Feb. 17, 1925. 1,526,634

I. F. GOTTSCHALK

RESISTANCE SWITCH

Filed Nov. 12, 1923 2 Sheets-Sheet 1

Fig. 1.

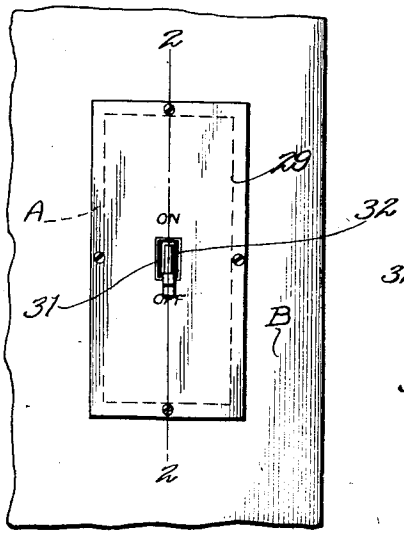


Fig. 2.

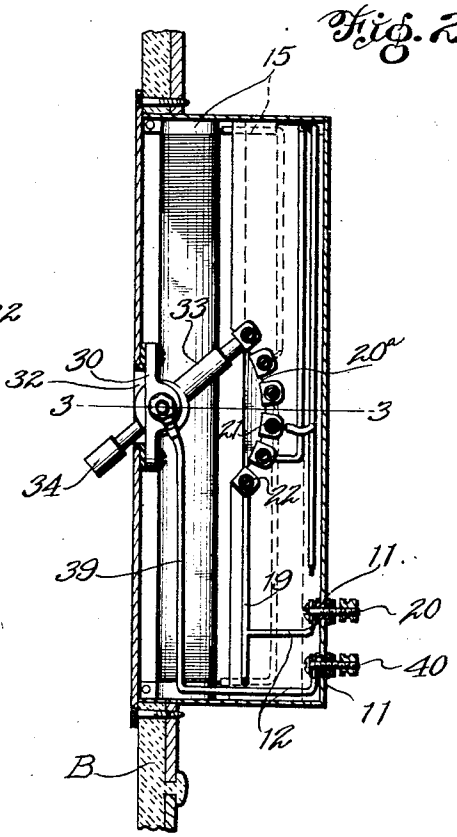
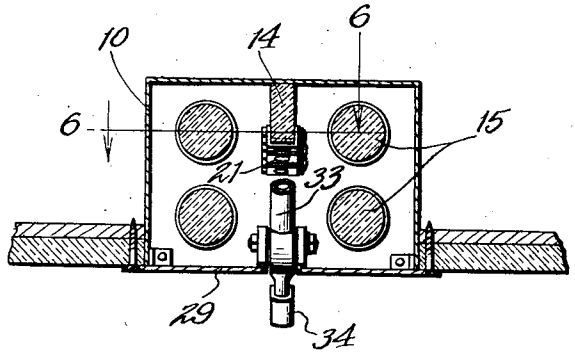


Fig. 3.



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Fig. 4.

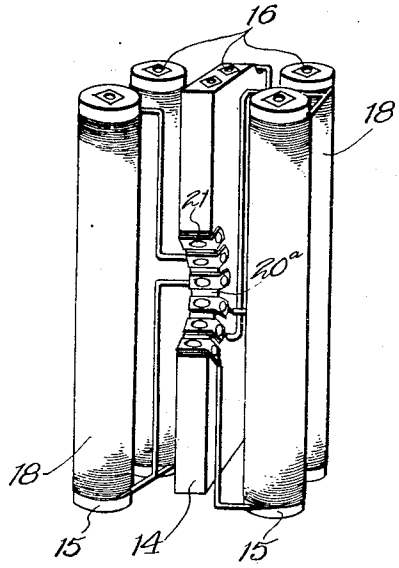


Fig. 5.

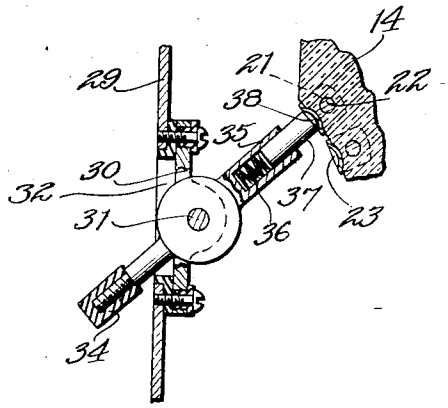


Fig. 6.

