United States Patent

Rieth

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[54] LAMP SOCKET

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[52] **U.S. Cl.** .....**339/93 L,** 339/119 L, 339/176 L

[51] **Int. Cl.**.....**H01r 33/12**

[58] **Field of Search** 339/93, 75, 119, 176; 240/46.55

[56] **References Cited**

UNITED STATES PATENTS

3,143,301	8/1964	Trautner et al	339/93 L
3,200,363	8/1965	Morgan, Jr.	339/75 T
3,387,255	6/1968	Earleywine, Jr.	339/188 R

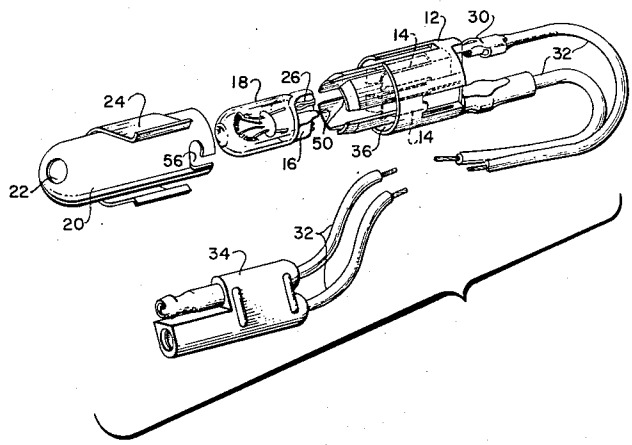
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[57] **ABSTRACT**

The following specification describes a lamp socket insulator having integrally formed cantilever extension walls for supporting a lamp electrically connected to a pair of wedge type electrical receptacles carried by the socket with a lamp housing engaged with the insulator in turn encircling and supporting the extension walls.

