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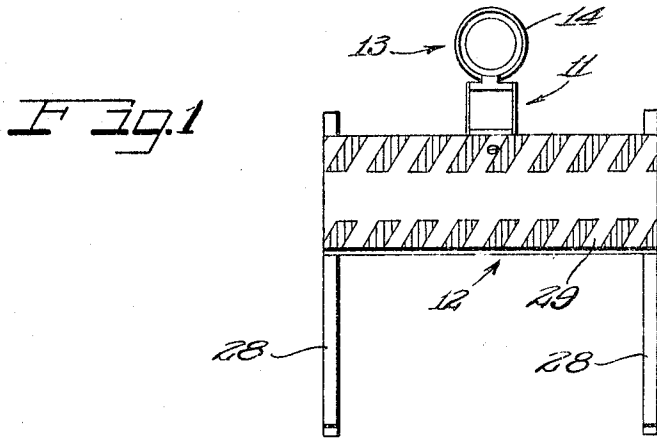
N. D. OSBURN

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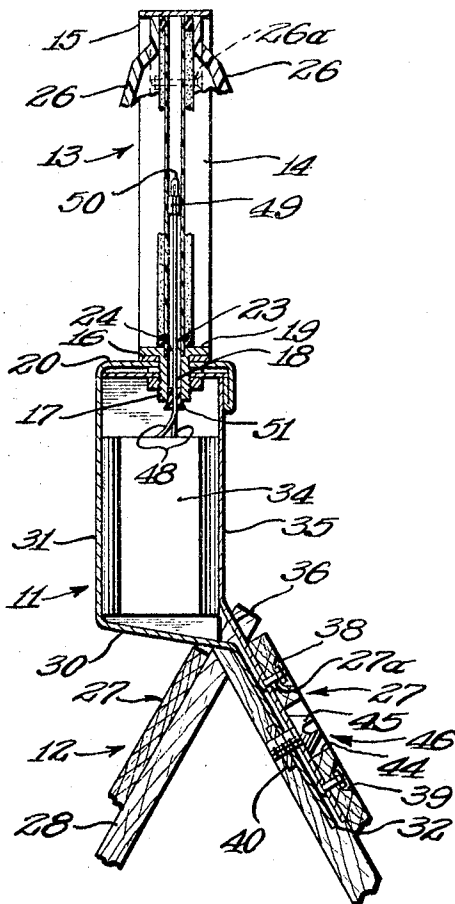
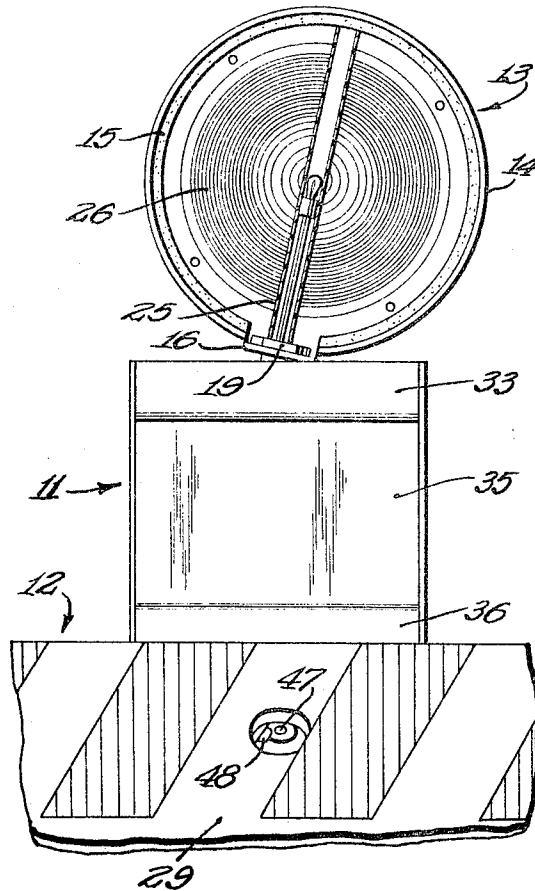
FLASHER WARNING LIGHT

