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A. B. CONLEY ET AL

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PHOTOGRAPHIC LAMP ADAPTER

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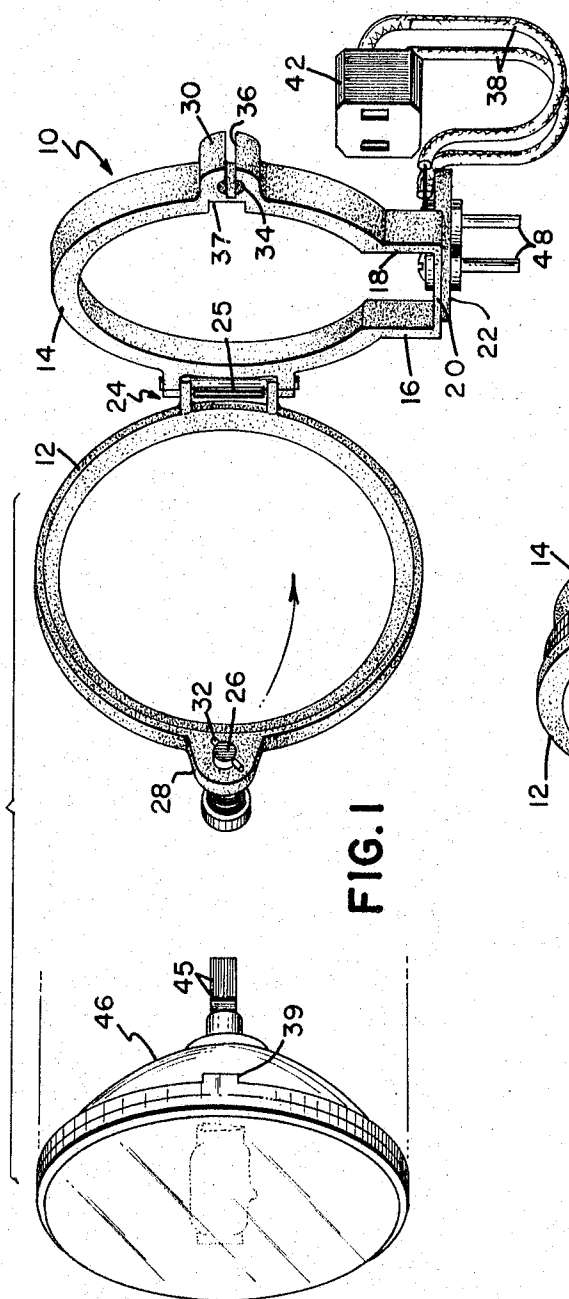


FIG. 1

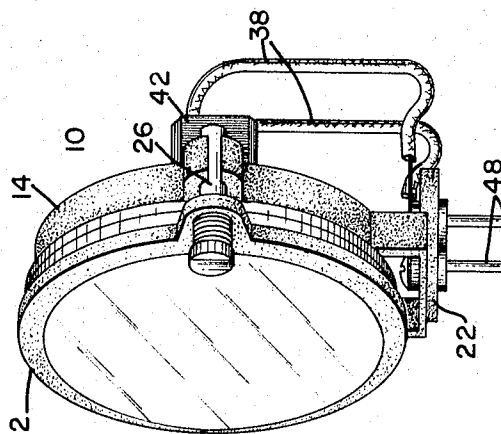


FIG. 2

AUSTIN B. CONLEY
WILLIAM H. MORGAN JR.
INVENTORS

BY *Lawrence Brown*
ATTORNEY

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PHOTOGRAPHIC LAMP ADAPTER

Austin B. Conley, Ipswich, and William H. Morgan, Jr.,
Georgetown, Mass., assignors to Sylvania Electric
Products Inc., a corporation of Delaware
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This invention relates to photographic lighting equipment and more particularly to a universal type lamp holder for lamps used in conjunction with cinematography and television productions.

Photographic lighting equipment used in motion picture, television and other photographic endeavors varies only in exterior design; the major working components are basically the same. For example, conventional type spot light units consist of a cannister-type housing, having a pivotal face cover holding a standard prismatic lens, the cannister housing being positioned from hanging supports or on movable pedestals. Within the cannister housing, high wattage globular or tubular incandescent lamps are mounted in cooperating relationship with a substantially spherical reflector. The lamp and reflector, although separate components, are held in spaced relationship to one another on a movable trolley that can be adjusted along the horizontal axis of the cannister housing. Movement of the trolley can be accomplished in many ways, but a simple method used is a bellcrank and push-rod mechanism.

