Oct. 31, 1939. J. A. HOEVELER 2,177,717

REFLECTOR

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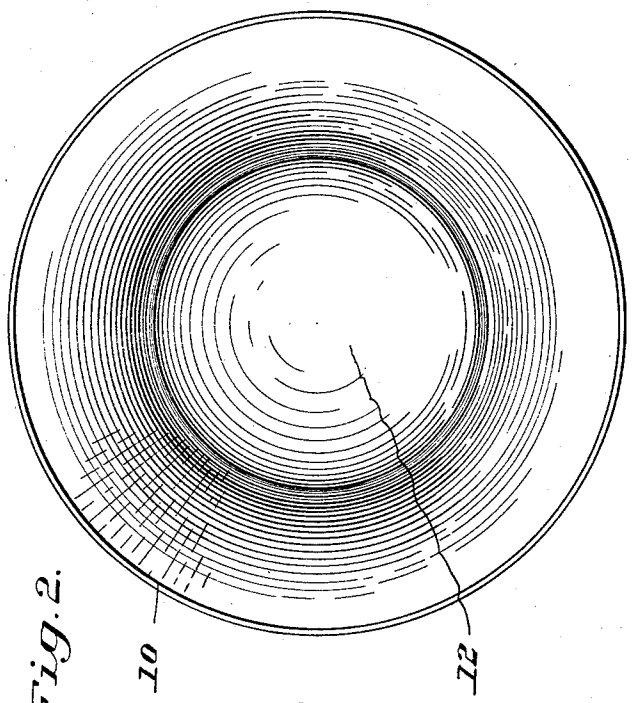


Fig. 2.

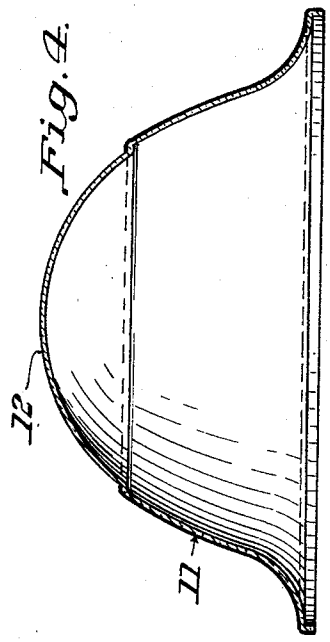


Fig. 4.

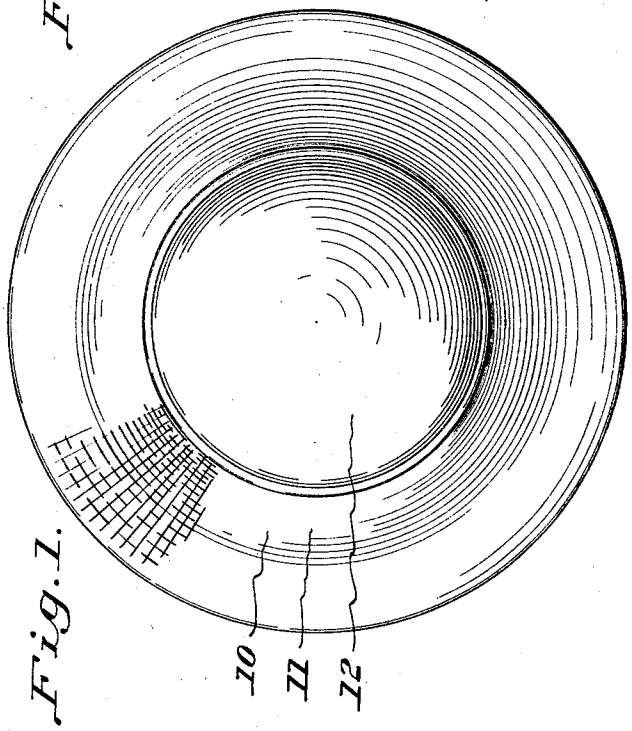


Fig. 1.

