Dec. 3, 1963 M. PEARLMAN 3,112,894

REFLECTOR ADAPTER

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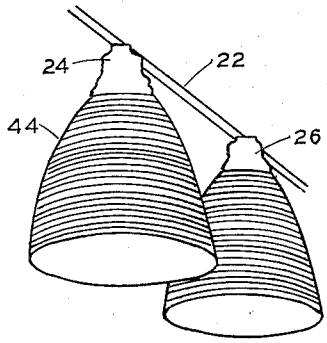


FIG. 1

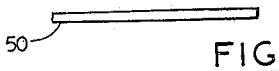


FIG. 5

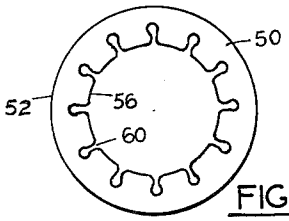


FIG. 4

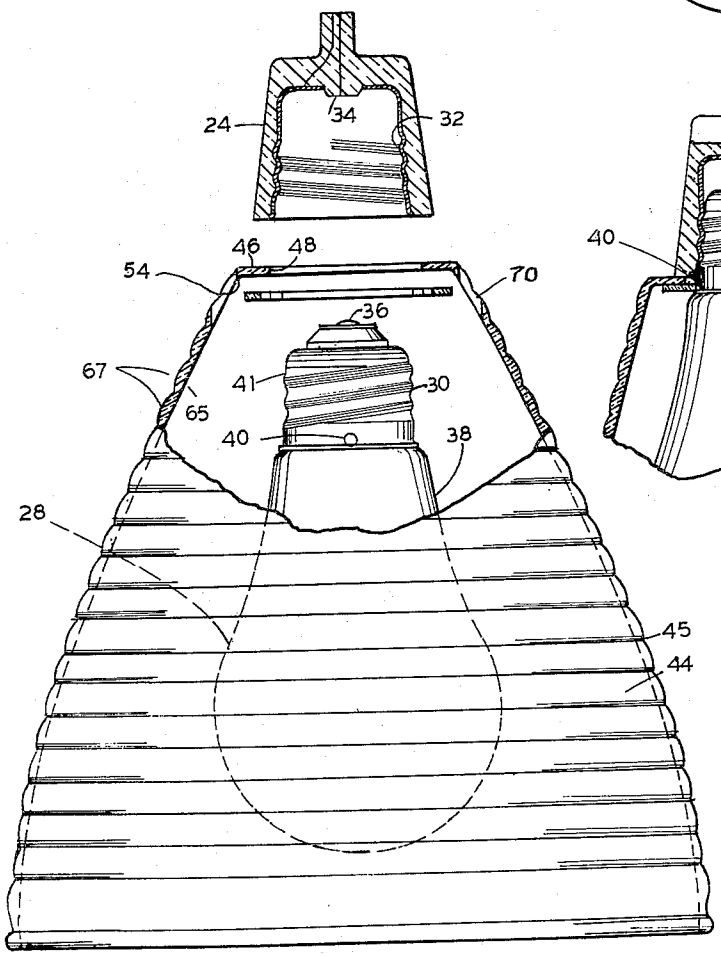


FIG. 2

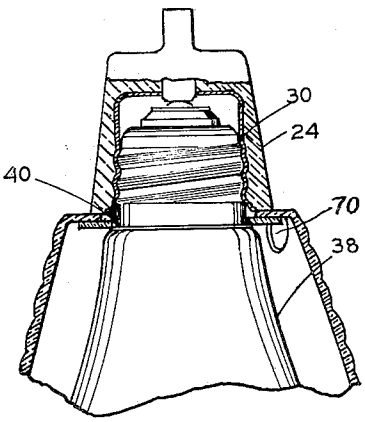


FIG. 3

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REFLECTOR ADAPTER

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This invention relates to reflectors for display lighting, and more particularly to the attachment thereof to electric light sockets.

