RAIL MOUNTED SIDEMARKER AND CLEARANCE LIGHT

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References Cited

UNITED STATES PATENTS

3,633,021 1/1972 Rossi........240/8.2

3,218,448 11/1965 Cala......................240/8.2
3,125,299 3/1964 Wooster et al............240/415.5 X

FOREIGN PATENTS OR APPLICATIONS


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ABSTRACT

An elastomeric lamp base fastened to a vehicle body surface seals a protective cavity into which conductors extend. Conductive contact elements embedded in the base body for electrical power and ground paths from different terminal socket locations adapted to accommodate different types of lamp units. A resilient rim on the base releasably holds the lamp unit firmly seated in the base with the lamp terminals received in the appropriate socket formations.

7 Claims, 10 Drawing Figures
RAIL MOUNTED SIDEMARKER AND CLEARANCE LIGHT

This invention relates to vehicle lamp assemblies and more particularly to a lamp mounting base in combination with lamp units of different types.

An important object of the present invention is to provide a lamp mounting base adapted to be fastened to dimensionally restricted vehicle supporting surfaces such as the upper aluminum rail of a trailer capable of receiving lamp units with different terminal prong arrangements. Lamp installations of this type must not only be economically feasible, but must also cope with the problems of vibration and extreme weather conditions. Thus, the present invention is addressed to the provision of a firm and weather resistant installation for various lamp assemblies.

In accordance with the present invention, a lamp mounting base is fastened onto a vertical vehicle surface by means of screw fasteners extending through tapering end portions of the base. When fastened in place, the base encloses and seals a cavity against the supporting surface into which electrical conductors extend from an available loop wire harness arrangement in order to supply electrical energy to the lamp unit adapted to be releasably held in position on the lamp base. The lamp base is accordingly provided with a resilient rim adapted to releasably hold in operative position the lens cover of a lamp unit. The terminals projecting from the lamp are received within socket formations formed in the base to accommodate different terminal locations.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a perspective view illustrating a typical installation for the lamp assembly of the present invention.

FIG. 2 is a perspective view showing the disassembled components associated with the lamp assembly.

FIG. 3 is a perspective view of another type of lamp unit capable of being used with the lamp mounting base.

FIG. 4 is a front plan view of the lamp holder.

FIG. 5 is a longitudinal sectional view taken through section line 5–5 in FIG. 4.

FIG. 6 is a transverse sectional view taken through a plane indicated by section line 6–6 in FIG. 5.

FIG. 7 is a transverse sectional view taken through a plane indicated by section 7–7 in FIG. 4.

FIG. 8 is a rear plan view of the lamp holder.

FIG. 9 is a perspective view of the power contact element in the lamp holder.

FIG. 10 is a perspective view of the ground contact element in the lamp holder.

Referencing now to the drawings in detail, FIG. 1 illustrates a typical installation for the lamp assembly generally denoted by reference numeral 10 on a vertical vehicle surface such as the upper aluminum rail 12 of a trailer. The lamp assembly includes the lamp mounting base generally referred to by reference numeral 14 and a sealed type of lamp unit generally referred to by reference numeral 16. As shown in FIG. 2, the lamp unit includes a relatively rigid lens housing 18 secured to a recessed bottom reflector 20 having a central boss formation 22 from which a pair of terminals 24 project in offset relation to the geometrical center of the lamp unit. Each longitudinal end of the housing may be provided with retainer lugs 26. Alternatively, the base 14 may receive a sealed lamp unit 16 as shown in FIG. 3. This type of lamp unit is disclosed in detail in copending application Ser. No. 191,907, filed Oct. 22, 1971, and includes a centrally projecting base portion 17 of a wedge-type bulb. Also, a lamp unit consisting of a wedge-type bulb enclosed by a separate lens cover could be accommodated.

As shown in FIGS. 2 and 5, the lamp mounting base 14 consists of an elongated base body 28 made of an elastomeric material that maintains its elastically deformable properties both at subzero temperatures and at elevated temperatures. The base body includes convergent end anchor portions 30 provided with openings 32 receiving screw fasteners 34 adapted to be threaded into the supporting surface 12 in order to firmly hold the base body on the surface as well as to establish any ground connections. Electrical energy is supplied to the lamp assembly through the base by means of the conductors 36 which enter the base through the underside as shown in FIG. 8.

The mounting base includes a continuous, outer wall portion 38 which is positioned substantially perpendicular to the supporting surface 12 and in the illustrated embodiment, forms a rectangular formation with the anchor portions 30 extending from the longitudinal ends of the rectangular formation. Integral with the outer wall 38, is an internal supporting wall 40 in parallel spaced relation to the supporting surface 12 so as to form an internal cavity 42 within the base body that is sealed against the supporting surface 12 when the body is fastened thereto by the fasteners 34. The cavity 42 thus forms a protective enclosure into which conductors 36 extend from the vehicle.

