

Sept. 15, 1970

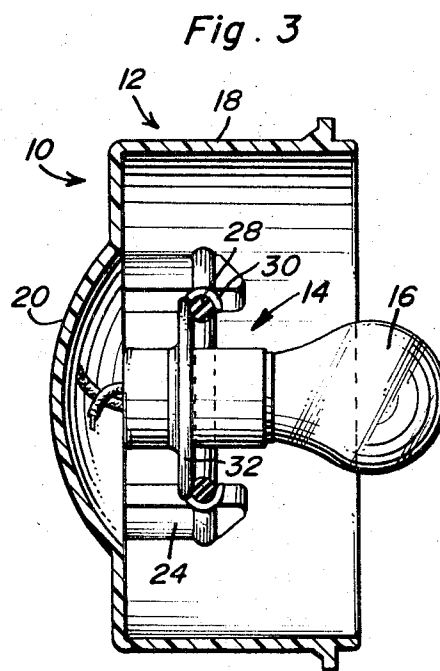
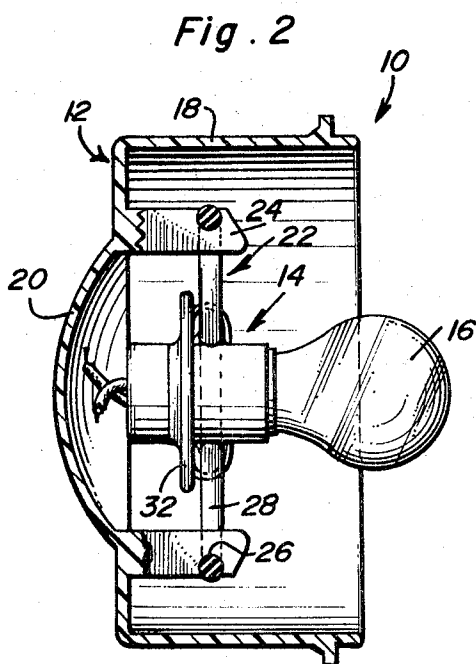
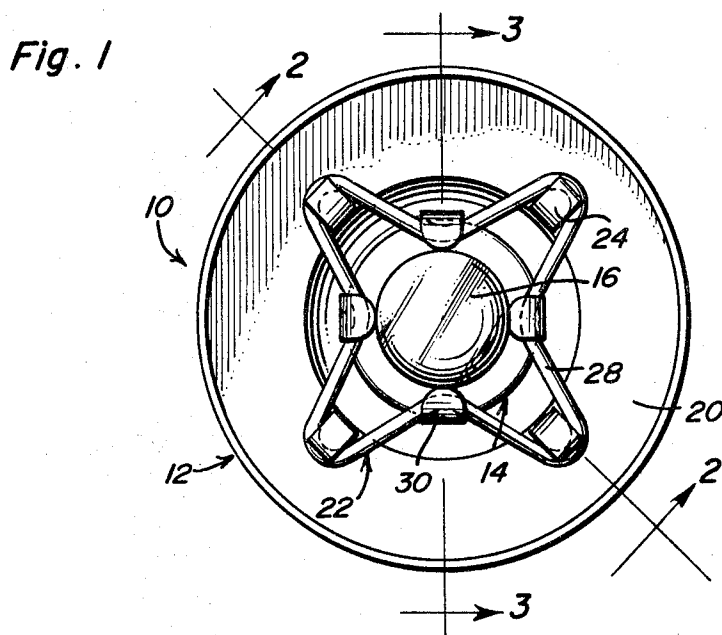
G. E. DWYER

3,529,149

SHOCK MOUNT FOR LAMP BULB

Filed Nov. 22, 1967

2 Sheets-Sheet 1



Gerald E. Dwyer

INVENTOR.

