

Aug. 29, 1967

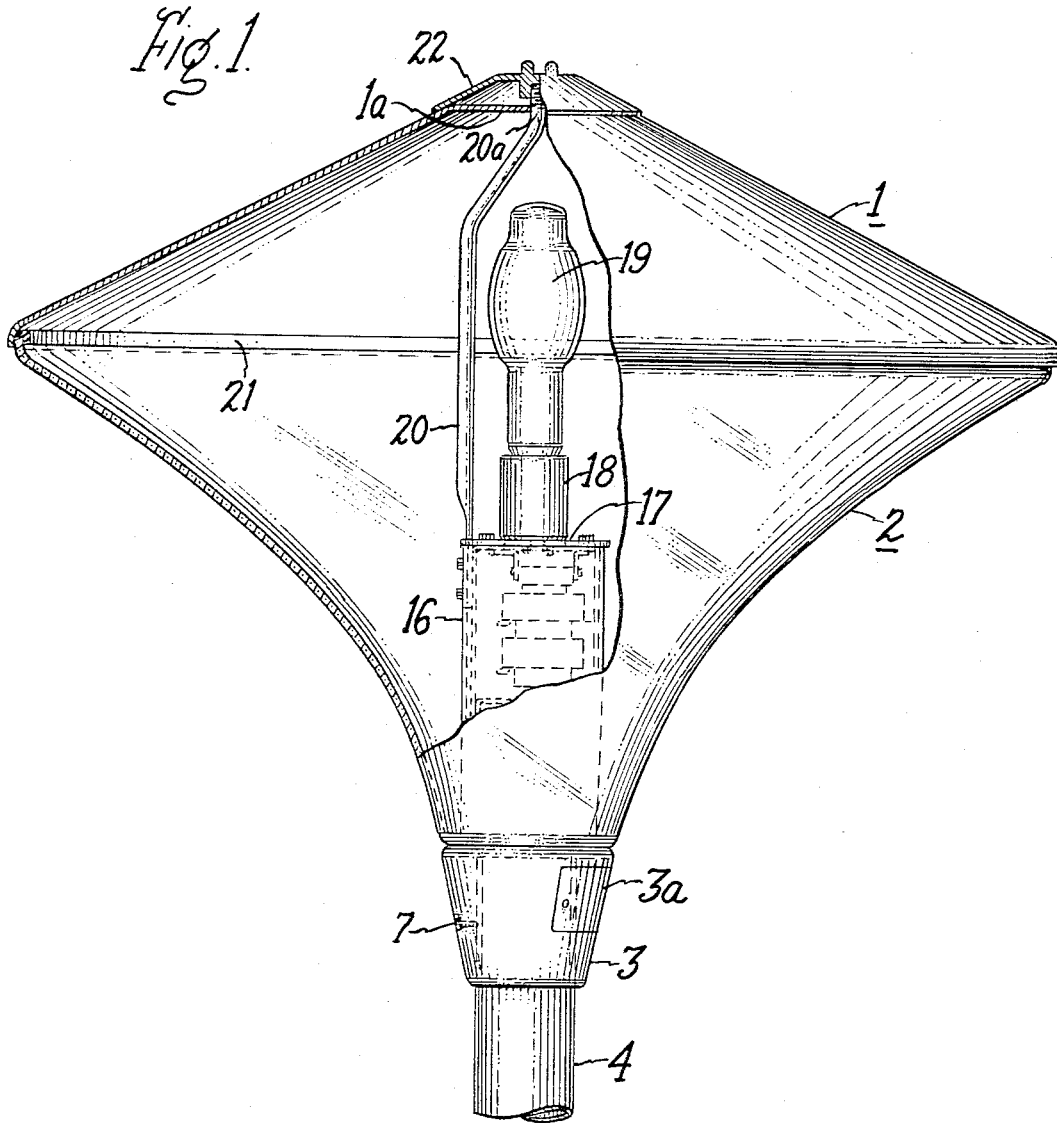
H. P. KELLEY, JR

3,339,065

POST TOP MOUNTED LUMINAIRE HAVING AXIALLY MOUNTED COMPONENTS

Filed Nov. 1, 1965

2 Sheets-Sheet 1



Inventor,
Harold P. Kelley, Jr.
by Sidney Greenberg
His Attorney.

