March 29, 1932. N. ABRAMSON 1,851,144

ELECTRIC FLASHER

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Fig. 1

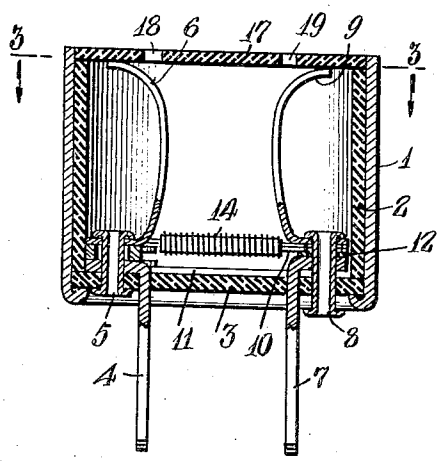


Fig. 2

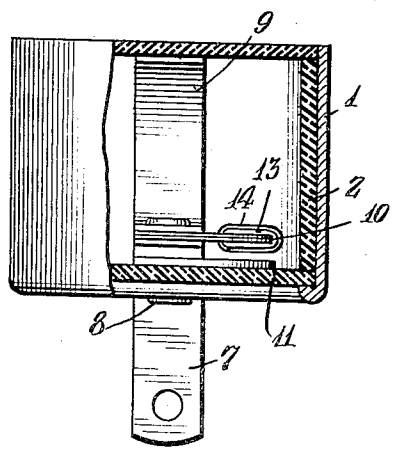


Fig. 3

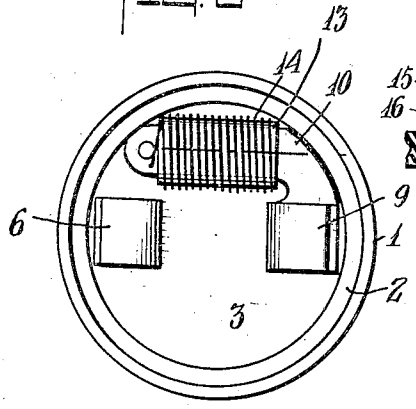


Fig. 4

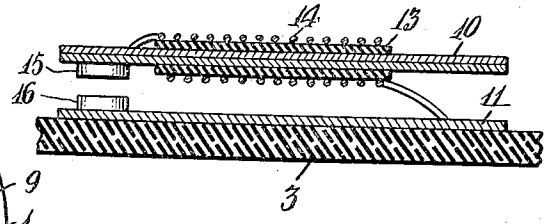


Fig. 5

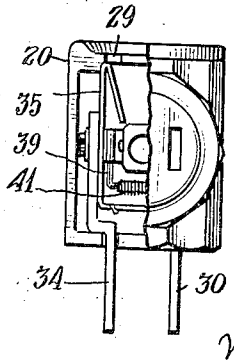
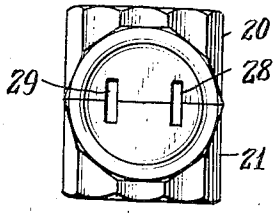


