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SWITCH OPERATING MEANS FOR STAND LAMPS

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Fig. 1.

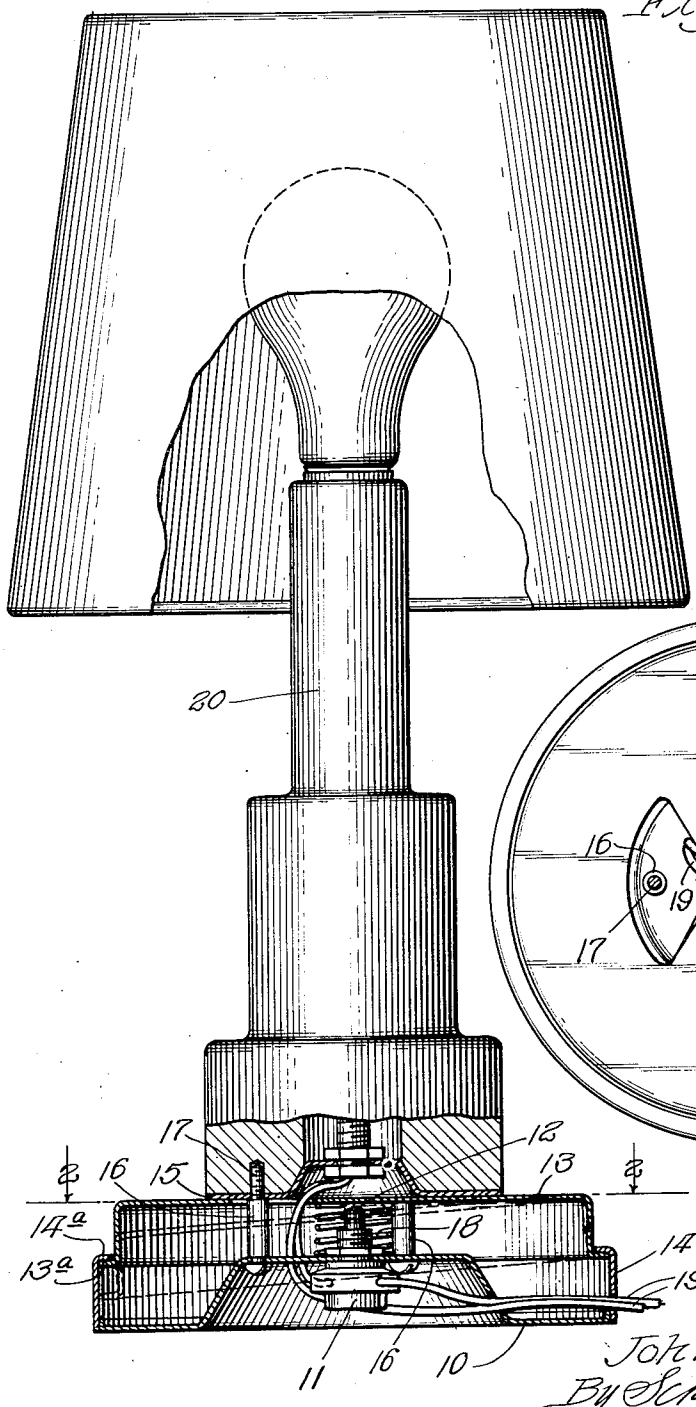
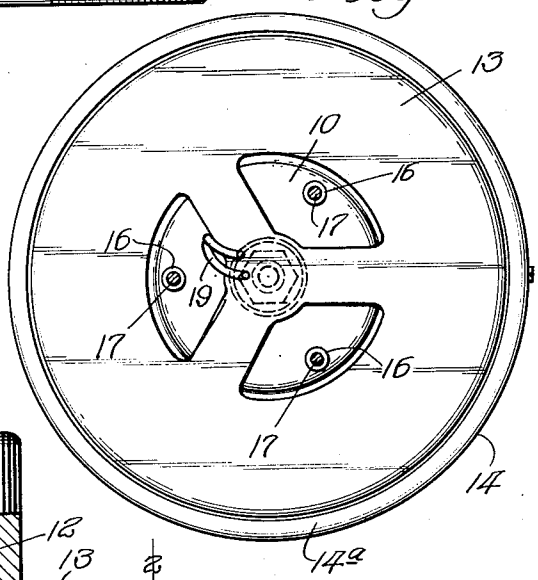


Fig. 2.



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SWITCH OPERATING MEANS FOR STAND LAMPS

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3 Claims. (Cl. 240—123)

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This invention relates to an electric switch and more particularly to an on-and-off switch for use in an electric lamp.

One feature of this invention is that it provides an electric switch having a large surface area to which pressure may be applied in order to operate the switch; another feature of this invention is that it provides an electric table or floor lamp having a switch conveniently located in the base thereof; a further feature of this invention is that it provides a simple electric switch manual control that can be easily located in the dark, or with a minimum of attention as to its location.

Other features and advantages of this invention will be apparent from the following specification and the drawings, in which:

Fig. 1 is a view, partially in section, of a lamp having a control switch in the base thereof; and

Fig. 2 is a view taken along the lines 2—2 of Fig. 1 showing the movable member which operates the switch.

In the particular embodiment of the invention illustrated in Fig. 1, a lamp base 10 has an on-and-off switch 11 mounted thereon. The on-and-off switch 11 is preferably of the plunger or push button type readily available on the market wherein a spring biased plunger 12 may be pressed to close a circuit that is open and to open a circuit that is closed. Such switches have been known for many years and therefore the mechanism whereby the circuit is alternately opened and closed upon repeated depression of the same button will not be described here.

