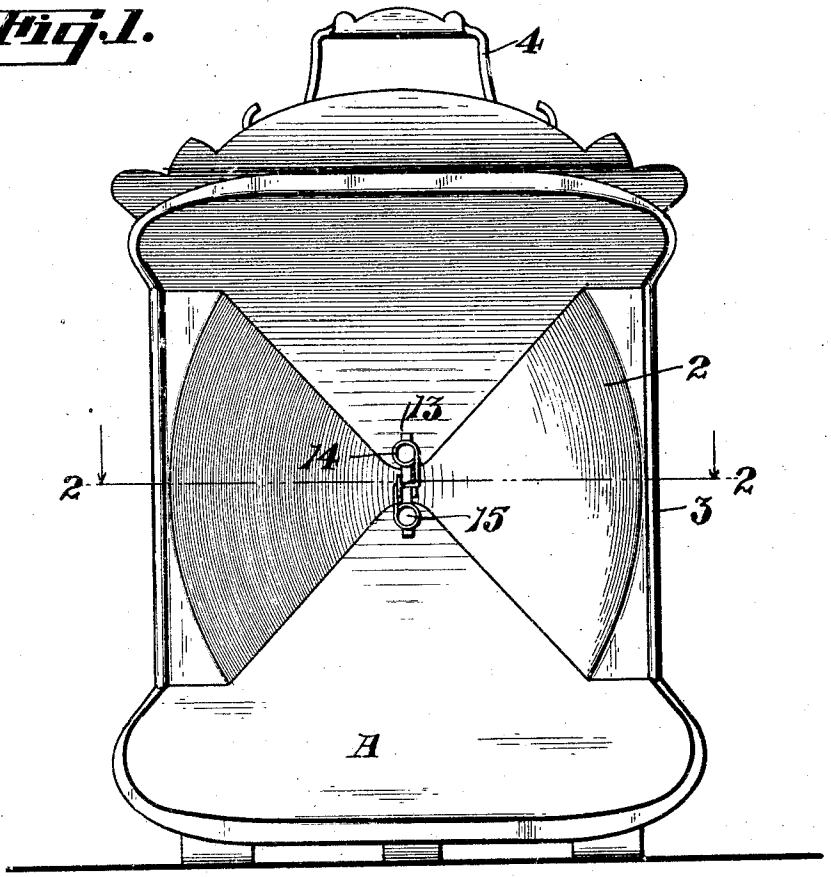
Sept. 15, 1925. 1,554,134

J. SCHOENFELD

COMBINATION SWITCH PLUG AND HEATING ELEMENT SUPPORT

Filed July 2, 1923 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

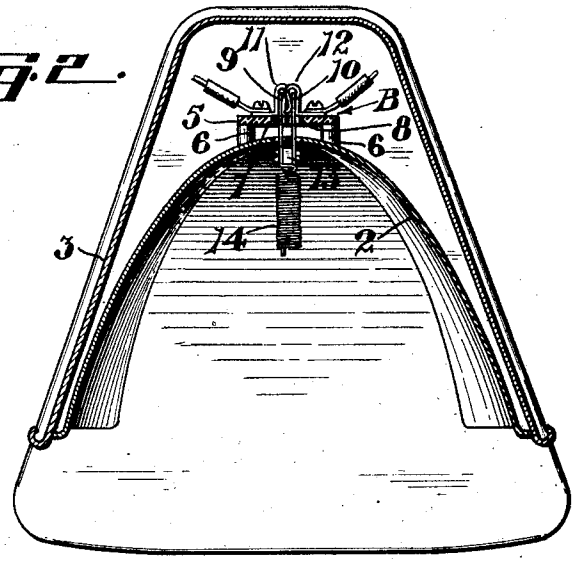
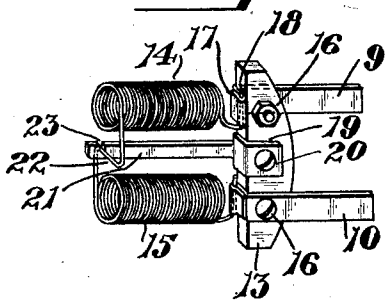


Fig. 3.