It has long been the practice to employ strings of colored lights for lighting gardens, outdoor automobile sales lots and the like to render the same attractive, and in the latter case to attract customers.

The present invention relates to reflectors adapted to be employed in conjunction with the lights of a string, and more particularly to thin wall plastic reflectors formed of translucent varied color material. Because of the thin walls employed in connection with such reflectors, difficulty is had in attaching the reflectors in proper relation to a lamp and lamp socket. The nature of the coarse thread on the lamp bulb base, with varying globs of solder at the soldered connection usually present adjacent the glass bulb end thereof, has prevented securing of reflectors in proper position. Reflectors have been designed to be supported from the socket directly, but the exterior diameters thereof vary so widely, that provision of a universally applicable reflector has presented a problem. Attempts to clamp the reflector between socket, and the glass bulb portion of a lamp also presents a problem, since the glass bulb portions in some lamps present a sizeable shoulder and substantial enlargement in diameter adjacent the shell, while others exhibit almost no shoulder.

The present invention, in order to provide a secure attachment of a reflector to such a socket and lamp, employs an adapter ring, having an aperture closely fitting the threaded base of a light bulb, the adapter aperture being provided with a plurality of radially outward keyhole like slits uniformly spaced around the aperture, whereby the adapter may make a close fit around the threaded lamp base, and yield to clear the thread undulations and any solder globules that may be adjacent the glass bulb end of the base. The adapter when applied to the base is adapted to clamp the thin flange of the reflector between the adapter and the lamp socket, and hold the reflector rigid. The reflector, being somewhat parabolic, and open ended, is provided with vacuum and heat vent apertures adjacent the securing flange to minimize the effect of wind, and heat generated by the lamp bulb. By providing the adapter ring, the thickness of the reflector material may be kept to a minimum, proving a great saving in the cost of material used in forming the reflectors.

The above and other novel features of the invention will appear more fully hereinafter from the following detailed description when taken in conjunction with the accompanying drawings. It is expressly understood that the drawings are employed for purposes of illustration only and are not designed as a definition of the limits of the invention, reference being had for this purpose to the appended claims.

In the drawings wherein like references indicate like parts:

FIGURE 1 is a perspective view of a portion of a light setting equipped with reflectors in accordance with the invention;

FIGURE 2 is an exploded view with parts in section of a lamp socket, adapter and reflector;

FIGURE 3 is a fragmentary sectional view showing the parts assembled;

FIGURE 4 is a plan view of the adapter and;

FIGURE 5 is a side view of the adapter.

A typical light string is shown in FIGURE 1 comprising power supply insulated conductors 22 to which are attached at spaced intervals, lamp bulb sockets 24 and 26, the sockets being connected preferably in parallel to the conductors, as is well understood in the art. The conductors 22 will preferably be of high strength to support a plurality of such sockets between spaced supports, not shown.

Each of the sockets 24 and 26 is provided with standard electric lamp bulbs 28 having a threaded conductive base 30 which is screwed into the threaded conductive shell 32 of the lamp socket, the lamp socket having a central contact 34 insulated from the shell and adapted to complete the circuit to a central lamp bulb contact 36, insulated from the lamp bulb base. As will be understood, the glass bulb portion 38 of the lamp bulb is cemented within the hollow base, and the leads therefrom are connected to the contact 36, and threaded base 30, the connection to the base being affected by a lead extending through a small aperture in the base, and being secured thereto by a glob of solder as at 40. Such globule may present a slight enlargement, providing an irregularity in the contour of the base, which would otherwise be generally circular, except for the screw threads 41 formed therein.

