair of spaced conventional contact prongs 16 and 17. As can be seen in FIG. 2, the prongs are mounted so that they form a double fold with one arm extending through the disc on each prong. On the side opposite the prongs, the disc is provided with a diametric thickened portion 18 adjacent the perimeter. Now, viewing FIG. 2, the prong 16 has its arm extending through the disc 15 and bent to the left at 19 to form a contact area over the rib 18. On the opposite side, similarly, the prong 17 has its arm extending through the disc 15 and bent at 20 over the rib 15. A switch arm 21 is provided in the form of a small strip of conductive metal. One end is pivotally mounted in the center of the disc at 22. The arm 21 is bent at one edge 23 to provide it with thickness. The arm is sufficiently long so that it extends to almost the wall of the recess 15, beyond the body of the ribs 13 and 14.

A small fractional watt neon lamp 24 is mounted on the disc 15. One electrical connection 25 is attached to the pivot connection 22 of the switch arm 21. The other electrical wire connection 26 is attached to one end of a small resistance 27. The other end of the resistance 27 is attached to the bent end 20 of the contact prong 17, at 28. To avoid the cost and time of soldering, the portion 20 may be cut to provide a resilient tongue as shown in FIGS. 3 and 4 with the electrical wire 28 locked under the tongue.

It should be noted that the disc 15 is positioned in the recess 11 so that it rests on the top of the ribs 13. The thin bottom edge 12 of the housing 10 is swedged over to lock the disc to the housing, see FIGS. 2 and 5. The disc 15 may be provided with a peripheral thin portion 29 so that the swedged edge is flush with the surface of the disc.

In assembly, the switch arm 21 is positioned over the bent portion 19 as shown in FIG. 3 and the disc is placed

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in the housing 10 so that the cross rib 18 rests on the top of the short ribs 14 but at one side, abutting the nearest long rib 13, see FIG. 3. In this position, the flange 23 on the switch arm 21 will extend between the ribs 13 and 14. If the assembly is now pushed into a wall receptacle, current will flow from the contact prong 16, bent portion 19, switch arm 21 which touches it, wire 25, lamp 24, wire 26, resistance 27, wire 28, bent portion 20, to prong 17. This is a complete circuit and the lamp 24 will be lit. The housing 10 will be lighted and glowing. Now, if the housing 10 is grasped and turned clockwise in the direction of the arrow in FIG. 4, the ribs 13 and 14 will cause the switch arm 21 to move with it until further movement is prevented by the disc rib 18 contacting the rib 13 of the recess. The housing 10 can thus be swung in a short arc permitting the disc rib 18 to move over the short recess ribs 14, the longer ribs 13 acting as stops. However, the switch arm 21 is confined between the adjacent ribs 13 and 14, FIG. 3, and will be moved from the position shown in FIG. 3 in contact with the portion 19 to place the lamp in "on" position, to the position shown in FIG. 4 where the switch arm 21 is no longer in contact with the portion 19, breaking the circuit and turning the lamp "off." A short turn of the housing 10 one way will turn on the light and the other way will turn it off.

All exterior switches are eliminated, providing a small compact combination light and switch. It can easily be used at any house outlet. The electrical circuit and parts are all enclosed and out of reach so that it can be touched and turned on and off by a small child without danger. The parts are simple and easy to manufacture providing an economical construction. Other advantages of the present invention will be readily apparent to a person skilled in the art.

I claim:

1. A combination light and switch comprising a housing having an annular recess extending into it from one side, an annular dielectric disc rotatably mounted over said recess, means in said housing supporting said disc at the outer edge of said recess, a pair of electrical contact prongs mounted on said disc and extending from the outer face thereof, an electric lamp circuit mounted on the inner face of said disc in series with the inner ends of said prongs, a switch arm pivotally mounted on the inner face of said disc for controlling said electric lamp circuit, and means for operating said switch on rotation of said housing.

2. A device as in claim 1, wherein said housing comprises a translucent, decorative, knob-like member, the body of said housing tapering to a thin wall at the outer edge of said recess.

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3. A device as in claim 2, wherein said disc is locked to said housing by the swedged over edges of said thin housing wall portion.

4. A device as in claim 1, wherein said housing recess is provided with integral spaced ribs extending vertically around the wall of said recess, said disc being mounted on the upper ends of said ribs.

5. A device as in claim 3, wherein said housing recess is provided with integral spaced ribs extending vertically around the wall of said recess, said disc being mounted on the upper ends of said ribs.

6. A device as in claim 4, wherein said disc is provided with a thick portion extending diametrically across the inner face thereof, said recess having diametrically opposed shorter ribs permitting limited rotating movement of said disc relative to said housing, the longer ribs on each side of said shorter ribs acting as stop members bearing against said thick portion.

7. A device as in claim 4, wherein said switch arm operating means comprises an angularly bent edge on said switch arm adapted to extend between two of said ribs, whereby said switch arm will be pivoted by the relative rotation between said housing and said disc.

8. A device as in claim 6, wherein said switch arm operating means comprises an angularly bent edge on said switch arm adapted to extend between two of said ribs, whereby said switch arm will be pivoted by the relative rotation between said housing and said disc.

9. A device as in claim 5, wherein said disc is provided with a thick portion extending diametrically across the inner face thereof, said recess having diametrically opposed shorter ribs permitting limited rotating movement of said disc relative to said housing, the longer ribs on each side of said shorter ribs acting as stop members bearing against said thick portion.

10. A device as in claim 9, wherein said switch arm operating means comprises an angularly bent edge on said switch arm adapted to extend between two of said ribs, whereby said switch arm will be pivoted by the relative rotation between said housing and said disc.

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U.S. Cl. X.R.

200-155 A; 240-2 S; 313-312, 324; 315-58