

[54] MEANS FOR SECURING A BODY TO A
PANEL

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287/20.1

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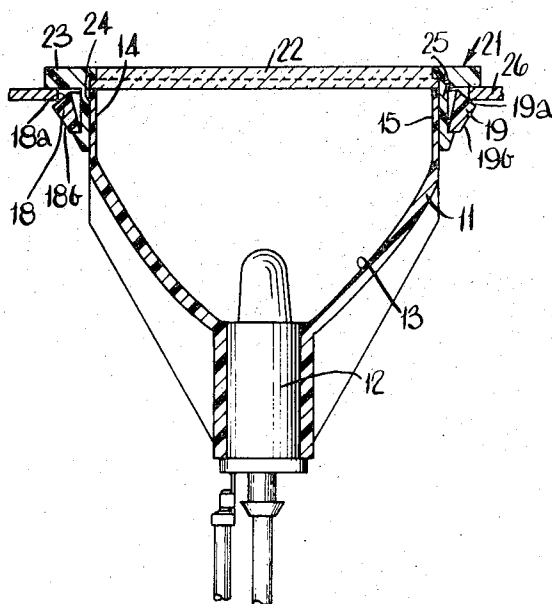
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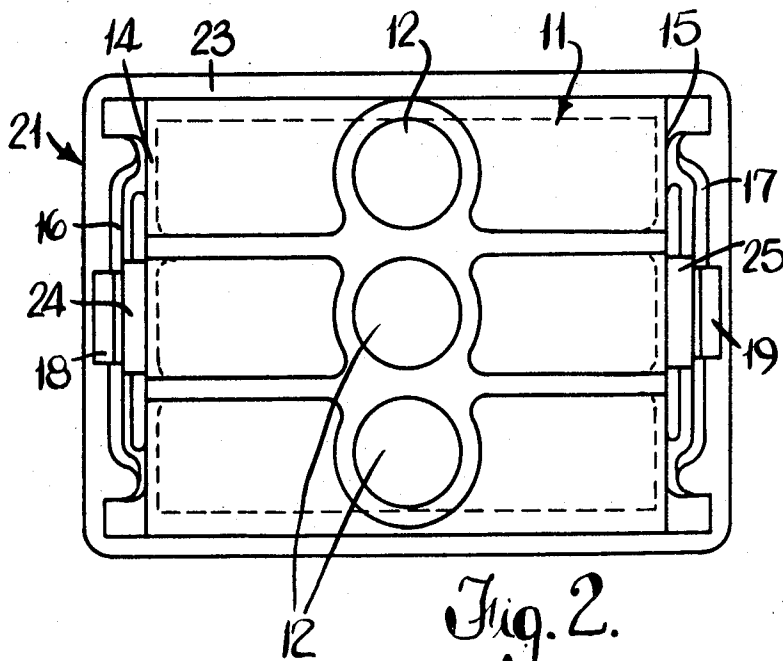
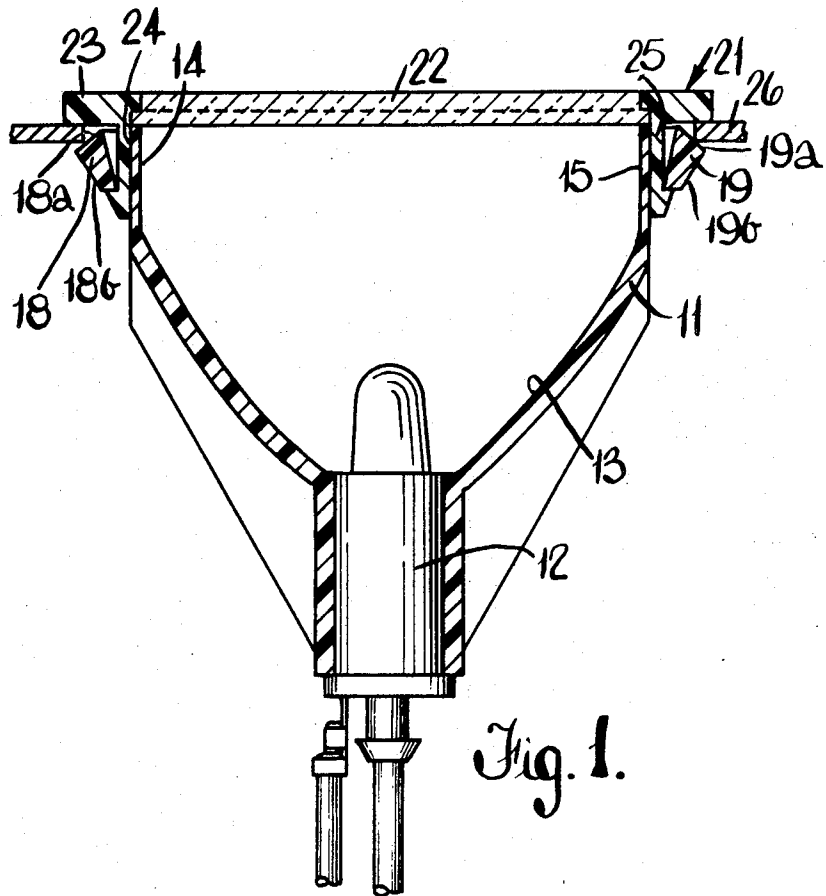
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[57] ABSTRACT

