March 12, 1940. J. M. REED 2,193,740

ILLUMINATED WALL SWITCH PLATE

Filed Sept. 6, 1938

FIG. 1.

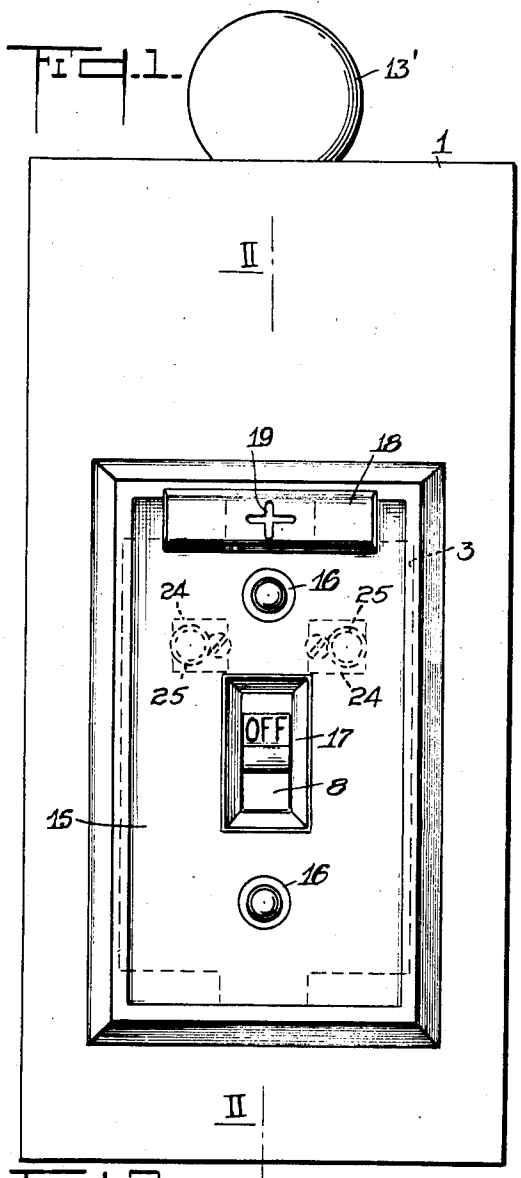


FIG. 2.

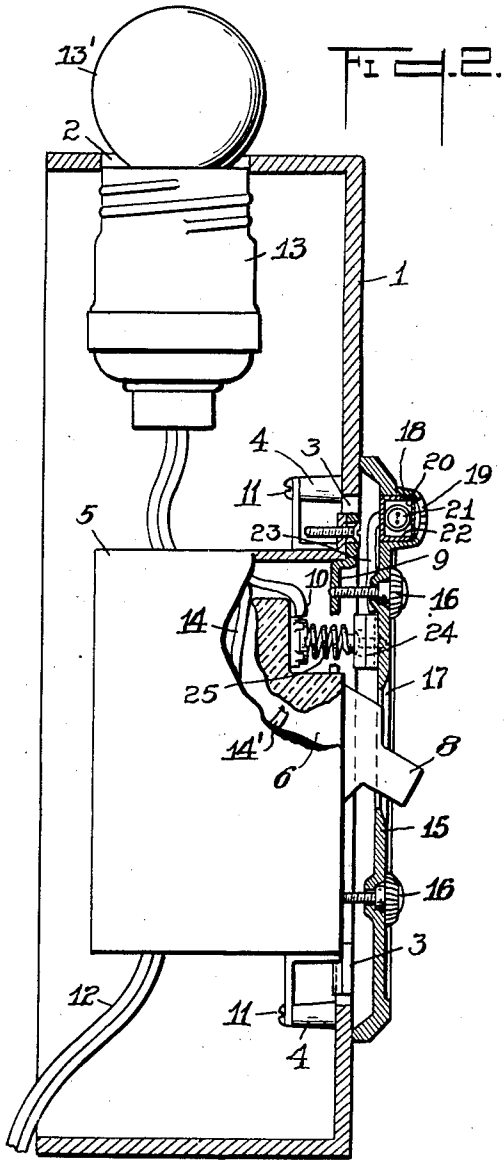
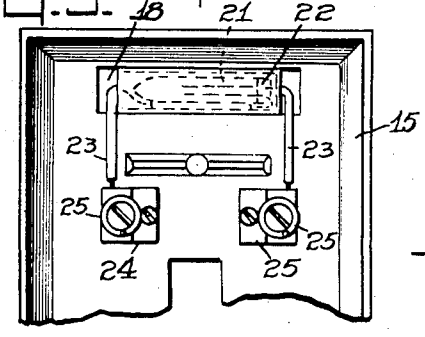


FIG. 3.



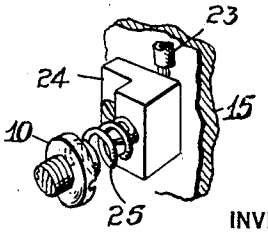
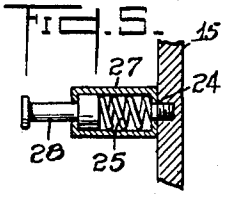


FIG. 4.

FIG. 5.



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ILLUMINATED WALL SWITCH PLATE

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4 Claims. (Cl. 35—49)

My invention relates to cover plates for electrical wall switches and more particularly to a cover plate supporting a gaseous pilot light bulb, which is permanently connected to the switch terminals and which glows and indicates in the dark the position of the switch.