Adjustment of the trolley carrying the lamp and the reflector will position the trolley in varying incremental distances relative to the fixed lens. The most common type face lens used with spot light units are Fresnel lenses that project the light rays generated by the light source in controlled, well-defined patterns, therefore with this arrangement of adjusting the lamp and reflector relative to the fixed lens it will produce a distribution of light from a wide spread to a well-defined spot.

In motion picture and television lighting procedures, what is referred to as "key light" is the principal source of directional illumination falling upon a subject or area. Spotlights are usually used for key light because their light is easily controllable. Key light is determined usually by the light power ratio to the size of the set and the ability of the performers to work under these conditions. It can be noted from past experience that performers work better and for a more sustained period of time when the key lights are not above 250 footcandles thus keeping heat at a bearable point. It can also be mentioned that once a key light intensity has been established for a sequence of shots it must be kept constant throughout the entire shooting.

This creates many problems in the normal shooting of scenes for movies and television, mainly a great number of lighting units have to be used to provide the necessary lighting. Not only the above-mentioned key spotlight units are used but various other types of units such as "scoop" and "backlights" for added lighting effects. The combined lighting units as mentioned above generate a great amount of heat which affects the ability of the performers to work for sustained periods of time and it also prevents the principal key lights from being used to their desired effect. These are decided handicaps to the industry especially the lighting specialists.

Other problems must also be considered, in that the relatively short life of incandescent lamps by blackening, resulting in less light and lower color temperature, etc., requires frequent lamp replacement and the reflector being in close proximity to the lamp can be inadvertently scratched, or by the constant polishing of the reflector, the polished quality becomes diminished over a period of

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time, therefore diminishing the basic light output of the unit.

With our present invention we have overcome the above mentioned problems encountered in that our invention consists of a lamp holder that will adapt a standard commercial type high intensity lamp which will produce an increased number of footcandles with the same amount of wattage as that of an incandescent lamp now used in industry. Also the lamp will transmit 85% less infrared radiation to the subject or stage area. The lamp we use is a standard Par lamp or otherwise known as, a sealed beam lamp. This lamp consists of an internal, substantially parabolic, reflective surface, that is made as an interference filter or sometimes called a dichroic reflector, having alternate layers of magnesium fluoride and zinc sulfide. These layers produce an interference pattern which varies in such a manner with the wave length of the incident radiation, that the infrared radiation is transmitted, but most of the visible light is reflected. This is fully disclosed in U.S. Patent 3,162,785, which issued Dec. 22, 1964, and assigned to the assignee of the instant invention.

Sealed within the lamp envelope in place of standard filament we place a high intensity iodine quartz lamp. The advantages of this combination of an iodine quartz positioned within a sealed beam lamp is that the maintenance of color temperature and lumen output are substantially constant throughout the life of the lamp and the lamp life of an iodine quartz lamp is considerably longer than that of the globular incandescent lamps of the same color temperature. Also with the above-mentioned improved reflector and iodine lamp the same number of footcandles may be obtained with a 1000 watt as will be obtained with a 2000 watt globular incandescent.

Other features, advantages and objects of the invention will be apparent from the following description taken in connection with the accompanying drawing in which:

FIGURE 1 is an exploded perspective view showing the construction of the lamp adapter.

FIGURE 2 is a perspective view of the lamp and holder in operational readiness.

In FIG. 1 the lamp adapter 10 consists of two major parts, a hinged face ring 12 and a base ring 14. The base ring 14 is not a complete ring but has a pair of legs 16 and 18 extending outwardly from the basic concentric ring construction and these legs are interconnected by a web leg 20 which is an integral part of an enlarged socket base 22. Face ring 12 is hinged to base ring 14 at 24 by a spring metal clip 25 that performs the function of adjusting the spacing between face ring 12 and base ring 14 when different thickness of lamps are used. A spring latch rod 26 positioned in an enlarged node 28 on the outer circumferential of face ring 12 is in cooperating relationship with a mating node 30 on the outer surface of the base ring 14. The spring latch rod 26 has a pin 32 that protrudes from either side of the rod 26. Node 30 on base ring 14 is provided with a bore 34 equal in diameter to that of rod 26 and a pair of clearance slots 36 for pin 32. As can be seen in FIG. 2 when face ring 12 is swung to a close position, that is, when the face ring 12 and the base ring 14 are positioned as in FIG. 2 the latch rod 26 will be inserted into the bore 34, the pin 32 fixed to the end of the rod 26 is allowed to pass through the bore by way of the clearance slots 36, and when the pin 32 is on the back side of the node 30, the rod 26 is turned so that the pin 32 is out of relationship with the path of the clearance slots 36, this will lock the face ring 12 to the base ring 14. Located on the inner surface of base ring 14 and adjacent to bore 34 is a positioning notch 37, the purpose of this notch will be described hereinafter.

