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DUSTPROOF CLOSURE FOR LIGHTING UNITS

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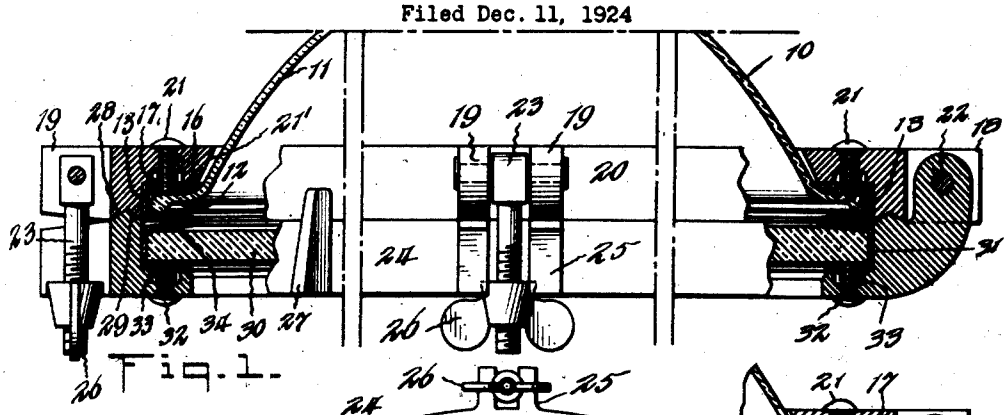


Fig. 1.

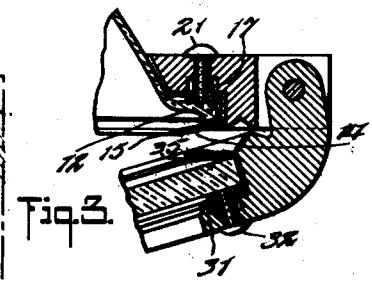


Fig. 3.

Fig. 2.

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DUSTPROOF CLOSURE FOR LIGHTING UNITS.

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The present invention relates to dust proof closures for lighting units, and more particularly to the provision of a dust proof and weather proof joint between the parts of an enclosed lighting unit.

Electric lighting units, when designed for exposed positions, such as enclosed flood lights having a reflector and a glass cover or panel, to be maintained at high efficiency, must be provided with means to prevent the entrance of dust, smoke, moisture, fumes or other foreign matter. Any of these tend to accumulate on the lamp, the reflector and the cover, and to absorb the useful light flux. They may also, in some cases, cause deterioration of the parts of the lighting unit.

An object of the present invention is to provide an improved form of closure which will be effective to prevent the entrance of such foreign matter into the enclosed lighting unit. The invention contemplates the use of one or more soft metal rings carried by the separable parts of the unit in such a manner that they may be squeezed together to provide an effective seal.

Another object of the invention is to provide either the mouth of the reflector, or the periphery of the glass cover, or both of these parts, with protecting rings, preferably of channel cross section, for the purpose of avoiding chipping or injury to the reflecting surface or the glass when the unit is sealed.

Other and further objects of the invention are the provision of a closure which is not subject to deterioration, and which requires a minimum of space and materials whereby appearance of the unit is improved and its weight and cost are reduced.

The accompanying drawings show, for purposes of illustrating the invention, one embodiment in which it may take form.

In these drawings:

Fig. 1 is a sectional view, with parts in elevation, showing a lighting unit provided with the improved closure;

Fig. 2 is an inverted plan view of the same, parts being broken away, and

Fig. 3 is a fragmentary view of a detail.

The housing of the lighting unit, generally in the form of a reflector, is shown at 10. This housing may be made of any suitable material such as aluminum and provided with an enameled reflecting surface 11. In the form shown in the drawings, an outwardly directed flange 12 is provided about the mouth of the reflector.

A split ring 13, preferably made of sheet copper, is mounted on the flange 12. The ring, for convenience in mounting on this form of flange, is made of channel cross section so that it may be opened up, where split, and passed about the mouth of the reflector. The lower side 14 of the channel shaped ring is spaced, at its inner edge 15 from the material of the flange, while the upper side 16 is provided with a number of threaded bushings 17.

