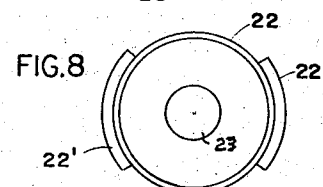
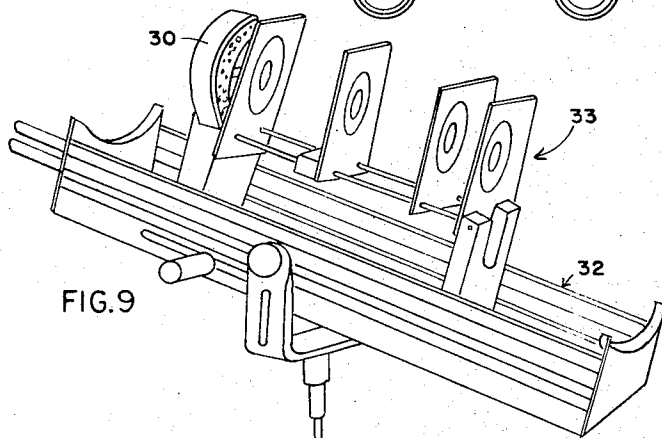
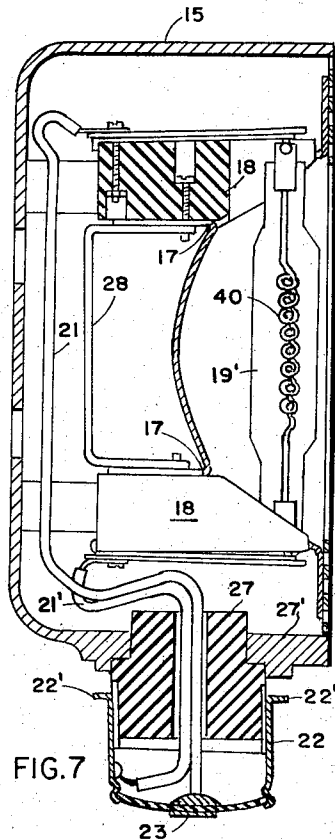
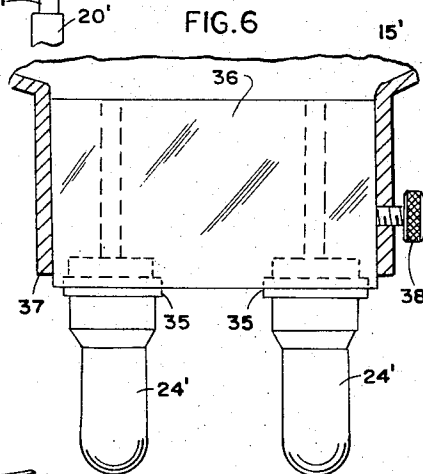
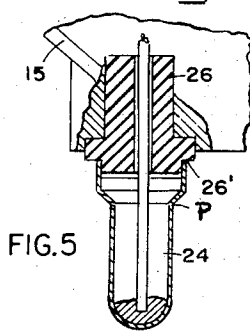
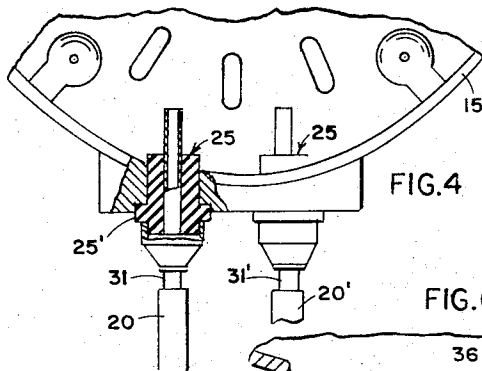
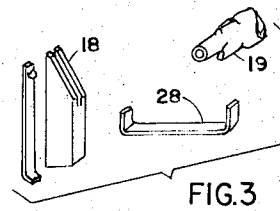
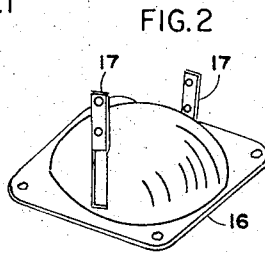
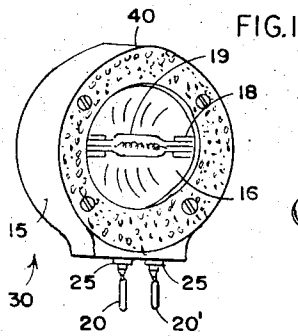