Fig. 6



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ELECTRIC FLASHER

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Fig. 7

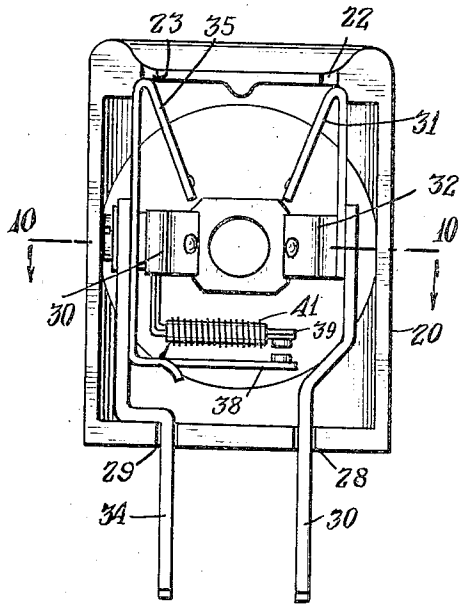


Fig. 8

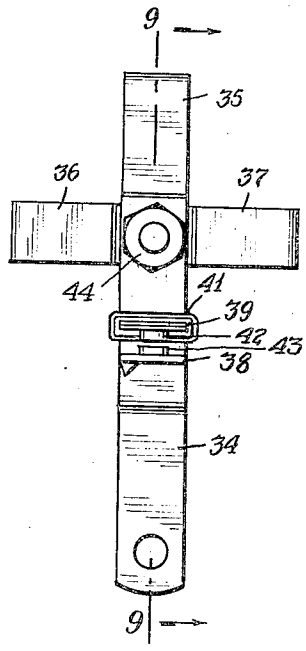


Fig. 9

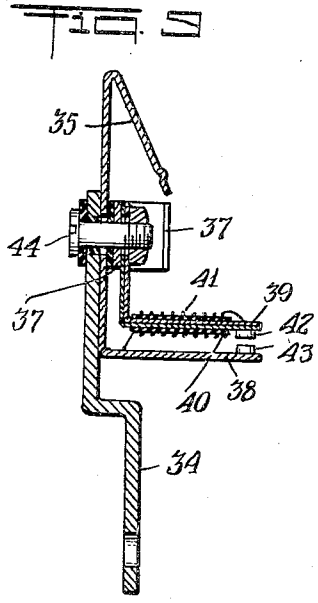
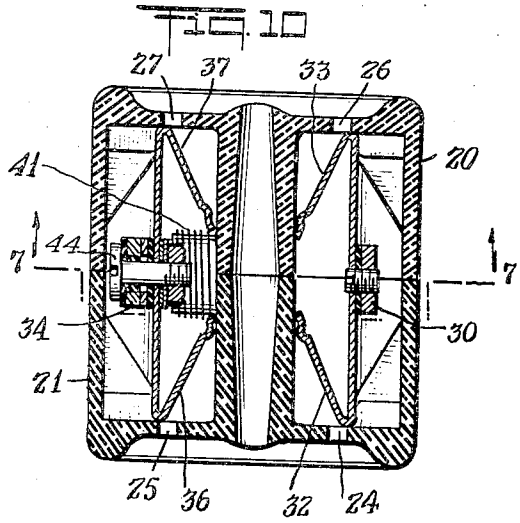


Fig. 10



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Patented Mar. 29, 1932 1,851,144

UNITED STATES PATENT OFFICE

NATHAN ABRAMSON, OF BROOKLYN, NEW YORK

ELECTRIC FLASHER

Application filed April 21, 1931. Serial No. 531,688.

My invention relates to flashers or current interrupters for electric circuits whereby lights are caused to intermittently flash or motors or the like to operate intermittently and it is my object to produce a cheap, simple, efficient and long lived device for this purpose and which, if desired, may operate a plurality of circuits from one flasher.

In the drawings, in which certain of the figures are enlarged for clearness of illustration, Fig. 1 is a sectional view of a single circuit flasher embodying my improvement; Fig. 2 a view of the structure of Fig. 1, partly broken away, and taken at right angles to the view shown in Fig. 1; Fig. 3, a sectional view of the structure of Fig. 1 on the line 3—3 thereof; Fig. 4 a sectional view of the thermostat taken on the line 4—4 of Fig. 3; Fig. 5 a side view, partly broken away, of a modified form of flasher for use with a plurality of circuits; Fig. 6 a top view of the structure of Fig. 5; Fig. 7 a side view of the structure of Fig. 5 one half of the shell being removed as indicated by the line 7—7 of Fig. 10; Fig. 8 a plan view of the thermostat and contact blades of the structure of Figs. 5, 6 and 7; Fig. 9 a sectional view of the structure of Fig. 8 on the line 9—9 thereof; and Fig. 10 a sectional view of the structure of Fig. 7 on the line 10—10 thereof.

The embodiment of my invention shown in Figs. 1 to 4 consists of a shell 1 provided with an insulating lining 2. An insulating disk 3 carries the thermostat and its connections. The usual blade 4 is mounted on the disk 3 and is secured thereto by a rivet 5 which passes through the blade 6 within the shell and holds the three parts together. This forms one side of the circuit.

The blade 7 is also secured to the disk 3 by a rivet 8 which passes through the blade 9 within the shell and through the thermostat blade 10 and the contact blade 11, holding the parts 3, 9, 10 and 11 together. The thermostat blade 10 is formed of two pieces of metal having different co-efficients of expansion under heat in the usual manner. The contact blade 11 is in electrical contact with the blade 7 while the thermostat blade 10 is in electric contact with the blade 9, the blades 7 and 11 being insulated from the blades 9 and 10 by the insulation 12, the rivet holes in the blades 7—11 being slightly larger than the rivet 8 so that the rivet is not in electrical contact with said blades.

Asbestos, or other material 13, is wrapped around the thermostat blade 10 and a coil of high resistance wire 14 is wound over the asbestos, one end being attached to the thermostat blade 10 and the other to the co-operating contact blade 11. Suitable contact points 15 and 16 are mounted on the outer ends of the thermostat blade 10 and contact blade 11.

A cover disk 17 is secured to the shell 1 and is provided with slots 18 and 19 to enable the blades on the attaching plug to contact with the blades 6 and 9.

