

Dec. 3, 1946.

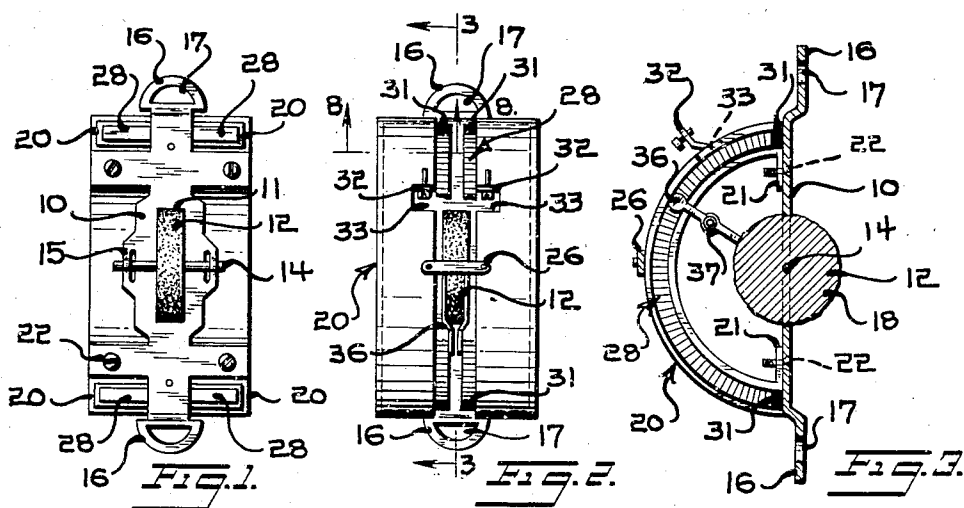
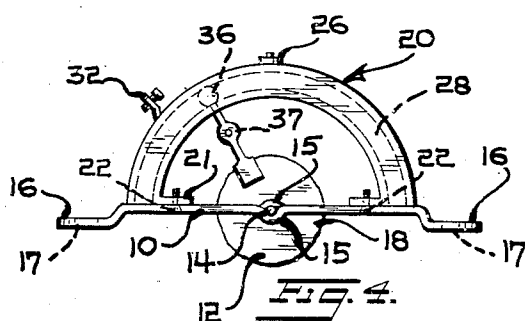
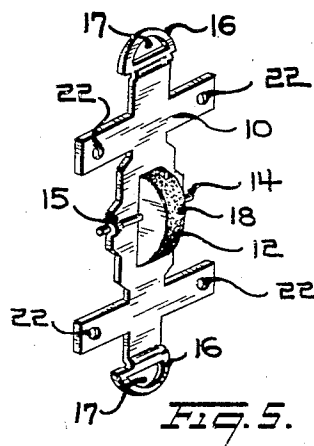
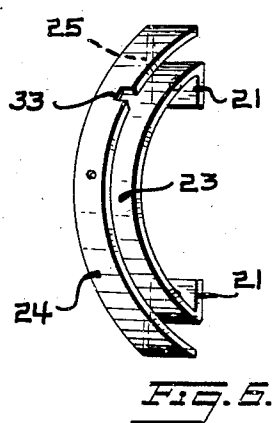
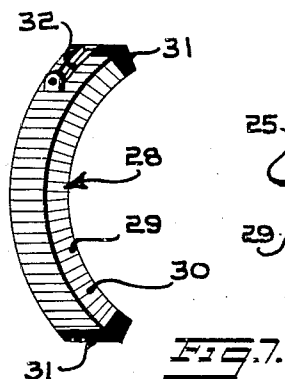
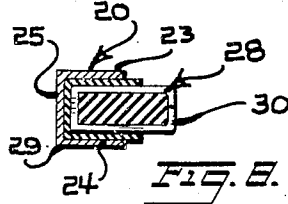
B. REISBERG ET AL