A formation 44 projects from the internal wall 40 into the cavity 42. This formation receives the conductors at either longitudinal end through openings 48. The conductors are connected to connectors 46 in contact with a conductive contact element 50 as shown in FIG. 9 hereafter described in detail. The contact element 50 is embedded in the formation 44 of the base body which also embeds a second conductive contact element 52 as shown in FIG. 10 to be hereafter described in detail. A central socket formation 54 projects forwardly from the wall 40 and is adapted to receive the base portion of any wedge-type bulb such as base 17 of bulb unit 16. Two pairs of smaller socket openings 56 are formed on the wall 40 on either side of the central socket formation 54. One pair of the openings 56 are adapted to receive the pair of offset terminals 24 projecting from a lamp unit 16 of the type shown in FIG. 2. Thus, the base 14 is adapted to receive two diverse types of lamp units.

By virtue of the offset relationship of the terminals 24 to the geometric center of its lamp unit 16 and the lamp mounting base 14, a firm physical and electrical contact is established between the terminals 24 and the connectors 46 within the socket formations 56 in a manner similar to the arrangement disclosed in U. S. Pat. No. 3,218,448 to Cala owned by the same assignee as the present application. However, the lamp unit 16 need not be orientated for insertion into the base as in
the aforementioned patent, since two pairs of openings 56 are provided. Also, the outer wall 38 is provided with a resilient in-turned rim 58 peripherally dimensioned equal to the rectangular dimension of the lamp unit 16 so that the retainer projections 26 will deflect the rim and be held thereunder for releasably yet firmly holding the lamp unit in its operative position.

Insert of a lamp unit into the base 14 establishes electrical connections to the power cable 36 and ground through the contact elements 50 and 52 as aforementioned. These contact elements accommodate both types of lamp units 16 and 16'. As shown in FIG. 9, the contact element 50 includes a centrally located, resilient grip or clip portion 60 which is to be seated within the central socket formation 54 so as to receive a portion of the base portion 17 of the bulb projecting from a lamp unit 16'. The clip portion 62 of contact element 52 shown in FIG. 10 is also seated in the socket formation 54 closely spaced from clip portion 60 so that the base portion 17 of a wedge-type bulb will be engaged and electrical contact made with both filament leads. A pair of arms 64 extend from clip portion 60 and are connected by angularly related section 66 to sleeve portions 68 receiving the power cable connectors 46 aforementioned in order to establish an electrical path between a power cable 36 and the filament lead of a wedge-type bulb engaged in clip portion 60. A ground path is established from clip portion 62 by the strip portion 70 and ring portion 72 connected to opposite ends in parallel offset relation. A connecting portion 74 interconnects clip portion 62 and the strip portion 70, also in parallel offset relation to each other, so that the ring portions will be aligned with openings 32 for engagement by fasteners 34.

The contact elements 50 and 52 also establish electrical paths with respect to either pair of offset socket openings 56 by means of prongs 76 and 78 projecting into the openings 56 as more clearly seen in FIG. 6. The prongs 76 are interconnected by portion 80 spaced on either side of clip portion 60 and connected to the clip portion by connector portion 82. Prongs 78 are also interconnected by portion 84 with strip portion 70 so as to be positioned on either side of the associated clip portion 62. Thus, the terminals 24 will be engaged by one pair of prongs 76 and 78, on either side of the central socket formation 54 when a lamp unit 16 is inserted into the base.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. A lamp holder comprising a body having means for releasably holding a lamp unit, said body including a socket formation and socket openings adjacent thereto, and a pair of conductive contact elements embedded in said body having grip portions positioned within the socket formation in spaced relation to each other and spaced prongs extending into said socket openings.

2. In combination with a supporting surface and a lamp having a rigid housing from which terminals project, a lamp mounting base made of an elastomeric material secured to said surface, said base comprising an elongated body having a continuous outer wall extending substantially perpendicularly to said surface and an internal supporting wall integrally connected to the outer wall in spaced relation to the supporting surface to form a cavity within the body, resilient rim means connected to the outer wall for releasably holding the lamp housing in an operable position, socket formations on said internal supporting wall receiving the lamp terminals in the operative position of the lamp housing and contact means embedded in the base body and extending into the socket formations for establishing electrical paths to the lamp terminals, said socket formations including a central socket and a pair of socket openings on either side of the central socket.

3. The combination of claim 2 wherein said contact means includes a pair of conductive contact elements having resilient grip portions positioned within the central socket in close spaced relation to each other and spaced prongs on either side of the grip portion extending into the socket openings.

4. The combination of claim 3 wherein one of the contact elements further includes a sleeve portion embedded in the base body and a power cable connector embraced by the sleeve portion exposed to said cavity.

5. A lamp holder base adapted to receive diverse types of lamp units having projecting terminals at different locations, comprising an elongated body having anchoring end portions and means for resiliently holding a lamp unit in operative position, said body being formed with a central socket and a pair of socket openings on either side of the central socket, and a pair of conductive contact elements embedded in said body having resilient grip portions positioned within the central socket in close spaced relation to each other and spaced prongs on either side of the grip portions extending into the socket openings.

6. The combination of claim 5 wherein one of the contact elements further includes a sleeve portion embedded in the base body and a power cable connector embraced by the sleeve portion.

7. The combination of claim 6 wherein the other of the contact elements further includes ring portions aligned within the anchoring end portions of the body to form ground connections.