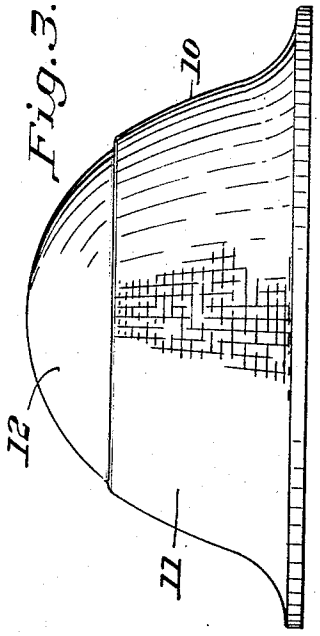


Fig. 3.

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Fig. 5.

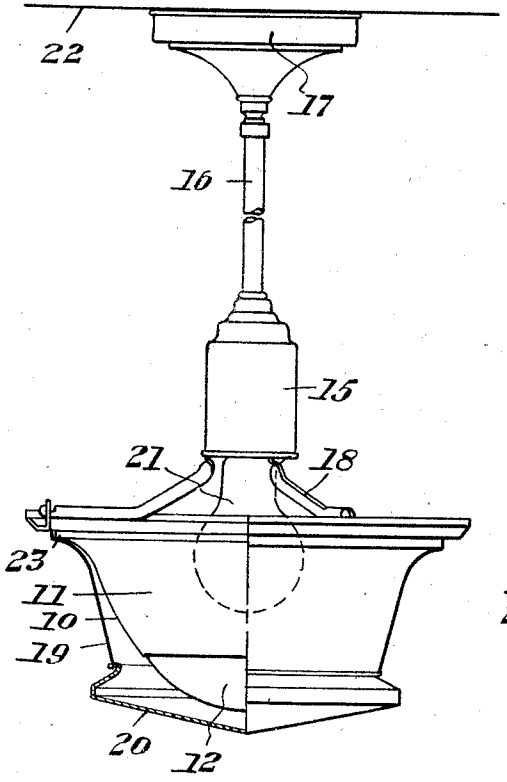


Fig. 6.

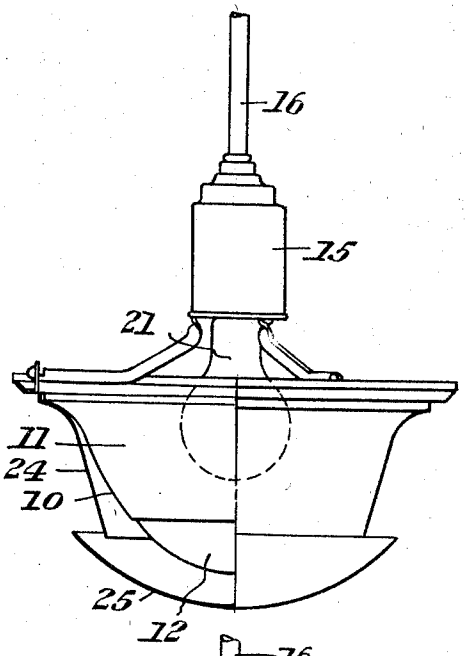


Fig. 7.

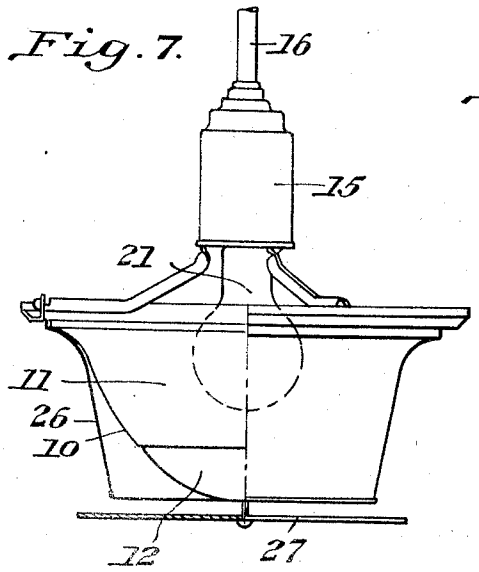
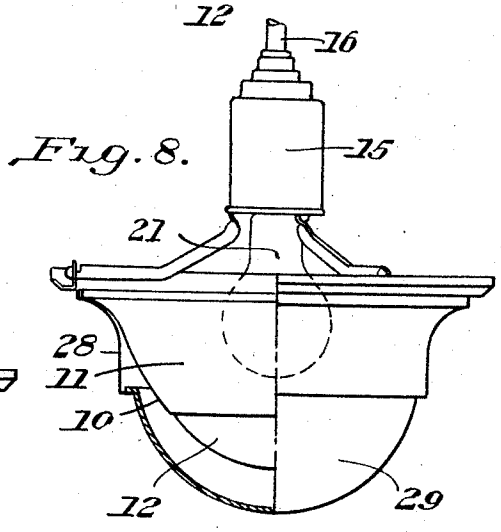


