Sept. 19, 1961 B. MOORE 3,001,060

FLOODLIGHT

Filed July 22, 1957

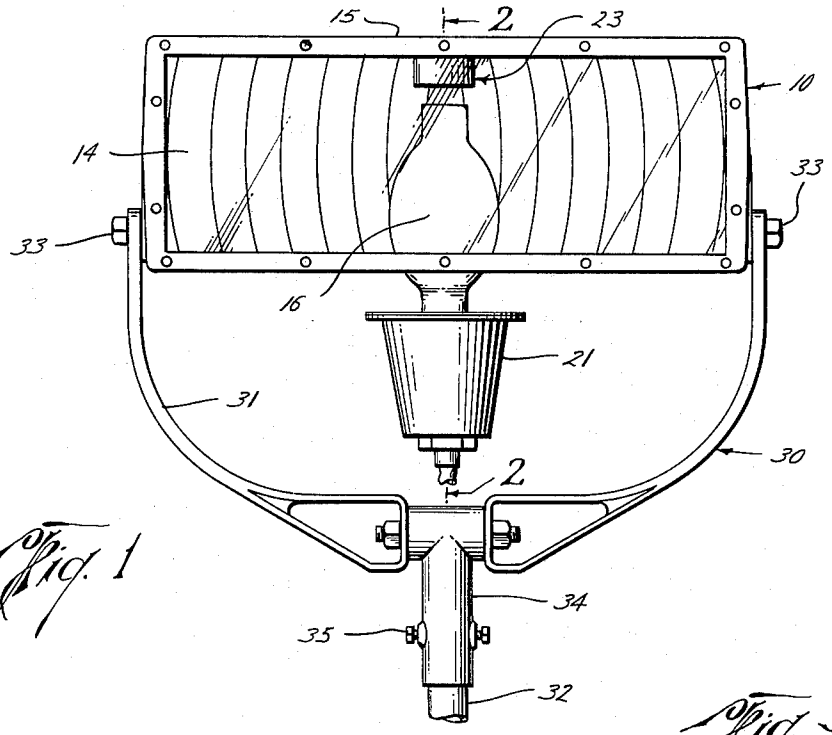


Fig. 1

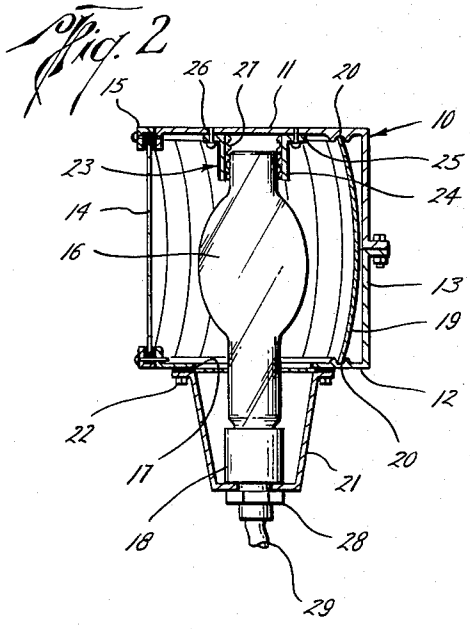


Fig. 2

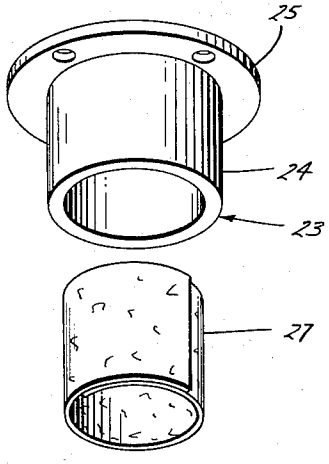


Fig. 3

Buell Moore
INVENTOR.

BY Browning, Simms, Hyer & Eickenroht
ATTORNEYS

United States Patent Office 3,001,060 Patented Sept. 19, 1961

3,001,060

FLOODLIGHT

Buell Moore, Houston, Tex., assignor, by mesne assignments, to Esquire, Inc., a corporation of Delaware

Filed July 22, 1957, Ser. No. 673,356
2 Claims. (Cl. 240—3)

This invention relates to improvements in floodlights for use in industrial areas.

The efficiency of a flood light depends upon a predetermined disposition of the light source or lamp with respect to the reflector. It is particularly difficult to maintain this relationship due to the fact that only one end of the lamp is connected to the case for the reflector. Even if a lamp is accurately aligned with respect to the reflector, there is no guarantee that its replacement will also be properly disposed.

