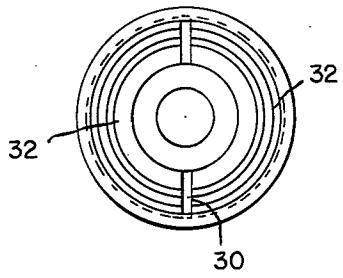
Jan. 17, 1956 R. M. HELLER 2,731,612

BULB SOCKET HAVING INTEGRAL MEANS FOR ATTACHMENT TO AN APERTURED PANEL

Filed Sept. 21, 1953

FIG.1.



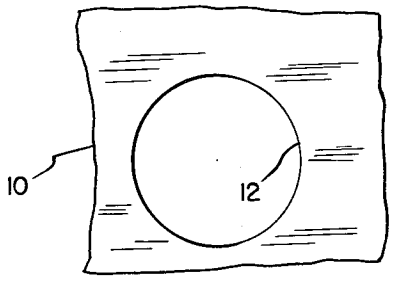
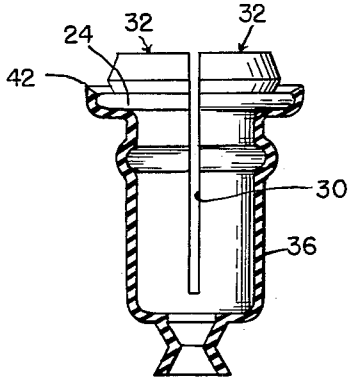


FIG.5.

FIG.2.



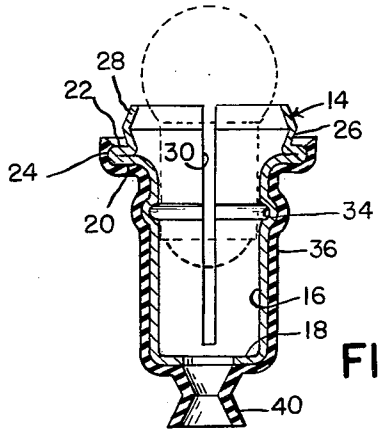
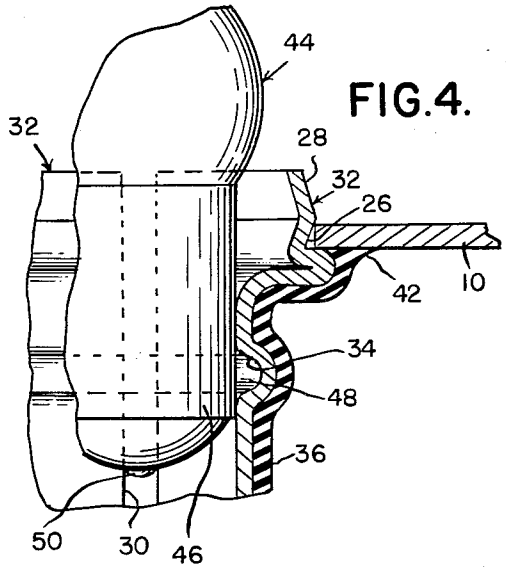


FIG.3.

FIG.4.



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BULB SOCKET HAVING INTEGRAL MEANS FOR ATTACHMENT TO AN APERTURED PANEL

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Application September 21, 1953, Serial No. 381,216

2 Claims. (Cl. 339—128)

The present invention relates to an integral bulb socket designed to be detachably mounted in a panel opening.

It is an object of the present invention to provide a bulb socket designed to engage and support a conventional automobile type lamp and to serve as a detachable means for mounting the lamp in a panel opening.

It is a further object of the present invention to provide a socket of the character described characterized by its simplicity, the economy with which it may be produced, and the facility with which it may be assembled with a lamp and inserted in a panel opening.

More specifically, it is an object of the present invention to provide a lamp socket of generally elongated tubular form provided with a pair of diametrically opposed elongated slots extending substantially to the rear end of the socket to separate the major portion of the socket into two arms movable toward and away from each other.

It is a further object of the present invention to provide a construction as defined in the preceding paragraph in which the forward ends of the arms are constructed with portions adapted to engage and interlock in and around a panel opening and in which intermediate portions of the arms are shaped to cooperate with the laterally extending pins provided on conventional automotive type lamp bulbs.

It is a further object of the present invention to provide a construction as described above provided with an external sealing coating of a yieldable or resilient plastic material which is adapted to seal the slots provided in the socket and to cooperate in the mounted assembly to prevent the entrance of foreign matter into the light unit.

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 plan view of a socket constructed in accordance with the present invention.

Figure 2 is a side elevation of the socket illustrated in Figure 1 with the sealing coating sectioned diametrically to expose the socket proper.

Figure 3 is a longitudinal sectional view of the socket assembly showing its association with a lamp bulb.

Figure 4 is an enlarged fragmentary view, partly in section, illustrating the manner in which the socket is retained in a panel part.

Figure 5 is a fragmentary plan view of a panel having a bulb receiving opening.

Referring now to the drawings the lamp socket is designed for association with a panel **10** such for example as the instrument panel of an automotive vehicle. The panel **10** is provided with a circular opening in which the lamp socket is mounted to support a lamp bulb in operative position.

