Aug. 26, 1941. H. J. FLAHERTY 2,253,972

LUMINAIRE

Filed Dec. 15, 1939

Fig. 1.

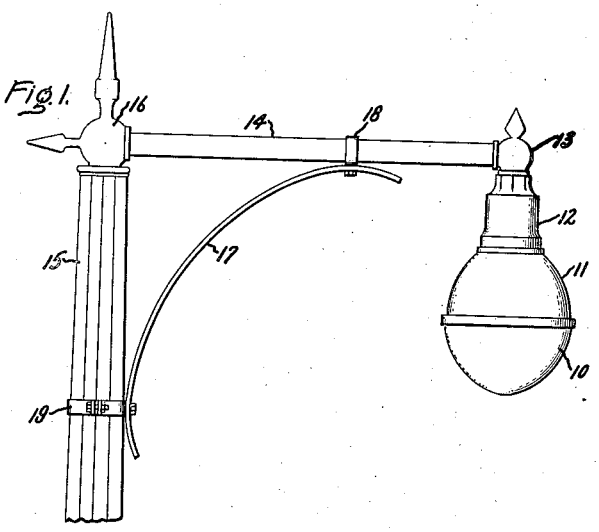
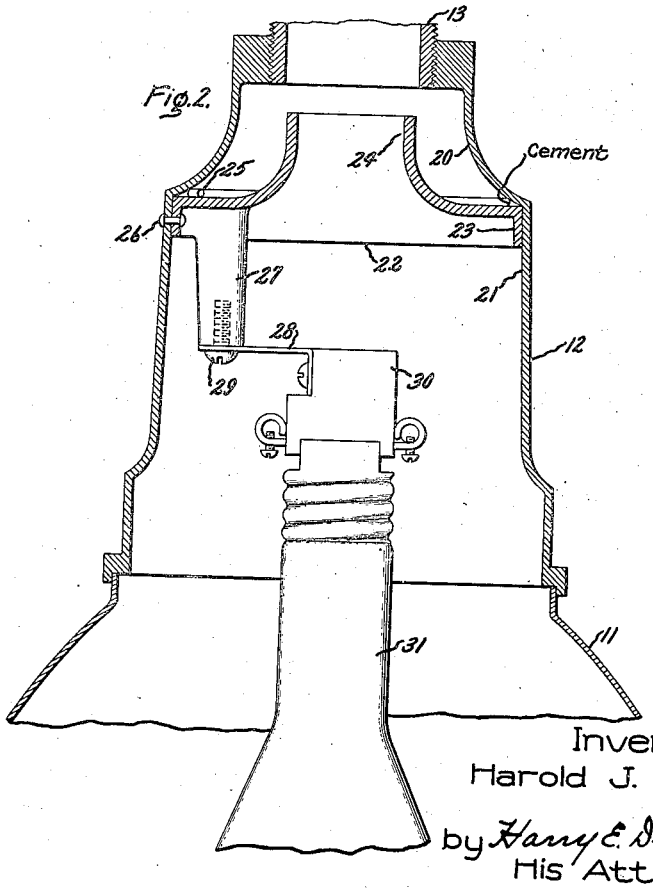


Fig. 2.



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UNITED STATES PATENT OFFICE

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LUMINAIRE

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2 Claims. (Cl. 240—25)

My invention relates to luminaires, and more particularly to outdoor luminaires.

Luminaires exposed to weather conditions and used for street lighting and highway lighting purposes are generally suspended from a tubular supporting structure through which the conductors for the light source are brought into the luminaire. For the purpose of keeping out water, dust, and insects, the luminaire is enclosed as far as possible. It is impossible, however, to close the luminaire against the tubular support through which the conducting cable enters the luminaire and considerable trouble is here encountered because of water entering the luminaire at this point.

Tubular supports are, almost without exception, made of metal upon which water vapors condense. The vapor gets into the support through openings which develop during the life of the supports and against which there is no practical safeguard. The change of temperature within the luminaire between periods of operation sets up a circulation of air out of which moisture condenses on the inner surfaces of the tubular support and gathers in droplets which tend to move toward the luminaire. If a drop of this moisture falls on the lamp, or upon the globe, during operation of the luminaire, the lamp glass, or globe, cracks and is destroyed.

The primary object of my invention is to provide an improved construction of luminaire to prevent water entering the luminaire through its tubular support without interfering with the desired interior cables or wiring thereof.