BY *Clarence A. O'Brien*
and Harvey B. Jacobson
Attorneys

Sept. 15, 1970

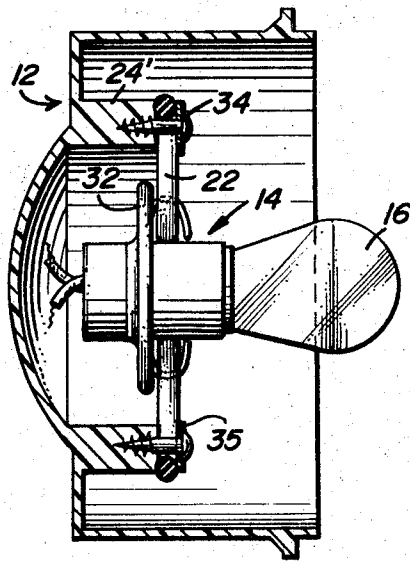
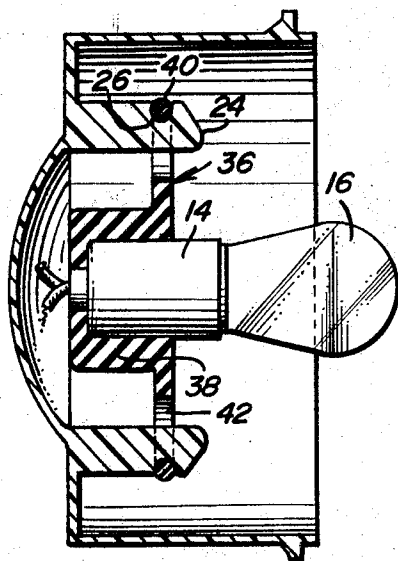
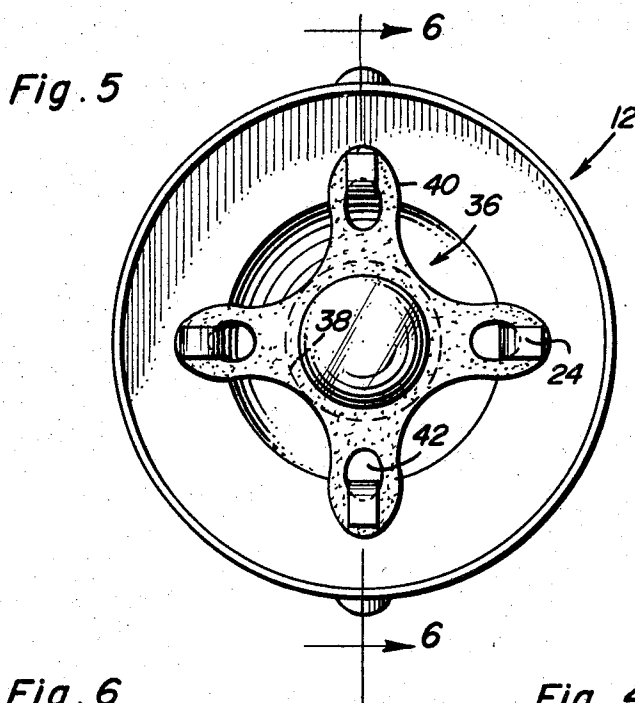
G. E. DWYER

3,529,149

SHOCK MOUNT FOR LAMP BULB

Filed Nov. 22, 1967

2 Sheets-Sheet 2



Gerald E. Dwyer

INVENTOR.

BY *Charles A. O'Brien*
and *Harvey B. Jackson*
Attorneys

1

3,529,149

SHOCK MOUNT FOR LAMP BULB

Gerald E. Dwyer, Frewsburg, N.Y., assignor to Truck-Lite Company, Inc., a corporation of New York
Filed Nov. 22, 1967, Ser. No. 685,055

Int. Cl. F21v 17/00

U.S. Cl. 240—90

7 Claims

ABSTRACT OF THE DISCLOSURE

A yieldable suspension for lamp bulb sockets on a reflector to dampen high shock impulses. The socket is provided with anchoring members for an elastic member tensioned at locations spaced radially inwardly of and angularly between a plurality of lugs projecting from the reflector on which the elastic is supported.

This invention relates to shock absorbing mountings for lamp bulbs and more particularly to a yieldable suspension support for a lamp bulb socket within a lamp assembly.