Switch plate covers of this type have the advantage that although the main circuit through the switch is interrupted, the switch plate may be constantly illuminated by the pilot bulb without using any appreciable amount of current. Heretofore, the installation of switch plate covers of this type, required that a connection be made with the switch terminals, which was accomplished by unscrewing the latter, inserting the ends of the flexible wires leading to the pilot bulb electrodes, and then again tightening the terminal screws. The installation involved considerable danger and further required time and skill because to attach the lead wires of the plate without short-circuiting and receiving an electric shock, it was necessary to temporarily disconnect the entire switch from the main circuit by removing a fuse. In view of the danger and difficulties associated with the mounting of the illuminated switch cover plate, the commercial value of the device was greatly reduced.

It is one object of my invention to provide a cover plate with a gaseous pilot light bulb which automatically makes its electrical contacts with the switch terminals as the plate is being attached to the wall switch casing.

Another object of my invention is to produce a cover plate of the type which connects the bulb to the switch terminals without disconnecting the switch from the circuit, and while the circuit through the switch is closed.

A still further object of my invention is to devise a model switch box which in combination with my novel cover plate may be used to demonstrate to buyers the extremely simple and entirely unharmful method used to attach the new cover plate to a wall switch.

I accomplish these and other objects, which will appear as the specification proceeds, by means of the new structure, arrangement and combination of elements described in the following description and set forth in the appended claims.

My invention is illustratively exemplified in the accompanying drawing in which:

Fig. 1 is a front elevational view of my novel switch plate mounted on a model switch box according to the invention.

Fig. 2 is a substantially longitudinal sectional view taken on line II—II of Fig. 1 showing certain parts in elevation.

Fig. 3 is a partial elevational view of the dismounted cover plate seen from the inside.

Fig. 4 is a perspective view of the yieldable contact piece and associated parts; and

Fig. 5 is a sectional view of a modified embodiment of the contact piece.

Referring to the drawing, 1 denotes a rectangular box, preferably of "Bakelite" or the like material, open at its back and provided with a circular opening 2 in its top wall and a rectangular cut-out 3 in its front wall. Integral with the front wall of the box 1 and inwardly projecting therefrom are four conical studs 4. A usual snap switch element comprising switch casing 5, porcelain core 6 provided with switch mechanism (not shown), switch operating lever 8, front bracket 9, and terminals 10, is mounted on the studs 4 by means of screws 11. An insulated double lead wire 12 is introduced into the open back of the box 1, leads into the switch casing 5, and then to the socket 13 of an electric bulb 13' which is disposed on the top of the box 1 and projects downwardly through the opening 2 into the socket 13. The wire 12 is separated into two strands 14 and 14' at a point in the casing 5, one of said strands, 14, passing uninterrupted through the casing while the other strand 14' is severed and the two free ends are connected to the two terminals 10 of the switch. Thus, when the cord 12 is connected to a supply main, operation of the lever 8 opens and closes the circuit including the bulb 13'.

A cover plate 15 is secured to the switch by means of screws 16 engaging threaded holes in the front bracket 9. The plate 15 is provided with a substantially central opening 17 to accommodate the switch lever 8. An outwardly projecting and rearwardly open pilot light housing 18 is disposed on and adjacent the upper edge of the plate 15, the housing 18 being integral with the latter and provided with a pilot opening 19 in its front wall and a light pervious window 20 covering the opening on the inside thereof. A gaseous pilot light bulb 21 is contained in a carrier box 22, which is supported in the housing 18. The carrier box 22 is open at the front and fits tightly into the housing 18. The electrodes of the bulb 21 terminate in lead wires 23, connecting said terminals to two yieldable contact pieces 24, respectively, which contact pieces project inwardly from the inner wall of the plate 15 and are secured thereto in register with the terminals 10 of the switch.

According to Figs. 1 to 4 each yieldable contact piece comprises a base plate 24 screwed to the plate 15 and a spiral spring 25 mounted on said base plate and projecting inwardly a distance exceeding that existing between the base plate 24 and the corresponding terminal 10 when the plate 15 is mounted on the switch. Thus, upon securing the cover plate 15 to the switch the inner free ends of springs 25 contact and are pressed against the terminals 10, respectively, and insure automatically an effective and permanent electrical connection.

Fig. 5 illustrates a further embodiment of a contact piece according to the invention in which the spring 25 is guided in a stationary cylindrical sleeve 27 integral with the base plate 24 and urges a projecting pin 28 of conducting material disposed slidably in said sleeve towards the switch terminal 10.

I claim:

1. A cover plate for a switch provided with terminals to receive the wires of an electric circuit, said plate supporting a gaseous light bulb visible from the outside of said plate, yieldable contact elements projecting inwardly from the inner wall of said plate to contact the switch terminals, and means permanently and electrically connecting the electrodes of said bulb to said contact elements.

2. A cover plate, as claimed in claim 1, in which each of said yieldable contacts comprises a base plate fastened to said cover plate, and a spiral spring mounted on said base plate and projecting inwardly therefrom a distance exceeding that existing between the base plate and the corresponding switch terminal when the cover plate is mounted on the switch.

3. A cover plate, as claimed in claim 1, in which each of said yieldable contacts comprises a base plate fastened to said cover plate, a cylindrical guide sleeve integral with said base plate and projecting inwardly therefrom, a contact pin disposed slidably in said sleeve and adapted to project inwardly therefrom, and a pressure spring in said sleeve between said pin and said base plate.

4. In combination, a substantially rectangular box having a rectangular opening in one of its walls, an electric light bulb disposed on the outside of said box, a switch mounted in said box rearwardly of said opening and having a switch operating member projecting through the latter, and connecting terminals in its forward portion, electric conductors connected to said terminals and said bulb and adapted to connect the latter in series with said switch into a supply circuit and a cover plate secured to said box and switch, said cover plate supporting a gaseous light bulb visible from the outside of said plate, yieldable contact elements projecting inwardly from the inner wall of said plate to contact the switch terminals and means permanently and electrically connecting the electrodes of said gaseous bulb to said contact elements.

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