Nov. 27, 1962 C. A. WOODCOCK 3,066,218

LAMP ASSEMBLY

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Fig 1.

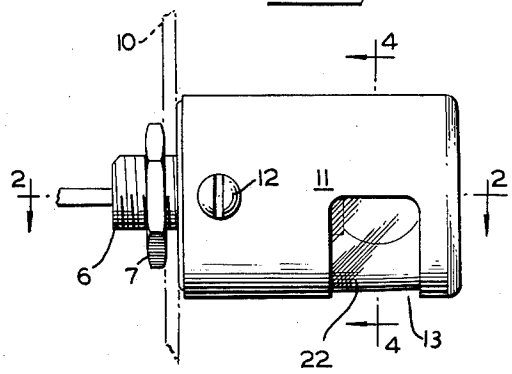


Fig 2.

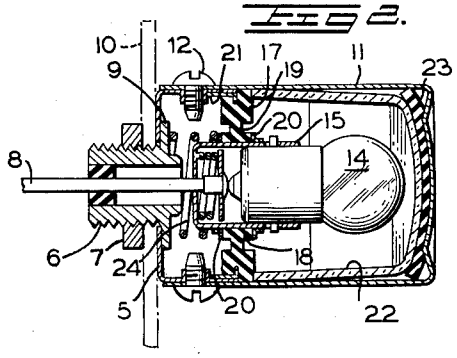
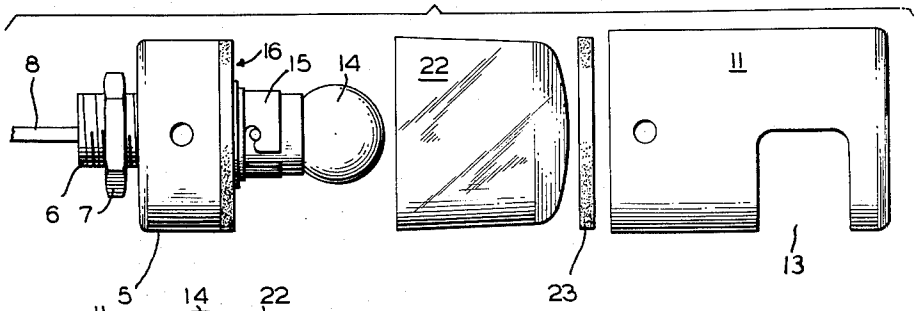


Fig 3.



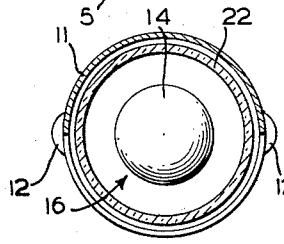


Fig 4

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LAMP ASSEMBLY

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FIG. 8.

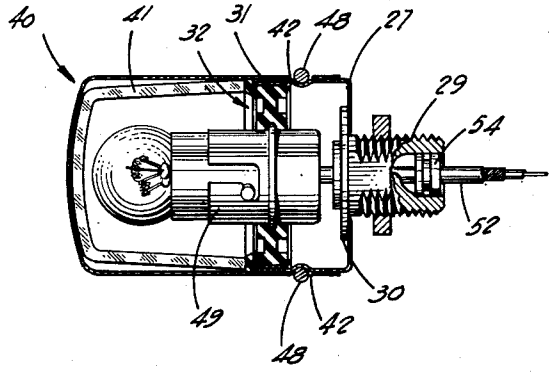


FIG. 6.

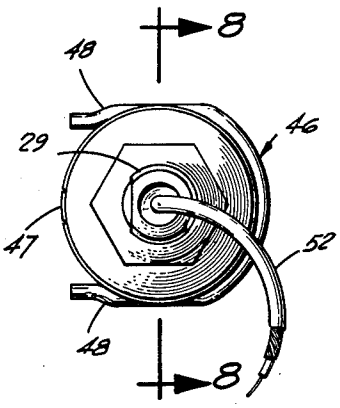


FIG. 7.

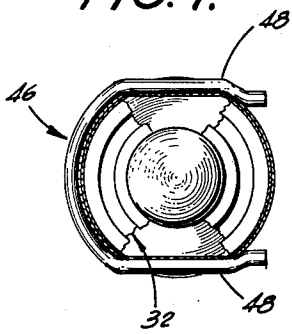
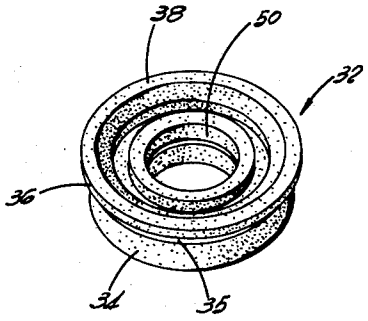


FIG. 9.



