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APPARATUS FOR CONVERTING REFLECTOR-TYPE FLOODLIGHTING SYSTEMS TO USE WITH SEALED BEAM FLOODLAMPS

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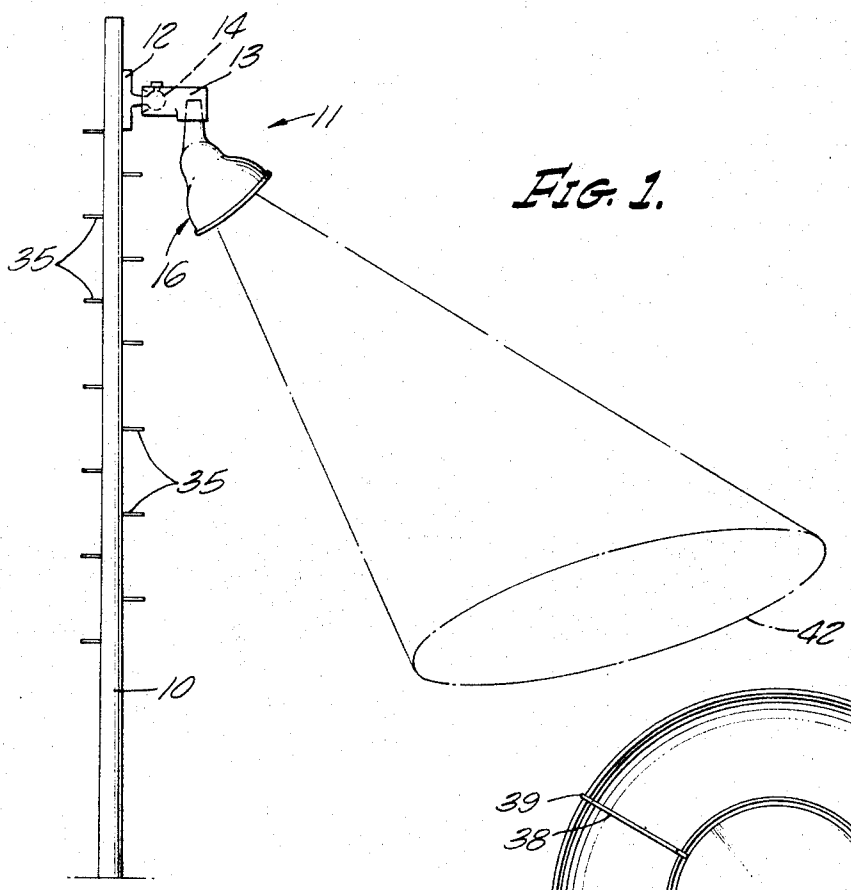



FIG. 1.

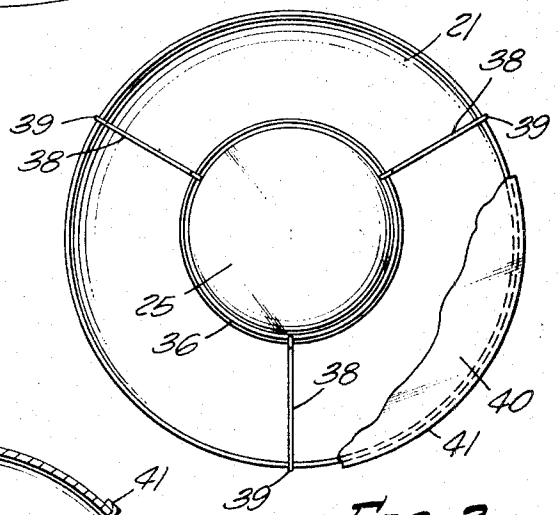



FIG. 3.