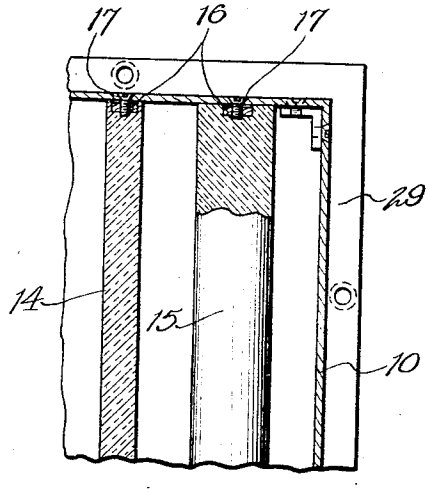
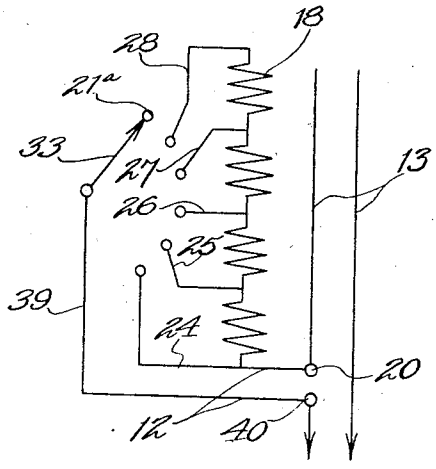


Fig. 7.



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UNITED STATES PATENT OFFICE.

IRA F. GOTTSCHALK, OF NEW YORK, N. Y.

RESISTANCE SWITCH.

Application filed November 12, 1923. Serial No. 674,271.

To all whom it may concern:

Be it known that I, IRA F. GOTTSCHALK, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Resistance Switches, of which the following is a specification.

This invention relates to electrical apparatus, particularly to wall switches and has for its object the provision of a novel switch embodying a rheostat construction and adapted to be used in series with the electric lights in a store, residence or any other place whereby to dim the lights when desired, the deivce being particularly of advantage when used in connection with the lights in a store by enabling all the lights to remain lighted all night but only dimly so that the current consumption will be small while at the same time adequate illumination may be provided throughout the store to avoid leaving any dark corners or recesses in which a thief might hide while a watchman or policeman passes the store on his beat.

An important object is the provision of a switch device of this character which is so constructed that the degree of illumination may be regulated step by step depending upon the brilliance of the illumination desired.

Another object is the provision of a switch of this character which may be manufactured at small cost and easily installed while at the same time having a pleasing appearance and being simple and efficient in operation, as well as durable in service and a general improvement in the art.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which:

Figure 1 is a fragmentary view of a wall showing a front elevation of the switch.

Figure 2 is vertical section on the line 2—2 of Figure 1.

Figure 3 is a horizontal cross section on the line 3—3 of Figure 2.

Figure 4 is a perspective view of the stationary portion with the housing thereof removed.

Figure 5 is a fragmentary view showing the movable member which co-operates with the contact points.

Figure 6 is a section on the line 6—6 of Figure 3.

Figure 7 is a diagram of the circuit.

Referring more particularly to the drawings I have shown my switch structure as comprising a suitable housing 10 constructed of sheet iron or the like in the same manner that junction boxes are formed, and this housing is preferably of rectangular shape and provided with openings 11 within which may be secured, by the ordinary means, the flexible or rigid conduits 12 which contain the current carrying wires 13. It is intended that the device be interposed in a circuit between the source of current and the lamps to be energized and my switch is employed either in conjunction wtih or in place of the ordinary cut off switch. The housing 10 is intended to be mounted within a suitable recess A in a wall B or in a wainscoting, base board, door casing or jamb, there being no restriction in this respect.

