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BULB MOUNTING ASSEMBLY FOR ATTACHMENT TO A PERFORATED MOUNTING PANEL

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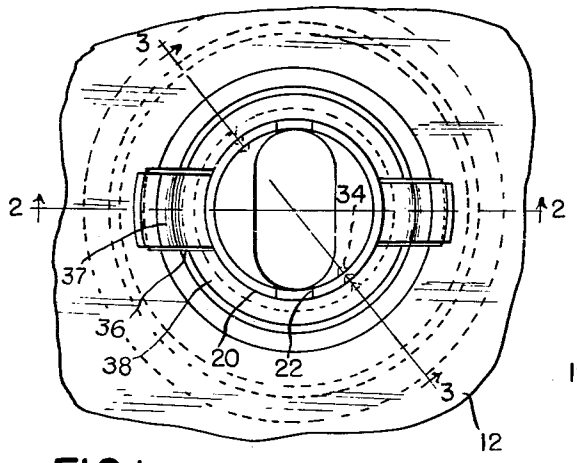


FIG.1.

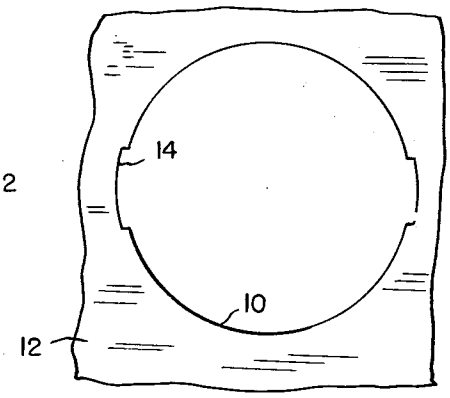


FIG.4.

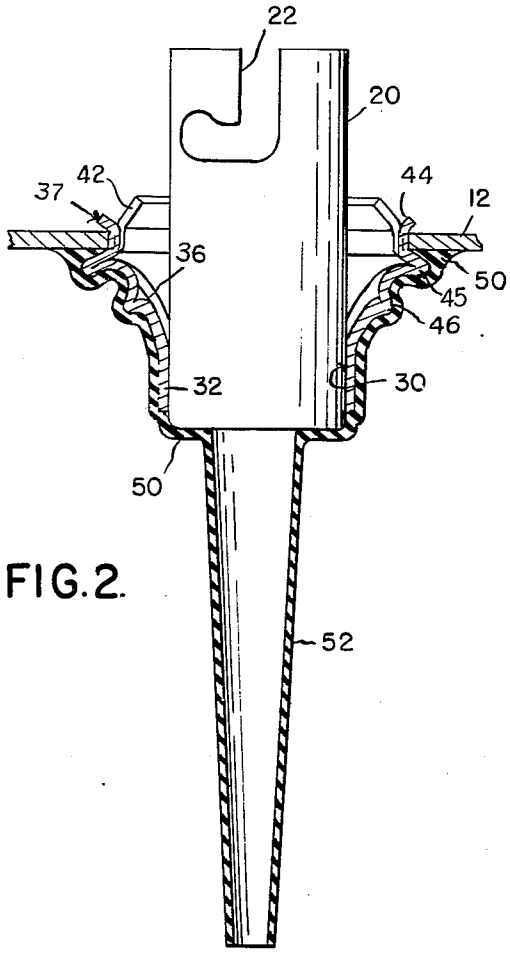


FIG.2.