Means for securing a body to a panel including a pair of torsion bars on the body on opposite sides thereof. The torsion bars are spaced from the body and each torsion bar includes an outwardly projecting lug the lugs being positioned intermediate the ends of the torsion bars. The distance between the outer edges of the lugs is greater than the distance between opposite sides of a hole in a panel into which the body is to be inserted, and there is provided a retaining member engageable with the body. The retaining member is capable of engaging the panel around the hole in the panel, and includes a pair of fingers which extends between the lugs and the body when the member is engaged with the body. The fingers each include portions which engage the lugs on the torsion bars so as to prevent disengagement of the body from the member. When the body and the member are interengaged and the body is inserted through the hole in the panel the lugs engage in the opposite sides of the hole and the torsion bars are twisted to permit the lugs to pass through the hole. The torsion bars then restore the lugs to their original position so that the lugs engage with the under surface of the panel while the retaining member engages the upper surface of the panel so that the lugs and the retaining member secure the body to the panel.

1 Claim, 2 Drawing Figures





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MEANS FOR SECURING A BODY TO A PANEL

BACKGROUND OF THE INVENTION

This invention relates to means for securing a body to a panel.

SUMMARY OF THE INVENTION

Means according to the invention includes a pair of torsion bars carried by the body on opposite sides thereof, and spaced from the body, an outwardly projecting lug on each of the torsion bars, the lugs being intermediate the ends of the torsion bars and the distance between the outer edges of the lugs being greater than the distance between opposite peripheral walls surrounding a hole in the panel into which the body is to be inserted, and a retaining member engageable with the body, the retaining member being capable of engaging the panel around the hole in the panel and having a pair of fingers which extend between said lugs and the body respectively when the member is engaged with the body, the fingers having portions which engage said lugs in a manner to resist disengagement of the body from said member and the arrangement being such that in use the body and said member are interengaged and the body is inserted through the hole in the panel, said lugs engaging the peripheral walls surrounding the hole and said torsion bars being twisted to permit said lugs to pass through the hole, by the action of said lugs engaging said peripheral walls of the hole as said body is urged through the hole, the torsion bars then restoring the lugs to their original positions so that the lugs engage the undersurface of the panel, and said retaining member engaging the upper surface of the panel so that the lugs and the retaining member secure the body to the panel.

One example of the invention is illustrated in the accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE INVENTION

FIG. 1 is a sectional view of a warning lamp assembly secured to a panel, and

FIG. 2 is an inverted plan view of the assembly shown in FIG. 1.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings, the lamp assembly includes a generally rectangular, molded synthetic resin body 11 defining three bulb holders 12. The upper surface of the body 11 is open, and between the bulb holders 12 and the open surface of the body 11, the body 11 defines three curved reflectors 13. End walls 14, 15 of the body include respective integral torsion bars 16, 17 of rectangular cross-section, the torsion bars 16, 17 being parallel with one another, and being spaced from the body throughout the majority of their length. At its mid point each of the torsion bars 16, 17 includes an integral lug 18, 19 respectively, top surfaces 18a, 19a of which are inclined so that their innermost edges are closer to the plane of the open end of the body 11 than are the outermost edges thereof. Moreover, each of the lugs 18, 19 includes an outer ramp surface 18b, 19b respectively, with the ramp surfaces 18b, 19b defining an edge with the top surfaces 18a, 19a.

