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LAMP SWITCH COMBINED WITH AN ILLUMINATING INDICATOR

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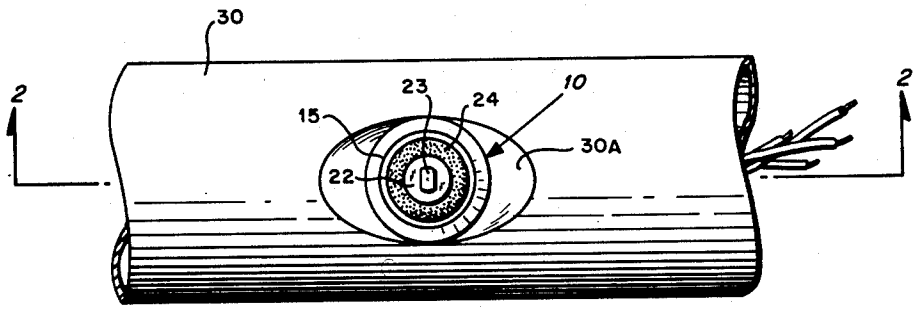



Fig. 1

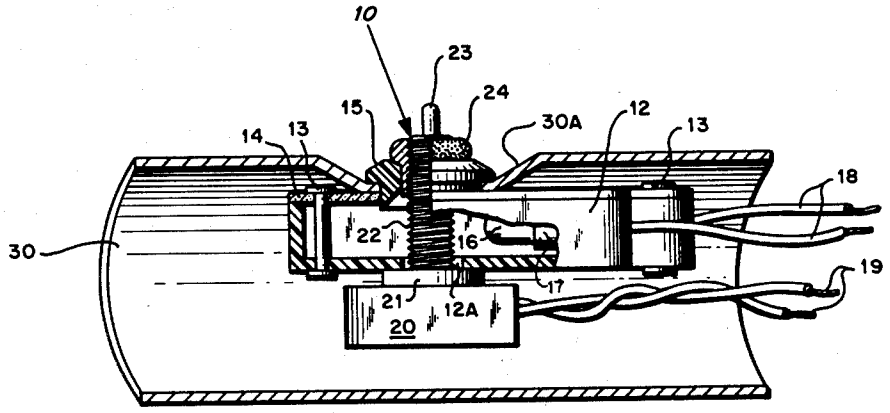



Fig. 2

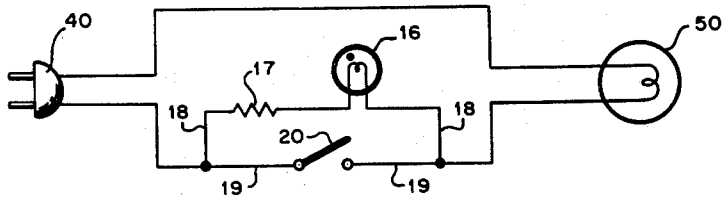



Fig. 3

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# LAMP SWITCH COMBINED WITH AN ILLUMINATING INDICATOR

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1 Claim. (Cl. 200—167)

This invention relates to an electrical switch. More particularly, it relates to a switch adapted for use on an incandescent lamp, fixture and supporting means. The supporting means is generally decorative for use in the home.

The lamp switch of this invention relates to a switch incorporating an illuminating device which is operative when the switch is in the off position and is inoperative when the switch is in the on position. Thus, this invention provides the householder with a lighting means in which the switch is always marked by the illuminating device when the lighting means is not in use. In general, this permits the householder to easily locate the switch on his lighting means even in a dark room.

It is an object of this invention to provide a switch for a lamp.

It is another object of this invention to provide a switch incorporating an illuminating device for a lamp, whereby said illuminating device provides a small amount of light at said switch when said switch is in the off position and said illuminating device provides no light when said switch is in the on position.

It is yet another object of this invention to provide a lamp, fixture, and support means for household lighting means, comprising a lamp switch, said lamp switch being provided with a low output gas discharge illuminating device and a resistor in series therewith, said illuminating device and resistor being connected across the terminals of said switch whereby said illuminating device is operative when said switch is open and is inoperative when said switch is closed.

Other objects and aims of this invention are made apparent in the following specification and claim.

The invention is best understood in connection with the accompanying drawing in which like reference numerals refer to like parts and in which:

FIGURE 1 is a top view of the switch in a partially fragmented lighting means support;

FIGURE 2 is a partially cross-sectional view taken along line 2—2 of FIGURE 1;

FIGURE 3 is a schematic diagram of the electrical circuit.

In this patent, the term "lighting means" refers to the complete main lamp, fixture, and support. The term "lamp" refers to the main light-producing means of the lighting means, and the term "support" refers to the mechanical structure of the lighting means which holds the fixture and lamp, as for example the base and standard of a floor lamp. The term "illuminating device" refers to the low-output light source incorporated with the switch.

The structure of the switch is best understood in connection with FIGURE 2. The switch, generally designated 10 is mounted on the support 30. This support is part of the overall structure of the lighting means, and is here shown as a typical tubular metal structure. A depression 30A is provided on the support 30, and the switch 10 is mounted in this depression. A hole is provided at the bottom of depression 30A and the switch 10 in its mounted position is partly within the interior of support 30 and partly on the upper surface of depression 30A, as best shown in FIGURE 2.