An object of this invention is to provide a floodlight in which a lamp, as well as its replacements, will be maintained in their proper predetermined position with respect to the reflector.

Another object is to provide a floodlight of the character described in the foregoing object in which the lamp is easily and quickly replaceable.

Other objects, advantages and features of this invention will be apparent to one skilled in the art upon a consideration of the written specification, the attached claims and the annexed drawings.

In accordance with the present invention, there is provided a floodlight comprising a case having a top and bottom and open at one side. A reflecting surface is disposed in the case opposite the open side thereof, and an electrical socket is disposed on the bottom of the case for mounting a lamp in an upright position in front of the reflecting surface. Thus, as distinguished from more conventional types of floodlights, light is reflected in a wide path generally perpendicular to the upright lamp.

A non-electrical socket on the top of the case is positioned to closely receive the upper end of the lamp and hold it in a desired predetermined position with respect to the reflecting surface. The socket may be lined with a material adapted to insulate the hot lamp from the relatively cool case as well as to cushion the envelope of the lamp against breakage during vibration or other movement of the case.

Preferably, the lamp is removable from and insertable into its guide socket through the bottom of the case. For this purpose, the bottom of the case is provided with an opening therethrough large enough to pass the lamp, and the electrical socket is mounted in a well or the like removably connected, as by bolts, to the bottom of the case and across the opening. Obviously, the guide socket will properly align a lamp as it is inserted therein, regardless of the rotative position of the well with respect to the bottom of the case when connected thereto.

In the drawings, wherein like reference characters are used throughout to designate like parts:

FIG. 1 is a front elevational view of an illustrative embodiment of the floodlight of the present invention, with the lamp thereof in the process of being either removed from or inserted into its guide socket;

FIG. 2 is a cross-sectional view of the floodlight of FIG. 1, with the lamp received within its guide socket and as seen along broken line 2—2 of FIG. 1; and

FIG. 3 is an enlarged perspective view of the guide socket with the lining separated therefrom.

Referring now to the above-described drawings, the floodlight will be seen to comprise a case 10 made up of upper and lower parts bolted together to define a top 11, bottom 12 and back 13 for the case. The side of the case opposite the back is open, and the inside of the case is enclosed by a glass window 14 disposed across

the open side. More particularly, the window is held in place and sealed about its edges by means of a frame 15 bolted or otherwise secured across the front edge of the case.

A lamp 16 is connected at its lower end to an electrical socket 18 on the bottom of the case for mounting in an upright position in front of the reflecting surface of a reflector 19 within the case. As can be seen from the drawings, this reflector faces oppositely to the open side of the case and is curved about an axis substantially parallel to the axis of the upright lamp so that it reflects a broad band of light through the window 14. The back of the case may be correspondingly curved so as to fit closely about the back surface of the reflector.

It is contemplated that the reflector itself may provide a back for the case. Also, of course, window 14 may be eliminated. The illustrated construction is preferred, however, for protecting the reflector and lamp against breakage and weathering.

As shown in the drawings, the reflector may be made up of a plurality of segments each of which is curved about an axis disposed substantially perpendicularly to the first-mentioned axis so that the overall reflecting surface of the reflector is substantially spherical. As shown in FIG. 2, the opposite ends of the curved reflector segments are received within grooves 20 on the inner surface of the top and bottom of the case. It will be understood, of course, that the arrangement of the grooves will determine the curvature of the reflecting surface about the axis of the upright lamp. However, this reflector construction is not a part of the present invention and, if desired, the reflector may take a more conventional form.

In any case, the efficiency of this floodlight will, as previously mentioned, depend upon a predetermined disposition of the lamp 16 with respect to the reflecting surface of the reflector 19. That is, the mounting for the lamp and the reflector should be positioned relative to one another as to provide light of desired size and direction. Obviously, any movement of the lamp out of this predetermined position relative to the reflector will destroy this desired effect.

As best shown in FIG. 2, the lamp 16 is received through an opening 17 in the bottom of the case and the electrical socket 18, which may be of the conventional screw-in type, is carried within a well or bowl 21 removably connected by bolts 22 to the bottom of the case and across the opening therethrough. As can be seen from FIG. 2, the opening 17 is of a size to pass the lamp 16 so that the lamp may be inserted into and removed from operative position within the interior of the case through the opening.