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UNITED STATES PATENT OFFICE.

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COMBINATION SWITCH PLUG AND HEATING-ELEMENT SUPPORT.

Application filed July 2, 1923. Serial No. 649,003.

To all whom it may concern:

Be it known that I, JOSEPH SCHOENFELD, a citizen of the United States, residing at Alameda, county of Alameda, and State of California, have invented new and useful Improvements in Combination Switch Plugs and Heating-Element Supports, of which the following is a specification.

This invention relates to a combination switch plug and heating element support.

There are two distinct methods of room heating by electricity, one by heating the air and permitting circulation thereof throughout the room, and the other by projecting the heat and light rays through means of reflectors. The efficiency of electric heaters of the latter type depends to a great extent upon the maintenance of highly polished reflecting surfaces; the type of reflectors employed; correct positioning of the heating element with relation to the reflecting surfaces, particularly if parabolic reflectors are employed, and also upon the shape and size of the heating element. The device forming the subject matter of the present application is applicable to both types, but is particularly desirable in connection with the reflector type of heater as the object of the invention is to provide a combined switch and heating element support which permits quick and ready removal of the heating element, for instance, if it is desired to polish the reflectors or to renew the heating element; to provide a heating element support which permits correct positioning of the element with relation to the reflectors; to provide a heating element support which permits one or more elements to be secured thereto, and which also permits changing of the shape and type of element employed, and further to provide a heating element support which also serves as a switch plug, thus automatically breaking the circuit through the heater when the heating element is removed, and furthermore, preventing accidental short-circuiting or transmission of shocks when cleaning the reflectors, etc. Other objects will hereinafter appear.

One form which my invention may assume is exemplified in the following description and illustrated in the accompanying drawings, in which—

Fig. 1 is a central, vertical, longitudinal section of an electric heater of the reflector type showing the application of the invention.

Fig. 2 is a detail plan section taken on line 2—2, Fig. 1.

Fig. 3 is a perspective view of the switch plug, which also serves the function of a heating element support.

Referring to the drawings in detail, and particularly to Fig. 1, A indicates a base or standard of suitable construction upon which is supported a reflector such as indicated at 2; the reflector here employed being of the parabolic type. The reflector is in this instance partially closed by a housing 3 and a handle 4 is provided so that the heater may be readily moved from place to place; that is, the heater is of the portable type and is intended for local heating of rooms, etc. The device forming the subject matter of the present application consists of a switch plug and heating element support which are generally shown in Fig. 3. A switch is formed on the rear side of the reflector and is generally indicated at B, this switch consisting of a plate 5 constructed of insulating material, such as fiber, vulcanized rubber, porcelain or the like. This plate is suitably secured to the rear side of the reflector, for instance, by means of lugs 6 and it is perforated or slotted at two points as at 7 and 8 to permit the legs 9 and 10 of the switch plug to pass therethrough. Secured to the rear side of the plate are two pair of contacts such as indicated at 11 and 12. These contacts are connected in series with a power circuit and a circuit can only be closed therethrough when the switch plug is inserted. The contacts 11 and 12 are in reality nothing more or less than opposed yieldable metal fingers. These fingers frictionally engage the legs of the switch plug when inserted and as such insure a circuit.