Fig. 8.



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UNITED STATES PATENT OFFICE

2,177,717

REFLECTOR

John A. Hoeveler, Mount Lebanon, Pa., assignor to Pittsburgh Reflector Company, Pittsburgh, Pa., a corporation of New Jersey

Application November 11, 1932, Serial No. 642,255
Renewed March 8, 1934

3 Claims. (Cl. 240—78)

My invention relates to a reflector and, in particular, to a reflector useful in indirect and semi-indirect systems of illumination.

It has been the practice heretofore to employ a translucent or an opaque bowl enclosing a light source such as an electric bulb and a reflector comprising two separate portions, a light reflecting portion and a light transmitting portion. Although this arrangement has been used universally, as far as my knowledge extends, there are several serious objections to it. In most indirect lighting fixtures, the opaque bowl enclosing the reflector and bulb has an open top and the same is true of the reflector itself. This means that the reflector serves as a dirt catcher and, when it is necessary to clean an indirect lighting fixture, the two parts of the the reflector must be removed from the bowl individually. The necessity of individually removing the separate pieces of the reflector increases the likelihood of breakage and makes it possible for the unit to be restored to service with the light transmitting portion of the reflector missing from its place. This interferes seriously with the desired and intended functioning of the unit, and what is worse, it permits the collection of dust within the outer bowl itself. Thus, in addtion to the increased likelihood of breakage of the parts of the reflector, there is also the chance that the parts may be lost or misplaced.

I have invented a reflector for direct or indirect lighting fixtures which obviates the aforementioned disadvantages of the present two-part construction. In accordance with my invention, I provide a reflector comprising a single unitary glass member of bowl or dome shape having a reflecting coating, such as silver, applied to a portion of the exterior thereof. The remainder of the reflector may be left clear, or may be made translucent by frosting, or otherwise, or may be suitably colored. The basic idea of the invention, however, is the unitary construction of a reflector having both light reflecting and light transmitting portions.

For a complete understanding of the invention, reference is made to the accompanying drawings illustrating a present preferred embodiment thereof. In the drawings:

Figure 1 is an outside plan view of the reflector;

Figure 2 is an inside plan view;

Figure 3 is a side elevation;

Figure 4 is a cross section;

Figure 5 is a side elevation partly in section showing the reflector installed in one type of lighting fixture;

Figure 6 is a similar view showing another type of fixture;

Figure 7 is a similar view showing a still further type of fixture; and

Figure 8 is a similar view showing another form of fixture.

Referring in detail to the drawings, the reflector of my invention comprises an integral glass bowl or dome 10. The lateral surface of the bowl or dome is provided with a reflecting surface, as by silvering, as shown at 11. The bottom of the reflector, shown at 12, may be left clear, or may be colored or made translucent as desired. The reflector is preferably formed by molding in a single piece and, while I have illustrated a reflector of a particular shape, it will be apparent that other shapes of reflectors may be similarly made. The shape of the light transmitting portion 12, in particular, is subject to wide variation.

The use of the invention in connection with a number of different standard types of lighting fixtures of both the semi-indirect and the indirect systems is shown in Figures 5 through 8. In each of these figures, a socket husk 15 is suspended on the usual hanger 16 from a canopy 17. Radial arms 18 extending downwardly and outwardly from the husk 15 are adapted to support different types of bowls. The bowl shown in Figure 5 comprises an opaque portion 19 preferably of sheet metal, and a translucent bottom 20. These parts together form the exterior of the unit and the reflector 10 of my invention is mounted therein as illustrated.

