March 10, 1931. M. H. SHOENBERG ET AL 1,795,740

FLASHING LAMP

Filed Oct. 12, 1926

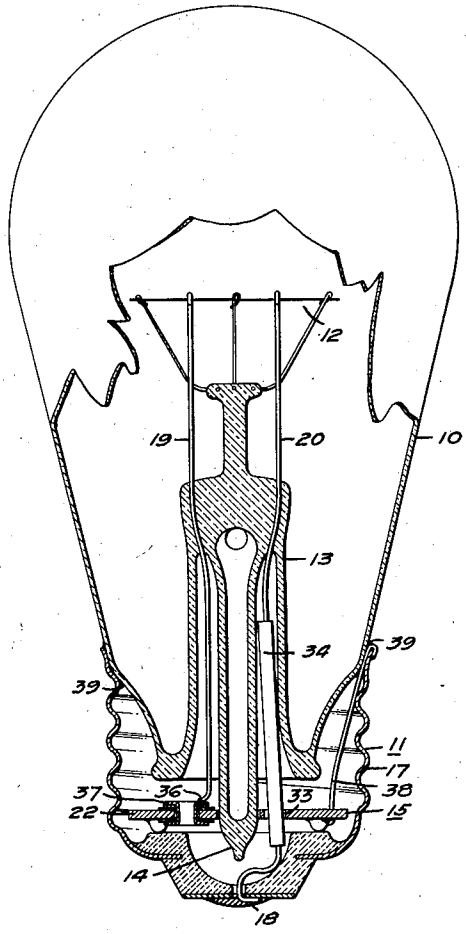



FIG. 1.



FIG. 2.

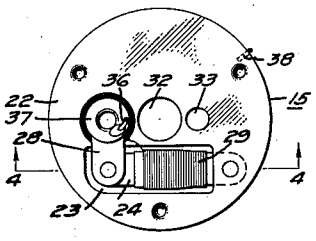



FIG. 3.

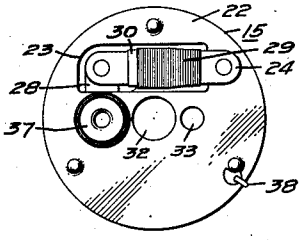
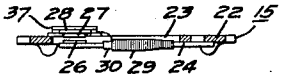



FIG. 4.



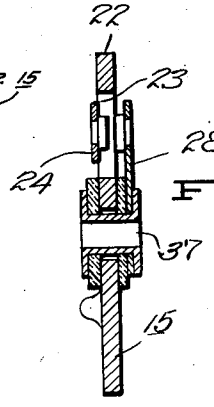




FIG. 5.

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Patented Mar. 10, 1931 1,795,740

# UNITED STATES PATENT OFFICE

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## FLASHING LAMP

Application filed October 12, 1926. Serial No. 141,058.

This invention relates generally to electrical devices for securing flashing illumination and particularly to those devices which are adapted to be intimately positioned with respect to the lamp to be illuminated.

In electrical signs, signals or other devices intended to attract attention, it has been common to incorporate means for repeatedly varying the current supplied to one or more lights in order to secure a flashing effect. These flashing systems have been more universally used since the invention of circuit interrupting devices in the form of a wafer or button adapted to be removably inserted in a lamp socket or receptacle beneath the base of a lamp or connection plug. (See Shoenberg Patent No. 1,400,914 and Shoenberg and Schon Patent No. 1,602,088). There are certain instances however where such a button is not particularly well adapted. For example, the socket or receptacle may be hanging in an elevated position, in which case it is difficult to keep the button in the socket while inserting the lamp. Since the button occupies a certain amount of space within the socket, a portion of the metallic lamp base will be exposed or the socket may not be deep enough to engage the lamp base after the button is inserted. It is also desirable to be able to market a certain type of advertising lamp with the assurance that it will always be used in a flashing circuit.

It is an object of this invention to construct an electrical lamp and a circuit interrupter as a unit which may be removably inserted in a lamp socket or receptacle.

It is a further object of this invention to incorporate a certain structure within the base of an electric lamp whereby the interrupter will be permanently associated with the lamp.

It is another object of this invention to provide a novel form of mounting for an interrupter element within the base of an electric lamp.

Further objects of this invention will appear from the following description in which we have set forth the preferred embodiment of our invention. It is to be understood that the invention is to be accorded a range of electrical and mechanical equivalents consistent with the state of the prior art.

Referring to the drawings:

Figure 1 is a cross sectional elevational view of a device incorporating the principles of this invention.

Fig. 2 is a top plan view of the mounting for the interrupter element.

Fig. 3 is a bottom plan view of the mounting for the interrupter element.

Fig. 4 is a cross section taken along the line 4—4 of Fig. 2.

Fig. 5 is a cross-section taken on the line 5—5 of Fig. 3.

