March 31, 1942. M. RUGGIERI 2,278,218

CANOPY FOR SUPPORTING LUMINAIRES

Filed Jan. 5, 1940

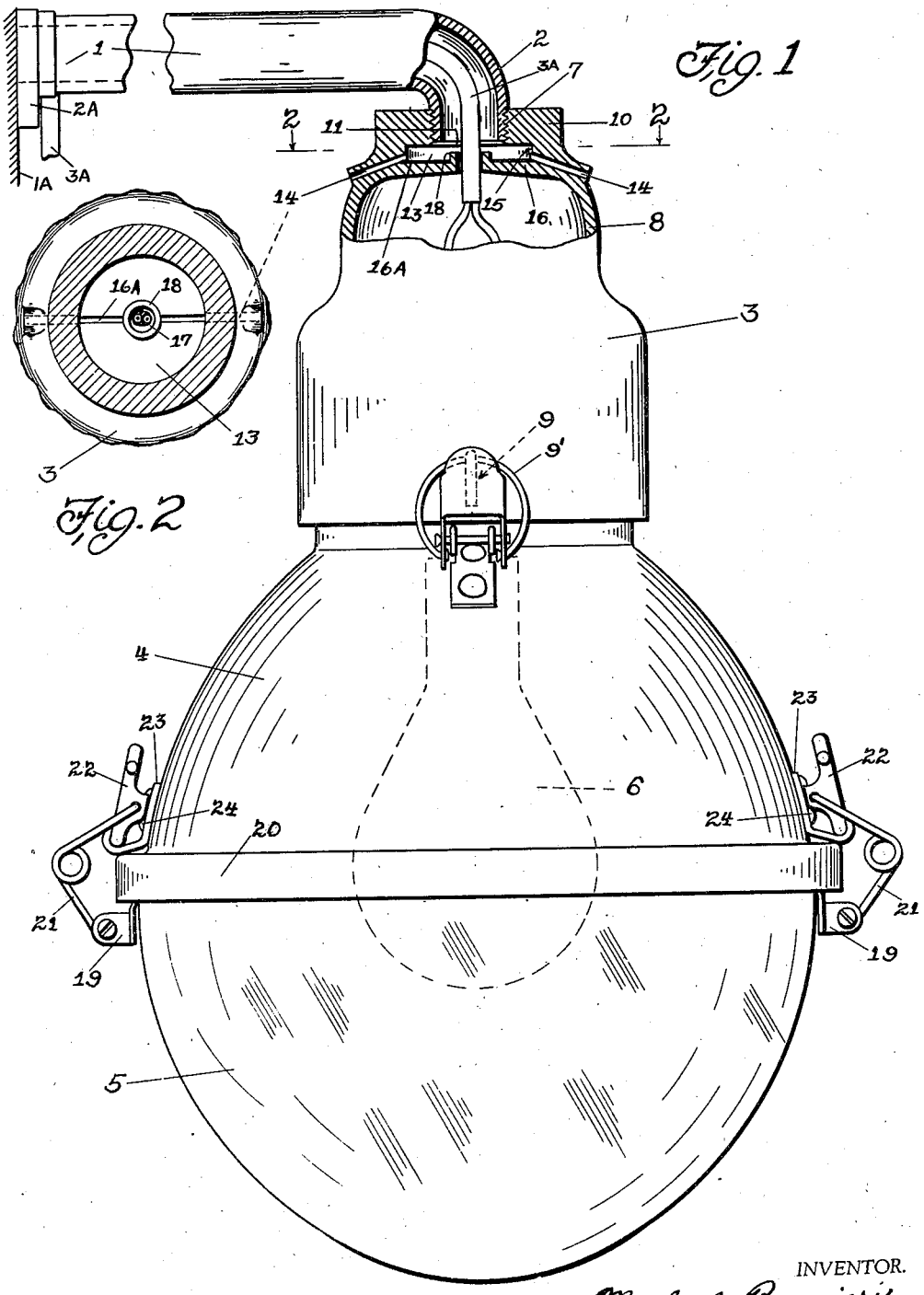

Fig. 1

Fig. 2

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Patented Mar. 31, 1942 2,278,218

UNITED STATES PATENT OFFICE

2,278,218

CANOPY FOR SUPPORTING LUMINAIRES

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Application January 5, 1940, Serial No. 312,505

2 Claims. (Cl. 240—25)

This invention relates to improvements in canopies for supporting luminaires.

