Dec. 22, 1925. 1,566,549

J. M. McMEEN

CIRCUIT CONTROLLING DEVICE

Filed June 19, 1924

Fig. 1.

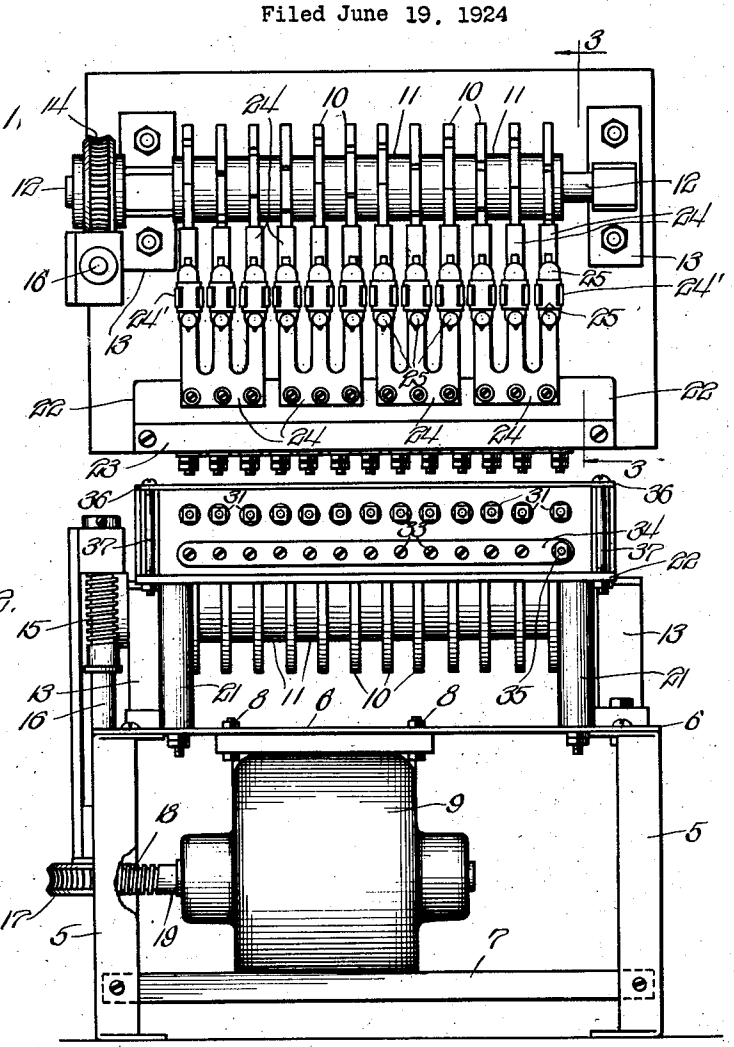
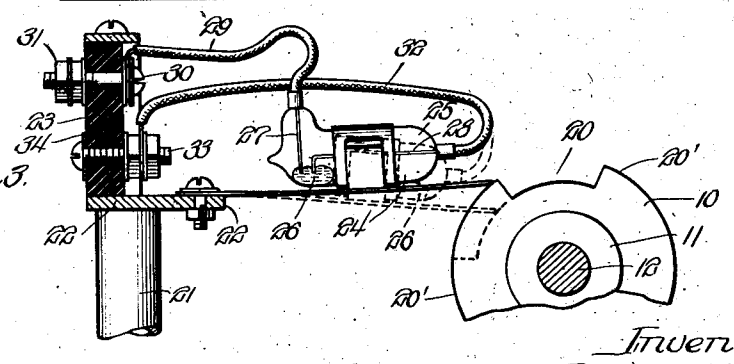


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES M. McMEEN, OF WESTMONT, ILLINOIS, ASSIGNOR OF ONE-THIRD TO WILLIAM I. ABBOTT, OF GLEN ELLYN, ILLINOIS.

CIRCUIT-CONTROLLING DEVICE.

Application filed June 19, 1924. Serial No. 721,067.

To all whom it may concern:

Be it known that I, JAMES M. McMEEN, a citizen of the United States, residing at Westmont, in the county of Du Page and State of Illinois, have invented certain new and useful Improvements in Circuit-Controlling Devices, of which the following is a specification.

The invention relates to electric circuit controllers and has especial reference to rotary means for controlling a plurality of circuits.

One of the objects of the invention is to provide a flasher in which the circuit terminals are protected from destructive wear due to the oxidizing effects of the atmosphere.

