Nov. 16, 1926. 1,607,413

E. D. TILLSON

LIGHTING UNIT

Filed Jan. 2, 1925

Fig. 2.

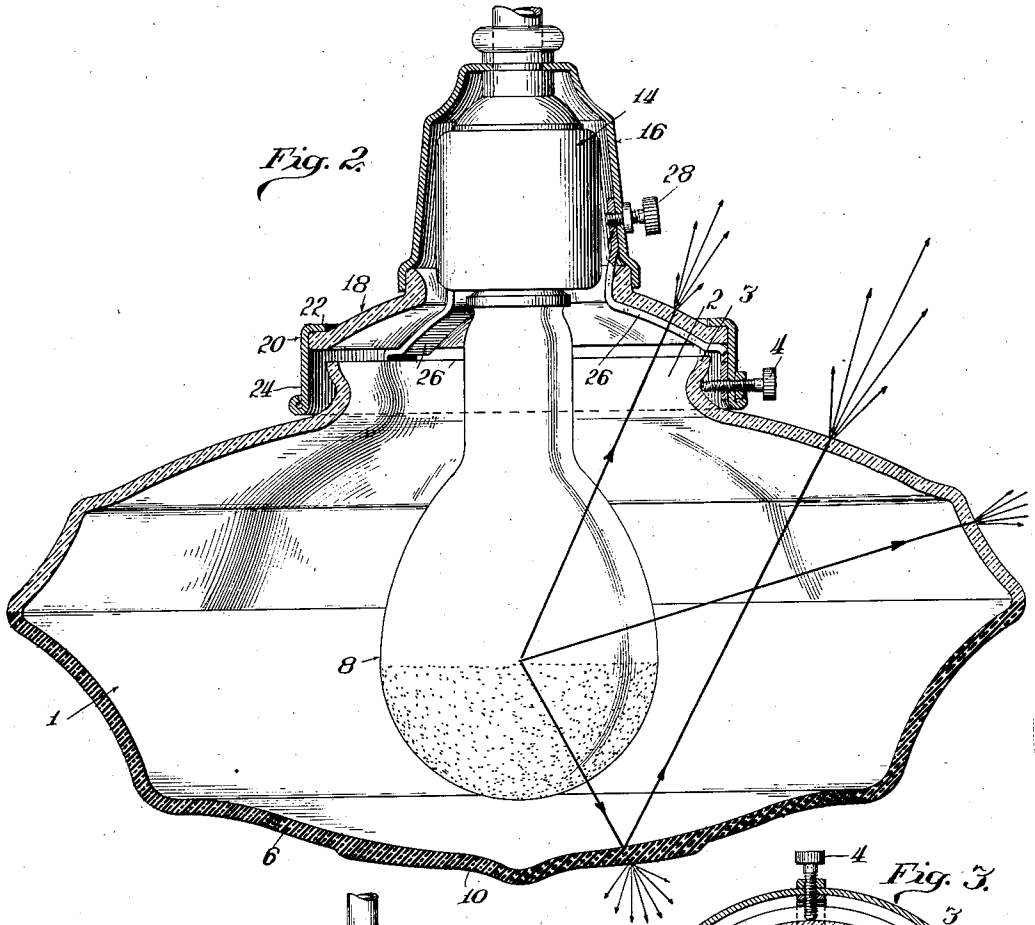


Fig. 1.

