

Jan. 26, 1926.

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1,571,104

THERMALLY ACTUATED DEVICE FOR CONTROLLING ELECTRIC CIRCUITS

Filed Sept. 25, 1923

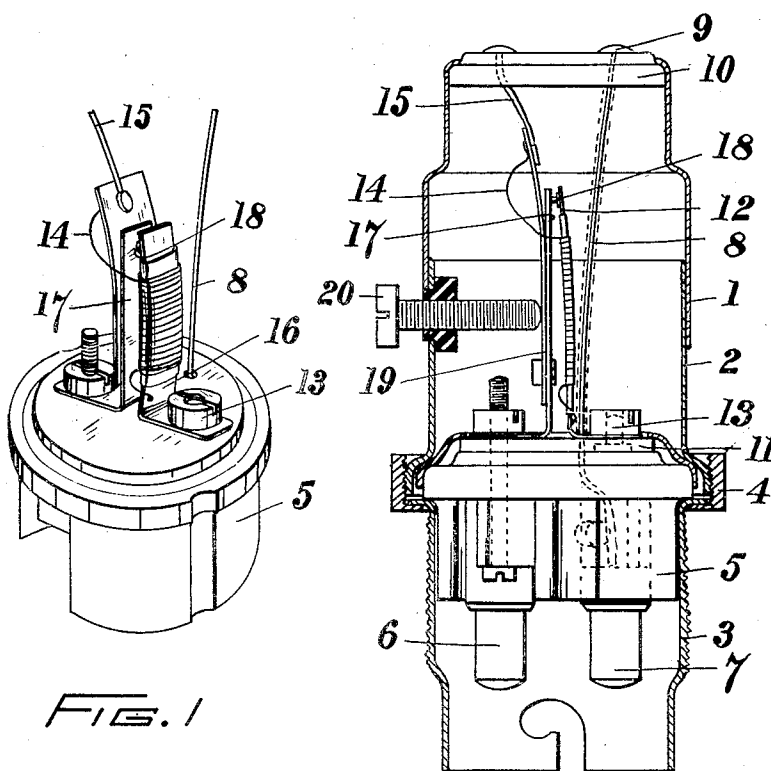


FIG. 1

FIG. 2

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Patented Jan. 26, 1926.

1,571,104

UNITED STATES PATENT OFFICE.

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THERMALLY-ACTUATED DEVICE FOR CONTROLLING ELECTRIC CIRCUITS.

Application filed September 25, 1923. Serial No. 664,764.

To all whom it may concern:

Be it known that I, PERCY WILLIAM BAKER, a British subject, and resident of "Bramber", 2 Durlston Road, Kingston-on-Thames, in the county of Surrey, England, have invented certain new and useful Improvements in a Thermally-Actuated Device for Controlling Electric Circuits, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a thermally-actuated device or flasher for the automatic switching on and switching off of current to electric lamps and is of that type adapted to be fitted to the lamp holder and in which the current is passed around a bimetallic bar or equivalent so as to heat it and cause it to bend and in doing so to break a circuit which is reclosed when the bar or equivalent cools sufficiently to return to its normal position.

Lamp holders generally comprise two main outer parts adapted to be held together by threaded rings and made to hold a plug or block of insulating material, usually of china, fitted with contacts through which the current passes.

In these devices as hitherto made it has not usually been possible to effect time adjustment of the flashes without partly dismounting or disassembling the device and in competent hands this is sometimes a troublesome matter whilst an incompetent person may cause some damage in making the alteration, in addition to which it is not generally easy to get precisely the adjustment required. My invention is designed to overcome these disadvantages and to provide means whereby the required alteration or adjustment can be easily made from outside the device without opening it or removing any of the parts.

The invention can be applied to practically any type of lamp holder, including the screw or concentric form, but it will be more particularly described as applied to holders of the bayonet catch type.

According to my invention the said two main outer parts are fitted with an insulating block carrying on one side spring terminals of substantially known type which contact with the usual metal terminals in the cap of the lamp and fitted on the other side with a fibre or other insulating disc or

equivalent on which the flasher, that is the bimetallic bar, and other parts are mounted. A screw or other movable device is fitted and can be adjusted from outside the holder for the purpose of regulating or setting the parts carried by the disc thus providing simple and easily operated means for producing long or short flashes or intervals between the flashes.

In a preferred form the said disc or equivalent carries a metal strip electrically connected through the disc to one of the before mentioned spring contacts. To this strip a contact is fixed and is adapted to close the circuit through another contact mounted on the bimetallic bar which is also carried by the disc and may be set about parallel with the said metal strip.