Another object is to provide a circuit controlling device or flasher which is practically noiseless.

Another object is to provide a circuit-breaking device in which the resulting arc is hermetically sealed so that it cannot ignite surrounding inflammable gases, thereby decreasing the fire hazard.

A further object is to improve flashers.

Other objects and advantages will readily appear from a consideration of the following description, when taken in conjunction with the drawings, wherein:—

Fig. 1 is a plan view of a flasher embodying my invention.

Fig. 2 is a rear elevation thereof.

Fig. 3 is a section substantially on line 3—3 of Fig. 1.

In all the views the same reference characters are employed to indicate similar parts.

The organized structure, as shown, comprises a frame having four posts 5, an overlying table top 6, and bars 7.

Mounted below the top and secured thereto at 8 is an electric motor 9. The motor rotates a plurality of cam wheels 10, which are spaced by washers 11 and mounted on the shaft 12. The shaft is rotatably supported in bearing-pedestals 13—13 which are mounted on the table top 6. One end of this shaft carries a worm wheel 14 which is driven by a worm 15 on the vertical shaft 16. The lower end of shaft 16 carries a worm wheel 17 which is driven by the worm 18 on the motor shaft 19.

Each of the cams 10 is cut away to a suitable extent, as at 20, at one or more peripheral points to open or close an electric circuit for stated periods of time.

Mounted on the table 6 are posts 21 which support a plate 22 and at right angles thereto, in a vertical plane, is a plate 23 of insulating material.

Mounted on the plate 22 are a plurality of spring fingers 24. The fingers 24 normally occupy the position shown in dotted lines in Fig. 3 until their free ends are raised by the respective cams.

Mounted in a spring clip 24′ on each finger 24 is a hermetically sealed exhausted casing 25, preferably of glass, or the like, containing a globule of mercury 26. Sealed into the casing wall is a wire 27 terminating near one end of the casing. Another wire 28 is also sealed in the wall of the casing and terminates near the free end of wire 27.

When the casing is tilted the globule of mercury will move toward one end and close an electric circuit between wires 27 and 28 and when this end of the casing is elevated or the other end depressed the mercury will run to the lower end and open the electric circuit.

When the cut-away portion 20 of the cam 10 passes under the outer end of any finger 24, the finger will be relieved of tension under which it has been placed by the larger part of the cam and will move down into dotted line position of Fig. 3 causing the globule of mercury to move to the lower end of the casing and to either open or close the circuit thus controlled.

As shown in Fig. 3, when the globule moves to the outer end of the casing, it will open an electric circuit. If the casing be turned end for end or reversed in position, then under the same conditions, the movement of the globule will result in closing the electric circuit.

It is therefore manifest that the same movement of the finger or either of them can be made to effectuate an electric circuit to open it for a definite time period, or to close it for the corresponding time periods by the simple act of reversing the position of the glass casing on its finger.

For example, if the cut-away part 20 of the cam 10 extends over 90 degrees of the cam periphery, as the device is shown in the

drawing, the circuit will be closed while the finger is riding over the part 20′ of the cam or during 270 degrees movement of the cam, or 75% of one revolution of the cam. If now the casing 25 be reversed in position on the finger, with the wire ends nearer the outer end of the finger, the relative time periods will be reversed and the circuit will be opened during the time it was closed before the reversal of the casing.

The wire 27 is connected to a flexible wire 29 and the end of this wire is connected to a binding screw terminal 30, which is mounted on the plate 23 of insulating material. The nuts 31 serve as means for connecting one wire of a circuit to be controlled by the device.

Wire 28 is connected by a flexible wire 32 to a binding screw 33. There are a pair of such binding screws for each casing 25 and supporting finger 24, as shown. All of the binding screws 33 are connected together by the strip 34. A binding screw 35, secured to the strip 34 is to be connected to a general return wire of all of the circuits.

The plate 23 is held in place by the strip 36 and the bolts 37.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

A circuit controlling device having a movable finger; a spring clip mounted on the finger; a cylindrical casing held on the finger by the clip and arranged to be reversed end for end in the clip; a pair of circuit wires terminating within the cylinder and near one end thereof; a globule of mercury within the casing adapted to close and to open a circuit between said wire terminals; and a rotatable cam, upon which the free end of the finger normally rests, having a cut-away part, operable to change the altitude of said end of the finger to control said circuit.

In testimony whereof I hereunto set my hand.

JAMES M. McMEEN.