Heretofore in certain types of luminaires exposed to extreme changes in weather, frequent failures of the lighting units occurred during or shortly after a period of precipitate weather. It is well known that luminaires of the closed type which are used particularly for street lighting, develop high temperatures on the surface of the lamp within the fixture. During a rainy period, the luminaire "breathes in" a certain amount of moisture which is vaporized by the heat and rises to the top of the luminaire fixture and condenses on relatively cooler portions thereof, forming drops of water heavy enough to cause them to fall upon the light bulb. These drops are cold in comparison to the temperature of the bulb and set up stresses therein which cause the bulb to collapse.

When luminaires are suspended from certain well-known types of brackets, there is a tendency for water to enter the bracket and drain into the luminaire, thereby causing damage to the hot light bulb.

Therefore, it is an object of this invention to provide for a luminaire a canopy which will collect water that enters the luminaire through its supporting bracket or that may be condensed therein and which will direct the water thus collected to the exterior of the canopy, thereby preventing the water from falling upon the relatively hot bulb within the luminaire.

More specifically, it is an object to provide a canopy having a condensation chamber in which water may collect and from which the water may escape by means of a plurality of drain openings to the exterior of the canopy, thereby preventing its contact with a hot bulb beneath the canopy.

Another object is to provide for a canopy a condensation chamber including a plurality of drain openings and a wire-receiving aperture having a barrier preventing water in the condensation chamber from passing through the aperture and causing damage to a bulb below the canopy.

A further object is to provide for a luminaire canopy, a condensate chamber having a fluted bottom adapted to direct condensate to the exterior of the canopy.

In the drawing:

Fig. 1 is a vertical view, partly in section, illustrating a luminaire embodying this invention.

Fig. 2 is a fragmentary sectional view taken on the line 2—2 of Fig. 1.

The drawing discloses a closed type luminaire comprising a supporting tubular bracket 1, a canopy or hood 3, a detachable reflector 4, a glass globe 5 and a light bulb 6 which is secured to the canopy in any well-known manner, not shown.

The supporting tubular bracket 1 is connected to a supporting structure 1A by means of a plate 2A for suspending the luminaire over an area to be illuminated. The bracket further acts as a conduit for electrical line wires 3A and is provided at its depending elbowed end 2 with a threaded portion 7.

The canopy 3 is cast as an integral unit and comprises a shell 8 having a support 9 shown by broken lines exteriorly of the lower end of the shell and to which the detachable reflector 4 is held by means of a pair of toggle latches including a bail member 9'. Detail of this toggle is not given in full since it is in common use and forms no part of this invention. A hexagonal portion 10 is provided at the upper end of the shell 8 for engagement by means of a wrench and is provided with a centrally-located threaded aperture 11 receiving therein the threaded end 2 of the bracket 1.

A cylindrical condensation chamber 13 is disposed within the upper portion of the canopy and below the lower end of the aperture 11. A pair of drain openings or tubular passageways 14 extend in opposite directions outwardly through the wall 15 of the chamber and downwardly at a slight angle relative to a horizontal plane through the chamber.

The base 16 of the chamber 13 is provided with a wire-receiving aperture 17 centrally located therein and disposed in substantially axial alignment with the threaded end of the bracket 1. The aperture places the chamber 13 in communication with the lower portion of the luminaire and is adapted to receive the conductor wires 3A for electrical connection with the light bulb 6. An annular barrier portion or collar 18, surrounding the aperture 17 and positioned in the chamber 13, is integrally cast with the base and is adapted to prevent water from entering the interior of the luminaire. The base is further provided with a pair of drain flutes 16A which extend radially from the collar 18 and terminate in the drain openings 14 as shown.