For a better understanding of my invention, together with other and further objects thereof, reference is had to the following description taken in connection with the accompanying drawing, and its scope will be pointed out in the appended claims.

In the accompanying drawing, Fig. 1 illustrates a conventional street or highway luminaire with its tubular support, and Fig. 2 is an enlarged cross sectional view of a portion of the luminaire of Fig. 1 illustrating my invention.

Referring to Fig. 1 in detail, the luminaire comprises a globe 10, a reflector housing 11, and a cap 12. The cap 12 is attached to a pipe fitting 13 which joins the luminaire to a horizontal tubular bracket 14. The tubular bracket is joined to a suitable column 15 by another decorative pipe fitting 16. A scroll 17 braces the bracket against the column, being attached to these members respectively by clamps 18 and 19.

Referring to Fig. 2, the cap 12 is illustrated in a cross-sectional view taken through the center thereof. The cap is cylindrical, having a reduced diameter throat portion 20, into the end of which the fitting 13 is threaded. At the joint of the throat portion 20 and the slightly tapered body portion 21 of the cap, a conically shaped member 22 is provided through which the cable for the light source is brought into the cap. The conical member is slightly greater in diameter at its lower end, than the inside of the body 21, so that when the conical member 22 is assembled with the body 21, its lower end which is provided with a flange 23 is pressed into position against the wall of 21 and is held, partly by friction, at the line of intersection of the portions 20 and 21 of the cap 12.

The upper end of the conical member 22 is provided with a tubular portion 24, the outside diameter of which is made smaller than the inside diameter of the fitting 13, and is made concentric with it. This difference in diameters between the inside of the pipe fitting 13 and the outside of the tubular portion 24 is made small because it is desired to keep the inside diameter of the tubular portion as nearly as possible the same as the inner diameter of the fitting 13 and thereby minimize the interference with the passage of cable from the fitting through the portion 24 to the cap. The difference is made large enough only to enable the water flowing along the inner surface of the fitting 13 to drop vertically to the outer surface of the conical member 22 to be thereby directed into an annular space formed between the surface of the conical member 22 and the section 20 of the cap 12. An opening 25 is provided in the wall of the member 20, permitting this water to escape. A suitable cement and rivets 26 are used to insure a permanent water-tight joint between the flange 23 and the cylinder 21.

The conical member 22 is provided with a lug 27 projecting downwardly into the cap. A bracket 28 and screw 29 support a socket 30 for an incandescent lamp 31 in line with the axis of the tubular portion 24. The lamp 31 projects into the reflector 11 and constitutes the light source.

This simple arrangement within the luminaire is efficient for the reason that the moisture within the tubular support, or pipe fitting, 13 condenses on the metal surface of the support and not upon the cable which is nearly always at a higher temperature than the support and cools at a slower rate than the support when the luminaire ceases operation. The condensed moisture drops vertically since there are no air currents

to alter its course. Hence the difference between the outside diameter of the tubular portion **24** and the inside diameter of the tubular support need be small; resulting in a minimum of interference with the passage of the cable through the conical member **22** into the luminaire.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a street lighting luminaire including a globe, a reflector housing and a cap joined to each other to form a water-tight enclosure for a light source, the combination of a lamp socket mounted in said cap, a hollow pipe support joined to said cap, and arranged to guide conductors to said socket, a conical member mounted in said cap between said pipe support and said socket, said conical member having an upper opening concentric with the said pipe support and an outside diameter smaller than the diameter of the opening in said pipe support, said member having its lower end in water-tight relationship with said cap, whereby water dripping into said cap from said support falls on the outer surface of said conical member and is thereby diverted into the chamber defined by the conical member and the wall of said cap.

2. In a street lighting luminaire including a globe, a reflector housing and a cap joined to each other to form a water-tight enclosure for a light source, the combination of a lamp socket mounted in said cap, a hollow tubular support joined to said cap and arranged to guide conductors to said socket, a conical member mounted in said cap between said tubular support and said socket, said member being provided with an upper opening concentric with the said tubular support and an outside diameter smaller than the opening in said tubular support, said member having its lower end in water-tight relationship with said cap and said cap having an opening through its wall at the edge of said member whereby water dripping into said cap from said support falls on the outer surface of said conical member and is thereby diverted and drained from said cap.

HAROLD J. FLAHERTY.