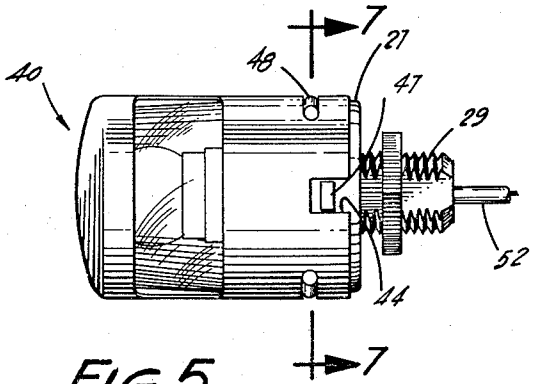


FIG. 5.

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3,066,218
Patented Nov. 27, 1962

3,066,218

LAMP ASSEMBLY

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Filed Sept. 21, 1960, Ser. No. 60,243
8 Claims. (Cl. 240—8.16)

This is a continuation-in-part of application No. 752,544, filed August 1, 1958, now abandoned, for Lamp Assembly.

The present invention relates to lamp assemblies and more particularly those for use on the dash of automobiles, tractors or stationary equipment.

Vibration is a major cause of lamp failure in such assemblies. Imperfect sealing against entry of moisture to the lamp chamber is another. The problem is one of serious concern to the automotive industry.

An object of the present invention is to provide a dash lamp assembly of simple design and relatively few parts in which the bulb and socket are a unit floatably and resiliently mounted in a housing that is attached to a dash panel or other fixed support on a vehicle.

Another object is to provide an assembly of the character stated in which a single means provides both a resilient support for the bulb socket and an efficient seal preventing ingress of moisture to the lamp chamber.

Other and incidental objects will be apparent from the following description taken in conjunction with the accompanying drawings in which:

FIG. 1 is an elevation of the assembly installed for use;

FIG. 2 is a sectional view on line 2—2 of FIG. 1;

FIG. 3 is an exploded elevation of the assembly;

FIG. 4 is a sectional view on line 4—4 of FIG. 1;

FIG. 5 is an elevational view of the second embodiment of this invention;

FIG. 6 is an elevational view as seen from the right of FIG. 5;

FIG. 7 is a sectional view as seen from line 7—7 of FIG. 5;

FIG. 8 is a sectional view as seen from line 8—8 of FIG. 6; and

FIG. 9 is a perspective view of the grommet used in this embodiment.

The embodiment of the invention disclosed in FIGS. 1–4 includes a cylindrical cupped base 5 carrying through its bottom an axial attaching spud 6 externally threaded for engagement by a nut 7 and having an axial bore for passage of a conductor wire 8 to the interior of the lamp chamber. The attaching spud is provided at its inner end with a radial flange 9 bearing against the inner face of the lamp base closing the spud receiving opening and cooperating with the nut 7 to clamp the base securely against a dash panel or other support 10 through which the spud extends.

The lamp casing comprises the base 5 together with a cylindrical cover 11 open at its inner end for close fitting axial sliding engagement over the open end of the base. Screws 12 secure the cover in position. The cover is closed at its outer end and is formed with a side opening 13 for passage of light from a lamp bulb 14 in a conventional bayonet type socket 15 that has a floating mounting in the lamp casing. This mounting comprises a grommet 16 of resilient compressible material, preferably rubber, that encompasses the mid-portion of the lamp socket in sealed engagement with its peripheral surface and extends radially into sealing engagement with the wall of the cover 11.

Grommet 16 serves not only to provide a floating mount for the bulb socket but also to provide a seal preventing ingress of dirt and moisture to the interior of the casing. It is formed with a relatively thick outer edge bead 17 spaced radially from an inner edge bead 18 of the same thickness and joined integrally thereto by a web 19 of reduced thickness. Both beads are squared. The inner bead 18 is fixed on the bulb socket 15 between a pair of annular metal sleeves 20 rigidly fixed on the socket and having each a radial flange abutting the adjacent face of the bead. The outer bead is formed with an annular groove in its outer peripheral surface for reception of one radial flange of an annular channel member 21 that is fixed rigidly on the inner face of the cylindrical wall of the base 5 flush with its outer end. The channel member 21 thus anchors the bead 17 against movement axially with respect to the lamp casing. The reduced web 19 imparts flexibility to the grommet and this in conjunction with the resilience of the grommet body absorbs road shock and vibration to such degree that the lamp socket and bulb are effectively insulated against the same.