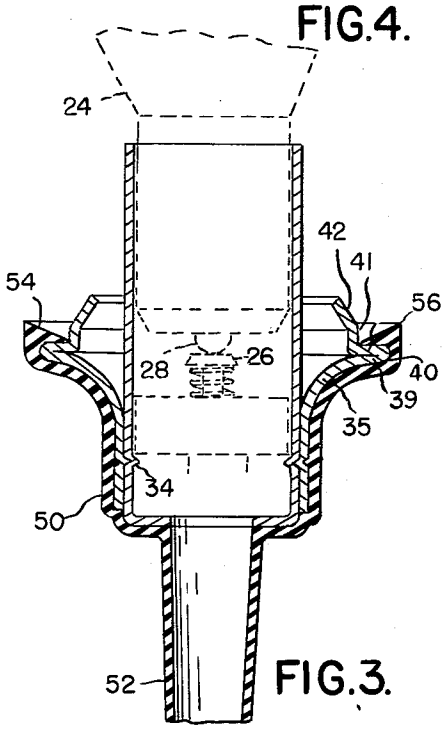


FIG.3.

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BULB MOUNTING ASSEMBLY FOR ATTACHMENT TO A PERFORATED MOUNTING PANEL

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11 Claims. (Cl. 339—128)

The present invention relates to a bulb mounting assembly.

It is an object of the present invention to provide a bulb mounting assembly adapted to hold a bulb socket mechanically in an opening in a panel.

It is a further object of the present invention to provide a bulb mounting assembly including means for sealing the bulb mounting with respect to an opening in a panel in which the assembly is mounted.

It is a further object of the present invention to provide a bulb mounting assembly which is characterized by its inexpensiveness, simplicity, the ease with which it may be inserted and removed, and its high electrical efficiency.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a front elevational view of a bulb mounting assembly mounted in an opening in a panel.

Figure 2 is a section on the line 2—2, Figure 1.

Figure 3 is a sectional view on the line 3—3, Figure 1, in which the associated panel is omitted.

Figure 4 is a fragmentary plan view of the panel in which the assembly is mounted.

Referring now to the figures, the invention relates to a bulb mounting assembly for mounting a bulb socket in an opening 10 provided in a panel 12. As best seen in Figure 4, the opening 10 is of generally circular configuration but includes radial outwardly extending portions 14 for a purpose which will presently be described.

The bulb mounting assembly comprises a bulb socket 20 of conventional type which includes J-slots indicated at 22 for engagement with projections on a light bulb indicated in dotted lines at 24 in Figure 3. As best seen in this figure, the bulb socket includes a resilient contact 26 adapted to engage the base contact 28 of the light bulb.

A unitary mounting member 30 is provided which is formed of a single piece of sheet metal and is shaped to the configuration illustrated by a conventional operation, such for example as spinning and/or stamping.

The mounting member 30 includes a rear cylindrical sleeve portion 32 adapted to engage the rear portion of the bulb 24 and to be interlocked therewith, a suitable interlock configuration being illustrated at 34 in Figure 3. Forwardly from the cylindrical sleeve portion 32 the mounting member 30 flares outwardly as indicated at 35.

Two pairs of closely spaced axially extending slots 36

are provided which extend from the forward end of the mounting member 30 rearwardly to the cylindrical sleeve portion thereof. The mounting member is formed of relatively thin sheet metal, and the pairs of slots 36 thus divide the forward portion of the mounting member 30 into two diametrically opposed relatively narrow flexible mounting fingers 37 and two diametrically opposed relatively wide and relatively rigid locator portions 38. It will be appreciated that while the sheet metal of which the mounting member 30 is formed may be relatively thin, the locator portions 38 are relatively rigid due to their substantial circumferential extent. The slots 36 are closely spaced and accordingly the locator portions 38 approach 180 degrees of angular or circumferential extent.

The locator portions 38 include outwardly or radially extending flange portions 39 which are rebent to provide forwardly facing radial abutments 40 adapted to limit forward movement of the mounting member through an opening in a panel. Forwardly of the abutments 40 the locator portions are provided with generally cylindrically shaped centering portions 41 dimensioned to fit closely within a circular opening in a panel part, such as the opening 10 shown in Figure 4. Forwardly of the centering portions 41 the locator portions 38 are provided with forwardly and inwardly tapered conical guide portions 42.