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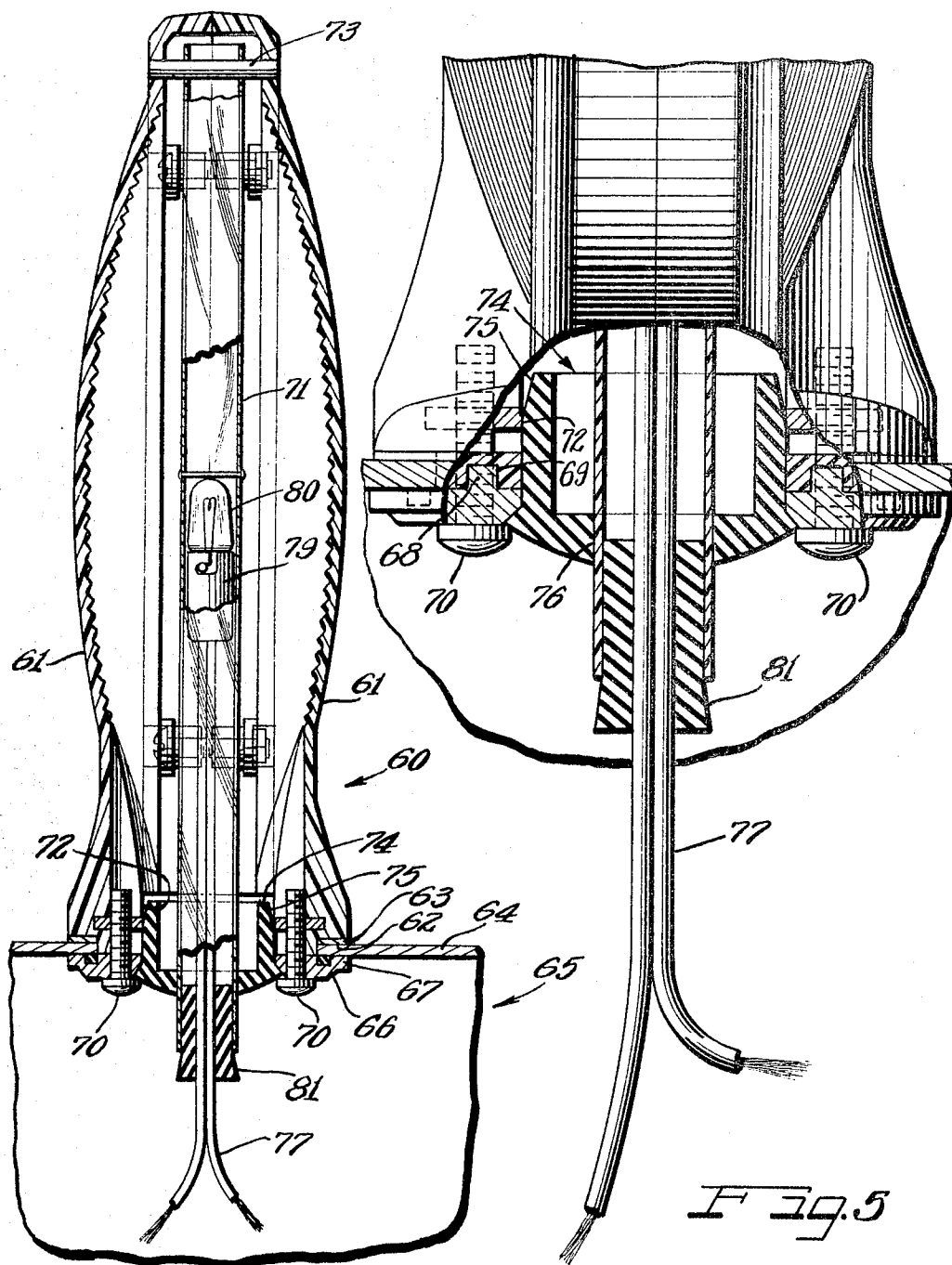


Fig. 4

Fig. 5

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FLASHER WARNING LIGHT

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2 Claims. (Cl. 240-2)

The subject matter of the instant case is a continuation-in-part of my earlier filed application Serial No. 63,027 entitled "Flasher Light Mounting" which was filed Oct. 17, 1960, and now Patent No. 3,135,468.

This invention relates broadly to a novel lamp assembly and is more particularly directed to a warning lamp assembly such as a flasher unit of the type which is adapted to be mounted on a barricade and utilized on highways to warn motorists of highway construction areas or the like.

More specifically, the instant invention is directed to an improved lamp head and light centering means for use in a lamp assembly of the foregoing general type which is designed to provide such a lamp assembly with a greatly increased life over prior types of devices of this general class and which is designed to substantially reduce mechanical fatigue of various parts of the assembly and breakage thereof resulting from shock loads.