The switch 10 here shown as a typical switch is of the



push-type, wherein successive pushes on button 23 alternately open and close the switch contacts. The switch 10 comprises a switch section generally designated 20 and an illuminating device section generally designated 12.

The switching section 20 is a well-known standard switch means and its structure does not have to be varied from normally commercially obtainable switches. As shown, the switching section 20 includes the push-button 23, a threaded stud 22, and the contacts which are contained within the dependent chamber bearing the reference numeral 20. It is understood that the switch can be of the type illustrated, a rotary type, a push-pull type, or any other known type. The operation of this invention is not dependent on the exact type of switch used.

In addition, the switching section includes a lower washer 21 which rests at the bottom of stud 22. This element may also be a threaded nut if desired. A locking decorative nut 24 is provided with threads and is screwed down on stud 22 as shown. Since nut 24 is exposed to view, it is generally made of brass or some other material of pleasing appearance, and is provided with a knurled or roughened surface to provide a grasping means without spoiling the appearance.

The assembly of the complete switch 10 is clearly shown in FIGURE 2. The switching section is positioned within the support 30 and the stud 22 projects upwardly through the hole in depression 30A. Between the switching section and the bottom surface of depression 30A, the illuminating device section 12 is positioned. The illuminating device section is provided with a hole therethrough to accommodate stud 22. A glow washer 15 is placed around the stud 22 over illuminating device section 12 and partially over the depression 30A. This glow washer is a ring-shaped element of any convenient transparent material, generally a transparent plastic such as methyl methacrylate.

The locking nut 24 is then placed over the glow washer 15 and is screwed down on stud 22 so that the entire switch assembly 10 is firmly held in place on support 30.

The illuminating device generally designated 12 comprises a chamber preferably made of molded plastic. The top of this chamber closed with a sheet of fiberboard 14, which is held in place by means of rivets 13. In the embodiment shown, one rivet 13 is provided at each end of the illuminating device section 12. Also, in the embodiment shown, the right hand end of the section is reduced to a solid plastic projection having a hole through which rivet 13 extends.

The illuminating device section includes an illuminating device or gas discharge illuminating device 16. This illuminating device is generally a very small low-output neon lamp. For example a suitable gas discharge illuminating device 16 is a neon lamp rated at $\frac{1}{15}$ watt at 110–125 volts.

In close proximity to the gas discharge device 16, and in series with one of its leads 18, is a resistor 17. This resistor has a rating of the order of magnitude of the impedance of the gas discharge device itself, but the resistance of resistor 17 is somewhat less than the rated impedance of the gas discharge device 16. For example, the device 16 may have a rated impedance of about one megohm, and resistor 17 is rated at somewhat less than this value. The values are not critical and the tolerances are not critical.

The leads 18 from the illuminating device extend from the illuminating device section 12 as shown.

The leads 19 from the switching section 20 extend from that section as shown.

FIGURE 3 shows schematically the circuit involved. The lamp and its switch are connected to an ordinary source of household electricity, usually at a nominal 110

volts A.C. by means of male plug 40. A lead goes to incandescent lamp 50 which is the main light source. The other lead from plug 40 to lamp 50 has therein the switch 20, shown in open position, from which leads 19 lead to the lamp and the plug. Across the terminals of switch 20 as a shunt circuit are connected leads 18, having in series resistor 17 and the gas discharge illuminating device 16. The elements 16, 17, and 18 together comprise the illuminating device shunt.

When switch 20 is open, as shown in FIGURE 3, lamp 50 does not produce any light, but gas discharge illuminating device 16 does glow. When switch 20 is closed, the lamp 50 is illuminated, and at the same time gas discharge illuminating device 16 does not glow.

A convenient way to obtain the circuit set forth in FIGURE 3 is by connecting each lead 18 to one of the leads 19, and from the junctions thus formed, continue one lead to the plug 40 and one lead to the lamp 50.

It is apparent that when switch 20 is open and lamp 50 is therefore not lighted, that the glow washer 15 produces a soft dim ring of light around the button 23, and that the lamp switch is thus visible even in a dark room. The amount of current drain due to this device is very small. The illuminating device may be expected to work without any attention or replacement of parts for many years of continuous service, for example, five or more years of continuous service.

The scope of this invention is to be determined by the appended claim and is not to be limited by the foregoing specification and drawings which are intended to be illustrative and not limiting.



I claim:

In a lighting means containing an incandescent lamp, a hollow tubular support comprising part of said lighting means, a switch mounted on said support, said switch with stable "on" and "off" positions including a switching section positioned within said support and a threaded stud on said switching section and extending through said support, said switching section containing a switch having terminals, an illuminating device section positioned around said stud above said switching section comprising a chamber within said support containing a low-output neon gas discharging lamp having a high impedance of the order of one megohm and a resistor in series with said illuminating device having a lower impedance but of the same order of impedance as said neon lamp, a transparent ring element around said stud on the outside of said support above said chamber and communicating thereto, and a locking nut around said stud above said ring element, said illuminating device and resistor being connected across said terminals whereby said switch is illuminated when said incandescent lamp is off.

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