Cover supports, 18 and 19, preferably in the form of an annular ring 20 are attached to the protecting ring 13 by means of screws 21 threaded into the bushings 17. In this manner the ring 20 is rigidly attached to the reflector without any likelihood of injuring the enamel surface of the reflector. The space 21′ between the ring and reflector may be filled with suitable waterproof and weather proof material to effectively seal the parts together.

As here shown, the cover support 18 is in the form of lugs for a hinge pin 22, while the supports 19 are in the form of lugs which pivotally carry latch bolts 23. A cover ring 24 is mounted on the hinge pin 22 and is provided with lugs 25 to cooperate with wing nuts 26 threaded on the latch bolts. Prongs 27 carried on the ring 24 are adapted to slide up along the edge of the ring 20 to facilitate aligning the rings, and, if desired, one ring may be provided with a groove 28 to cooperate with a ridge 29 in the other ring.

The cover ring 24 is recessed at its inner face to accommodate a glass panel 30 or cover for the reflector. A protecting ring 31 similar to the ring 13 is passed about the periphery of the glass panel. Screws 32 passed through the ring 24 from the front and threaded into bushings 33 in the ring 31 serve to fasten the glass cover in the cover ring. The upper side 34 of the protecting ring 31 is preferably normally spaced, at its inner edge 35, from the glass.

When the cover is clamped onto the reflector, the pressure applied by the nuts acts to squeeze the adjacent portions of the rings 13 and 31 toward their supporting parts. The copper rings are reflexive and readily conform to one another under pressure, and an exceedingly tight closure may be effected. The cover is readily removable without in

any way injuring the closure, and the parts are not subject to deterioration.

It is obvious that the invention may be embodied in many forms and constructions within the scope of the claims and I wish it to be understood that the particular form shown and described is but one of the many forms. Various modifications and changes being possible, I do not otherwise in any way limit myself with respect thereto.

I claim:

1. In combination, an open mouthed reflector, a glass cover for the mouth of the reflector, a frame for the cover, means for clamping the frame against the reflector, and cooperative reflexive metal rings carried by the reflector and cover for effecting a tight closure.

2. In combination, a reflector, a cover therefor, said reflector and cover being each provided with a metal ring of soft metal, the adjacent edges of said rings being of the same diameter and normally spaced from the reflector and cover respectively, and means to clamp the cover on the reflector to squeeze said edges tightly together and toward their respective supports.

3. In combination, an open mouthed reflector having a peripheral flange, a glass cover of substantially the same diameter as the flange, a pair of reflexive copper rings carried by the flange and glass cover respectively, said rings being spaced, near their inner edges from the flange and glass cover respectively, a frame about the glass cover, and means to clamp the frame to the reflector and squeeze the inner edges of said rings together.

4. In combination, an open mouthed reflector, a cover therefor, said cover including a frame and a glass panel, a metallic reflexive protecting ring about the periphery of the glass panel, said ring having an edge normally spaced from the inner face of the glass panel, and means for clamping the cover against the mouth of the reflector, the edge of the ring being yieldingly pressed to effect a tight closure.

5. In combination, an open mouthed reflector, a cover therefor, said cover including a frame and a glass panel, a metallic reflexive protecting ring about the periphery of the glass panel, said ring having an edge normally spaced from the inner face of the glass panel, a second protecting ring about the periphery of the reflector, and means for clamping the cover against the mouth of the reflector, the edges of the rings being yieldingly pressed together to effect a tight closure.

6. In combination, a reflector, a glass cover, and a gasket for rendering the joint between the reflector and glass cover tight, said gasket being in the form of two reflexive metal rings adapted to be brought into engagement and squeezed toward the reflector and cover respectively, and means for clamping the cover on the reflector.

7. In combination, a pair of rings of channel cross section, a reflector whose edge is within one of the rings, a cooperative glass cover mounted in the other ring, the adjacent sides of the rings being normally spaced from the reflector and cover respectively, and means to clamp the cover on to the reflector and squeeze the parts together.

8. A two part lighting unit having means to clamp the parts together, each part being provided with a metallic reflexive ring about the periphery thereof, the adjacent portions of each of the rings being normally spaced from its supporting part and adapted to be squeezed when the parts are clamped together.

Signed at New York, in the county of New York and State of New York, this 9th day of December, 1924.

LEROY C. DOANE.