2,412,062

ELECTRIC LIGHTING SWITCH

Filed Sept. 11, 1945

2 Sheets-Sheet 1



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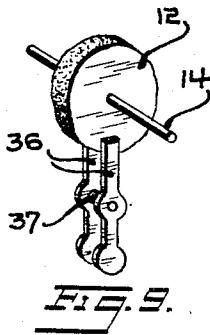
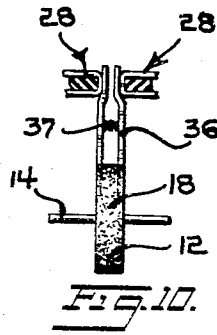
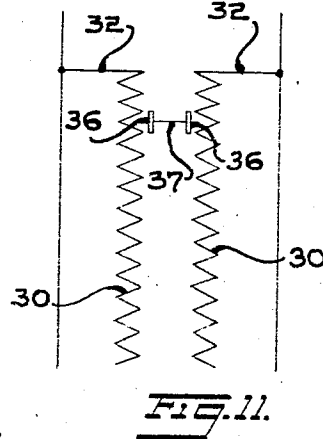
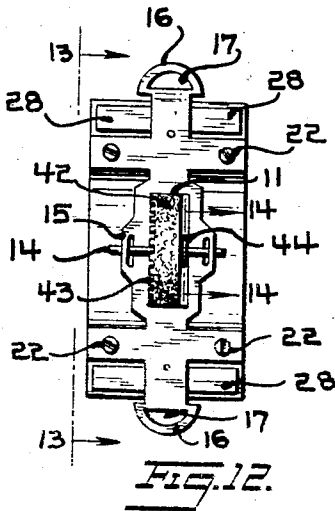
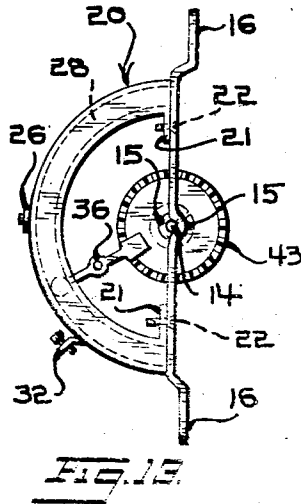
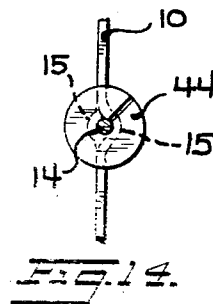
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ELECTRIC LIGHTING SWITCH

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2 Sheets-Sheet 2



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2,412,062

ELECTRIC LIGHTING SWITCH

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Application September 11, 1945, Serial No. 615,666

11 Claims. (Cl. 201—55)

1

This invention relates to new and useful improvements in electric switches.

More particularly the invention proposes a new and improved switch which is capable of controlling the amount of power passing through a circuit. The switch may be turned "on" and "off." While in the "on" position it may be adjusted for controlling the quantity of electric power passing through it. The switch is particularly intended to control lighting systems. With the switch it is possible to change the intensity of light from the electric light bulbs, as desired.

The new and improved electric light switch is characterized by a plate provided with an opening through which an insulation disc is rotatively supported so that the disc may be easily turned. It is proposed to mount one or more resistance windings in back of the plate and it is proposed to provide the insulation disc with one or more radially extending contact arms engageable with said resistance winding, or windings by which the power through the switch may be controlled.

The invention proposes an exceptionally simple and advantageous manner of mounting and supporting the resistance windings in position.

The new and improved switch is susceptible to many modifications. One modification has been disclosed in this specification, in which the insulation disc is associated with positive latch means by which it may be locked in various positions.

Still further the invention proposes a new and improved electric switch, as briefly explained, which is exceptionally simple, and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a front view of an electric switch constructed in accordance with this invention.

Fig. 2 is a back view of Fig. 1.

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a side elevational view of the switch.

Fig. 5 is a perspective view of the front plate and the insulation disc of the switch, illustrated

2

per se, to better show the construction of these parts.

Fig. 6 is a perspective view of one of the casings used in the switch for supporting the resistance windings.

Fig. 7 is a perspective view of one of the resistance windings.

Fig. 8 is a fragmentary enlarged sectional view taken on the line 8—8 of Fig. 2.

Fig. 9 is a perspective view of the insulation disc and contact arms, illustrated per se.

Fig. 10 is an elevational view of Fig. 9, but to which a fragmentary sectional view of the windings have been added.

Fig. 11 is a schematic wiring diagram of the device.

Fig. 12 is a front elevational view of an electric switch constructed in accordance with a modified form of this invention.

Fig. 13 is a side elevational view of Fig. 12 looking in the direction of the line 13—13 of Fig. 12.

Fig. 14 is a fragmentary enlarged vertical sectional view taken on the line 14—14 of Fig. 12.