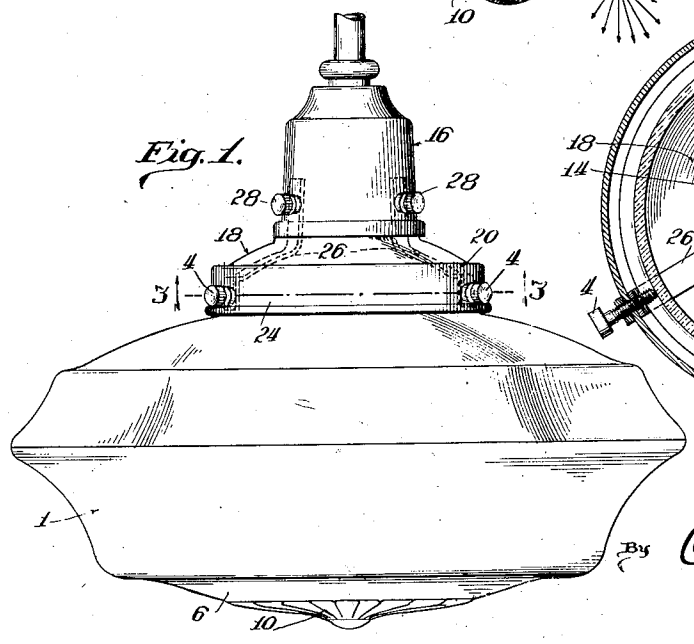
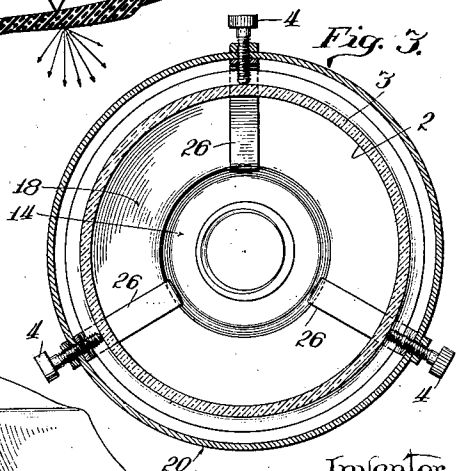


Fig. 3.



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EDWIN D. TILLSON, OF EVANSTON, ILLINOIS.

LIGHTING UNIT.

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My invention relates to lighting units, particularly for use in connection with electric lamps. It is well known to those familiar with the principles of indoor illumination that a semi-indirect fixture possesses great practical advantages. As the bowls employed are translucent they prevent the filament from being directly visible, and the transmitted rays are dispersed in such manner as to avoid the production of sharply defined shadows. A large portion of the light emanating from the lamp is however reflected upward from the bowl to the ceiling, and these rays, together with the rays which pass directly from the filament to the ceiling, are reflected downward by the ceiling and produce a soft and diffused light which is practically shadowless. These fixtures have the disadvantage, however, that dust soon collects in them, the rate being seemingly increased by the heat of the lamp. The result is that the unit soon presents a rather unsightly appearance and the efficiency is rapidly decreased. It is not easy to clean such a fixture, for ordinarily the bowl must be taken down and washed. Such work is more or less hazardous for an inexperienced person in a household and when the units are employed in office buildings and the like the work adds considerably to the cost of general maintenance. Furthermore the possibility of breakage is always to be considered. The general object of my invention is to produce a semi-direct lighting unit which will have a high degree of efficiency and will at the same time prevent the admission of dust. One of the contributory objects of the invention is to provide a unit having a flattened translucent lower portion. As a result of this a substantial portion of the light is reflected upward toward the ceiling instead of being too widely distributed laterally. Another object is to obtain a uniform flux up through the top of the fixture to thereby prevent uneven illumination of the ceiling. A further object is to provide a unit through which lamps of the larger sizes may readily pass and which will at the same time reduce to a minimum the shadows resulting from the presence of the means by which the individual elements of the units are held together. Another object is to provide a construction in which the suspending elements by which the canopy supports the transparent and translucent elements may be concealed, thus improving the appearance of the fixture. Another object is to provide means for masking the inequalities in the intensity of the light at different parts of the fixture.

I accomplish my objects by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of the complete unit showing its external appearance.

Figure 2 is a side elevation of the unit chiefly in central section.

Figure 3 is a bottom plan section on the line 3—3 Figure 1.

Like numerals denote like parts throughout the several views.

In the form selected to illustrate the invention the hollow body 1 is of glass, formed in a single piece, and is of lenticular shape, being a flattened body of revolution symmetrical about its central vertical axis and having its median zone about mid height. The body has a central opening 2 at the top which in the illustrated form is of a diameter less than half the maximum diameter of the unit. At the rim of this central opening is a flange 3 which is externally channeled to receive the inner end of set screws 4 by which the said glass body is supported.