Many shock absorbing mountings for lamp bulb sockets have been devised and in most cases, a rigid restraint against vibration in one direction is imposed. Further, yieldable shock mounts for lamp bulb sockets generally involve substantial structural modification of the reflector and bulb socket and also require special fastening facilities for installation. An important object of the present invention therefore is to provide a shock mount for lamp bulb sockets which is not only economical and simple to install but will also permit vibratory freedom for dampening high shock impulses in all directions.

In accordance with the present invention, the reflector associated with a lamp installation is provided with a plurality of circumferentially spaced anchoring lugs that receive an elastic member supported in a plane perpendicular to the longitudinal axis of the bulb socket suspended by means of the elastic member. The bulb socket is anchored to the elastic member in radially spaced relation to the anchoring lugs on which the elastic is supported so that the elastic member in its tensioned condition will exert forces that are directed radially outwardly, the forces being balanced so as to yieldably suspend the socket at a predetermined rest position. Vibration inducing forces in any direction are accordingly dampened because the bulb socket may be displaced from its rest position in any direction.

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 front elevational view of a typical lamp assembly embodying the bulb mounting facilities of the present invention.

FIG. 2 is a sectional view taken substantially through a plane indicated by section line 2—2 in FIG. 1.

FIG. 3 is a sectional view taken substantially through a plane indicated by section line 3—3 in FIG. 1.

FIG. 4 is a side sectional view similar to FIG. 3 showing a modification.

FIG. 5 is a front elevational view of another form of the invention.

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

Referring now to the drawings in detail, a lamp assembly generally referred to by reference numeral 10 is shown, this lamp assembly being adapted for mounting

2

for example in a vehicle installation. The lamp assembly includes a reflector component generally referred to by reference numeral 12 which is fixedly mounted in the desired installation and a tubular socket 14 of well known construction threadedly receiving the externally threaded base of a lamp bulb 16. In the rest position of the position bulb 16 as illustrated, the tubular bulb socket 14 is axially aligned with the axis of the reflector 12.

The reflector in the illustrated embodiment, includes a cylindrical mounting wall 18 coaxial with the axis of the reflector and connected to an arcuate back reflector wall 20 axially spaced from the tubular socket 14 so that the socket may be displaced in response to vibration inducing forces in both axial directions from the rest position shown. The bulb socket is accordingly suspended at its rest position within the reflector by means of an elastic suspension means generally referred to by reference numeral 22 which is carried on the reflector by anchoring means consisting of a plurality of circumferentially spaced lugs 24.

In the illustrated embodiment, four lugs 24 are illustrated, each lug extending substantially parallel to the axis of the reflector from the back wall 20 so as to support the elastic suspension means 22 in spaced relation to the reflector and aligned in a plane generally perpendicular to the axis of the reflector. The lugs 24 are accordingly provided with recesses 26 which open radially outwardly in order to receive the elastic O-ring 28 associated with the suspension means 22.

The anchoring lugs 24 are circumferentially spaced from each other by equal amounts at the same radial distance from the axis of the reflector so as to support the O-ring elastic 28 in a tensioned condition when it is engaged with the hooks 30 that extend from the fitting 32 mounted on the tubular bulb socket 14 intermediate the opposite axial ends thereof. The hooks 30 open radially inwardly at the same radial distance from the axis of the lamp socket which is substantially less than the radial distance of the anchor lugs 24 from the axis of the reflector. Thus, when engaged with the hooks 30, the O-ring elastic 28 exerts forces directed radially outwardly on the tubular socket at circumferentially spaced locations equally spaced between the anchor lugs 24. Thus, the outwardly directed forces are balanced to hold the bulb socket in its rest position from which it may be displaced in any direction against the bias of the elastic restoring forces associated with the O-ring elastic 28.

