



# UNITED STATES PATENT OFFICE

2,381,292

## CANOPY FOR LUMINAIRES

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Application February 5, 1943, Serial No. 474,807

7 Claims. (Cl. 240—25)

My invention relates, generally, to luminaires and, more particularly, to waterproof canopies for outdoor luminaires such as those commonly used for street and highway lighting. Luminaires for street and highway lighting are subjected to severe weather conditions, making it necessary to guard against excessive moisture accumulations therein. These luminaires generally comprise a canopy or cap to which the reflector and globe assembly are attached in a watertight manner. The assembly is usually supported by a tubular member in the form of a pipe bracket or the like through which the lead-in conductors extend to the lamp socket mounted within the canopy.

It has been found that it is very difficult, if not impossible to make an assembly of this kind watertight to the extent that moisture will not enter the canopy through the support bracket. Moisture may enter through the threaded connection between the end of the bracket and the top of the canopy, through the inside of the bracket, or moisture may condense on the conductor leads and the inside walls of the bracket. Considerable field trouble has been caused from such moisture accumulation within the canopy regardless of the use of gaskets or other sealing materials to make the assembly as waterproof as possible. This is particularly true of luminaires using large lamps for the reason that a drop of water or particles of moisture coming into contact with the hot lamp will cause it to explode.

Various expedients have been used to overcome this difficulty but they have not been successful for the reason that they do not effectively protect the vital parts of the luminaire from moisture accumulation.

Accordingly, it is an object of my invention to provide a canopy for outdoor luminaires which may be successfully used for rigid mounting and inner wiring of the luminaire and which shall function to effectively exclude moisture from the socket and lamp region of the luminaire.

A more specific object of my invention is to provide a canopy in which the supporting and socket containing portions thereof are so isolated as to prevent the entrance of moisture into the socket containing portion.

Another object of my invention is to provide a canopy of the character described comprising upper and lower sections or compartments with provision for draining any accumulation of moisture from the upper compartment without its coming into contact with the lamp or lamp socket in the lower compartment.

Another object of my invention is to provide a

canopy comprised of upper and lower inverted cup-shaped elements secured together in loosely fitting overlapped relation, the upper one of which, together with the top of the lower, provides an upper compartment for receiving and draining away any moisture which may enter through or around the supporting bracket and the lower one of which provides a lower waterproof compartment for mounting the lamp socket.

A further object of my invention is to provide a canopy which is so constructed that the lamp supported thereunder is protected against excessive moisture regardless of the amount of moisture in the air and also the amount of moisture which may enter the canopy through the support.

These and other objects of my invention will become more apparent from the following description when read in conjunction with the drawing, wherein:

Figure 1 is a side elevational view of a conventional outdoor luminaire showing how the canopy of my invention may be used.

Fig. 2 is an enlarged cut away view in elevation of the canopy shown in Fig. 1, showing the structural details and arrangement of parts, and

Fig. 3 is a sectional view taken along line III—III of Fig. 2 showing the relation of the two parts or sections of the canopy.

Referring to Fig. 1 the luminaire shown is a typical outdoor luminaire comprising a globe 10, reflector 11 and canopy 12 assembled in a well known manner to provide an enclosed unit.

Referring to Fig. 2 which shows a preferred embodiment of my invention, the canopy 12, preferably of two-piece construction comprised of a lower inverted cup-shaped member 13 and an upper inverted cup-shaped member 14 secured thereto in overlapping relation, as shown. The object of this construction is to provide a canopy having upper and lower isolated compartments.

The lower member 13 is utilized to support the reflector 11 and lamp socket 15 and lamp 16 in the usual manner. The upper member 14 is detachably secured to the upper edge of the lower member and is provided with a threaded top opening 17 to receive the end of the pipe bracket 18 and lead-in conductors 19.

In this instance, the lead-in conductors 19 are extended through the canopy to the terminals of the lamp socket 15 by means of insulated members 21 and the short leads 22. The top portion 23 of the lower member is provided with a pair of openings 24 for receiving the terminal members 21 as shown. These openings are surrounded

by upstanding flange portions 25 upon which the insulator elements 26 of the terminal members rest. As shown in detail in Fig. 2, the stud portions 27 of the terminal members extend through the openings 24 and the terminal members are secured to the top portion 23 by means of the nuts 28. Suitable waterproof washers 29 and 30 are utilized in order to provide a waterproof joint between the insulators and the top portion 23.