The invention comprises generally an electric lamp having a metallic sleeve or other type of base adapted to be removably inserted in a lamp socket or receptacle, in combination with an interrupter element positioned within the base. A novel form of mounting is employed for the interrupter element whereby the period of interruption is made uniform and the device is rendered cheap to manufacture and easy to assemble. The form of the invention which has been illustrated comprises a lamp of the type having a transparent or translucent sealed globe or vessel 10 to which is secured a base 11 which may be inserted in a lamp socket or receptacle. Within the sealed vessel 10 there is disposed the usual light filament 12 which is suitably supported as by means of the stem 13. As the particular lamp shown is of the "tip-less" variety there has been shown a depending tube 14 through which the vessel 10 is evacuated during the process of manufacture. The base 11 is preferably made hollow and disposed within the same there is an interrupter element designated generally at 15.

The particular form of base 11 which has been shown is constructed with a metallic sleeve 17 formed with a threaded surface, a central insulated contact 18 being mounted upon the end of the sleeve. While a large percentage of the electric lamps now being manufactured are equipped with a base of this type, it is to be understood that the invention may be incorporated with lamps having any kind of base which may be removably inserted in

a suitable socket or receptacle. For example, the base may be of the two-prong contact type or it may have a single prong contact with a grounded metallic sleeve. With the type of base illustrated the terminal wires 19 and 20 from the filament 12 are normally connected to the metallic sleeve 17 and to the central contact 18. In this invention however, for electrically associating the interrupter element 15 with the lamp, this element is connected in series with one of the terminal wires.

The specific construction of the particular interrupter element employed and its associated mounting is shown in detail in Figs. 2 to 5 inclusive. Thus there is shown a relatively flat disc or metallic wafer 22 having a recess or cut-away portion 23 offset from the center of the same. Arranged to overlie and operate within this disc there is a bi-metallic strip 24 having its one end mounted upon the disc 22 and carrying a movable contact 26 at its free end. This movable contact is adapted to cooperate with a relatively stationary contact 27 carried by the metallic strip 28-which is provided with a suitable insulating mounting upon the disc 22. Suitable electrical heating means is provided for the bi-metallic strip 24 as for example, a resistance wire 29 which is wound on top of insulation 30 provided upon the strip 24. When a shunt type of interrupter element is desired, the resistance 29 is of relatively high value substantially greater than the resistance of filament 12. In this instance one end of the resistance wire is connected to the bi-metallic strip 24 and thus to the movable contact 26, while the other end is connected to the relatively stationary contact 27. If a series type of element is desired, the resistance wire is connected in series with the contacts 26 and 27 and these contacts are normally closed when the device is not in operation, heating of the bi-metallic strip in this case causing the contacts to separate and interrupt the current. The operation of both the shunt and series type of interrupter elements is well known and need not be described in detail.

To facilitate positioning the mounting for the interrupter element within the base 11, the disc has been provided with a central aperture 32 for receiving the end of the tube 14. Another aperture 33 may also be provided to permit the terminal wire 20 to extend down to the disc for connection to the central contact 18 as shown. This terminal wire may be insulated from the disc 22 as by means of an insulating tube 34. The interrupter element is connected in series with the terminal wires 19 and the metallic sleeve. Thus it has been shown as provided with a soldered connection 36 to eyelet 37 which is employed for mounting the strip 28, and the disc 22 is connected or grounded to the sleeve 17 by means of conductor 38. It is to be noted that the eyelet 37 is insulated from the disc as is shown particularly in Figs. 1 and 5. With this arrangement no short circuiting of the interrupter element will occur if the disc 22 comes in contact with the sleeve. Furthermore, the metallic nature of the disc serves as a heat storage device to stabilize operation of the interrupter element, thus causing the element to operate to maintain a relatively uniform flashing period. In practice the sleeve 17 is sealed to the vessel 10 as indicated at 39 so that the interrupter element will be protected from moisture or climatic conditions.

In operation the lamp is simply inserted in a lamp socket or receptacle adapted to fit the particular type of lamp base employed. If a shunt type of interrupter element is employed the contacts 26 and 27 are initially open and current flows through the resistance wire 29 and filament 12. Because of the relatively high resistance of the wire 29 the filament 12 will not be heated to incandescence or at least will not burn at full brilliancy. When the bi-metallic element becomes heated contact 26 is moved to contact with contact 27, thus shunting out resistance wire 29 and placing the full potential across the filament 12. The resistance wire 29 then cools to again interrupt the current. Since the device is incorporated in the form of a unit it may be readily inserted with one hand in any lamp socket or receptacle regardless of the elevation or the position of the same. When a lamp is manufactured as a particular advertising device, as by etching or placing certain letters or marks upon the surface of the globe or vessel 10, the manufacturer may always be assured that the lamp will be used in a flashing circuit, since it is impossible for the user to remove the interrupter element and incorporate it in a different system.

This case is in part a continuation of our copending application No. 49,976, filed Aug. 13, 1925 and entitled "Circuit interrupter".

We claim:

A device of the class described comprising a lamp globe, a hollow connector base secured to said globe, a sealing tube extending into said base, a current controlling element disposed within said base, and a relatively flat member serving as a mounting for said element, said member having a recess into which said tube extends.

In testimony whereof, we have hereunto set our hands.

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LESTER SCHON.