It is contemplated that the threaded end 7 of the bracket 1 should be only of sufficient length to prevent the end 7 from contacting with the base 16. However, if for any reason the threaded end is longer than contemplated and contacts

the base, the flutes 16A will serve to conduct condensate collecting in the chamber to the holes 14 which will direct such condensate to the exterior of the canopy. It is, of course, understood that to effect this result, it is imperative that the outside diameter of the collar 18 must be less than the inside diameter of the end 7 on the bracket 1, as clearly indicated in the drawing.

The upper edge of the hemispherical glass globe 5 is provided with a pair of supports 19 attached on diametrically opposite sides thereof in any well-known manner, not shown, and now in common use. The globe 5 is secured in firm contact with the depending flanged portion 20 at the lower end of the reflector 4 by means of springs 21 which are hingedly connected to the supports 19 and are provided with latching levers 22 adapted to engage the catch hooks 23 on the reflector 4. While I have shown this globe mounting means in some detail, it will be understood that it forms no part of this invention and may be replaced with any other latching arrangement without departing from the spirit of this invention.

When weather conditions are such that air in the vicinity of the luminaire contains a comparatively large amount of moisture, this moisture-ladened air is drawn into the interior of the luminaire by a "breathing" action of the luminaire due to the expansion and contraction of the air within the luminaire. This variation in the density of the air in the luminaire may result from several causes, one of which may be the heat emanating from the light bulb 6. When heat is emanating from the light bulb, the adjacent air is heated and caused to expand. This expanded air escapes through the drain openings 14, or through the joints between the globe and the reflector and joints between the reflector and the canopy. When the luminaire is electrically disconnected, the unit cools and the air within the unit contracts, thereby causing the air surrounding the luminaire to enter through the openings 14 or other apertures. Excess moisture in the air entering the luminaire will be condensed on any relatively cool surface and ultimately collect in the bottom of the globe 5.

When the luminaire is again electrically connected for operation, the confined air expands and the water previously collected at the bottom of the globe is vaporized by the heat emanating from the light bulb. This vapor rises to the top of the fixture and enters the chamber 13 where it is condensed in the condensation chamber and pipe bracket 1 because of their relatively cooler condition.

The condensate accumulates on the walls of the chamber and the pipe bracket and ultimately flows to the base 16 of the chamber and escapes therefrom through the drain openings 14.

It may be noted that to insure that the water falling from the lower end of the bracket 1 will enter the chamber 13 rather than pass to the interior of the luminaire, the outer diameter of the barrier 18 is less than the inner diameter of the end 7.

It is further noted that during a rainy period water may enter the bracket 1 between the plate 2A and the support 1A. This rain water will follow the walls of the bracket and fall from the depending end 2 of the bracket directly into the chamber 13 from which it then escapes to the exterior of the luminaire through the openings 14.

It will be obvious from the foregoing that if the barrier 18 and holes 14 were not provided, condensate collecting in the pipe bracket 1 and canopy 3 would remain within the luminaire and possibly drop upon the light bulb 6 and under such conditions, the cool condensate would set up stresses in the bulb, when the latter was hot, tending to destroy it.

Therefore, it may be seen that the objects of this invention have been accomplished by providing for a luminaire a canopy having a condensation chamber provided with a plurality of drain openings and a wire-receiving aperture having a water barrier at its chamber end, whereby undesirable water vapor entering the luminaire may be effectively condensed, collected and expelled to the exterior thereof without causing damage to the light bulb below.

I claim:

1. As a new article of manufacture, a canopy for luminaires, said canopy being of a one-piece casting and comprising a shell portion of relatively thin wall formation and a head at the upper end of the shell of increased thickness, said head having a shallow horizontal chamber therein defining top, bottom and side walls, the top wall of the chamber having a central threaded opening therein of less diameter than said chamber, the bottom wall of the chamber being of substantially the same thickness as the shell portion and having a central aperture therein of less diameter than said threaded opening and surrounded by an upstanding short tubular boss within the chamber, said head having radial and downwardly inclined drain passages in the side walls thereof forming communication between said chamber and the exterior of said canopy, the lower sides of the inner ends of the passages being in the plane of the top face of the bottom wall of the chamber.

2. A new article of manufacture as set forth in claim 1, wherein the top face of the bottom wall has radial grooves co-extensive with said drain passages.

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