The function of the reflecting portion 11 of the reflector, of course, is to throw light from a bulb 21 screwed into the socket in the husk 15, upwardly on to the ceiling 22 to afford indirect illumination. The light transmitting portion 12 of the reflector causes the illumination of the translucent bottom 20 of the globe so as to provide for direct illumination. The fixture of Figure 5, thus combines the principles of direct and indirect illumination. The reflector 10 rests in a seat 23 formed in the upper edge of the outer bowl of the fixture.

The outer bowl shown in Figure 6 has an opaque lateral portion 24 and a cap or dome 25 spaced therefrom which may be opaque or translucent. If it is opaque, light is distributed only indirectly by reflection from the ceiling or from the cap 25 and the side wall 24 of the bowl.

If the cap **25** is translucent, of course, the fixture emits light directly as well as indirectly.

Figure 7 shows another modification of the outer bowl having an opaque lateral wall **26** and a bottom disc **27** spaced therefrom which may be translucent or opaque, as aforesaid.

Since the modifications shown in Figures 6 and 7 provide for illuminating the exterior of the outer bowl, these devices lend themselves very well to numerous decorative schemes. The exterior illumination of the outer bowl produces a very striking effect and, by the use of a suitable color medium, light of any desired color may be reflected on to the bowl exterior to harmonize with various descorative combinations.

In Figure 8, the bowl comprises an opaque lateral wall **28** and a translucent outer bowl **29** seated therein.

It will be apparent from the foregoing description that the invention provides a novel form of reflector comprising a one-piece glass bowl or dome having a lateral wall provided with a reflecting surface and a bottom of light transmitting characteristics, either translucent or transparent. This unitary construction providing light transmitting and light reflecting portions, I believe to be entirely novel in the art and it is characterized by numerous important advantages. As already stated, the cleaning of a single unitary reflector having both light reflecting and light transmitting portions, is much simpler than the cleaning of two separate portions which have always been used heretofore. The danger of breakage in handling is also minimized, as has previously been pointed out. It is impossible for the reflecting portion of the reflector to be replaced without the light transmitting portion thereof and the interior of the outside bowl is thus protected from the collection of dirt. The invention thus serves the dual purpose of a dust shield and a reflector. The reflector lends itself well to use in fixtures of the completely indirect type, as well as to those of the semi-indirect type. In the former it may be desirable to silver the entire surface of the reflector instead of leaving a portion thereof clear or translucent. The cost of the one-piece reflector of my invention is another fact in its favor as contrasted with the old two-piece structure.

It will be understood that the invention is not limited as to the shape of the reflector, either the light reflecting or light transmitting portions, nor the shape or type of the outside bowl with which it is used. Although I have illustrated and described herein but one type of reflector, it will be apparent that numerous changes in the design and construction thereof may be made without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. In an illuminating unit, the combination with an outer bowl, of a reflector seated therein, and a light source within said reflector, said reflector comprising an integral glass member of dish shape having a reflecting portion and a light transmitting portion, said portions having substantially the same degree of curvature, the edge of the reflector being seated on said outer bowl.

2. In an illuminating fixture, the combination with an outer, opaque bowl, a reflector bowl seated therein having a peripheral reflecting portion and a central light transmitting portion integral therewith, said portions being continuous and of substantially the same curvature, of a reflector cap spaced axially from said bowls, effective to direct the light passing through said transmitting portion on to the exterior of the first-mentioned bowl.

3. In an illuminaing device, the combination with an open bottom, opaque bowl tapering downwardly whereby to permit the exterior illumination thereof by light reflected from below, a light source supported within the bowl, an integral, one-piece reflector suspended in the bowl by its upper edge, said reflector having upper reflecting and lower transmitting portions and being shaped and adapted to reflect the major portion of the light from said source upwardly and outwardly of said bowl and to transmit a minor portion of the light downwardly through the open bottom of the bowl, and a second reflector spaced below the open bottom of the bowl adapted to reflect said minor portion of the light onto the exterior of said bowl.

JOHN A. HOEVELER.