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LIGHT BAFFLE FOR LAY-IN FIXTURE CLOSURE

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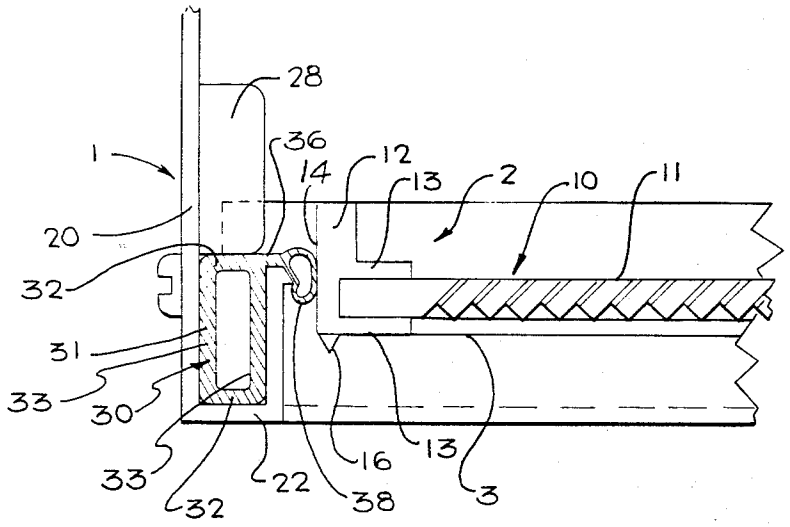


Fig 2

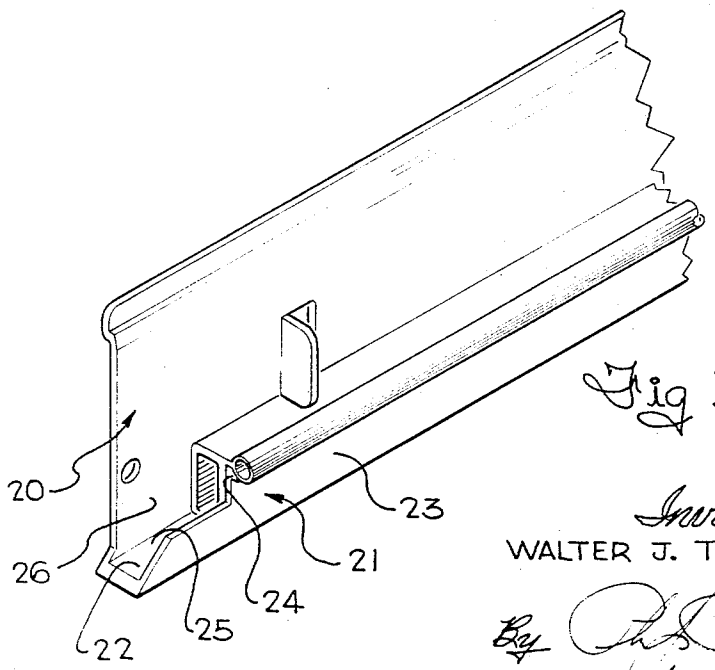


Fig 1

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LIGHT BAFFLE FOR LAY-IN FIXTURE CLOSURE

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This invention relates to lay-in type lighting closures, and in particular to sealing means for fixtures of this type.

In lighting fixtures with lay-in closures, a framed or frameless diffuser is mounted, in normal use, on oppositely disposed flanges of a fixed lamp housing. Generally, these fixtures are elongatedly rectangular, and the closure (hereafter called "diffuser") rests on flanges along the opposite long edges of the fixture. The diffuser is not hingedly mounted in fixed relation to the fixture. It generally is provided with a pair of hinge lugs, one projecting at each short end of the diffuser near a long side edge. When the diffuser is displaced transversely sufficiently to permit the long edge opposite the edge near which the lugs are located to clear the flange, the lugs permit the diffuser to swing down and hang so that lamps can be replaced. In order to permit this movement, the short end edges of the diffuser must lie inboard of the flanges of the end walls of the fixture. This leaves a gap which permits the leakage of light, and the ingress of dirt and bugs.

