June 20, 1950 D. A. NATALE 2,511,937

FLOODLIGHT

Filed Nov. 24, 1947

Fig. 1.

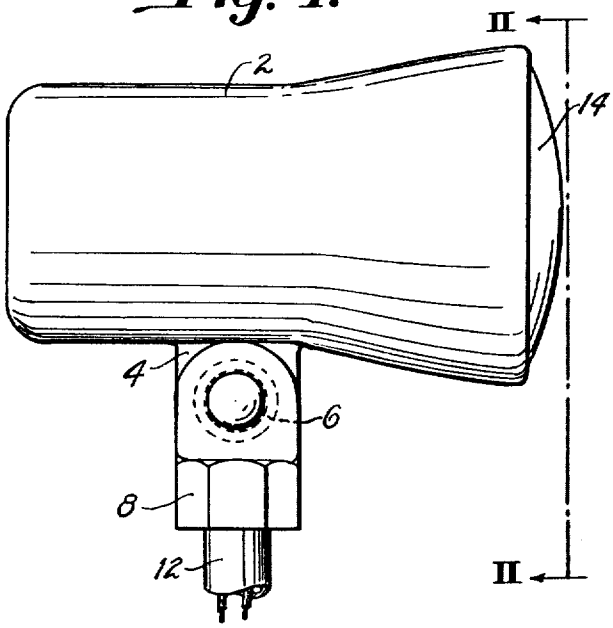


Fig. 2.

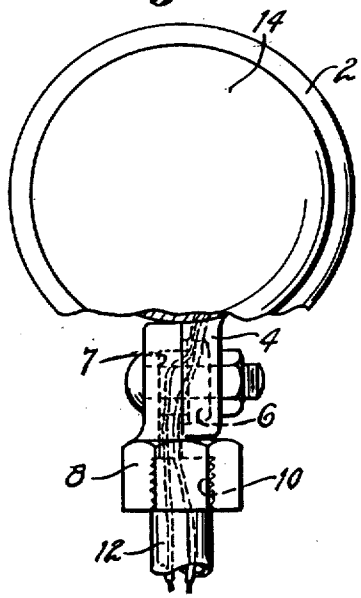


Fig. 3.

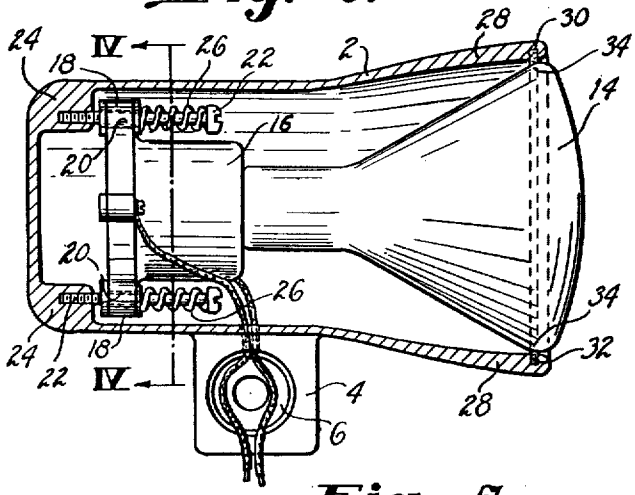


Fig. 4.

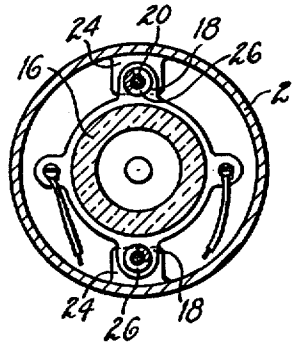
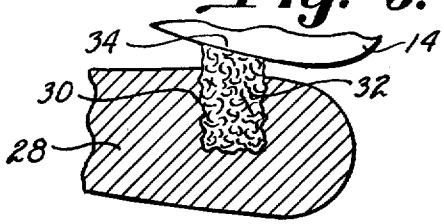


Fig. 5.



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FLOODLIGHT

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2 Claims. (Cl. 240—41)

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This invention relates to an improved floodlight, more particularly to a floodlight incorporating therein a sealed unitary light producing and reflecting lamp bulb.

The invention has among its objects the provision of a simple, rugged, floodlight of the type indicated which is easy to make and economical to maintain.

The invention has a further object the provision in such floodlight of an improved lamp bulb mounting means which both cushions the bulb against mechanical shock and seals the interior of the housing against the atmosphere.