It will be appreciated from the foregoing description, that suspension of the bulb socket by the elastic O-ring 28 will permit the socket to be displaced in both axial directions, in all radial directions as well as to accommodate tilting thereof in all directions. Thus, vibration due to impact will be dampened under all situations in order to provide an effective shock mount for the lamp bulb. Further, the lamp bulb may be simply mounted by means of the O-ring elastic 28 made of an endless ring of suitable elastic material such as rubber cooperating with the anchor lugs 24 and the hooks 30 respectively secured to the reflector and the bulb socket.

A modification of the lamp assembly is shown in FIG. 4 wherein the anchor lugs 24' threadedly receive screws 34 clamping the O-ring 22 between the end faces of the lugs 24 and the washers 35. Thus, a more simpler molded reflector may be fabricated by eliminating the external recesses on the anchor lugs and installation of the O-ring facilitated. Structurally, the lamp assembly illustrated in FIG. 4 is otherwise the same as hereinbefore described in connection with FIGS. 1-3.

FIGS. 5 and 6 illustrate another form of a lamp assembly utilizing a reflector component 12 which is identical to the reflector component described in connection

with FIG. 1-3 including the anchor lugs 24. In this form of the invention, the O-ring and hook mounting fitting 32 are eliminated in favor of a special elastomer 36. The elastomer 36 includes a cup portion 38 receiving the tubular lamp base 14. Radial arms 40 project from the portion 38 of the elastomer and are provided with openings 42 through which the anchor lugs 24 extend. The elastomer 36 functions to yieldably suspend the lamp socket 14 in a manner similar to that hereinbefore described in connection with the O-ring 28. A single piece elastomer replacing the O-ring 28 and its anchoring fitting 32, may have some advantages from a manufacturing standpoint.

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 as claimed.

What is claimed as new is as follows:

1. In combination with a reflector and a lamp socket, means for mounting the socket on the reflector comprising rigid anchoring means projecting forwardly from the reflector in radially spaced relation to the socket, and a single elastic member supported by said anchoring means in a tensioned condition for exerting radially outwardly directed forces on the socket balanced to yieldably suspend the socket in axially and radially spaced relation to the reflector, said forces being applied to the socket by the elastic member at locations circumferentially spaced from each other and from the rigid anchoring means.

2. The combination of claim 1 wherein said elastic member comprises a flexible ring supported by the anchoring means in encircling relation to the socket and means secured to the socket radially inwardly of the anchoring means for engaging the ring in angularly spaced relation to the anchoring means.

3. The combination of claim 2 wherein said ring engaging means comprises hooks opening radially inwardly and secured to the socket intermediate opposite axial ends thereof.

4. The combination of claim 3 wherein said anchoring means comprises a plurality of circumferentially spaced lugs having recesses opening radially outwardly and substantially aligned in a plane perpendicular to an axis with which the socket is axially aligned by the elastic member, said elastic member being received in the recesses.

5. The combination of claim 1 wherein said anchoring means comprises a plurality of circumferentially spaced lugs having recesses opening radially outwardly and substantially aligned in a plane perpendicular to an axis with which the socket is axially aligned by the elastic member, said elastic member being received in the recesses.

6. The combination of claim 5 wherein said elastic member comprises a flexible ring supported by the anchoring means in encircling relation to the socket and means secured to the socket radially inwardly of the anchoring means for engaging the ring in angularly spaced relation to the anchoring means.

7. The combination of claim 1 wherein said elastic member comprises an elastomer having a cup portion receiving the bulb socket and a plurality of radial extensions projecting therefrom substantially in a plane perpendicular to the axis of the bulb socket, said radial extensions having openings receiving the anchoring means when the radial extensions are under tension.

References Cited

UNITED STATES PATENTS

1,435,763	11/1922	Townsend	240-90
1,555,902	10/1925	Brady	240-90
1,817,091	8/1931	Miller	240-90
2,051,324	8/1936	Williamson	240-90
2,494,652	1/1950	Ganzert	240-90 X
3,018,365	1/1962	Wenman	240-90
3,065,341	11/1962	Shaver	240-134 X

FOREIGN PATENTS

425,239 3/1911 France.

NORTON ANSHER, Primary Examiner

M. H. HAYES, Assistant Examiner

U.S. Cl. X.R.

240-134