The lamp assembly to which the instant invention apertains includes generally a battery casing having means formed thereon for mounting the casing on a road barrier and a lamp head rotatably mounted on the casing containing a lamp which is energized by a battery mounted within the casing.

Specifically, the lamp head disclosed in the illustrated embodiment of my invention comprises generally a rim which is cylindrical in form and which is rotatably mounted on the top wall of the battery casing. A translucent tube extends diametrically across the rim and has at least one end secured to the rim. An ordinary lamp bulb is disposed inside the translucent tube and is maintained midway between the ends thereof by means of its own lead wires as to be disposed at the center axis of the rim. The lead wires from the battery extend up into the hollow translucent tube and are connected to the lamp bulb and constitute the only means for supporting the lamp bulb in the tube. A stopper is provided at one end of the tube which receives the lead wires in frictional contact so that the wires can manually be moved into or out of the stopper to place the bulb mounted thereon in exactly the desired position within the translucent tube in a manner such that they will remain in their adjusted position. Since the lead wires are the sole supporting means for the bulb in the tube, the translation of shock loads from the lamp assembly to the lamp itself will be minimized and bending of the lamp head relative to the casing will not interrupt operation of the lamp.

Since the translucent tube is connected, in one embodiment of the invention, to the rim rather than the casing, the tube will always extend across the axis of the rim even if the rim is tilted with respect to the casing. In each embodiment, by maintaining the lamp bulb midway between the opposite ends of the translucent tube, the lamp bulb will always remain in the optical center of the lenses which, in turn, are mounted coaxially of the rim. It will be recognized that this feature is particularly important in properly projecting the light emitted from the bulb.

It is therefore a principal object of the present invention to provide a novel and improved lamp assembly wherein simple yet effective means are provided for properly positioning a lamp bulb in a lamp head.

Another object of the invention resides in the provision of a means for mounting a lamp bulb in a lamp

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head such that the translation of shock loads applied to the lamp head, to the lamp bulb will be minimized.

A still further and more specific object of the invention relates to a flasher light or barricade lamp assembly wherein a translucent cylindrical tube positioned diametrically across the lenses of a lamp head is adapted to slidably receive a lamp bulb and wherein the lamp bulb is mounted by means of its connected lead wires only within the translucent tube and wherein means are provided to seal the bulb within the tube and yet provide a means of ready access to the bulb.

These and other objects and features of the present invention will become apparent from time to time as the following specification proceeds and with reference to the accompanying drawings, wherein:

FIGURE 1 is a front elevational view of a lamp assembly constructed in accordance with the principles of the present invention mounted on the usual type of road barricade;

FIGURE 2 is a vertical sectional view through one embodiment of a lamp assembly constructed in accordance with the principles of the instant invention, fragmentarily illustrating the road barricade upon which it is mounted;

FIGURE 3 is a front elevational view of the lamp assembly illustrated in FIGURES 1 and 2 but showing the lamp head "cocked" with respect to the casing upon which it is mounted;

FIGURE 4 is a vertical sectional view through a different form of lamp assembly constructed in accordance with the principles of the present invention;

FIGURE 5 is a fragmentary vertical sectional view through the lower end of the lamp head shown in FIGURE 4 and showing the means by which the lamp head is mounted on the casing and the translucent tube is maintained in position.

The lamp assembly 10 comprises a battery casing 11 which is mounted on a road barricade 12 and which has a lamp head 13 rotatably mounted thereon.

In the embodiment of the invention shown in FIGURE 2, the lamp head 13 comprises cylindrical rim 14 which has a resilient liner of sponge rubber or the like 15 bonded to the inner periphery thereof. The rim 14 is welded or otherwise rigidly secured to an annular washer 16. A hollow bolt 17 having a central bore 18 and a head 19 extends through the annular washer 16 and an aperture in the top wall 20 of the casing 11 and has a nut 21 threadably mounted thereon which serves to positively secure the rim 14 to the top wall 20.

The nut 21 is sufficiently torqued at time of assembly to permit, under tension, complete rotation of the lamp head. This allows optimum beaming of the emitted light rays toward traffic irrespective of the placement of the barricade.

