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2,307,302

LAMP HOUSE

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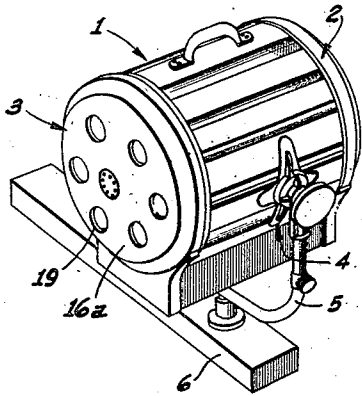


FIG. 1.

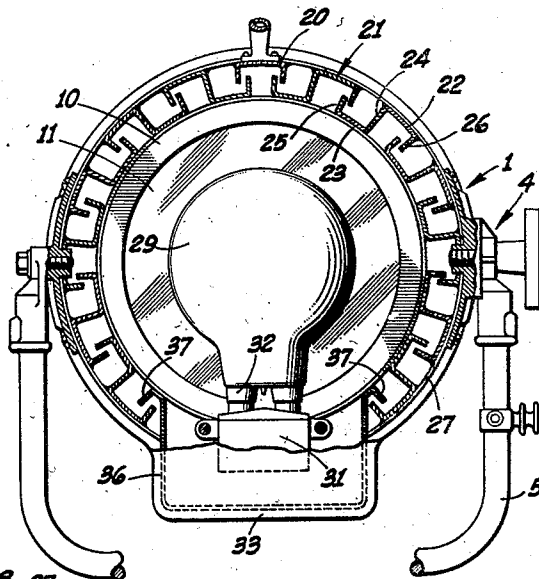
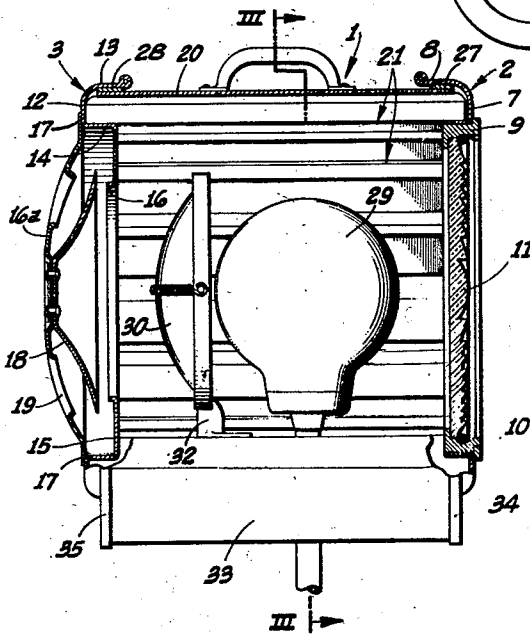


FIG. 2.

FIG. 3.



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LAMP HOUSE

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5 Claims. (Cl. 240-47)

My invention relates to a lamp house construction and has particular reference to a ventilated light-tight housing particularly adapted for use as a spot light.

In high intensity lighting installations such as those used in the motion picture industry to light the motion picture sets it is essential that the high power light sources employed be well ventilated to prevent over-heating of the equipment since oftentimes as much as ten kilowatts of power are dissipated in the light source. Furthermore, the light sources must be completely enclosed in a light-tight housing since stray light such as that escaping through light leaks in the housing produce a spotty and unbalanced lighting of the set, making the satisfactory photographing thereof very difficult, if not impossible.

In addition to providing adequate ventilation and protection against light leaks, the lamp housing must also be weather-proof since, on occasion, they are used out-of-doors in foggy or rainy weather.

The present invention is directed to the provision of a lamp housing which fulfills the above noted requirements and which is at the same time of simple and inexpensive construction.

It is, therefore, an object of my invention to provide a lamp housing which includes a shell formed of a plurality of spaced parallelly extending members, each of which includes a portion disposed in spaced overlapping relation to a complementary portion of adjacent members to prevent the escape of light and the entry of water and to provide for free circulation of air.

It is also an object of my invention to provide a lamp housing of the character set forth in the preceding paragraph in which the parallelly extending members are substantially S-shaped and disposed in interlocking relation to each other.

It is an additional object of my invention to provide a lamp housing of the character set forth in the preceding paragraphs which includes a cylindrical shell formed of a plurality of axially extending members spaced from each other, each of said members including two circumferentially extending portions, one disposed inwardly of the other and in a position to extend across a gap between the outer portions of adjacent members.

It is a still further object of my invention to provide a housing construction of the character set forth in the preceding paragraphs in which the ends of each member are secured to a pair

of circular assembly straps and in which the assembly straps are carried by housing end members.

