March 3, 1936. W. LA HODNY ET AL 2,032,540

ILLUMINATED FACEPLATE FOR ELECTRIC SWITCHES AND THE LIKE

Filed Sept. 1, 1934

Fig. 1.

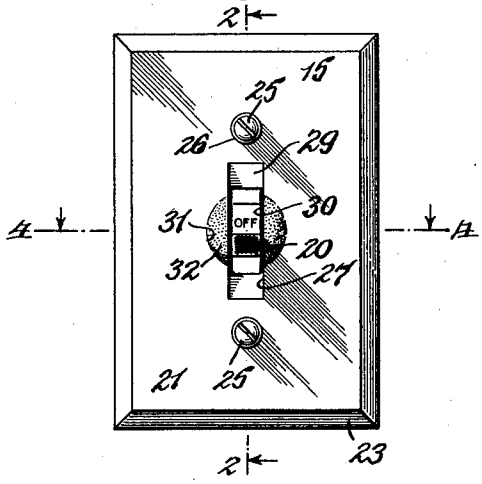


Fig. 2.

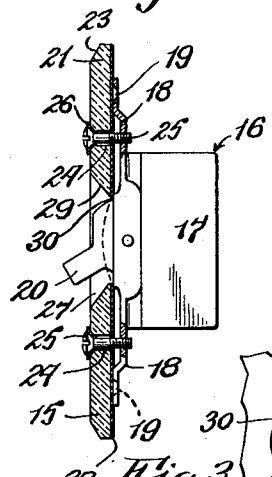


Fig. 3.

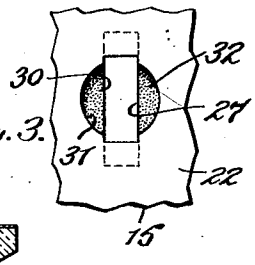


Fig. 4.

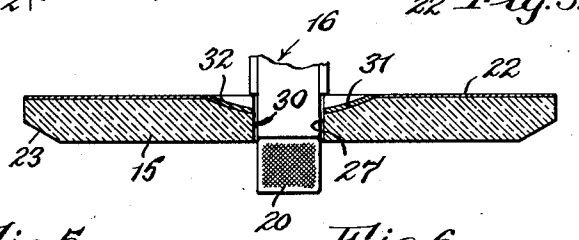


Fig. 5.

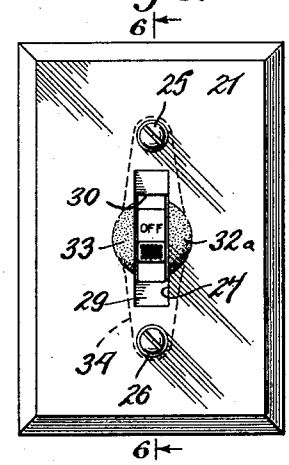


Fig. 6.

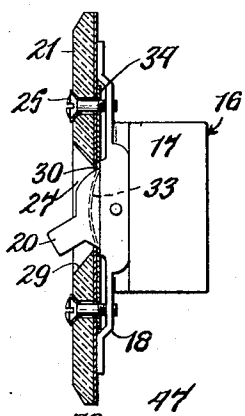


Fig. 7.

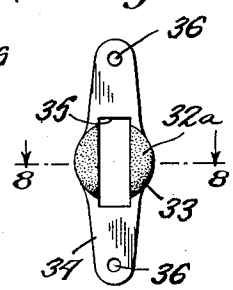


Fig. 8.

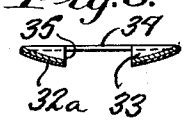


Fig. 9.

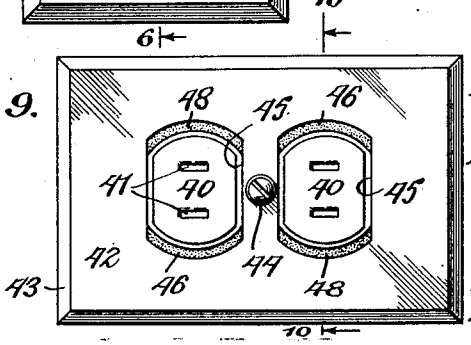
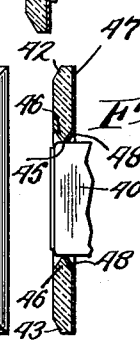


Fig. 10.



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ILLUMINATED FACEPLATE FOR ELECTRIC SWITCHES AND THE LIKE

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Application September 1, 1934, Serial No. 742,434

6 Claims. (Cl. 240—2.25)

This invention relates to illuminated face plates for electric switches and the like and method of making the same, although the invention can also be employed wherever an illuminated face plate is desirable, such as for base plugs, the illuminated feature in all cases rendering the plate easily found in the dark, or in dim light, and thereby avoiding the necessity of groping around to find the switch, base plug or other device covered by the face plate.