These and further objects of the invention will be more readily apparent in the following description of a preferred embodiment of the floodlight of the invention.

In the drawings which form a part of the specification.

Figure 1 is a view in side elevation of such preferred embodiment of the floodlight;

Figure 2 is a view of such floodlight in end elevation, the view being taken from the point of view indicated by the line II—II in Figure 1;

Figure 3 is a view in vertical section through the longitudinal axis of the floodlight housing;

Figure 4 is a view in vertical section through the rear end of the housing, the section being taken along the line IV—IV in Figure 3; and

Figure 5 is an enlarged view in section of the front end of the housing in the region of the sealing means, the section being taken in the same manner as in Figure 3.

The floodlight shown consists of a housing designated generally by the reference character 2. Such housing has an external contour generally in the shape of a solid of revolution cylindrical in its rear portion and frusto-conical in its front portion. Such housing on its lower side has a projecting lug 4 in the form of an ear having a circular recess 6 in one side thereof. Such ear cooperates with a standard in the form of a cap 8 having a similar smaller circular recess 7 on the side of the upper end thereof which confronts recess 6. Such upper end of the cap and the ear 4 are clamped together in the desired angular position by a bolt passing through both, as shown. The cap has a screw threaded recess 10 in the bottom portion thereof into which is fitted the screw threaded upper end of

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the tubular upright support 12. Lead wires supplying current to the lamp bulb are led, as shown, upwardly through standard 12, through the hollow portion of the cap into recess 7 and the recess 6, and thence into the housing.

The lamp bulb, shown generally at 14, is of the sealed unitary light producing and reflecting type, more familiarly known as a "Sealed Beam" bulb. When the floodlight is employed for lighting large areas, for example when it is used as an exterior floodlight, the larger size bulbs such as 300 or 500 watt bulbs are employed. It is, of course, to be understood that the floodlight of the invention is not so limited as to size, and that it may, if desired, be made of a size to receive any lamp bulb of the type indicated.

Housing 2 is provided at its closed rear end with a socket 16 located coaxial therewith and facing the open end of the housing, shown at the right in Figures 1 and 3. The socket is mounted in the housing so that it may move toward and away from the open end of the housing but is constantly urged away from such open end. Such mounting means, in the embodiment shown, takes the form of two diametrically opposed laterally projecting ears 18 which are provided with holes 20 extending parallel to the axis of the housing. Through the hole in each ear 18 there extends the headed stud 22 which is threadedly mounted in the thickened portion 24 at the rear end of the housing. A coil compression spring 26 is provided around each stud 22 between the head thereof and the forward face of ear 18, so that the socket 16 is constantly urged to the left in Figures 1 and 3.

The outer, forward, end of the housing is flared somewhat and is thickened, as shown at 28. The opening at the end of such flared portion of the housing is made of a diameter approximating the greatest diameter, and preferably at least slightly greater than the greatest diameter, of the bulb 14. The bulb 14 shown is of the conventional type in which the diameter of the glass sheath increases from a point somewhat forward of its rear, contact, end to a maximum at a zone only slightly to the rear of its forward, lens, end.

The housing is provided with a sealing means between its forward end and the sheath of the lamp bulb at a zone 34 at the rear of, but closely

adjacent to, the zone of greatest diameter of the bulb. Such sealing means is provided by a circumferential, inwardly facing, groove 30 in the housing, in which is positioned an annular sealing member 32, the inner face of which engages the lamp bulb at the circumferential zone 34 and effects a seal therewith. Although any relatively soft and somewhat resilient material which is adequately heat resistant may be employed satisfactorily for member 32, it is preferred to make such member of long fibered asbestos without any bonding medium because of the weather resistance and ease of forming of such material. Member 32 may be formed in situ by thrusting such asbestos into the groove so as to build up the seal member to a height such that it extends inwardly of the housing. Preferably groove 30 is made with somewhat roughened side walls so that the sealing member will be firmly retained therein by interlocking therewith.

In Figure 5 such side walls of groove 30 are shown roughened in an exaggerated degree, for purposes of illustration. Ordinarily, it will be sufficient to form such groove during the casting of the housing 2, which is preferably made of metal, by employing a destructible sand core which will provide side walls in the groove of adequate roughness. If desired, however, the side walls of the core may be intentionally roughened to produce a corresponding added roughness or irregularity to the sides of groove 30.