It will be understood, however, that even when the well 21 is tightly bolted to the bottom of the case, the screw-in type connection of the lamp to the socket 18 will not provide a particularly stable mounting therefor. This is particularly true in and around industrial areas where there may be considerable vibration. Furthermore, upon removal and replacement of the lamp 16 for any reason, it is possible that the well 21 may be reconnected to the bottom of the case in a different rotative position with respect thereto than it previously occupied. As a result, even if the lamp 16 were initially properly disposed with respect to the reflector, any angular inclination of the socket 18 with respect to the vertical would cause it to be out of proper alignment with respect to the reflector upon such reconnection.

These and other problems are remedied by means of a non-electrical guide socket 23 on the top of the case which fits closely over the upper end of the lamp 16 and is arranged to maintain the lamp in its predetermined position with respect to the reflector. Obviously, its close

fit over the upper end of the lamp prevents the lamp from vibrating out of such position. Also, this socket guides the lamp into its proper position as it is inserted into the case. Normally, the axis of the guide socket 23 will be substantially aligned with that of the electrical socket 18.

The light source conventionally used in industrial floodlights of this type are 400 and 1000 watt mercury vapor lamps, each of which has a substantially cylindrical portion at its upper end. Therefore, the guide socket comprises a tubular body 24 having an inside diameter slightly greater than the outside diameter of the cylindrical section of the lamp and provided with a flange 25 at its upper end for connection as at 26 to the top of the case. Preferably, the tubular body 24 is lined with a material 27 which will insulate the relatively cool body 24 from the relatively hot lamp, and thereby avoid cracking the envelope of the lamp. It is also contemplated that this insulating material may be asbestos or the like, which will provide a cushioning effect for the upper end of the fragile envelope of the lamp, particularly during vibration of the case itself. As shown in the detailed view of FIG. 3, the asbestos may be provided in a roll which is merely slipped into place within the tubular body 24 and, if desired, cemented thereto.

It should be understood that the case of the floodlight may be so constructed as to permit removal and replacement of the lamp 16 through the top of the case, in which case the non-electrical guide socket would be removably connected to the case. However, the arrangement illustrated is preferred inasmuch as the electrical socket 18 is the one which would ordinarily require the more repair.

As previously mentioned, the electrical socket 18 may be of the conventional screw-in type. It is fixedly carried in the bottom of the well by means of a nut 28 and is provided with a suitable conduit 29 leading therefrom to provide the necessary electrical connection.

The floodlight may be mounted upon a standard 30, as shown in FIG. 1, so as to permit it to be faced in any desired direction. This standard will be seen to comprise a yoke 31 mounted upon an upright 32 for rotation about a horizontal axis and pivotally connected at its opposite ends to opposite sides of the case 10, as shown at 33. The yoke may include a tubular mounting 34 disposable over the upright 32 and having set screws or other means 35 selectively engageable therewith to permit rotation of the standard and floodlight about a vertical axis.

From the foregoing it will be seen that this invention is one well adapted to attain all of the ends and objects

hereinabove set forth, together with other advantages which are obvious and which are inherent to the apparatus.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

The invention having been described, what is claimed is:

1. A floodlight, comprising a case having a top and bottom and a laterally elongate opening across one side, a reflecting surface in the case and curved concavely of the open side from one end to the other thereof, an opening in the bottom of the case, a well extending downwardly from the bottom of the case in alignment with said opening, an electrical socket mounted in the well so that its open end is aligned with the opening in the case bottom, a cylindrical socket on the top of the case facing downwardly and axially aligned with the electrical socket, heat insulating and cushioning material lining the inside of the cylindrical socket, and a lamp mounted in front of the reflecting surface having its upper end fitted closely within the heat insulating and cushioning material of the cylindrical socket and its lower end fitted into the electrical socket whereby the portion of the lamp intermediate its opposite ends is out of engagement with the case.

2. The invention as described in claim 1 and wherein the top and bottom of the case are parallel and the axis of the lamp is substantially perpendicular to the top and bottom of the case.

References Cited in the file of this patent

UNITED STATES PATENTS

853,829	Robinson	May 14, 1907
1,313,739	Ryerson	Aug. 19, 1919
1,937,585	Luxmore	Dec. 5, 1933
2,033,038	Lee	Mar. 3, 1936
2,056,648	Dorgelo et al.	Oct. 6, 1936
2,101,135	Finch et al.	Dec. 7, 1937
2,756,384	Meyer	July 24, 1956
2,774,947	Frensch	Dec. 18, 1956
2,892,994	Ingraham	June 30, 1959

FOREIGN PATENTS

323,077	Great Britain	Dec. 24, 1929