In order to secure a thin walled plastic shade such as 44 to the socket and lamp, the shade is formed with an integral thin inturned flange 46, with an aperture 43 of adequate diameter to clear a lamp base 30 and such obstruction as the solder glob 40 referred to. An adapter 50 in the form of a nylon or Teflon ring or other suitable flexible non-conductive material, approximately 1/32 of an inch thick is provided. The adapter is circular, and of an outside diameter 52 slightly less than the diameter of the flange 46 at its juncture 54 with the parabolic portion 45 of the reflector. The adapter has an internal diameter 56 adapted to snugly embrace the threaded portion 41 of the lamp base 30. To provide yielding engagement with the threads of the lamp base, and to clear any obstruction such as a solder glob 40, the adapter is provided with a plurality, such as 13 in number, keyhole slots, radially disposed as at 60. The slots 60 preferably extend radially outwardly of the aperture 56, approximately one-half of the width of the adapter. Such slots, permit the adapter to be readily threaded over the lamp bulb base, and yieldingly override any obstruction such as a glob 40, or the cylindrical portion of the lamp base, so that the adapter is located against the glass bulb 38 of the base. It can be seen from the foregoing that a bulb provided with an adapter as shown in FIGURE 3, may then securely clamp the flange 46, of the reflector against the socket 24, and hold the same rigidly, regardless of the thickness of the material of which the reflector is made.

In practice such reflectors will be of non-conductive material molded of plastic such as polypropylene or other suitable material, and will be of varied colors and translucent. The manner of support referred to permits the reflector to be molded extremely thin and thus economizing on material. The reflector may have a smooth interior 65 and a series of spaced toroidal rings 61 forming the exterior to enhance the display effect. To prevent wind from creating undue disturbance to a string of such reflectors, by creating a vacuum within the reflector, and to afford circulation and cooling of the air within the reflector, a plurality of vent apertures 70 may be provided in the parabolic portion of the reflector adjacent the flange thereof. Such vents which may be four in number will be preferably molded to provide cylindrical apertures extending parallel with the axis of the reflector, and be equally spaced around the reflector.

While a single modification of the invention has been

illustrated and described, it is to be understod that the invention is not limited thereto. As various changes in the construction and arrangement may be made without departing from the spirit of the invention, as will be apparent to those skilled in the art, reference will be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. A display lamp and reflector comprising in combination, a lamp bulb socket having a threaded shell for securing a lamp bulb, a lamp bulb having a bulb portion and a threaded base threadedly secured in said shell, a portion of said base exposed beyond said shell, an open end thin wall translucent reflector of generally parabolic configuration disposed about said bulb portion and having an inturned flange disposed against the end of said socket around the lamp bulb base, and an annular adapter of thin flexible non-conductive material disposed within said reflector and against said flange, said adapter having an internal aperture snugly embracing the lamp bulb base, and said adapter having a plurality of keyhole slots formed in the adapter and extending radially outwardly of the aperture approximately one-half the width of the adapter, said slots being uniformly spaced about the adapter aperture and providing a yielding aperture to clear the lamp bulb base threads and any irregularities thereon, whereby the adapter may be positioned at the bulb end of the base and clamp the reflector flange against the bulb socket.

2. A display lamp and reflector comprising in combination, a lamp bulb socket having a threaded shell for securing a lamp bulb, a lamp bulb having a bulb portion and a threaded base threadedly secured in said shell, a portion of said base exposed beyond said shell, an open end thin wall translucent reflector of generally parabolic configuration disposed about said bulb portion and having an inturned flange disposed against the end of said socket around the lamp bulb base, and an annular adapter of thin flexible non-conductive material disposed within said reflector and against said flange, said adapter having an internal aperture snugly embracing the lamp bulb base, and said adapter having a plurality of keyhole slots formed in the adapter and extending radially outwardly of the aperture approximately one-half the width of the adapter, said slots being uniformly spaced about the adapter aperture and providing a yielding aperture to clear the lamp bulb base threads and any irregularities thereon, whereby the adapter may be positioned at the bulb end of the base and clamp the reflector flange against the bulb socket, said reflector having in its parabolic wall vent a plurality of vents, adjacent said flange, said vents comprising cylindrical walled apertures disposed on axes parallel with the reflector axis.

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