5 Claims, 4 Drawing Figures



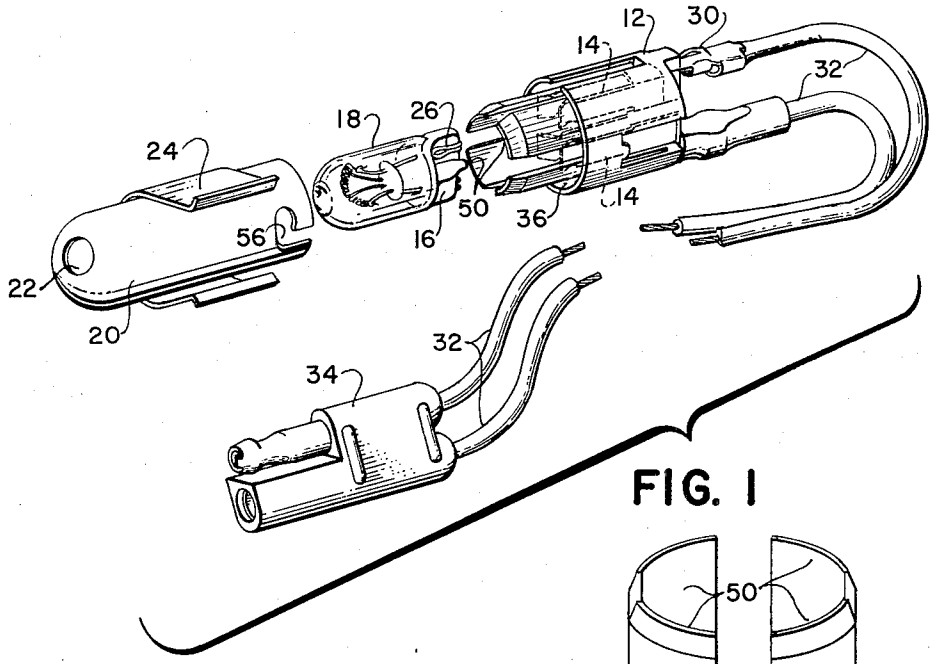


FIG. 1

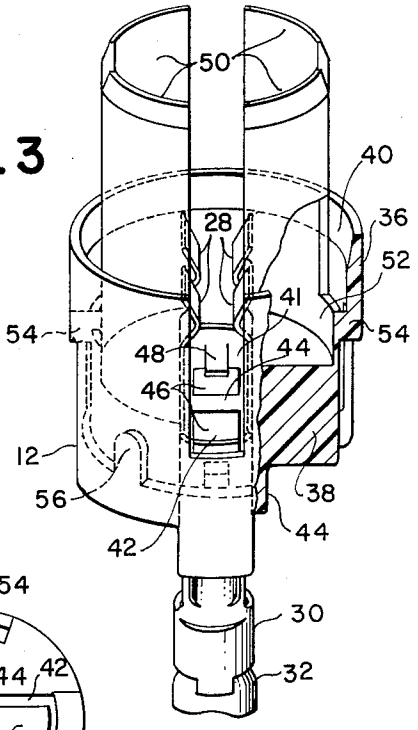
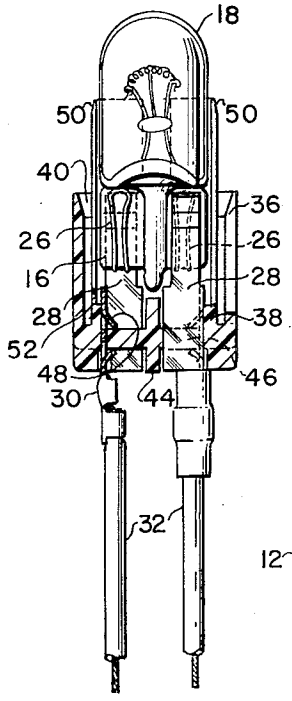


FIG. 3

FIG. 2



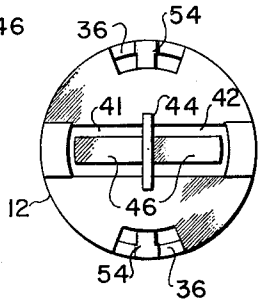


FIG. 4

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LAMP SOCKET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates in general to instrument or panel type lamp sockets and more particularly to an improved arrangement for supporting a lamp in a socket of the type having wedge type electrical receptacles for receiving one end of a lamp.

2. Brief Description of the Prior Art

In the prior art instrument of panel type lamp sockets having a wedge type electrical connection for the lamps, the lamp is cantilever supported by one end of the glass envelope inserted between metal spring fingers or legs. The lamp terminals projecting from the one end are folded over the lamp end and sandwiched between the spring fingers and glass end to complete the electrical connections. This type of arrangement leaves the lamp subject to considerable vibrational forces creating instability in the lamp connections.

SUMMARY OF THE INVENTION

The present invention utilizes a socket insulator of a type somewhat similar to that shown in U.S. Pat. No. 3,387,255. The socket carries a pair of wedge type electrical receptacles for in turn carrying the narrowed glass end of the lamp. The lamp terminals are short lengths of wire which are conventionally folded over a respective portion of the glass end and sandwiched between the respective receptacle and the glass end. The aforementioned patent discloses spaced annular portions for the socket insulator and in the present invention an inner cylindrical portion is provided with an extended wall to engage the lamp body at spaced peripheral positions and dampen the lamp vibration, while an annular housing which is also received by the insulator intermediate the cylindrical and annular portions in turn serves to support the extended wall.

It is therefore a primary object of the present invention to provide an improved socket insulator of the type having wedge type electrical receptacles for receiving a lamp.

Other objects and features will become apparent on examination of the following specification and claims together with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric exploded view of a lamp, socket and housing assembly employing the principles of the present invention;

FIG. 2 is a sectional view of the socket illustrating the lamp and receptacles assembled thereto;

FIG. 3 is an isometric view of the socket insulator partially in section; and

FIG. 4 is a bottom elevational view of the insulator socket.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIG. 1 of the drawings a lamp, socket and housing assembly is indicated by the reference character **10**. The assembly **10** comprises a socket insulator **12** carrying a pair of spaced wedge type electrical receptacles **14** for receiving the rectangular portion **16** formed at the end of a generally tubular glass envelope defining a conventional wedge base lamp **18**. A housing **20** encircles the lamp and an opening **22** at one end thereof provides a light exit for lighting an appropriate instrument or other apparatus to which the lamp assembly is attached by means of the spring clip **24** fixed to the housing and whose ends are snap fitted in an appropriate panel or instrument opening, for example.

The lamp terminals comprise a pair of spaced wires **26** which are folded back over the respective rectangular glass portion **16** for engaging against one of the spaced spring fingers or legs **28** of the wedge receptacles **14**. The receptacles **14** are each provided with a terminal such as **30** at the end opposite the respective receptacles to which a respective insulated conductor **32** is connected for extending an electrical

connection to the lamp **18** by means of a conventional socket **34**.

