Oct. 6, 1970 C. W. HEATH 3,533,050

ELECTRICAL SOCKET

Filed Sept. 26, 1967 2 Sheets-Sheet 1

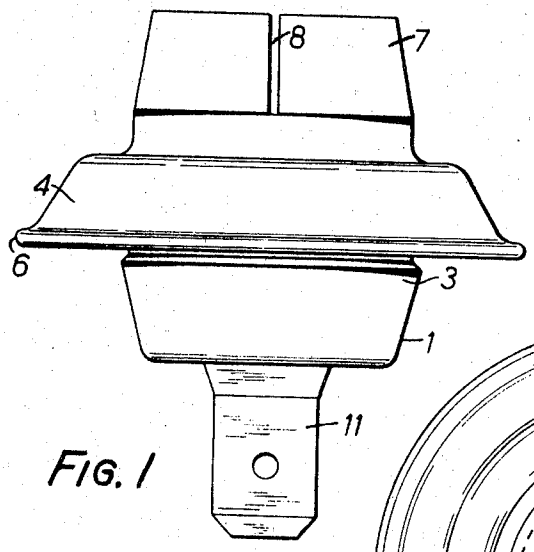


FIG. 1

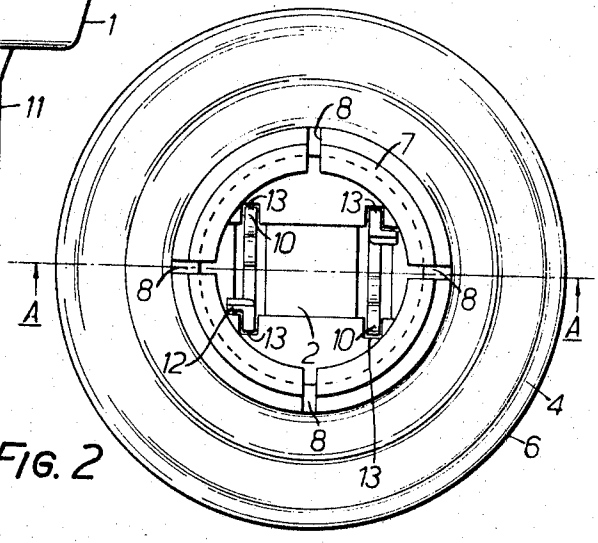


FIG. 2

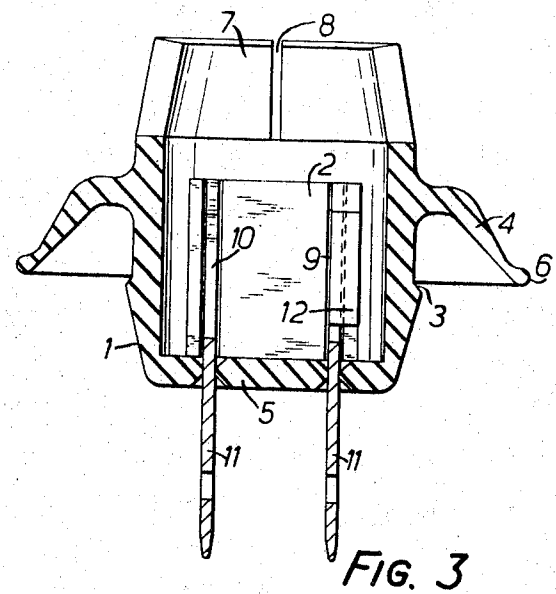


FIG. 3

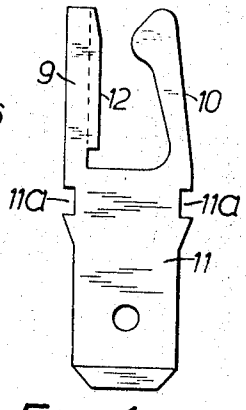


FIG. 4

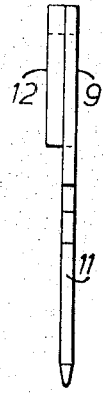


FIG. 5

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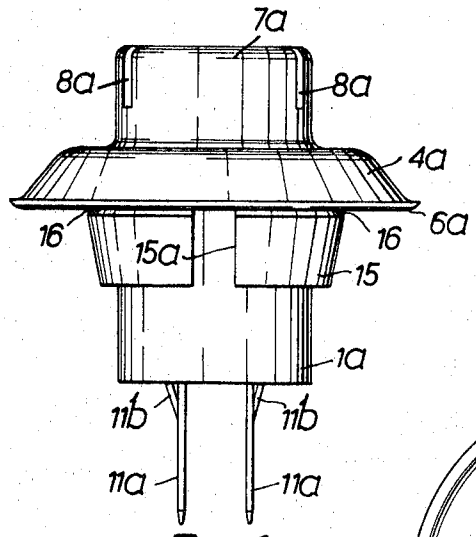


FIG. 6.