As will be readily understood, this arrangement provides a lower compartment for housing the lamp socket 15 which is waterproof and which is also completely isolated from the upper compartment formed by the upper member 14.

In order to provide for draining any accumulation of moisture from the upper compartment, the upper and lower members 14 and 13 are so connected together as to provide drainage spaces 31 therebetween as best shown in Fig. 3.

The upper edge of the lower member 13 is preferably provided with a circumferential recess 32 which receives the lower edge of the upper member 14 in overlapping relation. The upper member 14 is provided with spaced internal lug portions 33 which engage the vertical wall of the recess 32 and space the inner wall 34 of the upper member therefrom to such extent as to provide an adequate drainage opening.

As shown in Fig. 2, the bottom portion 35 of the recess 32 may be sloped downwardly and the lower edge of the upper member 14 sloped in the same manner so that they may be spaced apart to form a circumferentially extending slot 36 communicating with the vertical spaces 31.

The upper and lower members may be secured together in any suitable manner such, for example, as by means of the tap screws 37 which extend through suitable transverse openings in the rim of the upper member 14 and engage threaded openings in the upper edge of the lower member 13.

In assembling the canopy for use, the lower member 13 is removed in order that the lead-in conductors 19 may be attached to the terminal members 21 and then the lower member is secured to the upper member by means of the tap screws 37.

In view of the foregoing description, it will be apparent that my invention provides a canopy which is waterproof in the sense that moisture accumulating therein cannot come into contact with the lamp socket or the lamp supported thereby. Any moisture accumulation through the threaded connection between the end of the bracket and the top of the canopy, through the bracket or the conductor leads is caught in the upper compartment of the canopy which is completely isolated from the lower compartment and effectively drained therefrom to the outside of the luminaire. The construction is such that high wattage lamps are protected independently of the amount of moisture in the air or which may enter the canopy through the supporting bracket or otherwise.

The drainage openings or spaces are of such shape and size that they cannot become plugged up and cease to function.

Any tendency on the part of air currents set up by heat generated by the lamp to draw dirt and other foreign matter into the canopy, cannot result in any harm to the electrical connections for the reason that the upper and lower compartments of the canopy are completely isolated.

Another advantage of this construction is that the drainage openings between the upper and lower sections provides for an adequate circulation of air for cooling purposes.

Although I have described a specific embodiment of my invention, it will be apparent that various changes may be made in the detailed construction without departing from the principles of the invention as defined in the appended claims.

I claim as my invention:

1. A canopy for luminaires comprising, a lower inverted cup-shaped member for mounting a lamp socket, the top portion of said member having a plurality of openings therein and a downwardly and outwardly sloping upper edge portion forming a circumferential recess, an insulated terminal member mounted in each of said openings in sealed relation to the top portion, an upper inverted cup-shaped member attached to the lower member over the insulated terminals, said upper member having a threaded opening therein to receive a mounting bracket and having its lower rim disposed in said circumferential recess in overlapping and spaced relation both radially and axially with the upper edge of the lower member to provide elongated circumferentially extending drainage openings therebetween, said drainage openings extending throughout a major portion of the circumference of the upper cup-shaped member, and means detachably securing the upper and lower cup-shaped members together.

2. A canopy for luminaires comprising, a lower inverted cup-shaped member having an integral top portion for mounting a lamp socket and an upper inverted cup-shaped member positioned thereon with its lower edge in overlapping relation with the upper edge of the lower member, said upper cup-shaped member having a plurality of spaced integral lug portions formed therein adjacent its lower edge disposed to engage the outer wall of the upper end of the lower cup-shaped member, means extending transversely through the overlapping portions of said members to attach them together, the joint between said members having circumferentially extending openings through which any moisture accumulating in the upper member may drain to the outside, and a pair of terminal members mounted upon and extending through the top portion of the lower member for connecting lead-in conductors to the socket, said terminal members being mounted on said top portion in an insulated and waterproof manner, thereby to exclude any moisture which may accumulate in the upper member from the interior of the lower member.