The socket insulator **12** comprises a first annular wall **36** having a cleft therein and joined at the end adjacent terminal **30** to a cylindrical or annular wall **38** of smaller diameter so as to be inwardly spaced from wall **36** to define an annular passageway **40**. The cylindrical wall **38** is provided with a pair of spaced U-shaped passageways **41** and **42**. The passageways **41** and **42** are spaced by a central axially extending rib **44** from which a perpendicular arm **46** extends in opposite directions to define the legs of each U-shaped passageway **41** and **42**.

Each U-shaped passageway **41** and **42** receives a respective U-shaped wedge type receptacle **14** with the side legs **28** of each receptacle **14** projecting beyond the central rib **44** to receive the bulb end portion **16**. The short back leg of the respective U-shaped receptacle engages the back leg of the respective U-shaped passageway and a pair of spaced barbs **48** formed thereon engage opposite radial surfaces of arm **46** for preventing the retraction of the receptacle when inserted to the required position in a respective passageway **41** and **42**.

A plurality of integrally formed circumferentially shaped arcuate walls **50** extend axially from an annular wall **52** formed on the periphery of wall **38** for receiving the tubular portion of the bulb **18**. A locking lug **54** radially extending between walls **52** and **36** at spaced positions engages in a respective J slot such as **56** of housing **20**. The walls **50** have an inner diameter of substantially 0.40 inch to grasp the 0.40 inch diameter wall of the bulb **18** for supporting the bulb against vibratory movement. The free ends of the walls **50** are thinned adjacent the free ends to facilitate insertion of the bulb and receipt of the housing **20**.

The annular wall of housing **20** is received between the walls **36** and **50** and between **36** and **38** with the lugs **54** aligned with the axial portion of the respective J slot until the housing engages between walls **36** and **38** to abut an integrally formed circumferentially spaced stop such as **56** formed on the interior of wall **36**. At that time the lugs **54** are at the axial end of the respective J slot so that rotation of the housing relative the insulator **12** serves to engage the lugs **54** in the circumferential portions of the J slots to prevent axial retraction of the housing. Thus, the walls **50** which extend substantially one-half the axial length of bulb **18**, or about 0.4 inch beyond the end of wall **36**, serve to support the bulb against vibratory movement. The annular wall of housing **20** in turn supports the walls **50** with the plastic preventing direct contact between the metal housing and glass bulb. The housing in turn is supported against vibration both by the circumferentially spaced stops **56** and lugs **54**, while the attachment of clip **24** to an appropriate support assists in preventing relative movement between the bulb and receptacles.

The foregoing constitutes the description of an improved lamp socket and assembly whose inventive concepts are believed set forth in the accompanying claims.

What is claimed is:

1. A socket insulator assembly for receiving a lamp having a narrowed end from which a pair of terminals extend, the improvement comprising an insulator socket cylindrical wall having a pair of spaced axial passageways therein, an electrical receptacle in each said passageway with each receptacle having spring means adjacent one end for receiving said lamp narrowed end and establishing a respective electrical connection to a respective one of said terminals, a socket insulator annular wall encircling said cylindrical wall and spaced outwardly of said cylindrical wall for receiving a housing wall therebetween, means integrally joining said cylindrical and annular walls adjacent the axial ends of said socket walls opposite the position of said spring means receiving said lamp end, and integrally formed support means projecting from the end of said cylindrical wall adjacent said receptacle one end for engaging said lamp at peripheral positions intermediate the ends of said lamp for supporting said lamp against vibratory movement relative said socket.

2. In the socket assembly claimed in claim 1, a housing having an annular wall for receipt between said socket cylindrical and socket annular walls with the diameter of said housing annular wall dimensioned for encircling engagement with said projecting support means to assist in preventing vibratory movement of said lamp.

3. The socket assembly claimed in claim 2 in which said insulator socket has a plurality of radial lugs integrally formed between said insulator socket cylindrical wall at a position spaced axially from said means joining said socket cylindrical and annular walls, a plurality of J slots formed at one end in said housing annular wall with each J slot receiving a respective radial lug, and a plurality of stop walls formed on said socket for engaging said housing wall one end and cooperating with said radial lugs for restraining vibratory movement of said housing.

4. In the socket assembly claimed in claim 3, a spring clip on said housing spaced from said housing one end for engaging said housing with a support.

5. In the socket assembly claimed in claim 4 in which said integrally formed support means comprises a plurality of circumferentially spaced arcuate walls projecting from said socket cylindrical wall along an inner diameter of 0.40 inch and substantially the same diameter as the outer diameter of said lamp.

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