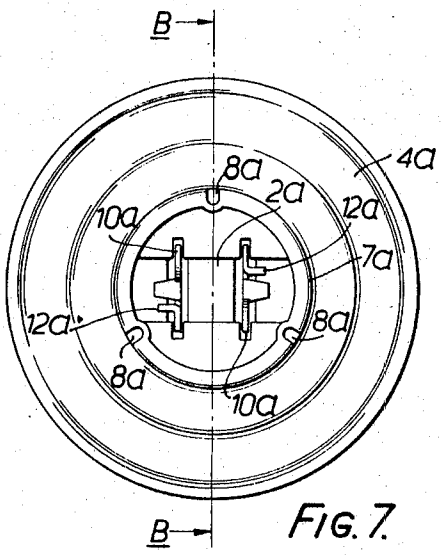


FIG. 7.

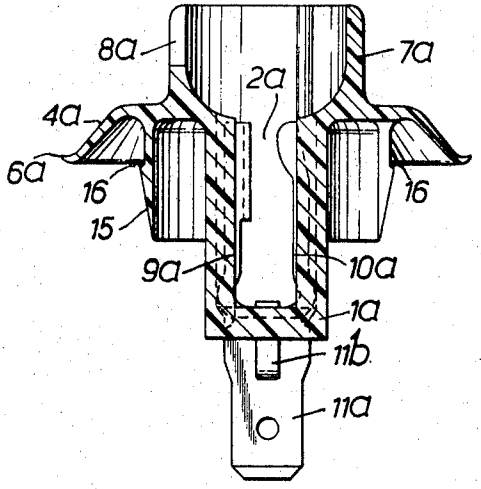


FIG. 8.

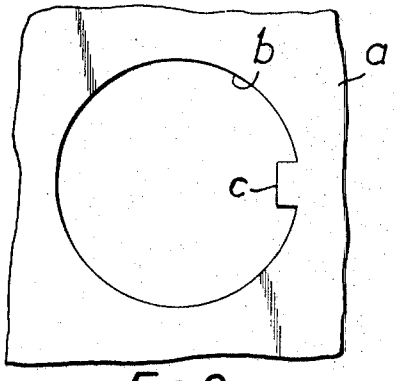


FIG. 9.

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3,533,050

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3,533,050

ELECTRICAL SOCKET

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Claims priority, application Great Britain, Oct. 4, 1966, 44,280/66
Int. Cl. H02b 1/02
U.S. Cl. 339—126 4 Claims

ABSTRACT OF THE DISCLOSURE

A socket for a lamp or plug comprises a body formed with a plug or lamp receiving cavity housing electrical contacts, the outer surface of the body having a shoulder for snapping through an aperture in a support and a radial flange for making resilient sealing engagement with portions of the support surrounding the aperture.

This invention relates to electrical sockets for a plug or lamp adapted to be mounted in apertured supports.

Supports on which such sockets or lampholders may be adapted to be mounted may be parts of motor vehicles, for example, the number plates or rear valances mounted externally of the vehicle and therefore liable to encounter wet and dusty conditions. It is important to prevent water or dust getting through the apertures in the support and reaching the inside on which contacts and circuitry connected with the socket or lampholder are exposed as such moisture or dust is liable to cause short circuits and corrosion of the contacts and circuit connections.

It is an object of the present invention to provide a socket or lampholder which will effectively seal the aperture in the support against the entry of moisture and dust.

According to the present invention, the socket comprises a body formed of resilient material having a cavity for receiving the base of an electric plug element or lamp, contacts mounted in the cavity for engaging contacts of the plug, the outer face of the body being provided with a shoulder for snapping through the aperture in the support, a resilient flange being provided integral with the body extending radially outwards for making resilient engagement with portions of the support surrounding the aperture when the holder is mounted therein.

The contacts are provided with tail portions extending through the base of the cavity in the body to the outside thereof. According to a preferred arrangement the tailpiece of each contact is forced through a hole in the base of the cavity which is slightly undersize so that the tailpiece is self-retaining and seals the hole through which it passes.

The plug receiving end of the cavity in the body is preferably formed with an integral resilient skirt adapted to grip the body **8**, the plug or the glass envelope of the lamp bulb when inserted into the holder so as to support it and dampen out vibrations to which the socket may be subjected.

To enable the invention to be fully understood, a lampholder will now be described, by way of example, with reference to the accompanying drawings in which:

FIG. 1 is a side view of a lampholder according to one embodiment of the invention;

FIG. 2 is a plan view thereof;

FIG. 3 is a sectional view on the line A—A of FIG. 2;

FIG. 4 is a side view of one of the contacts;

FIG. 5 is an edge view thereof;

FIG. 6 is a side view of a lampholder according to a modification of the invention;

FIG. 7 is a plan view thereof;

FIG. 8 is a sectional view on line B—B of FIG. 7; and

FIG. 9 is a plan view of a panel having an aperture in which the lampholder is to be assembled.