3. A canopy for outdoor luminaires, comprising a pair of inverted cup-shaped members attached together one above the other in partially telescoping relation, the lower member having openings in the top thereof for terminal members and means therein for mounting a lamp socket, the upper member having an opening to receive lead-in conductors, terminal members mounted in said openings in the top of the lower member and attached thereto in watertight relation, said upper and lower members being spaced apart circumferentially in both radial and axial directions at the joint therebetween to provide elongated drainage openings having connected vertical and downwardly sloping portions through which accumulated moisture in the upper member may drain off without coming into

contact with the lamp socket or a lamp supported thereby.

4. A canopy for luminaires comprising, an inverted cup-shaped lower member for housing a lamp socket and having a plurality of openings in the top thereof and a circumferential recess adjacent its upper edge having a downwardly and outwardly sloping bottom portion, an inverted cup-shaped upper member mounted thereon in partially telescoping relation with its lower end disposed in said recess to provide an upper compartment, said lower end of the upper cup-shaped member also having a downwardly and outwardly sloping surface of generally the same slope as the bottom of the circumferential recess adjacent the upper edge of the lower cup-shaped member, means for detachably securing said upper and lower member together, said members being joined in both radial and axial spaced relation at their telescoping portions to provide drainage spaces therebetween at the bottom of the upper compartment, and a plurality of insulated terminal members mounted in the upper compartment on the top of the lower cup-shaped member and extending through the top openings therein, said terminal members being sealed in watertight relation to the top of the lower member.

5. A canopy for luminaires comprising, a lower inverted cup-shaped member for housing the lamp socket, said member having a pair of terminal receiving openings in the top thereof and a circumferential recess adjacent its upper edge, an upper cup-shaped member mounted upon said lower member in inverted relation with its lower edge disposed in said recess and having a threaded opening in the top thereof to receive the end of a tubular mounting bracket, the inside diameter of said upper member being greater at spaced intervals than the outside diameter of the upper end of the lower member to provide drainage openings for moisture, means attaching the upper and lower members together to maintain the lower edge of the upper member and the bottom of the said recess in spaced relation, and terminal members mounted within the openings in the top of the lower member in sealed waterproof relation therewith.

6. A waterproof canopy for luminaires of the pendant type wherein the canopy supports the lamp socket and reflector-globe assembly comprising, a lower inverted cup-shaped member

for housing a lamp socket having a pair of openings in its top portion surrounded by upstanding flange portions, an insulated terminal member mounted in each of said openings upon the flange portions with waterproof gaskets interposed between abutting portions of the top portion and terminal member to provide a water-tight joint therebetween, said lower member having a circumferential recess adjacent its upper edge, an upper inverted cup-shaped member attached to the upper edge of the lower member over the terminal members with its lower edge disposed in said recess in overlapping relation with the top portion of the lower member, the lower edge of the upper member being spaced from the adjacent portions of the lower member to provide elongated circumferential drainage openings therebetween through which any moisture accumulating in the upper member may drain to the outside.

7. A waterproof canopy for luminaires of the pendant type wherein the canopy supports the lamp socket and reflector-globe assembly comprising, a lower inverted cup-shaped member for housing a lamp socket having a pair of openings in its top portion surrounded by upstanding flange portions, an insulated terminal member mounted in each of said openings upon the flange portions with waterproof gaskets interposed between abutting portions of the top portion and terminal member to provide a watertight joint therebetween, said lower member having a circumferential recess in its upper edge with spaced apart transverse threaded openings therein to receive tap screws, an upper inverted cup-shaped member mounted upon the lower member with its lower edge disposed in said recess in overlapping relation with the top portion, said upper member having spaced internal lug portions with openings therethrough opposite the transverse threaded openings in the lower member, said lug portions serving to space the inner wall of the upper member from the overlapped portion of the lower member to provide circumferentially extending openings therebetween and tap screws disposed in said openings in the upper and lower members to detachably secure said members together with the lower edge of the upper member in spaced relation to the bottom of the recess in the lower member.

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