The assembly further includes a molded synthetic resin retaining member 21 including a central lens por-

tion 22 and a peripheral flange 23. Extending downwardly from the member 21 adjacent opposite ends thereof are a pair of resilient fingers 24, 25, the free ends of which include respective outwardly directed shoulders parallel with the flange 23.

In order to secure the assembly to a panel 26, the panel 26 is formed with an aperture, the dimensions of which are slightly larger than the dimensions of the body 11. The member 21 is engaged with the body 11, in such a manner that the lens 22 closes the open end of the body 11, and the fingers 24, 25 extend between the lugs 18, 19 and the body 11, with the shoulders of the fingers 24, 25 engaging the lower surfaces of the lugs 18, 19 respectively. The dimensions of the flange 23 of the member are greater than the dimensions of the aperture in the panel 26, and the assembly constituted by the body 11 and the member 21 is inserted through the aperture in the panel 26 until the lower surface of the flange 23 engages the upper surface of the panel 26. During insertion of the assembly through the aperture in the panel 26, the ramp surfaces 18b, 19b engage the edges of the aperture in the panel 26, and the torsion bars 16, 17 are twisted so that the inclination of the ramp surfaces 18b, 19b with respect to the walls of the aperture in the panel 26 are altered in a manner to permit the lugs 18, 19 to pass through the aperture. When the ramp surfaces 18b, 19b have cleared the edges of the aperture, the resilience of the torsion bars 16, 17 returns the lugs 18, 19 to their original orientation, thereby engaging the top surfaces 18a, 19a of the lugs 18, 19 with the lower surface of the panel 26. Since the top surfaces 18a, 19a of the lugs 18, 19 are inclined, then they do not make facial contact with the lower surface of the panel 26 but make line contact with the lower surface of the panel 26 at the edges of the aperture in the panel. The dimensions of the parts are such that the torsion bars 16, 17 are still stressed when the top surfaces 18a, 19a of the lugs engage the lower surface of the panel, and so the restoring force applied by the torsion bars 16, 17 urges the lower surface of the flange 23 firmly into contact with the upper surface of the panel 26. Thus, the flange 23 prevents the assembly being pushed completely through the panel 26, and the lugs 18, 19 resist withdrawal of the assembly from the panel. Should an attempt be made to withdraw the assembly from the panel 26, then the action of the panel 26 on the top surfaces 18a, 19a of the lugs will tend to twist the torsion bars 16, 17 in the opposite direction to that in which they were twisted during insertion of the assembly through the aperture in the panel, and such twisting will be resisted by engagement of the lower portions of the lugs 18, 19 with the fingers 24, 25. It will be appreciated that this locking action will occur if the body 11 is pushed upwardly from beneath the panel 26, or if the member 21 is levered upwardly from the upper surface of the panel 26.

In order to remove the assembly from the panel 26, the lugs 18, 19 must be moved in such a manner that their upper edges move towards the body 11, thereby twisting the torsion bars 16, 17 in the direction in which they were twisted during insertion of the assembly, so that the top surfaces 18a, 19a of the lugs 18, 19 clear the edges of the aperture in the panel 26, whereupon the assembly can be withdrawn.

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

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1. Means for securing a body to a panel, including a pair of torsion bars carried by the body on opposite sides thereof, and spaced from the body, an outwardly projecting lug on each of the torsion bars, the lugs being intermediate the ends of the torsion bars and the distance between the outer edges of the lugs being greater than the distance between opposite peripheral walls of a hole in the panel into which the body is to be inserted, and a retaining member engageable with the body, the retaining member being capable of engaging the panel around the hole in the panel and having a pair of fingers which extend between said lugs and the body respectively when the member is engaged with the body, the fingers having portions which engage said lugs in a manner to resist disengagement of the body

4

from said member and the arrangement being such that in use the body and said member are inter-engaged and the body is inserted through the hole in the panel, said lugs engaging the peripheral walls surrounding the hole, and said torsion bars being twisted to permit said lugs to pass through the hole by the action of said lugs engaging said peripheral walls of the hole as said body is urged through the hole, the torsion bars then restoring the lugs to their original positions so that the lugs engage the under surface of the panel, and said retaining member engaging the upper surface of the panel so that the lugs and the retaining member secure the body to the panel.

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