The current is carried by one lead or wire from an external contact through one outer member to one of the ordinary spring contacts in the other. This lead may be a plain wire suitably insulated.

The current passes by this wire and the said contact to the lamp, then through the lamp to the other contact which is connected, say by a fine screw or bolt and nut to the said strip and thence through the contact on it to that on the bimetallic bar and from the bar through the winding to another external contact and thus back to the supply. The current passing through the winding warms the bimetallic bar which bends and breaks the circuit at its contact adjacent to that on the strip. This strip has fitted to it a small piece or length of insulating material opposite to which the adjusting screw is fitted so that it can apply more or less pressure on the strip and bend it towards or allow it to spring from the bimetallic bar. The said length of insulating material may carry a screw and nut to hold the return wire if desired and thus positively keep the two wires in the holder apart.

The holder may have the usual catch slots in the end containing the spring contacts and the other end may be made in any suitable manner such as providing it with bayonet catch pins adapted to fit an existing holder so that the device can be applied to any ordinary lamp holder without special fitting.

I will now describe my invention with reference to the accompanying drawings in

which one form of the device suitable for use with an ordinary lamp holder of the bayonet catch type is shown.

In the drawings,

Fig. 1 shows the insulating block and the switch in perspective.

Fig. 2 shows substantially the whole device in vertical sections.

The case of the device is shown made of two upper parts 1 and 2 fixed together and a lower part 3 in which are the bayonet slots for the lamp, which is connected to the part 2 by a screw ring 4 in usual fashion.

A china or like insulating block 5 carries the spring lamp contacts 6, 7 and one lead 8 of the circuit is taken direct to the contact 7 from one of the usual spot contacts 9 on the insulating end 10.

A fibre or like disc 11 is placed over the block 5 and carries the flasher device which in this example consists of a bimetallic bar 12 held by screw and nut 13 to the disc. This bar is wound with a fine wire 14 permanently connected to the other lead 15 and to the bar itself at 16.

Adjacent the bimetallic bar is another substantially rigid strip or bar 17 connected to the lamp contact 6. The bars 12 and 17 normally contact at 18 and thus a circuit is established from 15 through 14, 16, 12, 18, 17, 6 and through the lamp, not shown, to the other spring contact 7.

The fine wire 14 warms the bimetallic bar and distorts it thus breaking the circuit at 18 until the bar 12 has cooled sufficiently to return to its normal position and reclose the circuit.

Mounted on the bar 17 is a fibre strip 19 against which a screw 20 presses. This screw is capable of adjustment from outside the case and provides an easy, fine and very satisfactory method of adjusting the position of the bar 17 in relation to the bimetallic bar 12 thereby enabling the "flash" period to be regulated as desired and without removing any part of the device.

It will be evident to persons familiar with the various forms of lamp holders generally used and with the said type or kind of thermally actuated switches used for the automatic switching on and switching off of electric current that by modifications in con-

struction this invention is applicable to most or all usual forms of electric lamp holders and it will also be obvious that because electric lamp holders are commonly fitted with adapters or plugs the lamp may be fitted to the holder direct or may be at a distance therefrom. Assuming lamps of the right voltage are used more than one lamp may be controlled by one of my switches and the latter may be at a distance from the lamp or lamps. For example, if the circuit is one of 200 volts, the switch may be placed in say an office or rear part of a shop premises and may control four 50 volt lamps connected in series in the shop window. The lamp holder may be mounted on a fixed base or on any suitable block or back instead of being constructed as shown in the drawing, to fit to another lamp holder.

What I claim is:—

1. A thermally-actuated electric switch adapted to fit an electric lamp holder and of the kind in which a bimetallic bar is warmed and cooled for the purpose of making and breaking the electric circuit in combination with an insulated screw device adapted to be actuated from outside the lamp holder and by which the periods of make and break can be varied, said screw device being wholly beyond the circuit controlled by the switch.

2. A thermally-actuated electric switch comprising a case having a lamp holder at one end and double terminals at the other end, a direct coupling between one of the lamp holder contacts and one of the terminals, a disc of insulating material in the case, a bimetallic bar mounted on the disc, a fine insulated wire wound round the said bar and connected by one of its ends to the bar and by its other end to the other of the terminals, a metal strip mounted on the disc adjacent the bimetallic bar and connected to the other of the lamp holder contacts, and an insulated screw device capable of being actuated from outside the case and adapted to press the metal strip towards the bimetallic bar, said screw device being wholly beyond the circuit controlled by the switch.

In witness whereof I have hereunto set my hand.

PERCY WILLIAM BAKER.