Other objects and advantages of my invention will be apparent from a study of the following specifications, read in connection with the accompanying drawing, wherein:

Fig. 1 is a perspective view illustrating the appearance of the preferred form of my invention;

Fig. 2 is a vertical longitudinal sectional view of the housing illustrated in Fig. 1; and

Fig. 3 is a cross sectional view taken substantially along the line III-III of Fig. 2.

Referring to the drawing, I have illustrated the preferred embodiment of my invention in Fig. 1 as comprising a cylindrical housing shell 1 carrying front and rear end caps 2 and 3. If desired, the housing may be supported by means of trunnion constructions 4 carried on the ends of the arms of a U-shaped yoke member 5 permitting mounting of the lamp upon a suitable supporting structure such as a light balcony rail member 6.

As illustrated in Fig. 2, the front cap member 2 is preferably circular in form including an annular flange portion 7 from which is extended an outer axial flange 8 and an inner axial flange 9. The flange 9 provides a support for a lens ring 10 within which is mounted a suitable control lens 11. The rear end cap 3 is similar in form and shape to the front end cap 2 in that it includes an annular portion 12 carrying an outer axially extending flange 13 and an inner axially extending flange 14.

The inner axial flange 14 carries an annular flange portion 15 which defines a rear ventilating opening 16. Loss of light through the opening 16 is prevented by employing a rear cover member 16a suitably secured as at 17 to the flange portions 12 and carrying an inner baffle member 18 serving to obscure and prevent light from escaping through ventilation openings 19 formed in the cover 16a.

The construction of the cylindrical shell portion 1 is best illustrated in Fig. 3 as comprising a single channel member 20 disposed with the legs thereof faced inwardly toward the interior of the housing and a plurality of substantially S-shaped channel members 21 disposed in spaced relation to each other and extending about the circumference of the cap members 2 and 3 to define a cylindrical housing shell.

Each of the S-shaped members 21 includes an outer circumferentially extending portion 22 and

an inner circumferentially extending portion 23 interconnected with each other as by means of a central radially extending leg or web 24. Preferably each of the circumferentially extending portions 22 and 23 carries oppositely directed radial leg portions 25 and 26. Each of these members is spaced from each other but interlocked in such manner that the outwardly extending leg portions 25 of each of the members 21 is disposed between the leg portion 26 and the central portion 24 of the next adjacent member. This positioning of the members 21 also disposes the inwardly extending leg portion 26 between the central portion 24 and the outwardly extending leg portion 25 of the next adjacent member 21.

It will be noted that the inner circumferentially extending portions 23 serve as light trapping baffles in that they extend across the gap between the outer circumferentially extending portions 22 of adjacent members 21 and that, in like manner, the outer circumferentially extending portions 22 serve to prevent the escape of light by extending across the gap between the inner circumferentially extending portions 23 of adjacent members 21.

Each of these members is held in the above described desired relative positions as by securing the outer surface 22 of each of its ends to assembly straps 27 and 28 as by means of spot welding or riveting. Thus, the members 20 and 21 may all be assembled into a unit structure by means of the straps 27 and 28 prior to the incorporation of the cylindrical shell 1 into the lamp house proper.

After the assembly of members 20 and 21 is manufactured, the same is formed into a cylindrical form such as is illustrated in Fig. 3 and the end caps 2 and 3 are placed thereover. The radial spacing between the flanges 8 and 9 and between the flanges 13 and 14 is made substantially equal to the radial thickness measured from the inner surface of the inner portion 23 to the outer surface of the assembly straps 27 and 28, whereby the cylindrical shell assembly is closely received within the annular channel defined by the pairs of flanges 8-9 and 13-14. The entire assembly may be locked into a single rigid structure by securing the assembly straps 27 and 28 to the outer flanges 8 and 13, respectively, as by means of rivets or spot welding.

Attention is directed to the fact that the form of construction above described provides for a large amount of free air passageway between the interior and the exterior of the housing so that a free circulation of air is obtained around a light source 29 illustrated in the figures as comprising an incandescent lamp. Thus, lamps of extremely high wattage; i. e., ten kilowatts or over may be mounted within a relatively small housing and yet maintained at a satisfactory low operating temperature.

Attention is further directed to the fact that the escape of light from the housing other than through the control lens 11 is positively prevented since some part of the housing construction serves as a light trapping baffle over the various apertures through which air is admitted to the interior of the housing.