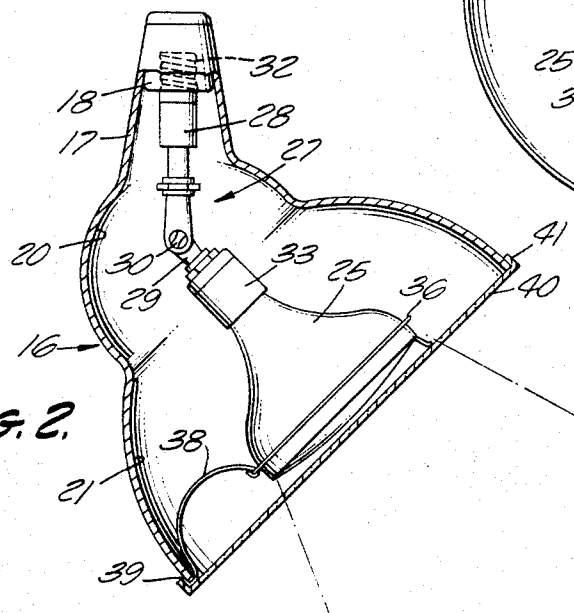



FIG. 2.

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# APPARATUS FOR CONVERTING REFLECTOR-TYPE FLOODLIGHTING SYSTEMS TO USE WITH SEALED BEAM FLOODLAMPS

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## ABSTRACT OF THE DISCLOSURE

A floodlighting system converted to use sealed beam floodlamps in lieu of transparent envelope lamps and utilizing the reflectors formerly required to direct the light beam to protect and stabilize an associated sealed beam floodlamp.

This invention relates to outdoor floodlighting systems for lighting playing fields, parking areas, and the like and more particularly to simple, inexpensive means for converting reflector type floodlighting systems to use with sealed beam floodlamps. There is no need for disturbing the installed system or the adjustment of the reflectors. The conversion is accomplished by a converter kit having an articulated adapter designed to be substituted for the conventional transparent envelope type floodlamp, the adapter being adjusted to support a sealed beam floodlamp coaxially of the larger end of the reflector which is then effective to illuminate exactly the same area formerly illuminated by reflection from the reflector. The entire assembly is preferably reinforced by installation of a resilient stabilizer between the rim of the new floodlamp and the rim of the reflector.

Prior floodlighting systems using transparent envelope incandescent lamps in combination with a surrounding specially contoured reflector are in use in large numbers but are notoriously inefficient and ineffective after a brief period of use. This is due to various factors including in particular the collection of dirt on the reflecting surface and the deterioration of this surface as an effective light reflector. These prior systems have been installed and adjusted to distribute the light in a desired pattern at high cost.

The sealed beam type floodlamp developed during recent years is capable of operating throughout its lifetime at high efficiency utilizing a protected coating applied to its interior surface and is known to maintain its efficiency throughout the life of the filament. However, it has not been possible heretofore to replace the transparent envelope type floodlamp with the sealed beam type because essentially all reflectors have a reflecting axis at an angle to the axis of the associated lamp socket. Consequently, it is usually not possible to substitute or even install a sealed beam floodlamp in place of the old type lamp. Even if the reflector does permit, portions of the reflector are in the path of the light beam and cut off a sizable portion of the light beam from the sealed beam lamp. Even more serious is the fact that the light beam from this lamp now falls on an entirely different area than intended and it is necessary to go to the very considerable expense of resighting each floodlamp at night and while the lamps are energized.

By the present invention there is provided a simple inexpensive converter kit by which relatively unskilled



workmen can convert installed reflector type illuminating systems to use with sealed beam floodlamps with a minimum amount of labor and expense and without need for energizing the lighting facility or for making any changes in the adjustment of any lamp. To this end, the converter kit comprises a simply constructed rugged articulated adapter having a threaded male fitting at one end insertable in the existing floodlight socket and having a threaded socket at its other end for seating a conventional sealed beam floodlamp. Locking means carried by the adjuster joint of the adapter enables the workman quickly and easily to lock the socket end of the adapter with its axis coincident with the axis of the existing light reflecor. This adjustment having been made and secured, a sealed beam floodlamp is installed in the socket. Additionally, and desirably, a stabilizer is installed between the periphery of the floodlamp and the surrounding rim portion of the reflector thereby assuring that the floodlamp will remain in its desired adjusted position to avoid undue strain on the original lamp socket and in order that the lamp and the reflector may mutually assist one another in strengthening and stabilizing the floodlamp facility. Also if desired, and preferably, a protective transparent cover is clipped over the rim of the reflector to exclude moisture, insects and the wind.