The resilient fingers 37 at their forward ends are provided with outwardly extending engagement portions 44. Rearwardly from the engagement portions 44, the fingers 37 include a generally outwardly extending rebent flange portion 45, and intermediate the rebent flange portion 45 and the sleeve portion 32 of the mounting member, the fingers are provided with outwardly extending projections 46 which may be pressed inwardly by the user to flex the fingers inwardly to permit the engagement portions 44 to pass through the opening 10 in registration with the appropriate recessed portion thereof in the panel 12.

The entire rear portion of the assembly is coated with a suitable yieldable sealing material to form a sealing cover 50. Preferably, the sealing cover 50 is provided by a dipping operation into a liquid which is caused to form a substantially uniform coating on the assembly and to set forming a resilient sealing and protective cover over the assembly, including a rearwardly extending portion 52 adapted to overlie a conductor connected to the contact element 26 of the bulb socket.

As best illustrated in Figure 3, the cover material 50 preferably includes a portion 54 extending forwardly of the surface of the abutments 40. Moreover, this portion 54 of the sealing material is preferably forwardly and outwardly tapered to provide a sealing surface 56 adapted to contact the adjacent surface of the panel 12 so as to provide a most effective seal. The relationship of the portion 54 when the assembly is engaged in the panel is best illustrated in Figure 2.

The present invention is particularly well adapted for use in automotive vehicles and a typical use thereof is for parking lights or the like, which may be located in a position such that the exposed portion of the assembly may be subjected to mud, sand, dirt, water, or other material. It is thus essential that the exposed portion of the socket be protected and sealed and this is effectively

accomplished by the sealing material or coating 50. Moreover, it will be observed that the coating 50 overlies the slots 36 and prevents the entry of dirt or the like into the interior of the light unit.

Moreover, the present invention is characterized in that good electrical conductivity between the panel 12 and the assembly is provided as is required in the conventional type of automotive lighting equipment. This electrical contact is established in part between the locating portions of the mounting member, but more particularly between the spring fingers 37 and the edges of the opening 10 in the panel.

It will be observed that the inwardly tapered conical guide portions 42 of the mounting member serve as a pilot which assists in guiding the assembly into the opening 10 in the panel part. The cylindrical centering portions 41 of the mounting member serve to center the socket in the opening 10 and is of course shaped to conform closely to the size of the circular portion of the opening. The assembly may be quickly and easily introduced into the opening by pressing the outward projections 46 toward each other an extent sufficient to permit the engagement portions 44 of the spring fingers 37 to pass through the opening 10. To remove the assembly the projections 46 are compressed and the socket assembly withdrawn.

The assembly is retained in assembled position in the panel without rattling and in an effectively sealed condition. Rattling is prevented by the simultaneous engagement by one side of the panel by the outward extending engagement portions 44 of the spring fingers, and at the other side of the panel by the portion 54 of the resilient sealing material.

Attention is particularly directed to the fact that the mounting member 30 is formed of a single piece of metal which may be given the required shape in simple spinning and/or stamping operations and thereafter staked or otherwise secured to the socket as indicated at 34. There is thus produced a most efficient and inexpensive bulb mounting assembly which carries into effect the stated objects of the invention.

The drawings and the foregoing specification constitute a description of the improved bulb mounting assembly in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A bulb mounting assembly comprising an annular mounting member having a generally cylindrical rear sleeve portion and an outwardly flared front portion, a generally cylindrical bulb socket having its rear end portion received in the sleeve portion of said mounting member and an open front end extending forwardly of said mounting member for the reception of the base of a light bulb, the front portion of said mounting member having two diametrically opposed pairs of closely spaced axially extending slots extending from the front end of said mounting member substantially to the rear sleeve portion thereof and dividing the forward portion of said mounting member into two diametrically opposed relatively narrow relatively flexible latching fingers, and two diametrically opposed relatively wide relatively rigid locator portions, said locator portions having intermediate portions extending radially outwardly and reversely to provide abutments to limit movement of said assembly through an opening in a mounting panel, said fingers at their forward ends having radially outwardly extending engagement portions located forwardly of said abutments and movable through the panel opening on radially inward flexing of said fingers and movable outwardly upon radial outward flexing of said fingers to engage the side of the panel at the opposite side thereof from the abutments on said relatively rigid locator portions, and a yieldable sealing cover overlying the slots in said mounting member and extending forwardly to overlie the forward surfaces of said abutments.