Aug. 29, 1967

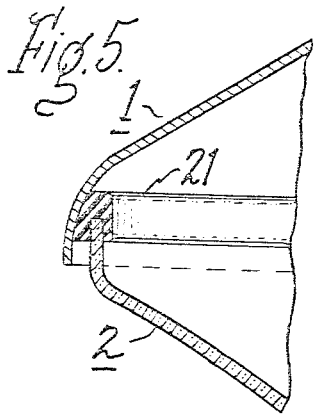
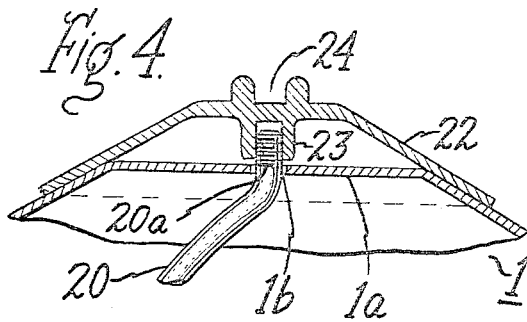
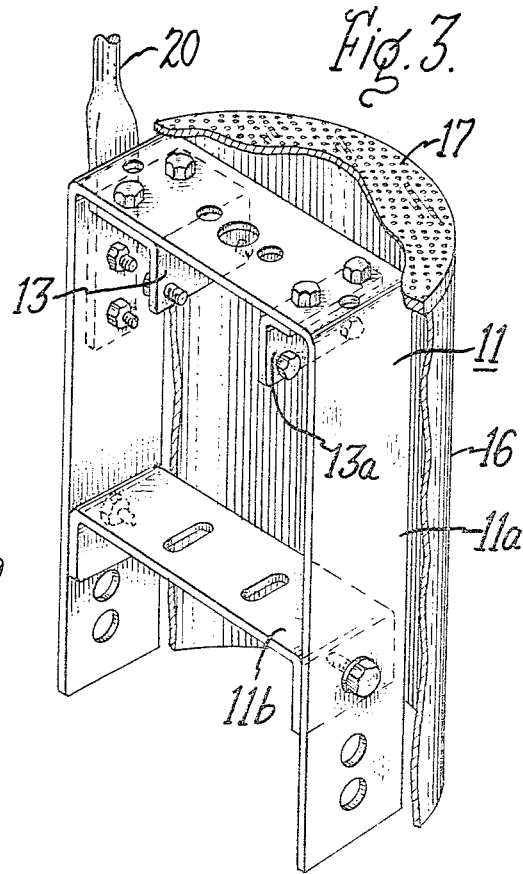
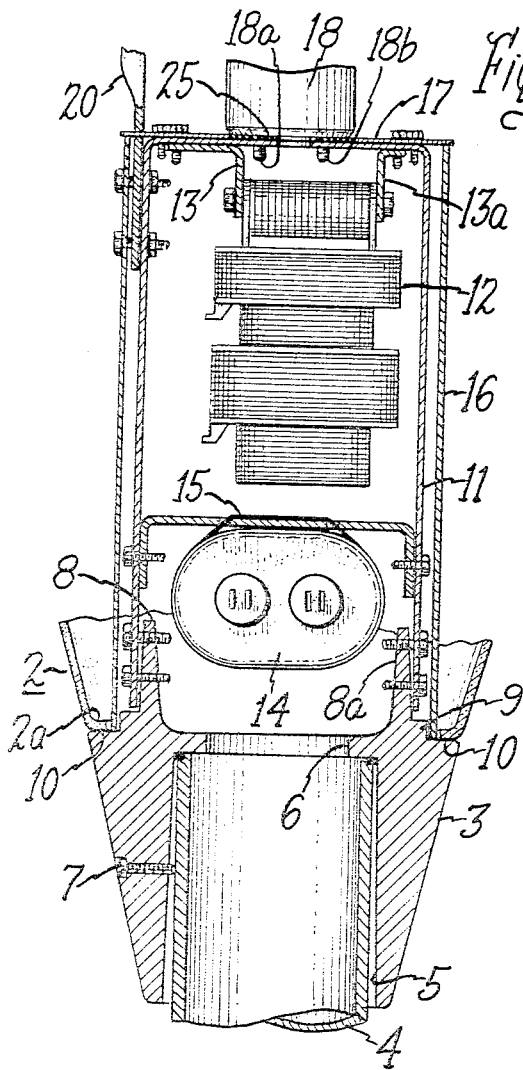
H. P. KELLEY, JR