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3,366,784

QUARTZ LAMP LIGHT SOURCE FOR EXISTING SPOTLIGHT APPARATUS, WITH
TERMINAL MOUNTING MEANS TO ACCOMPLISH FOCUSING POSITION
Filed Oct. 23, 1965



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QUARTZ LAMP LIGHT SOURCE FOR EXISTING SPOTLIGHT APPARATUS, WITH TERMINAL MOUNTING MEANS TO ACCOMPLISH FOCUSING POSITION

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2 Claims. (Cl. 240-3)

ABSTRACT OF THE DISCLOSURE

Terminal means to be received in a predetermined socket, extend downwardly from the bottom wall of a casing which has a quartz bulb exposed across a front opening. Said means contact the undersurface of a flange which is intermediate the ends of a vertically positioned dielectric bushing secured to the casing; the upper part of the bushing being through a vertical hole in said bottom wall, and said flange resting against the undersurface of said bottom wall. The terminals of the bulb are connected to said terminal means. The center point of the bulb's filament is at a predetermined distance from the undersurface of said flange.

The present invention relates to stage lighting apparatus and more particularly to spotlights which include an optical lens system, for use in photographic, television, motion picture and similar operations.

Heretofore, the light source for this type of spotlight, was a conventional incandescent electric bulb having bi-post terminals for slide-in, slide-in and turn, or slide-in and turn shell arrangements to fit into a socket, so that the focal point of the light was in line with the focal point or points of the lens or lenses included in such spotlights. Variances in lamp structures and in the many styles and sizes of spotlight apparatus, hampered true coincidence of focus, and now since the advent of the highly proficient and hence more desirable incandescent halogen quartz lamps, the problem was not only how to fit and mount an elongated quartz lamp, which I have solved with the adaptor which is the subject of my pending patent application Ser. No. 434,543, now Patent No. 3,321,615, but also to adapt it to existing spotlight apparatus to attain that the focal point of the lamp should be properly aligned with the lens system.

It is therefore the principal object of this invention to provide in the quartz lamp mounts, means to assure coincidence of the light's focal point with the focus line of the optical system of spotlights of every size and make. This conversion of old apparatus as afforded by this invention, creates a new life for spotlights in existence and prevents their obsolescence.

Another object thereof is to provide coincidence of the light's focal point with the optical system, by a novel and improved construction which is simple to manufacture, reasonable in cost and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

For one practice of this invention, each bi-post or shell offering the lamp's terminals is mounted on a special insulative bushing which mounts it to the main casing of the lamp mount. This bushing is so designed that the required focal point association is positively attained. In a modified embodiment, a telescopic adjustment is resorted to.

A detailed description will now be set forth, for which reference will be had to the accompanying drawing forming part of this specification, in which drawing, similar

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characters of reference indicate corresponding parts in all the views.

FIG. 1 is a perspective view of a quartz bulb in its mounting which embodies the teachings of this invention. This unit is to be received in what is commonly called a medium bi-post socket, which latter is part of the spotlight apparatus.

FIGS. 2 and 3 are perspective views of various parts of the unit shown in FIG. 1.

FIG. 4 is an enlarged fragmentary front view of the casing included in the unit of FIG. 1, showing the bi-post terminals associated in the bushings referred to.

FIG. 5 is an enlarged fragmentary front view of said casing showing the mounting thereon of what is commonly called a mogul post.

FIG. 6 is a similar view of a mogul bi-post construction employing a telescopic arrangement to adjust for the proper focal distance.

FIGS. 4-6 are shown partly in section.