A movable member 13 is positioned in operative relationship with the plunger 12. The movable member 13 is preferably circular in configuration, but it is not necessary to have such configuration in order for the device to function satisfactorily. An ovular, square, or other shape, will function satisfactorily provided the device is designed to accommodate such construction.

In the embodiment shown, there are two members which can serve to retain the movable member 13 in position when the switch is not being operated. The preferable manner of retaining the member 13 is by a collar 14 positioned around the periphery of the base 10. The retainer 14 has a portion 14*a* curved inward to engage a flanged portion 13*a* comprising the perimeter of the movable member 13. However, a retaining plate 15 positioned above the base 10 is also suitable as a means for retaining the movable member 13 when the switch 11 is not being operated. The retainer 15 is maintained in position with respect to the base 10 by means of spacer collars 16 and screws 17, the spacers serving to position the retainer 15 to the proper height above the base 10 and the screws 17 serving to hold the retainer 15 against the spacers 16. The movable member 13 is biased against the retainer 15 or the portion 14*a* of retainer 14 by means of the coil spring 18 surrounding the plunger 12. One of a pair of incoming wires 19 passes through the switch 11 and it is the circuit of this wire which is opened or closed by movement of the plunger 12.

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In the embodiment shown in Fig. 1, a lamp 20 is connected to the retainer 15 and the wires 19 are shown leading up through the central portion of the lamp 20. While the switch is thus illustrated with reference to a lamp it should be understood that it may be applied to other types of electrical equipment.

It may be seen that the movable member 13 is free to move up and down within the confines of one of the retainers 14 and 15 and the limit of travel of the plunger 12. When a point on the peripheral edge of the movable member 13 is pressed downward, the member will assume the position shown in dotted lines in Fig. 1. In this position the center of the movable member 13 has pressed the plunger 12 down sufficiently far to operate the switch 11. As may be seen, the movable member 13 and the retainer 14 have cooperated to apply lever action to the plunger 12. One peripheral edge of the movable member 13 has a downward force applied thereto and the opposite movable edge serves as a pivot or bearing surface for the lever action. It should be noted that the plunger 12 has travelled approximately half the distance travelled by the peripheral edge of the movable member 13 to which pressure has been applied.

The retainer 14 may be formed as part of the base 10, but this is not desirable where the member 14 is used as a retainer for the movable member 13 since the device is then difficult to take apart.

If the plate member 15 is used as a retainer for the movable member 13, the flange 13*a* may be omitted as well as the turned in portion 14*a* of the member 14. In this event if pressure is applied to one peripheral edge of the member 13 the peripheral edge of the member 15 opposite the point where pressure was applied to the member 13 will serve as the bearing or pivot surface for the other side of the movable member 13. When the plate 15 is used as the retainer

the downward movement of the center of the movable member 13 will not be as great as would be the case in which the collar 14 is the retaining member. Consequently, the plunger 12 will have to be made more sensitive to movement of the member 13 where the member 15 is used as the retainer. The plate member 15 may be increased in diameter, but in this event the exposed surface of the member 13 will be diminished. Therefore, for most installations the collar member 14 will be the preferable retainer.

It should be noted that no matter what point of the exposed surface of the movable member 13 has pressure applied to it, the travel of the center of the movable member 13 will always be the same. Thus, it may be seen that this invention provides a novel and simple means to control an electric circuit and it offers distinct advantages over an electric switch which is difficult of access when visibility is poor, or little attention is being given to the operation of the switch. The switch disclosed herein is particularly advantageous when applied to a lamp for use on a bedside table since it is a simple matter to find the switch in the dark.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims.

I claim:

1. In an electric lamp: a base; a switch mounted on said base; a vertically disposed plunger for operating said switch; a horizontally disposed movable member positioned above said plunger, said plunger and said disk being substantially coaxial; a flange on said disk; a collar around the peripheral edge of said base, said collar having a top portion turned inward and engaging said flange; and means for biasing said movable member against said collar, said movable member having an exposed surface around the periphery thereof which may be depressed at any point whereby the point on the flange adjacent the opposite peripheral edge of said member engages the portion of the collar immediately adjacent thereto which serves as a pivot point therefor, said disk member thereby acting as a lever to exert a downward force on said plunger.

2. In an electric lamp: a base; a switch mounted on said base; a vertically disposed plunger for operating said switch; a circular substantially flat movable member coaxial with said plunger and positioned immediately above it; a retaining member positioned above said movable member; and spring means biasing said movable member against said retaining member, said retaining member being substantially concentric with said movable member and being smaller in area whereby an annular portion of said movable member is exposed, said exposed portion being displaceable at all points whereby when pressure is applied to one point, a point on the upper surface of said movable member and diametrically opopposite the point where said force is applied presses against said retaining member and force is exerted on said plunger to move it sufficiently to operate said switch.

3. In an electric lamp: a base; an on-and-off switch mounted on said base; a spring biased plunger for operating said switch; a movable member horizontally disposed above said plunger, the center of said movable member being engageable with said plunger; spring means between said base and said movable member, biasing said movable member upwardly; a retaining element overlying a substantially continuous portion of said movable member completely around the point of contact with said plunger, and leaving exposed a substantially continuous circumferential area thereof which may be depressed at any point, whereby a point on said movable member diametrically opposite the depressed point bears against the retaining member which serves as a pivot point therefor, said movable member thereby acting as a lever to exert a downward force on said plunger.

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