3,339,065

POST TOP MOUNTED LUMINAIRE HAVING AXIALLY MOUNTED COMPONENTS

Filed Nov. 1, 1965

2 Sheets-Sheet 2



Inventor,
Harold P. Kelley, Jr.
by Sidney Greenberg
His Attorney.

1

2

3,339,065

POST TOP MOUNTED LUMINAIRE HAVING AXIALLY MOUNTED COMPONENTS

Harold P. Kelley, Jr., Henderson, N.C., assignor to General Electric Company, a corporation of New York
 Filed Nov. 1, 1965, Ser. No. 505,798
 5 Claims. (Cl. 240—25)

ABSTRACT OF THE DISCLOSURE

Post top luminaire comprises a frame in which a lamp socket, ballast transformer and capacitor are vertically mounted one over the other on the slipfitter and surrounded by a protective tubular member, a globe surrounding the electrical components, and a reflective canopy covering the upper opening of the globe.

The present invention relates to luminaires, and more particularly to luminaires of the type adapted to be mounted on the top of posts or the like.

It is an object of the invention to provide a luminaire of the above type which is weatherproof, provides relatively uniform illumination, and which has a minimum of parts which are readily assembled and disassembled for necessary maintenance of the luminaire.

It is a particular object of the invention to provide a luminaire of the above type employing a discharge lamp and electrical ballast components therefor, wherein the latter components are arranged for optimum cooling effect.

Other objects and advantages will become apparent from the following description and the appended claims.

With the above objects in view, the present invention in a preferred embodiment relates to a luminaire comprising a tubular base member for attaching the luminaire to a post, elongated bracket means secured at its bottom end to the tubular base member and extending upwardly therefrom, a plurality of electrical components secured to the bracket means in vertically spaced relation to one another, lampholder means secured at the upper end of the bracket means, elongated connecting means secured at its lower end to the bracket means and extending upwardly therefrom, a globe having open bottom and top ends and tapering in diameter from top to bottom and mounted with its bottom end on the tubular base member so as to surround the bracket means, and a hood secured to the elongated connecting means covering the open top of the globe.

The invention will be better understood from the following description taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is an elevational view, partly broken away, of an embodiment of the present invention;

FIGURE 2 is a detailed view of the interior supporting bracket and associated parts of the FIGURE 1 luminaire;

FIGURE 3 is a perspective view of the interior supporting bracket;

FIGURE 4 is a fragmentary view in cross-section of the top portion of the luminaire; and

FIGURE 5 is a fragmentary view in cross-section of the periphery of the luminaire hood and globe.

Referring now to the drawings, and particularly to FIGURE 1, there is shown a luminaire comprising a hood or canopy 1, globe 2, and tubular base 3, assembled as more fully described hereinafter and mounted on the upper end of post 4. As shown more clearly in FIGURE 2, tubular base 3 has a hollow cylindrical opening 5 in its lower portion which slips over vertical support post 4, such as a pipe, and is formed with an inwardly extending annular step portion 6 which rests on the top end of

post 4 for seating the luminaire assembly thereon. A set screw 7 passing through the wall of tubular base 3 and engaging post 4 serves to hold base member 3 in position on the latter. Tubular base 3 is advantageously provided with a door 3a opening into its interior to provide access to the wiring connections therein whereby the electrical components of the luminaire are connected to the power supply. If desired, door 3a may be replaced by a photoelectric cell (not shown) for automatic control of the operation of the luminaire lamp in accordance with ambient light conditions, as well understood by those skilled in the art.