The socket proper comprises an elongated unitary sheet metal member **14** of circular cross-section. As best illustrated in Figure 3, the socket comprises a generally cylindrical base portion **16** having an inwardly extending flange **18** at its rearward end. The front or forward end of

the socket **14** is shaped outwardly as indicated at **20**, and thence inwardly as indicated at **22** to provide an abutment flange **24** adapted to engage at one side of the panel **10** surrounding the opening **12** therein. Forwardly of the flange **24** the socket includes an outwardly flared conical portion **26** adapted to cooperate with the edge of the panel opening **12** to retain the socket therein. Forwardly of the portion **26** the socket is inwardly tapered as indicated at **28**. At diametrically opposite sides of the socket **14** there are provided elongated slots **30** which extend throughout the major portion of the length of the socket from the open or front end thereof. It will be apparent that the provision of the two slots **30** provides a pair of transversely arcuate arms **32**. Due to the arcuate cross-section of these arms, they are substantially rigid. However, due to the depth of the slot and the fact that the elongated slots result in equally elongated arms **32**, the arms **32** are substantially bodily movable toward and away from each other.

Intermediate the ends of the arms **32** there are provided aligned circumferential inwardly concave channels **34**.

The entire outer surface of the socket **14** is provided with a coating **36** of a suitable resilient material such for example as a polyvinyl chloride. This coating is preferably provided by a dipping operation and is caused to cover the entire rear portion of the socket and includes a rearwardly extending extension **40** adapted to surround the electrical conductor connected to the usual spring contact in the socket and to provide sealing engagement therewith. The forward end of the coating **36**, as best illustrated in Figure 2, extends slightly forwardly of the flange **24** and is forwardly concave to provide a peripheral knife-like edge **42** to facilitate sealing engagement with the panel **10**. The manner in which the portion **42** of the coating **36** engages the panel **10** is best illustrated in Figure 4.

The improved socket is intended for use with a conventional automotive type lamp bulb such as illustrated at **44** in Figure 4. Bulbs of this type have bases **46** provided with a pair of diametrically outwardly extending pins **48**, these pins normally being engaged in J-slots provided in the bulb sockets. In the present case however, the inwardly concave channels **34** are designed for receiving the pins **48** in the manner best illustrated in Figure 4. Due to the fact that the arms **32** are outwardly yieldable the socket may be pressed into the assembled position shown in Figure 4 by axial movement. Alternatively, the pins **48** may be aligned with the slots **30** and pressed down into registration with the channels **34** and thereafter turned to the position illustrated in Figure 4. The arms **32** of the socket are sufficiently resilient to retain the bulb base **46** assembled therewith and the assembly of the socket and bulb may be inserted into the opening **12** in the panel **10** merely by pressing the socket and bulb forwardly through the opening. This results in the inclined arcuate portions **28** of the arms **32** cammingly engaging the edges of the opening **12** and forcing the arms firmly inwardly against the base **46** of the bulb. In finally assembled position, the high point defined by the intersection between the socket portions **26** and **28** passes slightly beyond the opposite surface of the panel **10**, as best illustrated in Figure 4, and the socket and bulb are firmly assembled together and firmly mounted within the opening in the panel. The forward lip portion of the coating **36** provides an efficient seal between the panel opening and the socket, and also tends to retain the socket in position without vibration or rattling.

The parts are so designed that in the assembled relationship illustrated in Figure 4, the arms are firmly pressed inwardly against the outer surface of the lamp

base **46** so as to establish excellent electrical contact therewith. At the same time the outer ends of the arms are caused to engage firmly in the opening **12** of the panel.

It will of course be appreciated that the socket is provided with an electrical contactor of conventional type adapted to supply current to the end contact **50** of the lamp bulb, the circuit being completed through the outer shell of the base **46** to the socket and thence to ground through the panel part **10** as conventional in automotive lighting.

It will be observed that the single socket element **14** comprises both a bulb receiving socket and also means for mounting the socket and bulb assembly in an opening in the panel. The metallic socket element **14** may be economically produced by drawing, spinning and/or stamping in a most economical manner with the result that a highly efficient and simple mountable bulb socket is produced from a single piece of metal.

The coating **36** provides a seal for the longitudinally extending slots **30** and also provides a seal around the conductor which leads to the interior of the socket, as well as providing means for sealing the space between the opening **12** and the socket. In addition, the resilient coating cooperates in holding the socket in assembled relation in the opening without the possibility of vibration or rattling thereof.

The drawings and the foregoing specification constitute a description of the improved integral bulb socket 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 socket for use with a bulb of the type having radially extending pins on its base and adapted to be mounted in an opening in a panel, said socket comprising a one-piece metal body having an annular rear end portion provided with an opening for an electrical conductor

and an integral elongated generally cylindrical portion extending forwardly from said annular portion and open at its forward end for the reception of the base of a bulb, the generally cylindrical portion of the body having elongated slots extending rearwardly from its front edge for the major portion of the length of said generally cylindrical portion and dividing the generally cylindrical portion of said body into a plurality of arms which due to their arcuate cross-section are substantially rigid but which are sufficiently outwardly yieldable to receive and resiliently retain the base of a bulb therein, said arms intermediate their ends being provided at their inner sides with circumferentially aligned inwardly concave channels extending completely across said arms for the reception of the pins on the base of a bulb mounted in said socket, the forward ends of said arms having panel-engaging mounting portions including substantially rigid forwardly and inwardly inclined camming portions, said camming portions and the generally cylindrical portion of said body being dimensioned with respect to the panel opening and bulb base respectively so as to press said arms firmly against the bulb base to insure good electrical contact upon insertion of said socket with a bulb therein in the panel opening.

2. A socket as defined in claim 1 in which said channels are located approximately midway between the ends of said arms.

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