Accordingly, it is a primary object of the present invention to provide an improved, simple, and inexpensive mode of converting existing reflector type floodlighting systems to use with a sealed beam floodlamp.

Another object of the invention is the provision of a converter kit for use in converting a floodlighting system utilizing transparent type incandescent lamps in combination with a reflector to use with a sealed beam floodlamp without need for resighting the floodlamps and while utilizing the old reflector guide in spotting the new lamp and as a protective housing therefor.

Another object of the invention is the provision of simple components by means of which workmen having a minimum of training may convert an existing floodlighting system to use with sealed beam floodlamps without need for energizing the floodlights at any time during the conversion operation and while using the installed adjusted light reflectors as a guide in clamping the converter components in a proper position to light the same area previously illuminated by the reflector.

These and other more specific objects will appear upon reading the following specification and claims and upon considering in connection therewith the attached drawing to which they relate.

Referring now to the drawing in which a preferred embodiment of the invention is illustrated.

FIGURE 1 is a generally schematic view of a reflector-type floodlighting system after being converted to use with sealed beam floodlamps;

FIGURE 2 is an enlarged view partly in section of the floodlights shown in FIGURE 1 with the new lamp in place therein; and

FIGURE 3 is a bottom-plan view of FIGURE 2 taken on a plane spaced outwardly and parallel to the larger end of the reflector.

Referring more particularly initially to FIGURE 1, there is shown a typical outdoor floodlighting system including an upright pole 10 having a reflector type floodlighting facility designated generally 11 supported at the top thereof by a bracket 12. Floodlight 11 includes any suitable main body 13 connected to bracket 12 as by a universal ball and socket joint 14 having any suitable means

for clamping lighting facility **11** in a desired adjusted position.

Rigidly but adjustably secured to main body **13** is a suitable light reflector **16** of rigid material, as metal. This reflector includes a conical shank **17** at its smaller end housing a lamp socket **18**. Normally, reflector **16** is adjustably socketed within main body **13**, and can be rotated about the axis of its shank to aid in casting the reflected light beam on a desired area being illuminated. The details of these various adjustments and locking means are well known to those skilled in this art and it will be understood that these can be readily manipulated when loosened to permit proper adjustment of the light from the lamp. Since these details form no part of this invention, they need not be further described here.

It should be further pointed out that many conventional light reflecting hoods **16** have their main reflecting surfaces formed about a light reflecting axis at some angle to the axis of shank **17**. As here shown, the axis of the reflector proper lies at an angle of approximately 45 degrees to shank **17**. Usually such reflectors include a spherical inner section **20** having a reflecting surface generally concentric with the spherical transparent envelope of an incandescent floodlamp, not shown. The light from the lamp filament of such lamps emanates in all directions and is reflected in part from reflecting surface **20** and, in part, from the much larger reflector **21** formed within the larger diameter outer end portion of the reflector.

It is obviously not practical to install a sealed beam type of floodlamp **25** directly within socket **18** because such lamps are normally so sized and shaped that they cannot be installed within socket **18**, and additionally, a major portion of the output of such a lamp would be cut off by reflector **16**.

Accordingly, there is provided by this invention an articulated adapter designated generally **27** formed by two tubular sections **28, 29** adjustably interconnected at their adjacent ends by a hinge pin assembly **30** of any suitable construction readily manipulatable in known manner to lock tube **28, 29** in any desired angular relationship. Secured to the free end of tube **28** is a threaded male fitting **32** whereas the outer free end of tube **29** carries a female lamp socket **33**. Electrical wiring interconnects the electrical contacts of male fitting **32** with the corresponding electrical fittings of socket **33**.

To convert the old type of floodlighting system to the new type, it is merely necessary for a workman to climb to the top of pole **10** using steps **35**. When at the proper height he removes the well known transparent envelope floodlamp from socket **18** and replaces this lamp with adapter **27**. Once this adapter has been snugly screwed into socket **18**, socketed end **33** is pivoted so that its axis is accurately centered to coincide with the axis of reflector **16**. Once in this position, the locking facility for pivot pin **30** is tightened to clamp the adapter firmly in this adjusted position. A sealed beam floodlamp **25** is then installed in socket **33** and a stabilizer is also preferably installed between the larger diameter end of the floodlamp and the rim portion of reflector **16** to avoid overstraining socket **18**.