The principal object of this invention is to provide a face plate for switches and the like which is made of mirror glass and which has a portion of its back unsilvered and backed with a luminescent material, the glow of which can be seen through the face plate in the dark so as to form a guide to the switch plate. The use of plate glass mirrors for switch plates has distinct advantages in that such switch plates fit into any scheme of decoration particularly in reflecting the colors of the room. The present invention proposes to provide such switch plates with an illuminated portion, using the same glass which forms the body of the mirror as a lens for the illuminating material.

Another object of the present invention is to provide such a lens for the illuminating material which is of concave form so that the illuminating material is visible at a wide angle from the switch plate, thereby permitting the illuminated switch plate to be seen, in the dark, from all parts of the room. Such a lens is provided for the simple expedient of grinding a concavity in the rear face of the mirror, either before or after silvering and either applying a luminescent paint directly to the glass inside the concavity or applying such paint to a metal plate disposed behind the concavity.

A further object of the present invention is to apply the luminescent paint immediately adjacent the opening or openings in the switch plate and to fabricate the whole switch plate in such manner that it can be produced at very low cost and at the same time is durable and will stand up under continued service.

In the accompanying drawing:

Fig. 1 is a front elevation of a switch having the face plate made in accordance with our invention. The switch shown is of the snap switch type, although it will be understood that the invention is equally applicable to any other type of switch, such as a button switch.

Fig. 2 is a vertical transverse central section taken on line 2—2, Fig. 1.

Fig. 3 is a fragmentary rear elevation of the face plate shown in Figs. 1 and 2.

Fig. 4 is a horizontal vertical central section taken on line 4—4, Fig. 1.

Fig. 5 is a view similar to Fig. 1 showing a modified form of my invention.

Fig. 6 is a vertical central section taken on line 6—6, Fig. 5.

Fig. 7 is a face view of the metal plate used in the form of the invention shown in Figs. 5 and 6 to carry the luminescent paint.

Fig. 8 is a horizontal section taken on line 8—8, Fig. 7.

Fig. 9 is a front elevation of a pair of base or wall plugs having a face plate made in accordance with our invention.

Fig. 10 is a vertical section taken on line 10—10, Fig. 9.

In the form of the invention shown in Figs. 1–4 the face plate 15 is shown as secured to and covering an electric switch 16, the mechanism (not shown) being contained within a casing 17 having vertical arms 18, these arms having holes 19, by means of which the switch is screwed to the wall, the casing 17 fitting in a recess in the wall in the usual and well known manner. The switch shown is of the snap switch type having a vertically movable finger piece 20 which is snapped upwardly to its on position and downwardly to its off position, although it will be readily understood that the invention can be adapted to any type of switch, such as a turn switch or a push button type of switch.

The face plate shown in Figs. 1–4 consists of a glass plate 21 having on its rear side a reflective coating 22 which can be of silver or any other reflective material well known in the art. This reflective coating can also be coated with paint (not shown) to protect the silvering. The edges of the glass plate 21 are preferably beveled as indicated at 23 and two holes 24 are provided to receive screws 25 which extend through the mirror plate and screw into the arms 18 of the switch plate so as to secure the face plate in position. The heads of the screws 25 are preferably countersunk into the face plate and a conical washer or gasket 26 of soft metal is preferably interposed between the heads of the screws and the countersunk holes in the glass plate so as to avoid the danger of breaking the mirror in tightening the screws. Between the screw holes 24 a slot 27 is ground into the mirror plate so as to form an opening through which the finger piece 20 extends and can be manipulated. This slot is preferably provided by grinding with a grinding wheel from

the front side of the switch plate, the wheel grinding bevelled faces 29 in the opposite ends of the elongated opening 30 so as to provide adequate clearance for the finger piece 20 in either its on or its off position. Either before or after the silvering 22 is applied a concave recess 31 is ground in the rear side of the glass plate 23, this recess being preferably round and concentric with the slot 27, as best shown in Fig. 3. A coating of luminescent paint 32 is applied to the rear side of the glass plate 23 within this recess. This paint can be of any well known composition containing phosphorous or radium so as to glow in the dark.