As shown in FIGS. 1 to 5 of the drawings, the lampholder comprises a one-piece moulding of resilient synthetic plastics or rubber including a body **1** formed with a cavity **2** for receiving a rectangularly shaped base of a wedge type lamp bulb. The outer surface of the body **1** has an annular shoulder **3** and an integral resilient flange **4** which extends radially outwardly and downwardly towards the base **5** of the body. As shown, the peripheral edge of the flange is thickened to form a bead **6** which is located in the same plane or slightly spaced above the plane containing the shoulder **3**.

A resilient skirt **7** extends outwardly of the lamp receiving end of the cavity **2** and is tapered inwardly towards its free end. As shown, the skirt is divided into skirt portions by axial slots **8**.

As more particularly illustrated in FIGS. 4 and 5, each contact is formed from a blank of sheet metal and comprises a substantially rigid arm **9** and a resilient or yieldable arm **10** in opposed relation, the arms extending integrally from a tailpiece **11**. The arm **9** is formed with a lateral web **12** extending substantially at right angles thereto.

The tailpiece of each contact is adapted to be forced through a hole or slot in the base **5** of the body, the hole or slot being purposely made slightly undersize so that the tailpiece has to be forced through and therefore makes a tight sealing fit so that the contact is self-retaining and seals the hole or slot against the entry of moisture or dust. The wall of the cavity is formed with slots or grooves **13** for receiving edge portions of the arms **9** and **10** and the web portion **12**. When fully inserted portions of the base **5** of the body **1** will extend into notches **11***a* on the tailpiece.

The lampholder is adapted to be mounted in a support such as the rear valance or number plate of a motor vehicle by inserting the body **1** into the aperture and forcing it axially therethrough until the shoulder **3** snaps past the edges of the aperture in which position the beads **6** of the flange **4** will resiliently engage portions of the support surrounding the aperture and by reason of the resiliency of the flange the bead will be urged into sealing engagement with the support to preclude the entry of moisture or dust.

When the base of a wedge type lamp is inserted into the cavity **2** of the body, it is adapted to enter between the arms **9** and **10** of the contacts, the arm **10** flexing to accommodate this and when the lamp base is fully inserted the contacts on the base will be engaged by the respective contacts in the lampholder.

The skirt **7** is so shaped that it will make resilient engagement with the glass envelope of the lamp bulb so that the latter will be centralised within the cavity and any vibrations to which the lamp may be subjected will be damped out.

With reference to the modification illustrated in FIGS. 6 to 8, the lampholder comprises a one-piece moulding of resilient synthetic plastics or rubber including a body **1***a* having a rectangularly shaped lamp base receiving cavity **2***a*. A circular wall **15** surrounds the upper part of the body **1***a* and is formed with a slot **15***a* and a shoulder **16**.

The holder is also formed with a flange **4***a* similar to the flange **4** of the first embodiment and a resilient skirt **7***a* having axial slots or grooves **8***a*. In this embodiment the slots or grooves do not extend right through the wall of the skirt.

Contacts substantially similar to the contacts of the first embodiment are assembled in the cavity **2***a*. It will be noted, however, that as shown in FIGS. 6 and 7, each

tailpiece **11***b* has a resilient tongue **11***c* struck out for snapping through slots in the base of the body **1***a*.

The modified embodiment according to FIGS. 6 to 8 is adapted to be assembled with a supporting panel *a* formed with a circular aperture *b* having a lug *c* projecting inwardly at one point. The holder is assembled by inserting the circular wall **15** axially into the aperture *b* with the slot **15***a* aligned with the lug *c* so that the lug enters the slot and serves to locate the holder against rotation.

The wall **15** makes a fairly snug fit in the aperture and is moved through the aperture until the shoulder **16** snaps through, when the holder will be secured by the shoulder **16** engaging the under surface of the panel and the bead **6***a* of the flange **4***a* resilient engaging the upper face.

While the holder of the invention is particularly adapted for receiving wedge type lamp bulbs, it will be understood that it is not necessarily limited to this particular use. By varying the shape of the cavity **2**, the holder can be used for other types of lamp bulbs or electric plugs.

As shown the body **1** is tapered from the shoulder **3** to the base **5** to facilitate the insertion of the body into the aperture in the support.

I claim:

1. An electrical contact for assembly in an electrical socket, the contact being formed of sheet metal and comprising a body portion having a substantially rigid arm and yieldable arm extending from the body in spaced opposed relation, the rigid arm having a longitudinal flange facing the yieldable arm for making electrical engagement with a contact on a plug element to be inserted between said arms and the yieldable arm having a projection adjacent its free end directed towards said rigid arm.

2. An electrical contact according to claim **1**, wherein the said flange extends over substantially the whole length of the inner side edge of the rigid arm and is substantially at right angles thereto.

3. An electrical contact according to claim **1**, wherein the contact has an integral blade-like tailpiece extending from the body portion in an opposite direction to said arms.

4. An electrical contact according to claim **1**, wherein the body portion is formed with a notch at each of its side edges.

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U.S. Cl. X.R.

240—8; 339—258