At its upper end, base member 3 is formed with a pair of upstanding projections 8, 8a, an annular step portion 9, and a peripheral ledge 10. Globe 2, typically made of a white or light-colored translucent plastic material, tapers downwardly with concave walls from its open top to its open bottom, where an annular inwardly directed flange 2a rests on ledge 10. Globe 2 and base member 3 are formed so that their exterior surfaces blend in a generally continuous configuration, as appears in FIGURE 1. Secured to the upwardly projecting support lugs 8, 8a by bolts or other suitable means is a vertical bracket 11, shown more clearly in FIGURE 3, comprising an inverted U-shaped portion 11a and an intermediate transverse member 11b. Ballast transformer 12 hangs within the upper portion of bracket 11 by means of hangers 13, 13a secured to the top web portion of bracket 11. Ballast capacitor 14 hangs within the lower portion of bracket 11 below transformer 12 by means of strap 15 which passes around capacitor 14 and through spaced apertures in transverse member 11b. Tubular shield member 16 closely surrounds bracket 11 and the ballast components mounted thereon, and extends upwardly from ledge 10 on which it rests to approximately the top of bracket 11. Overlying the top of tubular shield member 16 and substantially coextensive therewith is a perforated disc-shaped cover 17 which is secured to the top of bracket 11 by bolts (see FIGURE 2) or other suitable means. Cover 17 has a central opening for receiving a gasket as described below. The outer surface of shield member 16 is preferably of specular reflecting nature, such as provided by a reflective aluminum coating, for reasons mentioned hereinafter. As seen in FIGURE 2, the bottom opening of globe 2 is somewhat larger than the diameter of tubular shield member 16 to enable the globe to be inserted over the latter in assembling the parts.

Annular insulating gasket 25 fits concentrically within the central opening of cover 17 and separates a lampholder comprising socket 18 from the top of bracket 11, to which the lampholder is secured by screws 18a, 18b threaded into tapped holes in bracket 11. Socket 18 receives a lamp 19, such as a mercury vapor discharge lamp, extending vertically above the upper opening of globe 2 and into canopy 1, substantially in alignment with the vertical axis of the luminaire.

An elongated connecting member or rod 20, secured at its lower end to one side of bracket 11 by bolts or other suitable means, extends upwardly along lamp 19 and has an offset upper portion 20a which extends axially above lamp 19 and has a threaded upper end portion.

Canopy 1 which covers the upper opening of globe 2 overlaps the rim of the globe, and, as seen in FIGURE 5, is provided with a resilient gasket 21 for fluid-tightly sealing the joint therebetween. Canopy 1 is of generally frusto-conical form and has a web portion 1a at its top (see FIGURE 4) formed with a central aperture 1b through which the upper end of connecting rod 20 passes. In overlapping engagement with the top of canopy 1 is a conical cap 22 formed with a threaded socket 23 for receiving the threaded end of support rod 20 and having a

slot 24 for receiving a tool, such as the shaft of a screw driver or other elongated tool, for screwing cap 22 onto rod 20. Cap 22 is cut away on the outside of the slot-forming portion to receive a wrench which may be alternatively used for tightening cap 22 on rod 20 as desired. When cap 22 is screwed onto the threaded end of rod 20, it forces canopy 1 and globe 2 together and onto tubular base 3 to form a unitary assembly. In addition, the complementary conical surfaces of cap 22 and canopy 1 serve during such tightening to center the luminaire parts.

The interior surface of canopy 1, which is typically made of aluminum, has a specular reflecting surface, and thus reflects the light of lamp 19 to the reflecting surface of tubular shield 16, which in turn redirects the light outwardly towards the lower portion of globe 2. As a result, globe 2 emits relatively uniform illumination throughout its extent.