With some such paints difficulty has been encountered in applying the paint directly to glass and in using such paints the form of the invention shown in Figs. 5–7 can be employed. In this form of the invention the switch and face plates are exactly the same as shown in Figs. 1–4 but instead of applying the paint to the rear face of the glass plate 23 within the recess 31, this paint 32*a* is applied to a bulging portion 33 of a small metal plate 34, this metal plate 34 having a central opening 35 conforming to the opening 30 through the glass face plate and also having screw holes 36 through which the attaching screws 25 of the face plate extend and thereby hold both the face plate and the metal plate in position. The bulging portion 33 and the slot 35 register, of course, respectively, with the concavity 32 and the slot 27 of the face plate so that it is apparent that this form of the invention acts in the same manner as the form shown in Figs. 1–4 and at the same time permits of the use of luminescent paints which do not readily adhere to glass.

As illustrative of other uses to which the invention can be adapted, in Figs. 9 and 10 is illustrated a base or wall plug having a face plate made in accordance with our invention. As there shown, the plugs 40 are of the usual construction having openings 41 adapted to receive the prongs of the male part of the plug. The glass plate 42 is preferably beveled as at 43 and is attached by means of a screw 44 similar to the screws 25 shown in the other forms of the invention. Slots or openings 45 are ground into the glass plate to provide openings in the desired number to receive the ends of the plugs 40 and these openings are preferably provided by grinding from the opposite sides of the glass plate with a grinding wheel which has a rounded periphery. By this means the openings 45 are straight sided and the upper and lower edges of the openings are defined by V-shaped edges 46 which are arcuate in plan. The silver or other reflective coating 47 is applied over the planar back of the glass plate and the rear face of the beveled edges 46 around the openings 45 are coated with luminescent paint 48. It is therefore apparent that with this form of the invention the grinding of the openings 45 also provides the desired bevel or concavity for applying the luminescent paint in such manner that it projects into the body of the mirror and is visible at a wide angle.

With all the forms of the invention shown it is apparent that the present invention provides a very attractive mirror face plate in which the glass of the mirror also forms a lens for a luminescent paint and protects both the paint and the silvering. With all forms of the present invention the luminescent coating is also disposed within the body of the mirror itself by the provision of a rear concavity in which the luminescent paint is disposed. By this means the luminescent paint is brought out from the rear of the glass and can be seen at a wide angle and hence can be visible from any point in the room. It has been found that the grinding of a concavity and arranging the illuminating surface behind this concavity will increase the angle of visibility even if the coating is not actually disposed within the concavity but it is preferable to dispose the coating within the concavity as the angle of visibility is thereby further increased.

We claim as our invention:

1. A face plate of the character described, comprising a transparent plate, a reflective coating over a portion of the back of said plate, said plate being provided in an interior area of its back with a rounded concavity, an opening extending through said plate and registering with said rounded concavity and through which apparatus behind the plate can be manipulated and a layer of luminescent paint within said rounded concavity and visible through said plate whereby said plate forms a lens for said luminescent paint and a carrier for said reflecting coating.

2. A face plate of the character described, comprising a transparent plate, a reflective coating over a portion of the back of said plate said plate being provided with an opening through which apparatus behind the plate can be manipulated, said plate around said opening being formed with a rounded concavity and said rounded concavity being unprovided with said reflective coating, a metal plate in rear of the rounded concavity in said reflective plate and having an opening registering with said opening of said plate and a layer of luminescent paint on said metal plate around its opening and in back of said rounded concavity whereby said transparent plate forms a lens for said luminescent paint and a carrier for said reflective coating.

3. A face plate of the character described, comprising a transparent plate, a reflective coating over a portion of the back of said plate, said plate being provided with a rounded concavity in its back, a metal plate in rear of said transparent plate and having a bulge projecting into said rounded concavity and a layer of luminescent paint on said bulge whereby said transparent plate forms a plano-concave lens for said luminescent paint and a carrier for said reflective coating.

4. A face plate of the character described, comprising a transparent plate, a reflective coating over a portion of the back of said plate, said plate being provided in an interior area of its back with a rounded concavity, a metal plate in rear of said transparent plate and having a bulge projecting into said rounded concavity and a layer of luminescent paint on said bulge whereby said transparent plate forms a lens for said luminescent paint and a carrier for said reflective coating.

5. A face plate of the character described, comprising a transparent plate, a reflective coating over a portion of the back of said plate, said plate being provided in an interior area of its back with a rounded concavity ground therein and a layer of luminescent paint within said concavity and visible through said plate whereby said plate forms a lens for said luminescent paint and a carrier for said reflective coating.

6. A face plate of the character described, comprising a transparent plate, a reflective coating over a portion of the back of said plate, said plate being provided in an interior area of its front face with a concavity and said plate being provided

in the interior area of its back with a second rounded concavity ground therein and opening into the bottom of said first concavity so as to form an opening extending through said plate and through which apparatus behind the plate can be manipulated and a layer of luminescent paint within said last rounded concavity and visible through said plate whereby said plate forms a lens for said luminescent paint and a carrier for said reflective coating.

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