Such a stabilizer is shown in FIGURES 2 and 3 as comprising a ring **36** only slightly larger in diameter than the larger end of lamp **25**. Interconnecting this ring and the rim of reflector **16** are a plurality and preferably three resilient spring links **38** having hooks **39** at their outer ends engageable over the edge of reflector **16**. To keep out rain water, snow, wind and dirt it is also desirable to add a transparent cover **40** over the remainder of the assembly. Such a cover may be provided with a resilient rim **41** having a snug frictional fit with the reflector and, additionally, thumb screws or the like may be employed to lock this cover against accidental dislodgement.

As will be appreciated from the foregoing, a simple gauging disc or tool contoured to fit about adapter socket **33** with its periphery engageable with reflector surface **21** radially opposite the socket can be utilized by the workman in quickly and accurately centering socket **31** with its axis coincident with the axis of the reflector. Once in this position, pivot **30** can be rigidly locked in place. It will therefore be readily apparent that there is no need for loosening any of the adjusting clamps between main body **13** and bracket **12**, or between the floodlight main body and reflector **16**. At the same time the workman has assurance that the adjustment of adapter socket **33** to lie in the center of the reflector provides adequate assurance that the newly installed sealed beam light will be properly positioned to illuminate the same elliptical area **42** formerly illuminated by the original lamp and reflector **16**.

While the particular apparatus and method for converting reflector-type floodlighting systems to use with beam floodlamps herein shown and disclosed in detail is fully capable of attaining the objects and providing the advantages hereinbefore stated, it is to be understood that it is merely illustrative of the presently preferred embodiments of the invention and that no limitations are intended to the details of construction or design herein shown other than as defined in the appended claims.

We claim:

**1.** A converter kit for use in converting a floodlighting system utilizing incandescent lamps with an associated external reflector to a system using floodlamps with built-in reflectors, said converter comprising an adapter having a screw-type lamp base and a lamp socket at its opposite ends and including means for adjusting said ends to lie along different intersecting axes, a sealed beam floodlamp with a built-in reflector within the glass envelope thereof supported in said lamp socket, and centering means adapted to be assembled and supported between the exterior of said floodlamp and the larger end portion of a floodlight reflector to hold said floodlamp stabilized and generally centered centrally of said reflector whereby the beam of said floodlamp falls on the same lighted surface area as the beam previously directed thereon by said reflector.

**2.** A floodlighting facility for lighting a remotely positioned surface comprising, a rigid support, a bracket attached to said support provided with an electrical socket, a light reflector hood having the mounting end thereof encircling said electrical socket and having generally circular light reflecting surfaces arranged to direct a floodlight beam along an axis lying at an angle to the axis of said electrical socket, an articulated adapter having one end threaded in and energizable from said electrical socket and having a sealed beam floodlight detachably socketed in the opposite outwardly facing end thereof, said articulated adapter being rigidly adjusted to support the axis of said floodlamp generally coincident with the axis of the larger end of said reflector, and stabilizer means interposed between the rim portion of said reflector and the envelope of said sealed beam floodlamp to facilitate holding said floodlamp directed to illuminate substantially the same portion of the surface formerly illuminated by light reflected thereto by said reflector.

**3.** A floodlighting facility as defined in claim **2** characterized in that said stabilizer is resilient and so formed as to be held assembled to the rim of said reflector by the resilient stabilizer components.

**4.** A floodlighting facility as defined in claim **2** characterized in that said stabilizer includes a ring slightly larger in diameter than the outer end of said floodlamp and including radially disposed resilient connectors distributed equitably about the circurference of said ring and including means for connecting their outer ends to the rim portion of said reflector.

**5.** A floodlighting facility as defined in claim **2** characterized in that said stabilizer comprises ring means sized to embrace a floodlamp closely in a plane spaced axially from the mounting end thereof and a plurality of resilient link means distributed about said means and

connecting the latter with the rim of said reflector hood and effective to hold the floodlamp resiliently centered therein.

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