While some kind of flexible gasket would seem to be called for, the problem of providing a suitable gasket has been so difficult as to defy solution in the art heretofore. Such a gasket must be flexible enough to accommodate the up and down motion of the diffuser panel while preserving the gasket's light and dust-blocking effectiveness, and it must be mounted so that it does not interfere with functions of other parts of the fixture and diffuser, and is easily installed. Weather strip-like flaps of various materials have been found to be unsatisfactory.

One of the objects of this invention is to provide a lay-in type diffuser for a lighting fixture with an end gap-bridging gasket which is inexpensive to produce, easy to install, effective, durable and attractive in appearance.

Other objects will become apparent to those skilled in the art in the light of the following description and accompanying drawing.

In accordance with this invention, generally stated, in a rectangular fixture wherein a lay-in type diffuser is supported in use by two, oppositely disposed, parallel flanges on two edges of a fixed part of the fixture, in the usual manner, and the diffuser is arranged to be swung down for maintenance, a channel-defining molding is provided along the two opposite edges perpendicular to the parallel flanges on which the diffuser panel rests, and a gasket is mounted in the channel, projects above and inboardly beyond the channel-defining molding, and provides, against a side edge of the diffuser panel, a light and dust-tight seal. The gasket is made of softly resilient material and has a hollow body shaped complementarily to the walls defining the channel to fit snugly in the channel, a neck projecting inboardly from an upper inboard edge of the body, and a thin-walled, hollow, tubular bead on the inboard side of the neck. The bead bears against and is deformed by a contiguous edge face of the diffuser (generally against an outboard vertical surface of a diffusing panel frame), and, in use, is compressed between the edge face of the diffuser and a channel-defining wall of the molding. In the preferred embodiment, an inboardly extending lip along an upper part of the channel-defining wall of the molding helps ensure a snug engagement of the bead and the panel edge face.

The term "diffuser" is used broadly to include not only

the transparent or translucent part of the panel but also a frame mounted on the ends of a so-called frameless diffuser or the frame in which a frame type diffuser is mounted.

In the drawing, FIGURE 1 is a fragmentary view in perspective of an end wall of a fixture designed for a lay-in diffuser, before the fixture is assembled, showing a molding and gasket constructed in accordance with one illustrative embodiment of this invention; and

FIGURE 2 is a fragmentary transverse sectional view through the end wall shown in FIGURE 1 in assembled condition, showing a diffuser in place against the gasket.

Referring now to the drawing for one illustrative embodiment of this invention, reference numeral **1** indicates a lighting fixture utilizing a lay-in type diffuser with fixed side walls **2** provided with diffuser-supporting flange **3**, and end walls **20**. The fixture **1** has a diffuser **10** which includes a light permeable panel **11** and, in the embodiment shown, at least two end frame members **12**. The end frame members **12** have inboardly extending spaced panel flanges **13**, defining between them a panel-mounting channel in which an edge of the panel is mounted. The frame member extends the width of the panel **11**, and has a smooth, vertical outboard surface **14**. In the illustrative embodiment shown, the frame **12** has a locating lug projecting downwardly at each end to help locate the diffuser with respect to the flanges **3**.

The end walls **20** have at their lower edge a molding **21** which, in this illustrative embodiment, includes a U-shaped channel **25** defined by an end wall **26**, a bottom wall **22**, an inboard vertical wall **23**, and a chamfered inboardly extending lip **24**. In this embodiment, the wall **20** also has integral with it a stop tab **28**, lanced from the wall, and projecting in a direction across the channel **25** a short distance above the upper edge of the inboard wall **23**.

A gasket **30** is mounted in the channel **25**. The gasket **30** includes a body portion **31**, essentially rectangular in transverse cross-section; a neck **36**, projecting inboardly from the inboard upper edge of the body **31**, and a tubular bead **38**, projecting inboardly from the inboard edge of the neck **36**.