2. An assembly as defined in claim 1 in which said relatively rigid locator portions have cylindrically shaped centering portions extending forwardly from said abutments.

3. An assembly as defined in claim 1 in which said relatively rigid locator portions have cylindrically shaped centering portions extending forwardly from said abutments and inwardly tapered conical guide portions extending forwardly from said centering portions.

4. An assembly as defined in claim 1 in which said fingers are shaped to provide outwardly extending projections intermediate their ends to which manual pressure may be applied through said sealing cover to flex said fingers inwardly to provide for passage of the engagement portions thereof through the panel opening.

5. An assembly as defined in claim 1 in which the portions of said sealing cover overlying the forward surfaces of said abutments has a forwardly and outwardly tapered front surface.

6. A bulb mounting assembly comprising an annular mounting member having a generally cylindrical rear sleeve portion and an outwardly flared front portion, a generally cylindrical bulb socket having its rear end portion received in the sleeve portion of said mounting member and an open front end extending forwardly of said mounting member for the reception of the base of a light bulb, the front portion of said mounting member having two diametrically opposed pairs of closely spaced axially extending slots extending from the front end of said mounting member substantially to the rear sleeve portion thereof and dividing the forward portion of said mounting member into two diametrically opposed relatively narrow relatively flexible latching fingers, and two diametrically opposed relatively wide relatively rigid locator portions, said locator portions having intermediate portions extending radially outwardly and reversely to provide abutments to limit movement of said assembly through an opening in a mounting panel, said fingers at their forward ends having radially outwardly extending engagement portions located forwardly of said abutments and movable through the panel opening on radially inward flexing of said fingers and movable outwardly upon radial outward flexing of said fingers to engage the side of the panel at the opposite side thereof from the abutments on said relatively rigid locator portions.

7. An assembly as defined in claim 6 in which said relatively rigid locator portions have cylindrically shaped centering portions extending forwardly from said abutments.

8. An assembly as defined in claim 7 in which said relatively rigid locator portions have cylindrically shaped centering portions extending forwardly from said abutments and inwardly tapered conical guide portions extending forwardly from said centering portions.

9. A bulb mounting assembly comprising an annular mounting member having a generally cylindrical rear sleeve portion and an outwardly flared front portion, a generally cylindrical bulb socket having its rear end portion received in the sleeve portion of said mounting member and an open front end extending forwardly of said mounting member for the reception of the base of a light bulb, the front portion of said mounting member having two diametrically opposed pairs of closely spaced axially extending slots extending from the front end of said mounting member substantially to the rear sleeve portion thereof and dividing the forward portion of said mounting member into two diametrically opposed relatively narrow relatively flexible latching fingers, and two diametrically opposed relatively wide relatively rigid locator portions, said locator portions having radially outwardly extending abutments spaced rearwardly from the forward free ends thereof to limit movement of said assembly through an opening in a mounting panel, said fingers at

their forward ends having radially outwardly extending engagement portions located forwardly of said abutments and movable through the panel opening on radially inward flexing of said fingers and movable outwardly upon radial outward flexing of said fingers to engage the side of the panel at the opposite side thereof from the abutments on said relatively rigid locator portions.

10. An assembly as defined in claim 9 in which said relatively rigid locator portions have cylindrically shaped centering portions extending forwardly from said abutments.

11. An assembly as defined in claim 9 in which said relatively rigid locator portions have cylindrically shaped centering portions extending forwardly from said abutments and inwardly tapered conical guide portions extending forwardly from said centering portions.

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