The flat outer face of the grommet bead 17 constitutes a compressible sealing seat for the rim of a cup-shaped lens 22 mounted within the cover 11. The outer end of the lens engages against a resilient cushioning pad 23, preferably of rubber, that seats on the closed end of the cover. A coil spring 24 surrounds the bulb socket in electrical contact with the inner one of the sleeves 20 on the bulb socket and with the flange 9 of the attaching spud 6 to provide a ground for the bulb circuit.

A second embodiment of the invention is disclosed in FIGS. 5 through 9 and includes structure similar in part to that of the first embodiment. A cup-shaped base member 27 has a central aperture in its base wall and a hollow spud 29 secured thereto against washer 30. A U-shaped ring 31 is secured to the side walls of the base member 27 at the open end thereof and receives and tightly holds therein a grommet 32. Grommet 32 is formed from a mass of resilient material and has a portion with a peripheral surface 34 engaging ring 31. A second portion of the grommet is spaced from the first portion by a recess 35 for receiving one flange of the ring 31 to prevent relative movement between the base 27 and grommet 32. The second portion includes a second peripheral surface 36 extending outwardly of surface 34 and an annular surface 38 facing the open end of base member 27.

A second cup-shaped cover member 40 is telescoped over member 27 with the side walls thereof engaging the peripheral surface 36. A lens 41 is disposed between the cover member 40 and grommet, and engages annular surface 38.

The cover member 40 has a pair of aligned elongated openings 42 on opposite sides thereof and a longitudinal slot 44. The base member 27 has aligned recesses on opposite sides of the side walls. The cover 40 and base 27 are secured together by means of a substantially U-shaped spring member 46 having a pair of arms 48 which are received within the openings 42 and the recesses 46. A lug 48 projecting from base 27 is received within

a slot 42 to prevent relative rotation of the two members and to ensure alignment of the openings and recesses.

A lamp socket 49 is tightly held in the central opening 50 of the grommet 32. Relative longitudinal movement of the lamp socket within the grommet is restricted by the mating ring flange and recess of the lamp socket and grommet respectively. Lamp socket has a coaxial wire 52 extending through spud 29 for connection to an electrical potential as is well known in the art. Grommet 54 surrounds the wire and seals the lamp assembly from the outside.

The lamp socket is resiliently held in the lamp assembly by the grommet 32. The grommet in turn has peripheral surfaces which engage the cover and base thereby sealing the lamp assembly from the outside to prevent the ingress of dirt or moisture.

Although the present invention has been described in conjunction with preferred embodiments, it is to be understood that modifications and variations may be resorted to without departing from the spirit and scope of the invention, as those skilled in the art will readily understand. Such modifications and variations are considered to be within the purview and scope of the invention and appended claims.

What is claimed is:

1. A lamp assembly comprising in combination a casing having a generally cup-shaped base portion and a generally cup-shaped cover extending over the open forward end of the base portion and in telescoped relation around the exterior of the side wall thereof, said base portion having means extending rearwardly of the rear wall thereof and provided with a central passageway communicating between the outside and interior of the casing, said base portion being entirely closed across the rear except for the passageway through the rearwardly extending means, said base portion having an inwardly directed annular portion at least adjacent the open end thereof, a bulb socket entirely within the casing and spaced entirely therefrom, an imperforate annular member of resilient deformable material such as rubber or the like tightly encompassing the bulb socket in sealing engagement therewith and extending continuously at least in close proximity to the inside surface of the cover, means securing said bulb socket within said annular member comprising annular abutments on the bulb socket engaging opposite sides of said annular member, the rearward abutment being electro-conductive, an electro-conductive coil spring between and abutting said rearward abutment and the rear of the base portion, seal means extending across the passageway of said rearwardly extending means of the casing, said latter seal means being apertured for substantially sealed passage of an electrical conductor wire for the bulb socket, a substantially cup-shaped lens in the cover with the rim of the lens in continuous engagement with said annular member adjacent the outer peripheral surface of the latter, resilient shock absorbent means between the forward end of the cover and the adjacent end of the lens, said annular member being tightly and fluid sealingly clamped between the rim of the lens on one side thereof at the forward end limit and the inwardly directed annular portion of the base portion on the other side, and means securing the cover and base portion together in clamped relation in the annular portion.