In use, assume that the contact points 15 and 16 are separated. The current passes through blade 9, resistance wire 14, contact blade 11, blade 7, then through the lamp or other apparatus, and back through the blades 4 and 6. The heat of the resistance wire causes the thermostat blade to become hot and it bends until the contacts 15 and 16 close when the full current will pass through the blades 9, 10, 11 and 7, the lamp or other device and back through the blades 4 and 6. This relieves the flow through the resistance wire and it cools causing the thermostat blade to straighten and the contact points 15 and 16 to separate, breaking the main circuit and causing the lamp or other device to cease operation. These operations are repeated as long as any current flows.

If it is desired to operate a multiplicity of circuits intermittently the thermostat is embodied in the structure shown in Figs. 5 to 10.

The shell 20—21 is made in two parts provided with slots 22—23 in one end, 24—25 on one side, 26—27 on the opposite side and 28—29 in the opposite end. A blade 30 has the contact blades 31, 32 and 33 secured to its upper end, the blade 30 passing through the slot 28, the blade 31 adjacent the slot 22, the blade 32 adjacent the slot 24 and the blade 33 adjacent the slot 26 in the shell.

This forms one side of the circuit which provides for three outlets.

The blade 34 passes through the slot 29 and has the contact blades 35, 36 and 37 mounted on, but insulated from its upper end. The blade 35 is adjacent the slot 23 but in electrical contact with the blade 34, the blade 36 adjacent the slot 25 and the blade 37 adjacent the slot 27 in the shell. The blade 35 is carried downward and then out at right angles to form the contact point blade 38.

A thermostat blade 39 is mounted on and in electrical contact with the blades 36—37 and is insulated from the blades 34 and 35. Asbestos or other material 40 is wrapped around the thermostat blade 39, which is made of two metals having different co-efficients of expansion under heat in the well known manner, and a coil of high resistance wire 41 is wound over the asbestos with one end attached to the thermostat blade 39 and the other end to the contact point blade 38. Contact points 42 and 43 are mounted on the free ends of the blades 38 and 39.

Assume the contact points to be separated. The constant full current passes through the blades 34 and 35 and then through a lamp or other device and back through the blades 30 and 31. A portion of the current is shunted through the resistance wire 41 and heats the thermostat blade which bends until it closes the contact points 42 and 43 when the current passes through the blades 38 and 39, through a lamp or other device and back through the blades 30 and 31 completing the circuit. When the full current is flowing the thermostat blade cools and the contact points separate breaking the circuit through the blades 38 and 39. This operation is constantly repeated while the current is flowing so that the circuits through the blades 38 and 39 are intermittent.

This form of construction is so arranged that it may be inserted in any standard 3-way attachment body as is shown in the drawings.

The various parts of the thermostatic side of the device of Figs. 5 and 10 are secured together by a single fastener 44 just as the like parts are secured together in the form shown in Figs. 1 to 4.

I claim:—

1. A flasher device for electric circuits comprising a slotted shell, a blade passing through one end thereof, a second blade within said shell in electrical contact with the first blade, a third blade passing through one end of said shell, a fourth blade within said shell insulated from said third blade, a contact blade within said shell in electrical contact with said third blade and extending at right angles thereto, a co-operating thermostat blade in said shell in electrical contact with said fourth blade, a heating coil on said thermostat blade one end of which is connected to the thermostat blade and the other end to the contact blade, and a single fastening device securing the third, fourth, contact and thermostat blades together.

2. A flasher device for electric circuits comprising a slotted shell, a blade passing through one end thereof, a plurality of blades within said shell and in electrical contact with said first blade, a third blade passing through one end of said shell, a fourth blade within said shell and in electrical contact with said third blade, said fourth blade being extended at right angles to form a contact blade within the shell, a co-operating thermostat blade mounted on but insulated from the third blade and fourth blade and over said contact blade, a heating coil on said thermostat blade one end of which is connected to the thermostat blade and the other end to the contact blade, a second plurality of blades in electric contact with the thermostat blade and a single fastening device securing the third, fourth, contact, thermostat and the second plurality of blades together.

3. A thermostatic device for electric flashers comprising a first blade, a second blade mounted thereon and in electrical contact therewith, a contact blade extending at right angles to said first and second blades and in electrical contact therewith, a co-operating thermostat blade mounted on but insulated from said first and second blades and over said contact blade, a heating coil on said thermostat blade one end of which is connected to the thermostat blade and the other end to the contact blade, a third blade mounted on said thermostat blade and in electrical contact therewith and a single fastening device securing the blades together.

In testimony whereof I have affixed my signature.

NATHAN ABRAMSON.