It will be noted also that the housing is entirely weather-proof. Any water tending to enter through the gaps between adjacent members 21 is caught by the inner circumferentially extending baffle portions 23 and since these portions are flanked on either side by the radially extending legs 24 and 25, these portions serve as troughs to convey the water to one end or the other of the

lamp housing, dependent upon the inclination of the axis of the housing from the horizontal. Suitably positioned drain openings provided in the cap members 2 and 3, but not shown in the accompanying drawing, will serve to convey the water caught by the members 21 to the exterior of the housing.

The light source 29 and a reflector 30 therefor are preferably mounted upon suitable supporting structures 31 and 32, respectively, which supporting structures may be carried within a lower housing member 33 secured to the under side of the cylindrical shell 1. The lower housing 33 may include end plate portions 34 and 35 formed integrally with or attached to the end caps 2 and 3, respectively. The end plates 34 and 35 carry a sheet metal housing wall member 36 which is extended across the bottom of the housing 33 and upwardly along either side thereof as is illustrated in Fig. 3, the innermost ends of the sheet metal member 36 being turned outwardly as indicated at 37 to comprise a light trapping baffle extended between the lowermost ones of the members 21 on either side of the housing shell 1.

From the foregoing it will be observed that I have provided a lamp house which is simple and inexpensive in construction and which provides for a great amount of air passage space, whereby ample ventilation of high intensity light source is obtained.

It will also be noted that the housing construction is entirely weather-proof permitting the lamp to be used out-doors as well as in-doors.

While I have shown and described the preferred embodiment of my invention, I do not desire to be limited to any of the details of construction shown or described herein, except as defined in the appended claims.

I claim:

1. In a lamp house, the combination of: a disk-like rear end cap; a ring-like front end cap for supporting a light controlling lens; and a plurality of shell members extending axially between said end caps to define a cylindrical housing shell holding said end caps in axial spaced relation to each other, each of said shell members having substantially an S-shaped cross section including an outer circumferentially extending portion and an inner circumferentially extending portion spaced inwardly of said shell from said outer portion and being off-set circumferentially relative thereto, adjacent edges of said outer and inner portions being interconnected by an integral radially extending web, and the outer and inner portions having also oppositely directed radially disposed legs extending from the non-adjacent edges of said portions, said shell members being spaced circumferentially from each other in such relative positions that the inwardly extending leg of one member is received between the web and outwardly extending leg of an adjacent member and such that the outwardly extending leg is received between the web and the inwardly extending leg of another adjacent member.

2. In a lamp house, the combination of: a disk-like rear end cap; a ring-like front end cap for supporting a light controlling lens; and a plurality of shell members extending axially between said end caps to define a cylindrical housing shell holding said end caps in axial spaced relation to each other, each of said shell members having substantially an S-shaped cross section including an outer circumferentially extending portion and an inner circumferentially extending portion spaced inwardly of said shell

from said outer portion, said portions extending in opposite directions from a radially extending web formed integrally therewith, said shell members being spaced circumferentially from each other in such relative positions that the inner portion of one member extends across the gap between the outer portions of that member and an adjacent member.

3. In a lamp housing, the combination of: a disk-like rear end cap; a ring-like front end cap for supporting a light controlling lens, both of said end caps including outer and inner circumferentially extending axial flanges spaced from each other to define an annular recess of predetermined width; and a plurality of shell members extending axially between said end caps to define a cylindrical housing shell holding said end caps in axial spaced relation to each other, each of said shell members having substantially an S-shaped cross section including an outer circumferentially extending portion and an inner circumferentially extending portion spaced inwardly of said shell from said outer portion a distance equal to said predetermined width of said annular recess, said inner portion being offset circumferentially relative thereto, adjacent edges of said outer and inner portions being interconnected by an integral radially extending web, said shell members each having their ends received in said annular recess and being secured

to said caps in such circumferentially spaced relation to each other that the inner portion of each member extends across the gap between the outer portions of that member and an adjacent member.

4. In a lamp housing, a cylindrical housing shell comprising a plurality of spaced apart axially extending shell members each having substantially an S-shaped cross section and being disposed in spaced interlocking relation to each other with the inwardly extending foot of one S-shape being received in the outwardly facing loop of an adjacent S-shape and spaced from the member defining said S-shape, whereby free circulation of air is permitted between adjacent members while said interlocking relation prevents the escape of light from said housing.

5. In a lamp housing, a cylindrical housing shell comprising a plurality of axially extending shell members each having substantially an S-shaped cross section and being disposed in interlocking relation to each other with the inwardly extending foot of one S-shape being received in the outwardly facing loop of an adjacent S-shape, the opposite ends of each of said shell members being secured to a pair of cylindrical strap members for securing said shell members in said interlocking relation.

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