A shoulder 23 lies intermediate the bore 18 and a radially enlarged portion 24 thereof which serves as a seat for one end of a translucent tube 25. As illustrated in FIGURES 2 and 3, the tube 25 extends diametrically across the rim 14 and has its upper end disposed in juxtaposition to the inner periphery of the rim 14 in a pocket cut in the resilient liner 15. The enlarged portion 24 of the bore 18 may be formed of sufficient diameter to provide a relatively loose fit for the tube 25 so that the tube is permitted some freedom of angular movement relative to the washer and bolt 16 and 17, respectively.

A pair of lenses 26 are mounted in the lamp head with their peripheries lying against the outer edges of the resilient liner 15 and are secured together by bolts 26a. The bolts 26a are the sole means for mounting the lenses within the lamp head against the resilient liner and there is, therefore, no means rigidly connecting the

lenses to the rim 14. In this manner, breakage of the lenses, resulting from shock loads applied to the lenses or the head rim is considerably reduced.

The road barricade 12 is of the usual type including a pair of leg sections 27 which are pivotally mounted together by bolts 27a extending through adjacent legs 28. Horizontally extending planks 29 are nailed or otherwise rigidly secured to each of the legs 28 in each leg section 29 and are usually imprinted with warning indicia as illustrated in FIGURE 1.

The battery casing 11 has a base wall 30 which is positioned at an angle of greater than 90° with respect to the rear wall 31 and has a downwardly sloping mounting plate formed integrally therewith. A lip 33 depends from the top wall 20 and defines an opening in the battery casing through which a battery 34 may be inserted. A cover 35 overlies the battery 34 and has its upper end lying adjacent the inner surface of the depending lip 33. A mounting plate 36 is formed integrally with the cover 35 and lies at an angle with respect to the cover so that the cover will lie parallel with the rear wall 31 when the mounting plates 32 and 36 are in juxtaposition to one another.

The mounting plate 36 may be secured to a plank 29 by screws 38 extending through the mounting plate 36 and threaded into tamper-proof nuts 39 recessed in the plank 29. Under such conditions, the remainder of the lamp assembly 10 can readily be mounted on the barricade by fitting the lip 33 of the casing over the upper end of the cover 35 and by positioning the mounting plate 32 over the exposed heads of the screws 38.

The nut 40 is welded or otherwise rigidly secured to the mounting plate 32 with its center aperture in registry with an aperture plate 32. The plate 36 also has an aperture formed therein which lies in registry with the aperture in the plate 32 when the casing 11 and cover 35 are positioned as shown. The plank 29 has an enlarged bore 44 formed therein in registry with the apertures in the mounting plates 32 and 36 which receives the enlarged head 45 of a tamper-proof bolt 46 having its shank threaded into the nut 40. The head 45 lies on the upper surface of the mounting plate 36 but entirely within the recess 44 to prevent tampering therewith.

Lead wires 48 are connected to and extend from the battery 34 (in a manner not shown) upwardly through the bore 18 and the hollow interior of the translucent tube 25. These wires are connected at their upper free ends to a lamp bulb socket 49 which has an ordinary lamp bulb 50 removably mounted therein. The wires are somewhat stiff and serve as the sole means of support for the socket and bulb. The lead wires 48 also extend through and are snugly engaged by a rubber "stopper" 51 which fits within the open end of the bore 18. The wires 48 are maintained in frictional contact with the stopper 51 so that by selectively positioning the lead wires within the stopper and thereby controlling the length of the wires intermediate the stopper 51 and the socket 49, the lamp bulb 50 may be positioned in any desired position along the axis of translucent tube and may thereby be positioned midway between the ends of the tube 25 at the exact center axis of the rim 14.

The stopper 51 not only facilitates assembly and/or servicing of the light mounting but also prevents the seepage of water into the battery casing in the event that one or both of the lenses 26 and the tube 25 becomes broken. Replacement of the lamp bulb is readily effected simply by removing the stopper from the lower end of the translucent tube and thereby pulling the lead wires and the lamp bulb out of the tube.

In FIGURE 3, the rim 14 is shown in a displaced position such as it might occupy if the lamp assembly were struck by a vehicle or subject to severe shock loads. It will be noted that the bulb is still disposed at the optical center axis of the lenses 26 while the washer 16 and head 19 of the bolt 17 are shown as being displaced from the

top wall of the casing. The tube 25 is loosely mounted in the bolt 17 and the tube 25 will thus extend across the diameter of the rim even though there is relative angular movement between the members 16, 17 and the rim 14.