Below the median zone the glass is translucent, that is, capable of transmitting a portion of the light rays and also of reflecting a portion of them. This condition may be obtained in different ways, for example, by providing a heavy coat of fired-on enamel. The portion above the median zone is approximately transparent, but by preference is not entirely so having a light coat of fired-on enamel in order that the light rays or lumins passing through may be somewhat dispersed to prevent the formation of a direct image of the filament on the ceiling or other reflecting surface above.

In the preferred form there is a portion 6 at the bottom of the body which is shallowly dished for the purpose of reflecting the rays almost vertically upward. The diameter of this portion is here shown to be approximately three-quarters of the maximum diameter of the fixture. The portion above the median zone is curved—in the illustrated form being flatly arched, so that the light rays will pass through without excessive lateral distribution.

As the body is shallow the lamp 8 ap-

proaches rather closely to the bottom, which tends to produce a spot of increased brilliance at the central bottom portion. To mask this it is desirable to form a sunburst 10 at the lower central area.

The lamp socket 14 is enclosed within a cap 16 which is preferably frusto-conical in general appearance. At the lower rim of the cap is a reducing ring 18 which is of glass which is approximately transparent like the upper portion of the main body. This forms part of the closure at the upper part of the body and permits the rays from the filament to pass up through it. A connector ring 20 has an internal flange 22 which rests upon the reducing ring. It also has a depending flange 24 which circumferentially sunrrounds but is spaced slightly from the flange 3 of the body 1. This connector rings among other things forms a housing or dust guard which tends to shed the dust and at the same time affords a passage for air as the latter expands and contracts due to the heating and cooling of the lamp when the latter is turned on and off.

While the glass parts may be supported in different ways from cap 16 I have shown an advantageous one in which there are three straps 26, which pass up to the inside of the cap and are there fastened by set crews 28. These straps pass down along the inside of the reducing ring 18 and are secured to the inside of the connector ring 24 by the set screws 4 previously mentioned. These screw into the lower end of the straps and project into the channeled rim 3 of the body 1 and thus hold the parts assembled.

As a result of my invention I have produced a lighting unit which has the advantages of the ordinary semi-indirect open bowl unit with the added advantage of being closed at the top so as to exclude dust. The elements which form the closure at the top of the unit are a simple form and at the same time permit the air flow resulting from the alternate heating and cooling of the lamp. The unit is of attractive appearance and may be used in connection with any standard form of socket and lamp.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. An inclosed lighting fixture having a hollow glass globe with a central opening at the top, a cap of less maximum diameter than said opening and located above the globe, a plurality of straps having their upper ends secured to the cap and extending downwardly and outwardly with their lower ends disposed in overlying relation in respect to the outer face of the upper end of the globe, a fastening element carried by the lower end of each strap and engaging in a groove in the globe, and a transparent closure between the cap and globe supported on said straps, and having an upwardly extending flange disposed between the straps and cap.

2. An inclosed lighting fixture having a hollow glass globe with a central opening at the top, a cap of less maximum diameter than said opening and located above the globe, a plurality of straps having their upper ends secured to the cap and extending outwardly and downwardly with their lower ends disposed in overlying relation to the outer face of the upper end of the globe, a fastening element carried by the lower end of each strap engaging in a groove in the globe, a transparent closure between the cap and globe supported on said straps, a dust excluding ring surrounding the upper end of the globe and through which said fastening elements extend, and a flange on the upper end of said ring engaging upon the upper surface of said closure.

3. An inclosed lighting fixture having a hollow glass globe with a central opening at the top, a cap of less maximum diameter than said opening and located above the globe, a plurality of straps having their upper ends secured to the cap and extending downwardly and outwardly with their lower ends disposed in overlying relation in respect to the outer face of the upper end of the globe, a fastening element carried by the lower end of each strap and engaging in a groove in the globe, a transparent closure between the cap and globe supported on said straps and having an upwardly extending flange disposed between the straps and cap, a dust excluding ring surrounding the upper end of the globe and through which said fastening elements extend, and a flange on the upper end of said ring engaging upon the upper surface of said closure.

In witness whereof, I have hereunto subscribed my name.

EDWIN D. TILLSON.