FIG. 7 is an enlarged central section of a unit employing an auto-lamp shell which offers the lamp terminals.

FIG. 8 is a bottom view of the shell included in FIG. 7.

FIG. 9 is a perspective view drawn to a reduced scale, of the interior of a spotlight apparatus, equipped with the unit of FIG. 1.

In the drawing, the numeral 15 designates a casing provided with a reflector 16, having rearward arms 17 struck therefrom, on each of which are the mounts 18 having terminal contact means to hold and connect a halogen quartz lamp 19 of elongated shape, to the bi-post terminals 20, 20', by suitable conductors as shown at 21, 21', where such conductors are shown connected to a shell 22 and the central contact terminal 23, respectively. Each bi-post 20, 20', and 24, 24' is provided with an open end into which fits one end of a dielectric bushing which is cemented thereto. Said bushings are denoted generally by the numerals 25 and 26 as indicated. The bushing holding the shell 22, is designated generally by the numeral 27. The arms 17 are held rigid by the frame piece 28. The quartz lamp 19 is shown positioned along the horizontal in the general front plane of the unit 30, but it may be in any position in said plane. However, such horizontal position, or the vertical position that the lamp 19' is shown in FIG. 7, are the most practical for manufacture.

The medium bi-posts 20, 20' with their reduced necks 31, 31', for slide in and turn to engage, the slide-in mogul bi-posts 24 and 24', and the slide in and turn to engage base shell 22 having the engagement wings 22', are conventional and for reception by present sockets respectively in existing spotlight apparatus as indicated generally by the numeral 32 including a lens system 33, all of which is well known and needs no further explanation or illustration for those versed in this art.

A single-size casing 15 is adaptable for all sizes and types of spotlight apparatus in use, but they require different distances respectively, from the neck 31 to the focal point of the lamp, from the point P to the focal point of the lamp, or from the wings 22' to the focal point of the lamp, in accordance with what type of terminal construction they have. So to accommodate for such focus coincidence in each case, the bushing used must be the thing to do it, except where such adjustment is afforded by the telescopic arrangement shown in FIG. 6 where the bushings serve merely as insulators 35 for the bi-post terminals 24' carried on a block 36 which is slidable in the neck 37, to be secured therein in any adjusted position, by the set screw 38, such neck being part of 15'.

Where such distance is to be determined by the bushing structure, as in FIGS. 4, 5 and 7, each such bushing has

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an integral collar or flange intermediate its ends; said flanges being indicated respectively by the numerals 25', 26' and 27'; said flanges being seated in a counterbore in the casing, which accurately positions the bushing which is cemented therein to maintain the assembly.

The bushing is through the wall of the casing while its flange rests against the undersurface of the casing, preferable on the seat offered by a counterbore opening in the bottom surface of the casing. Of importance, is the distance from the plane of the undersurface of the flange to the center point of the filament 40 of the quartz lamp, which of course differs with the particular type and size of the terminal means carried downwardly from the bushing.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiments herein shown shall be deemed merely illustrative and not restrictive, and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description and showings herein, to indicate the scope of this invention.

I claim:

1. In combination with an elongated halogen quartz electric bulb mounted exposed across the front opening of a casing having a bottom wall and a reflector behind said bulb, of conductive terminal means positioned below said bottom wall, on and extending downwardly from a

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vertically positioned dielectric bushing having a flange intermediate its ends; said flange resting against the undersurface of said bottom wall, and the upper part of said bushing being through a vertical hole in the casing's bottom wall, an element of said terminal means resting against the undersurface of said flange; said bushing being secured to said casing and said terminal means, and connectors electrically connecting the terminals of said bulb to said terminal means; said terminal means being adapted to be received in a predetermined socket, offering a current supply to said terminal means for the terminals of said bulb; the center point of the filament of said bulb being at a predetermined distance from the plane of the undersurface of said flange.

2. The combination as defined in claim 1, wherein said hole has a counterbore opening in the underside of said bottom wall of the casing; the upper surface of said flange resting against the seat offered by said counterbore.

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