In the embodiment of the invention illustrated in FIGURES 4 and 5 a light head 60 is formed of two lens sections 61 which are bolted together and which cooperate to define an annular seating surface 62. The seating surface 62 is fitted with a gasket 63 and is seated upon the upper surface 64 of casing 65.

A clamping ring 66 has its periphery 67 mounted on the undersurface of the upper wall of the casing 65 and has a plurality of studs 68 extending outwardly from and formed integrally therewith which are received within complementary apertures 69 formed in the annular seating surface 62. A plurality of screws 70 extend through the clamping ring 66 and into the seating surface 62 to rigidly mount the light head 60 on the casing 65.

Translucent tube 71 extends through the aperture defined by the annular seating surface 62 and has a pin 73 extending through its uppermost end and maintaining the said end in a fixed position at a point on the light head 60 diametrically opposed from the aperture 72. The pin 73 extends through both lens sections 61 and thus serves to positively maintain the upper end of the tube in a fixed position.

A rubber seal 74 having a tapered outer wall 75 is positioned within the central aperture formed in the clamping ring 66 and extends up into the aperture 72 in the head 60 with its tapered outer wall 75 wedged into the ring aperture. The seal 74 is itself centrally apertured as at 76 to snugly receive the outer surface of the lower end of the translucent tube 71. The seal 74 thus provides a positive seal between the head and the tube and serves also to center the tube within the aperture 72 so that the tube extends diametrically across the head 60 and intersects the optical center axis of the head.

Lead wires 77 extending upwardly from batteries have a lamp bulb socket 79 connected thereto at their upper ends and a lamp bulb 80 is removably received within the socket 79. The wires 77 are somewhat stiff and run through and are frictionally engaged by a tapered wall stopper 81 which is fitted within the lowermost end of the tube 71.

It will be observed that the inner diameter of the tube 71 is only very slightly greater than the maximum outer diameter of the lamp bulb 80 and its associated sockets 79 so that by moving the wires 77 into or out of the tube 71 the position of the lamp bulb can be adjusted along the length of the tube. Once the lead wires have been adjusted as desired and the stopper is put in place within the tube, the frictional engagement between the stopper and the lead wires will maintain the lead wires and hence the lamp bulb in the desired fixed position.

Lastly, attention is directed to the fact that the term "tube" as used herein is to be construed as meaning any hollow transparent member which may restrictively position the bulb. For this purpose it may conceivably include forms other than cylindrical.

From an optical standpoint, the purpose of the tube is to provide long distance visibility through the center (bulls-eye) of the outside lens while at the same time providing a means of diffusing the light source to achieve a more uniform pattern of light dispersion through the remainder of the outside lens, thus providing a highly visible light even when viewed from an oblique angle.

It will be understood that the illustrated embodiments of the instant invention have been used for illustrative purposes only and that various modifications and variations in the present invention may be effected without departing from the spirit and scope of the novel concepts thereof.

I claim as my invention:

1. A lamp assembly comprising:
 - a supporting member,

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- a light head member with light-transmitting walls mounted on said supporting member and having a lamp chamber formed therein,
 a resilient plug mounted on one of said members and having a central orifice,
 a translucent cylindrical tube extending into said chamber and being snugly engaged within said central orifice,
 said tube having an open end adjacent the said plug,
 a light source slidably guided for axial movement within said tube,
 a power supply lead connected to said light source and leading through the open end of said tube,
 means connecting said supply lead to a source of electrical power, and
 means gripping said lead to maintain said lead in a fixed position relative to the said open end of said tube.
2. A lamp assembly comprising:
 a supporting member,
 a light head member with light-transmitting walls mounted on said supporting member and having a lamp chamber formed therein,
 a resilient plug mounted on one of said members and having an orifice formed therethrough,
 a translucent cylindrical tube snugly engaged within

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- said orifice and extending into said chamber and having an open end adjacent said plug,
 a light source slidably guided for axial movement within said tube,
 a relatively stiff power supply lead connected to said light source and leading through the open end of said tube whereby to support said light source axially within said tube,
 means connecting said supply lead to a source of electrical power, and
 means gripping said lead to maintain said lead in a fixed position relative to the said open end of said tube and providing a fluid tight seal between said lead and said tube.

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NORTON ANSHER, *Primary Examiner.*