2. The assembly of claim 1, said annular member extending rearwardly of the inwardly directed annular portion of the base portion and being grooved for reception of the annular portion therewithin.

3. The assembly of claim 1, said rearwardly extending means of the base portion being threaded around the outer periphery, nut means received on the threading of said rearwardly extending means for the clamping, between the same and the opposite portion of the base portion, of a lamp assembly supporting structure.

4. A lamp assembly comprising in combination oppositely faced first and second cup-shaped members having side walls in telescoping relationship and defining an enclosure therebetween, with the first cup-shaped member having an opening communicating the enclosure with the outside thereof, a grommet disposed in the enclosure and formed from a mass of resilient material and having a pair of adjacent peripheral surfaces engaging in tight sealing relationships, respectively, the side walls of the first and second cup-shaped members, and having a through hole, a lamp socket disposed within the enclosure and resiliently supported by the grommet, with the socket extending through the through hole in tight sealing relationship with the periphery thereof, and having electrical connection means extending through the opening, a cup-shaped lens disposed in the enclosure engaging the second cup-shaped member with the open end engaging the grommet in sealing relationship therewith, and means engaging the first and second cup-shaped members for locking the members together.

5. A lamp assembly comprising a first cup-shaped member having a base wall with an opening therethrough and having side walls projecting from the base wall, a second cup-shaped member having side walls in telescoping relationship with the side walls of the first cup-shaped member and having a base wall defining an enclosure by and between the first and second cup-shaped members, a grommet disposed within the enclosure and formed from a mass of resilient material having a pair of adjacent peripheral surfaces in tight sealing relationship, respectively, with the side walls of the first and second cup-shaped members, and having a hole therethrough, a lamp socket disposed within the enclosure and extending through the hole in sealing relationship with the periphery thereof, a cup-shaped lens interposed between the grommet and second cup-shaped member and having a base wall engaging the base wall of the second cup-shaped member and having its peripheral open end engaging the grommet in sealing relationship therewith, and means on the first and second cup-shaped members securing them together.

6. A lamp assembly according to claim 5 wherein said securing means includes a U-shaped spring member having arms received in aligned openings and recesses presented by the cup-shaped members, respectively.

7. A lamp assembly comprising in combination oppositely faced first and second cup-shaped members having side walls in telescoping relationship and defining an enclosure therebetween, the first cup-shaped member having an opening communicating the enclosure with the outside thereof, a grommet formed from a mass of resilient material and having an intermediate through hole, said grommet being disposed in the enclosure and having a pair of adjacent peripheral surfaces engaging in tight sealing relationships, respectively, the side walls of the first and second cup-shaped members, and dividing the enclosure into two portions, a lamp socket disposed within the enclosure and resiliently supported by the grommet, with the socket extending through the through hole in tight sealing relationship with the periphery thereof, electrical connection means for the socket extending through the opening, a cup-shaped lens disposed in the enclosure in the portion thereof within the second cup-shaped member and surrounding the lamp socket exposed thereto, said lens being supported at its closed end by the second cup-shaped member and at its open end by compressible engagement with the grommet and having sealing relationship therewith, and means engaging the first and second cup-shaped members for locking the members together.

8. A lamp assembly comprising a first cup-shaped member having a base wall and having side walls projecting from the base wall, a second cup-shaped member having side walls in telescoping relationship with the side walls of the first cup-shaped member and having a base wall defining an enclosure by and between the first

and second cup-shaped members, a grommet formed from a mass of resilient material and having an intermediate hole therethrough, said grommet being disposed within the enclosure and having a pair of adjacent peripheral surfaces in tight sealing relationship, respectively, with the side walls of the first and second cup-shaped members, matable means on the first cup-shaped member and grommet securing the grommet to the first cup-shaped member, a lamp socket disposed entirely within the enclosure and extending through the hole in sealing relationship with the periphery thereof, a cup-shaped lens

interposed resiliently between the grommet and second cup-shaped member and having its peripheral open end engaging the grommet in sealing relationship therewith, and means on the first and second cup-shaped members securing them together.

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