The switch plug proper consists of a rectangular-shaped bar (see Fig. 3) as indicated at 13. This is also constructed of suitable insulating material and it serves two functions, first, that of a support for the legs 9 and 10, and secondly, that of a support for the heating elements generally indicated at 14 and 15. The legs 9 and 10 are secured to respective sides of the bar 13 by means of screws and nuts shown at 16. The outer ends are bent to form securing clips 17, and the lower terminals of the heat-

ing elements are secured thereto as shown at 18. The cross bar is also provided with a centrally disposed clip 19 secured by a screw 20 and this clip is in turn provided with a standard or centrally disposed rod 21, which supports the outer ends of the heating elements 14 and 15; that is, these elements are connected in series and their outer terminals consist of a continuous wire 22 which is secured to the rod or post 21 by passing the wire through a notch 23 formed in the outer end thereof. The heating elements are preferably constructed of nichrome, wire or the like, and are helically wound. Such coils usually require some sort of an interior support, but this is entirely eliminated in the present instance as the coils are rigidly supported at each end, first, by the rod 21 and the wire 22, and secondly, by the clips 17. Sagging or distortion of the coils when heated is thus prevented and losses by heat conduction etc., are reduced to a minimum.

A combined switch plug and heating element support constructed as here shown is exceedingly important when reflector types of heaters ars concerned. First, as it is known that the efficiency of a reflector heater depends upon the condition of the reflecting face or faces, it is obvious that the heating elements may be readily removed from time to time to permit polishing or cleaning of the reflecting faces; that is, the heat from the coils rapidly tarnishes the reflecting faces and unless they are polished from time to time the amount of heat and light reflected is materially decreased. Such a condition is readily avoided as the heating elements may be removed whenever required to permit re-polishing of the reflectors. Secondly, short-circuiting or transmission of shocks when cleaning the reflectors or the heater is prevented as the circuit is automatically broken the moment the plug and the heating elements are removed. Third, replacement of burned out coils is similarly taken care of. Fourth, practically any shape of coil may be employed as a support is provided at each end. Fifth, sagging or distortion of the coils is reduced to a minimum. And sixth, the size and number of elements employed may be varied as desired, and as this is the case correct positioning of the element or elements with relation to the focal center of the reflectors may also be insured, this being particularly true where a parabolic type of reflector is employed.

While certain features of the present invention are more or less specifically illustrated, I wish it understood that various changes in form and proportion may be resorted to within the scope of the appended claims; similarly, that the materials and finish of the several parts employed may be such as the experience and judgement of the manufacturer may dictate or various uses may demand.

Having thus described my invention, what I claim and desire to secure Letters Patent is—

1. In a heater of the character described, a parabolic reflector and a plurality of heating elements disposed within the reflector and projecting outwardly from the bottom portion thereof.

2. In a heater of the character described, a parabolic reflector and a plurality of heating elements disposed within the reflector and projecting outwardly from the bottom portion thereof, said heating elements being disposed in parallelism with a line drawn through the focal center and the longitudinal axis of the parabolic reflector.

3. A device of the character described comprising a switch plug, a pair of contact members on the plug, said contacts terminating in securing clips at their outer ends, a pair of helically wound electric heating elements carried by the plug, the inner terminal ends of said element being secured by the clips, a wire connecting the outer terminal ends of the elements and forming a series connection between the clips, the contacts and the elements, and a bar disposed between the elements, said bar being secured to the outer wire terminal connection between the heating elements at one end and to the plug at the inner end.

4. A device of the character described, comprising an elongated switch plug, a pair of contact members thereon disposed one on each side of an imaginary longitudinal center line drawn through the plug, a plurality of helically wound heating elements carried by the plug and disposed in parallelism with the imaginary longitudinal center line drawn through the plug, means connecting said heating elements with the plug contacts, and means for supporting each heating element with relation to the switch plug.

5. A device of the character described, comprising an elongated switch plug, a pair of contact members thereon disposed one on each side of an imaginary longitudinal center line drawn through the plug, a plurality of helically wound heating elements carried by the plug and disposed in parallelism with the imaginary longitudinal center line drawn through the plug, means connecting the heating elements in series with each other and the plug contacts, and means for independently supporting each heating element with relation to the plug.

JOSEPH SCHOENFELD.