A particular feature of the invention is the vertical disposition of ballast transformer 12 above capacitor 14 on bracket 11. Such arrangement not only provides for a compact, unitary mounting of the ballast components which facilitates assembly procedures, but also affords improved thermal conditions affecting these components. In its position below transformer 12, capacitor 14 is out of the path of rising heat generated in the transformer (as well as in lamp 19) during operation of the luminaire. The presence of tubular member 16 surrounding bracket 11 contributes to a chimney effect whereby air convection currents pass upwardly along the ballast components carrying heat away therefrom as cooler air from pipe 4 is drawn up into tube 16. Thus, the operating temperature of the luminaire components is desirably reduced. Tubular member 16 in conjunction with perforated disc 17 also serves to protect servicing personnel from inadvertent contact with electrical components contained therein, as well as keeping tools from such contact, in the course of replacement of the lamp or removal of the globe.

The joints between base member 3 and globe 2, between globe 2 and canopy 1, and between canopy 1 and cap 22, as shown and described, effectively prevent entry of rain and other elements of weather into the interior of the luminaire. The parts are constructed, furthermore, so as to permit ready assembly in the proper relationship and alignment with a minimum of time, tools and effort.

While the present invention has been described with reference to particular embodiments thereof, it will be understood that numerous modifications may be made by those skilled in the art without actually departing from the scope of the invention. Therefore, the appended claims are intended to cover all such equivalent variations as come within the true spirit and scope of the invention.

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

1. A luminaire comprising, in combination, a base member, a globe mounted on said base member, hood means overlying said globe and defining therewith an interior chamber, support means within said interior chamber secured at its bottom to said base member, and lampholder means secured to said support means; said base member, support means and lampholder means being substantially aligned with each other along an axis, with said support means arranged between said base member below

it and said lampholder means above it, and a plurality of electrical components mounted on said support means and spaced along said axis.

2. A luminaire as defined in claim 1, wherein said electrical components comprise a ballast transformer and a ballast capacitor, said ballast transformer being arranged above said ballast capacitor.

3. A luminaire as defined in claim 2, and a tubular member surrounding said support means and said electrical components mounted thereon, a space being defined between said electrical components and said tubular member extending upwardly for passage of air convection currents along said electrical components.

4. A luminaire comprising, in combination, a base member, a globe mounted on said base member, hood means overlying said globe and defining therewith an interior chamber, support means within said interior chamber secured at its bottom to said base member, means connecting said hood means to said support means, and lampholder means secured to said support means; said base member, support means and lampholder means being substantially aligned along an axis, a plurality of electrical components mounted on said support means and spaced along said axis and comprising a ballast transformer and a ballast capacitor, said ballast transformer being arranged between said lampholder means and said ballast capacitor, a tubular member surrounding said support means and said electrical components mounted thereon, the interior surface of said hood means and the exterior surface of said tubular member being light reflective.

5. A luminaire comprising, in combination, a base member, a globe mounted on said base member, hood means overlying said globe and defining therewith an interior chamber, support means within said interior chamber secured at its bottom to said base member, means connecting said hood means to said support means, and lampholder means secured to said support means; said base member, support means and lampholder means being substantially aligned along an axis, a plurality of electrical components mounted on said support means and spaced along said axis and comprising a ballast transformer and a ballast capacitor, said ballast transformer being arranged between said lampholder means and said ballast capacitor, said support means comprising an inverted elongated U-shaped bracket having a top web portion and a transverse member intermediate its ends, said ballast transformer being secured to said web portion and said ballast capacitor being secured to said transverse member.

References Cited

UNITED STATES PATENTS

2,905,808	9/1959	Wince	240—52
2,963,574	12/1960	Pfaff	240—51.12
3,086,106	4/1963	Andrews	240—25
3,170,635	2/1965	Curtin	240—25
3,225,187	12/1965	Curtin	240—25

FOREIGN PATENTS

813,648	5/1959	Great Britain.
---------	--------	----------------

NORTON ANSHER, *Primary Examiner.*

W. M. FRYE, *Assistant Examiner.*