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As seen in FIG. 1 the lamp we use can be any conventional Par lamp having a built in reflector. But for this particular application we prefer to use a lamp having an iodine quartz lamp sealed within the envelope. It also can be mentioned at this time that the lamp is provided with a dichroic reflector for dissipation of infrared radiation. The convention Par lamps or sealed beams as they are called, are provided with a bi-prongs base for electrical connection. The present line of studio lighting units of the spotlight variety use a globular or tubular incandescent lamp having a base provided with bi-post connectors. The conversion from bi-prongs to bi-post is made by providing a pair of bi-post connectors 48 on the socket base 22 and connecting there to a pair of electrical wires 38 and thence to a bi-prong female socket 42 that will adapt to the bi-prongs on the Par lamp.

With the above description of elements it can be readily seen that a conventional lamp 46 can be placed between the face ring 12 and the base ring 14 having its bi-prongs 45 extending through the base ring 14. The lamps we use are provided with a positioning node 39, this node will cooperate with notch 37 made in the base ring 14, to insure proper filament alignment of the lamp. The face ring 12 is then closed over the lamp 45 and latched by the spring rod 26 thus securely holding the lamp 46 in the lamp adapter 10. The electrical connection is made by inserting the female bi-prong socket 42 over the bi-prongs 45 of lamp 46.

What we claim is:

1. An adapter to receive a lamp having a pair of electrical contacts, said adapter comprising: a base ring having a pair of electrical posts depending therefrom; a face ring pivotally mounted on said base ring and spaced therefrom to receive a lamp therebetween; and means for electrically connecting said lamp electrical contacts to said electrical posts.

2. An adapter to receive a lamp having electrical contacts, said adapter comprising: a base ring having electrical posts depending therefrom; a face ring pivotally mounted on said base ring and spaced therefrom to receive a lamp therebetween and means for electrically connecting said lamp electrical contacts to said electrical posts.

3. An adapter to receive a lamp having a pair of electrical bi-prong contacts, said adapter comprising: a base ring having a pair of electrical bi-posts depending therefrom; a face ring pivotally mounted on said base ring; said base ring and said face ring provided with a cooperating retaining means to space and to receive a lamp therebetween; and means for electrically connecting said lamp bi-prong contacts to said base electrical bi-posts.

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4. An adapter to receive a lamp having a pair of electrical bi-prong contacts, said adapter comprising: a base ring having a pair of electrical bi-posts depending therefrom; a face ring pivotally mounted on said base ring; said base ring and said face ring provided with a cooperating retaining means to space and to support a lamp therebetween; an intermediate connecting means, said intermediate connecting means connecting said lamp bi-prong contacts to said base electrical bi-posts.

5. An adapter to receive a lamp having a pair of electrical bi-prong contacts, said adapter comprising: a base ring having a pair of electrical bi-posts depending therefrom; a face ring pivotally mounted on said base ring; said base ring and said face ring provided with a cooperating retaining means to space and support a lamp therebetween; an intermediate adapting means electrically connected to said bi-posts; said intermediate adapter means connecting said lamp bi-prong contacts to said base electrical bi-posts.

6. An adapter to receive a lamp having electrical bi-prong contacts, said adapter comprising: a base ring having electrical bi-posts depending therefrom; a face ring pivotally mounted on said base ring; said base ring and said face ring provided with a cooperating spring retaining means to space and support a lamp between said base ring and said face ring; an intermediate adapter means electrically connected to said bi-posts; said intermediate adapter means utilized to electrically connect said lamp bi-prong contacts to said base bi-posts.

7. An adapter to receive lamps having bi-prong electrical contacts; said adapter comprising: a base ring having a pair of contacts depending therefrom; a face ring pivotally mounted on said base ring; said base ring and said face ring provided with a cooperating retaining means to space and support a lamp therebetween; an intermediate adapter means electrically connected to said base ring contacts; said intermediate adapter means connecting said lamp bi-prong contacts to said base electrical contacts.

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NORTON ANSHER, *Primary Examiner*.