Within the housing I mount a suitable frame or body which includes a vertical central web 14 at the sides of which are mounted a plurality of cores 15 which in actual practice may be formed as small porcelain tubes. The exact manner of securing these parts together and mounting them in the housing is immaterial though I have shown nuts 16 embedded in the ends of the web 14 and cores 15 for the reception of screws 17 which are passed inwardly through the ends of the housing 10. Each of the cores 15 has wound thereon a coil 18 of some suitable resistance wire and all of the coils are connected in series as shown with the terminal of one endmost coil connected by a wire 19 with a suitable binding post 20. At its central portion one edge of the web 14 is cut away along an arc as shown at 20 and mounted upon this curved edge are U-shaped metallic contacts 21 held in place by screws 22. These contacts are shown as straddling the web though it is conceivable that they might be embedded therein if preferred and might be of some other shape. The portions of the contacts overlying the curved cut away edge are formed with depressions 23 for a purpose to be described. One endmost contact 21 is connected by a wire 24 with the binding post 20, and the next successive contacts are connected by wires 25, 26, 27 and 28 with the terminals

of the resistance coils as shown in Figure 7. The other endmost contact 21, distinguished by the reference character 21ª is not connected with the coils and thus provides an "Off" position for the switch.

The housing is provided with a removable cover 29 which carries a pair of brackets 30 which are secured upon and insulated therefrom, and pivoted between these brackets as shown at 31 and movable within a slot 32 in the cover is a lever arm 33 which has its outside end equipped with a knob 34. The inside end of the arm is formed with a socket 35 within which is seated a coil spring 36 which urges outwardly a contact plunger 37 which is slidable within the socket and which has a rounded end 38 connected to engage within the depressions 23 in the contacts 21. Connected with the lever 33 is a wire 39 which leads to a binding post 40 suitably mounted on the housing.

In the operation it will be apparent that when the switch is connected in the circuit by means of the binding posts 20 and 40, when the switch arm 33 is in such position that the plunger 37 engages the contact 21ª the current will be cut off. When the plunger 37 engages the opposite endmost contact 21 there will be no resistance in the line and the lights will be illuminated to full brilliance. By grasping the knob 34 and swinging the lever arm 33 so as to bring the plunger 37 into engagement with the next contact 21, one resistance coil 18 will be thrown into the circuit, while by moving the arm so as the plunger engages the next contact 21, two resistance coils will be thrown into the circuit and so on. In this way it is apparent that the brilliance of the illumination may be readily controlled.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simply constructed, inexpensive and easily installed control device which will save power and reduce electric light bills. The device can be used to great advantage in all large business houses, banks, furniture and other stores located on street fronts where night watchmen keep watch. In the present practice only one or two lights, ordinarily, are left burning which leaves the greater part of the store and all corners dark so that the watchman does not have a proper view of the interior. By leaving all the lights burning dimly the power consumed is just as small as when leaving two or three lights burning brightly while the light is evenly distributed, so that there will be no dark corners in which a thief might hide while the watchman passes by on his beat.

While I have shown and described the preferred embodiment of my invention it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention I claim:

1. A control switch structure comprising a housing having a cover formed with a slot, a support of insulating material within the housing having its edge toward said slot cut away along an arc, a series of contacts secured at said cut away edge, a plurality of resistance coils within the casing connected in series and having their points of connection brought out to said contacts, and a lever pivoted on said cover and movable along said slot, said lever being engageable selectively with said contacts.

2. A control switch structure for electric light circuits comprising a housing having a removable cover, a plurality of resistance coils within the housing connected in series, a support of insulating material within the housing having an edge cut away along an arc, a plurality of contacts secured upon the cut away edge and connected with the resistance coils, a pair of brackets secured upon the cover and insulated therefrom, a switch lever pivoted between said brackets and operating along a slot in the cover, and engageable selectively with said contacts.

3. A control switch structure for electric light circuits comprising a housing having a removable cover, a plurality of resistance coils within the housing connected in series, a support of insulating material within the housing having an edge cut away along an arc, a plurality of contacts secured upon the cut away edge and connected with the resistance coils, a pair of brackets secured upon the cover and insulated therefrom, a switch lever pivoted between said brackets and operating along a slot in the cover, engageable selectively with said contacts, the switch arm having its inner end formed with a socket, a spring pressed plunger seated within said socket, and said contacts being formed with depressions for receiving said plunger.

4. A control switch of the character described comprising a casing having a cover formed with a slot, an elongated support of insulating material within the casing having its edge toward said slot cut away along an arc, a series of contacts mounted in said cut away portion, insulating cores arranged in spaced relation parallel to one another and to said support and located within the casing, resistance coils on said cores connected with the respective contacts and connected in series, and a lever pivoted at the rear side of the cover, movable along said slot and cooperating with said contacts.

In testimony whereof I affix my signature.

IRA F. GOTTSCHALK.