The electric switch in accordance with that form of the invention illustrated in Figs. 1 to 11 inclusive, includes a plate 10 having an opening 11 through which an insulation disc 12 is rotatively mounted. The disc 12 is mounted upon a pin 14 which is engaged through strip portions 15 stamped from the material of the plate 10 and arranged to form bearings for the ends of the pin 14. The plate 10 is provided with lugs 16 having openings 17 by which the switch may be conveniently mounted, as needed. The periphery of the disc 12 is formed with ribs 18, or roughened portions, so that it may be easily turned.

A pair of opposed semi-circular casings 20 are mounted upon the back of the plate 10. Each casing 20 has lugs 21 upon its ends which engage against the back face of the plate 10 and by which the casings are fixedly mounted on the plate. Fastening elements 22 engage through the plate 10 and the lugs 21 for connecting these parts. Each casing 20 has a pair of concentric slightly spaced side walls 23 and 24 and a back wall 25. A strap 26 is mounted across the outer side walls 24 for assisting in supporting the casings 20.

A pair of resistance windings 28 are mounted in and projected from said casings 20. Each resistance winding 28 comprises an insulation core 29 about which a resistance wire 30 is mounted. At the ends, the cores 29 are provided

with insulation coverings 31. A terminal 32 is connected with one end of each of the windings 30 and pass out from slots 33 formed in the side walls 24.

A pair of radially electrically connected contact arms 36 are mounted on and project from the back of said disc 12. These contact arms are resiliently urged apart and are electrically connected by a spring 37 mounted between them. The contact arms 36 normally contact the projecting edges of the windings 30.

The operation of the electric switch may be understood from the following:

The disc 12 may be turned in one direction, or the other so as to move the contact arms 36 to different positions along the windings 30. The windings 30 are spaced from each other, and the contact arms 36 connect them in series. The terminals 32 may be connected into an electrical circuit which the switch is to control. When the contact arms 36 are moved to the extreme ends of the resistance windings 28 they will engage upon the insulation coverings 31 whereupon the switch is open. When the arms 36 are moved to different positions upon the resistance windings 28 different amounts of the resistance windings will be connected in the circuit and in this way the current is controlled.

In Figs. 12 to 14 inclusive, a modified form of the invention has been disclosed which is very similar to the prior form except for the fact that the disc 42 has been associated with positive latching means, by which it may be held in various turned positions. More specifically, one side of the disc 42 is provided with an annular area of radially extending teeth, or serrations 43 which are capable of engaging the edge of the opening 11 in the plate 10, upon which the disc 42 is mounted. A split washer 44, or any other resilient member normally urges the disc 42 slightly laterally to engage said serrations 43 with the edge of the opening 11.

In other respects this form of the invention is identical to the prior form and like parts may be recognized by the same reference numerals.

The operation of this form of the invention is substantially identical to the prior form, however, before the disc 42 may be turned for controlling the electric current through the switch, it is necessary that the disc 42 be moved slightly laterally, for compressing the split washer 44 and for disengaging the teeth or serrations 43 from the edge of the opening 11. Now it is possible to turn the disc 42 for causing the contact arms 36 to assume different positions upon the resistance windings. When the disc 42 is released, the resilient washer 44 urges it laterally so that the serrations 43 are engaged with the edge of the opening 11.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:

1. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a

pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings.

2. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, said plate being provided with lugs by which it may be mounted, as desired.

3. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, said insulation disc having ribs or roughened portions upon its periphery.

4. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, said casings being provided with lugs by which they are mounted on said plate.

5. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, each of said casings having concentric side walls and connecting back walls.

6. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, said resistance windings comprising a core of insulation material and a winding upon said core.

7. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings,

5

and electric terminals connected with one of the ends of said windings, said resistance windings comprising a core of insulation material and a winding upon said core, and insulation members upon the ends of said resistance windings representing the open position of the switch.

8. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, said contact arms being electrically connected with an expansion spring.

9. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, and electric terminals connected with one of the ends of said windings, said casings being provided with cutouts through which said electric terminals extend.

6

10. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, electric terminals connected with one of the ends of said windings, and latch means for holding said disc in various turned positions.

11. An electric switch, comprising a plate, an insulation disc rotatively mounted on and through an opening in said plate, a pair of opposed semi-circular casings mounted on the back of said plate, a pair of opposed resistance windings mounted in and projecting from said casings, a pair of radial electrically connected contact arms mounted on and projecting from the back of said disc and contacting said windings, electric terminals connected with one of the ends of said windings, and latch means for holding said disc in various turned positions, comprising resilient means urging said disc laterally against one side of said opening in said plate, and serrations or teeth on the side of said disc engaging the edge of said opening.

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