The body **31** is hollow, with top and bottom walls **32** and side walls **33**. The walls **32** and **33** are smooth on their outside surfaces, and the body **31** is of such outside dimensions as to fit snugly within the channel **25**. The neck **36** is of a length to bridge the top of the wall **23** and to position the bead tangentially to the chamfered surface of the lip **24**. The walls **32** and **33** of the body **31** are heavy enough to keep a snug frictional engagement between the outside surfaces of the body walls and the channel defining walls of the molding. They are preferably on the order of .030 to .060 inch thick. The neck may be slightly thinner, on the order of .020 to .040 inch thick. The tubular bead wall is quite thin, on the order of .010 to .020 inch, thick enough to be durable and to regain its original, circularly cross sectional shape when the panel is removed, but thin enough to permit easy manipulation of the panel and its seating on the flanges **3**, and to follow the upward and downward movement of the panel as it is mounted and demounted. As one can see from a study of FIGURE 2, when the panel is moved up, the bead will roll along the frame surface **14** as the panel is lifted, and will roll the other direction when the surface **14** is brought down, to move around the edge of the lip **24**. If the bead were solid, or if the bead wall were too heavy, the bead would either not move over the edge of the lip, or would bind tightly.

The height of the wall **23**, the height of the body wall **33**, and thickness of the neck **36** are all related in such a way that the body wall **32** bottoms on the channel bot-

tom **22**, the under surface of the neck **36** rests on the flat top edge of the channel wall **23**, and the top surface of the neck and body form a substantially continuously flat surface. The latter two conditions are important to provide support for a hinging pin or lug on the diffuser 10, which, when the panel is swung down, rests on the top surface of the neck and body, the bead being bent down out of the way by the weight of the panel acting through the hinging lug.

The tab **28** is so positioned with respect to the channel that its lower edge brushes the top surface of the body **31**. The tab **28** serves positively to retain the gasket **30** in the channel **25**. At the same time, the presence of the tab **28** makes it necessary to slide the gasket body beneath the tab when the gasket is being installed. The smoothness of the exterior surfaces of the body **31** and of the channel defining walls, and the flexibility of the hollow body **30**, make this installation easy.

The dimensions of the elements of the gasket and the characteristics of the gasket will be determined to some extent by the plastic from which the gasket is made. In the preferred embodiment, the gasket is made of light stabilized polyvinyl chloride resin with a non-migrating plasticizer. Illustrative dimensions for actual use are, gasket body, ¼" x ½" outside; neck, 1/16"; bead, 3/16" OD; body walls, .050 thick; neck, .030" thick; bead wall, .010–.015" thick.

A more detailed description of a lighting fixture in which the end wall arrangement and gasket of the invention are utilized is given in my co-pending patent application, Ser. No. 513,303 filed concurrently with the present application.

Having thus described the invention, that which is claimed and desired to be secured by Letters Patent is:

1. In a rectangular fixture for lay-in type closures, wherein a diffuser panel is supported in use by two, oppositely disposed parallel flanges on two edges of a fixed part of the fixture and the diffuser panel is arranged to be swung down for maintenance, the improvement comprising a molding defining a U-shaped channel at an edge of said fixed part of the fixture at right angles to the panel-supporting flanges, and a gasket mounted in said channel and projecting above and inboardly beyond said channel-defining molding, said gasket being made of softly resilient material and comprising a hollow body shaped complementarily to said channel to fit snugly therein, a thin, flexible neck projecting inboardly from an upper inboard edge of said body, and a thin-walled hollow tubular bead on and along the inboard side of said neck.

2. The lighting fixture of claim **1** wherein the channel-defining walls of the molding are smooth and the outside walls of the gasket body are smooth.

3. The lighting fixture of claim **1** wherein the molding has an inboard vertical wall with an inboardly extending lip along its upper edge.

4. The lighting fixture of claim **3** wherein the inboardly extending lip is chamfered inboardly downwardly to produce a thin edge below the top of the vertical wall.

5. The lighting fixture of claim **4** wherein the tubular bead rests tangentially on the chamfered surface of the lip.

6 The lighting fixture of claim **1** wherein a tab member, integral with an end wall of the fixture, projects over the channel closely adjacent the top of the gasket.

7. The lighting fixture of claim **1** wherein the gasket is made of polyvinyl chloride.

8. The lighting fixture of claim **7** wherein the tubular bead wall is on the order of .010 to .020 inch thick.

9. The lighting fixture of claim **8** wherein the body wall is on the order of .030 to .060 inch thick.

10. The lighting fixture of claim **9** wherein the neck is on the order of .020 to .040 inch thick.

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