The length of the housing 2 between the socket 16 and the sealing means is so chosen with respect to the length of the lamp bulb between its rear, contact, end and the sealing means engaging zone 34 that when the bulb is screwed into the socket in the position shown in Figure 3 it is subjected to tension between the socket and the sealing means. As a result a tight seal is maintained between the sealing means and the lamp bulb. In the embodiment shown in Figure 3 the dimensions of the housing are so chosen that the lamp socket has been pulled somewhat toward the opening in the housing against the action of springs 26, thereby insuring constant pressure between the lamp bulb sheath and the sealing means in spite of dimensional changes in the housing and/or lamp bulb occasioned by changes in their temperature. Such mounting of the lamp bulb also cushions it against mechanical shock, since sealing means 32 does not transmit vibrations or shocks very well from the housing to the bulb.

In the design of the floodlight shown, the lamp bulb is entirely within the housing with the exception of its forward, lens, portion. A sufficient amount of the bulb is exposed, however, so that one may grasp the outer edges of the lens portion and unscrew the bulb from the socket, if it is desired to remove the bulb.

Although I have described and illustrated a preferred embodiment of the floodlight of my invention, it is to be understood that such described embodiment is illustrative only, and that the invention is capable of considerable variation as to details.

I claim as new the following:

1. A floodlight comprising an elongated housing substantially closed at all but its front end, the housing having an opening at its front end, a screw-type socket mounted in the rear end of the housing facing the opening in the housing, the socket mounting means being so constructed and arranged as to allow the socket to move toward and away from the opening, means urging the socket away from the opening, a sealed unitary light producing and reflecting lamp bulb mounted in the socket, the bulb increasing in diameter, toward its outer lens end, the front opening of the housing having a diameter approximating the diameter of the outer end of the lamp bulb, the housing having an inwardly facing circumferentially extending sealing means thereon near the opening, the sealing means having its inner diameter somewhat smaller than that of the lamp bulb at its outer end, the length of the housing between the socket and the sealing means being such as to place the bulb in tension between the socket and the sealing means when the bulb is so mounted in the socket as to make electrical connection therewith.

2. A floodlight comprising an elongated housing substantially closed at all but its front end, the housing having an opening at its front end, a screw-type socket mounted in the rear end of the housing facing the opening in the housing, the socket mounting means being so constructed and arranged as to allow the socket to move toward and away from the opening, means urging the socket away from the opening, a sealed unitary light producing and reflecting lamp bulb mounted in the socket, the bulb increasing in diameter toward its outer lens end, the front opening of the housing having a diameter approximating the diameter of the outer end of the lamp bulb, the housing having an inwardly facing circumferentially extending sealing means thereon near the opening, the sealing means having its inner diameter somewhat smaller than that of the lamp bulb at its outer end, such sealing means comprising a substantially continuous inwardly facing groove in the housing near the opening therein and an annulus of soft packing material retained in such groove, the inner surface of the packing material projecting inwardly of the housing and adapted to engage a lamp bulb mounted in such housing to effect a seal therewith, the length of the housing between the socket and the sealing means being such as to place the bulb in tension between the socket and the sealing means when the bulb is so mounted in the socket as to make electrical connection therewith.

3. A floodlight comprising an elongated housing the exterior of which is substantially in the form of a solid of revolution, said housing being substantially closed at all but its front end, the housing having an opening at its front end, a screw-type socket mounted in the rear end of the housing facing the opening in the housing, the socket mounting means being so constructed and arranged as to follow the socket to move toward and away from the opening, means urging the socket away from the opening, a sealed unitary light producing and reflecting lamp bulb mounted in the socket, the bulb increasing in diameter toward its outer lens end, the front opening of the housing having a diameter approximating the diameter of the outer end of the lamp bulb, the housing having an inwardly facing circumferentially extending sealing means thereon near the opening, the sealing means having its inner diameter somewhat smaller than that of the lamp bulb at its outer end, such sealing means comprising a continuous inwardly facing groove in the housing near the opening therein, the sidewalls of such groove being rough, and an annulus of soft fibrous resilient packing material firmly retained in the groove by being tightly packed

thereinto, the inner surface of the packing material projecting inwardly of the housing and adapted to engage a lamp bulb mounted in such housing to effect a seal therewith, the length of the housing between the socket and the sealing means being such as to place the bulb in tension between the socket and the sealing means when the bulb is so mounted in the socket as to make electrical connection therewith.

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