May 24, 1955 P. GARNICK 2,709,224

PHOTO-ELECTRIC LIGHTING CONTROL UNIT

Filed Oct. 22, 1952 2 Sheets-Sheet 1

Fig. 1.

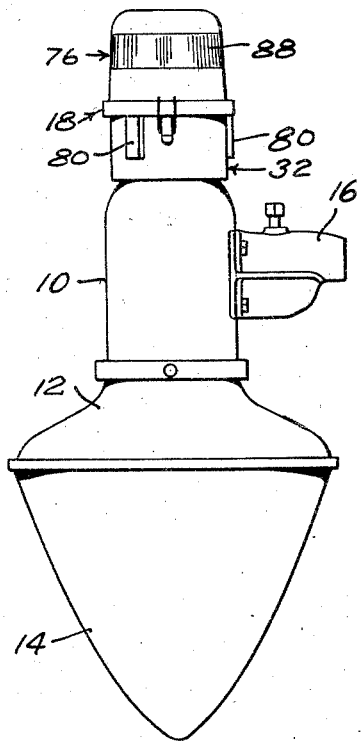


Fig. 3.

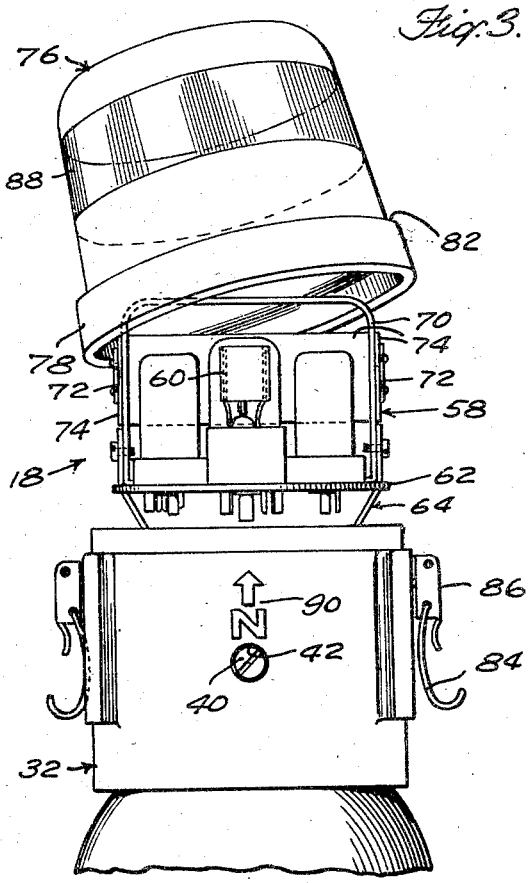
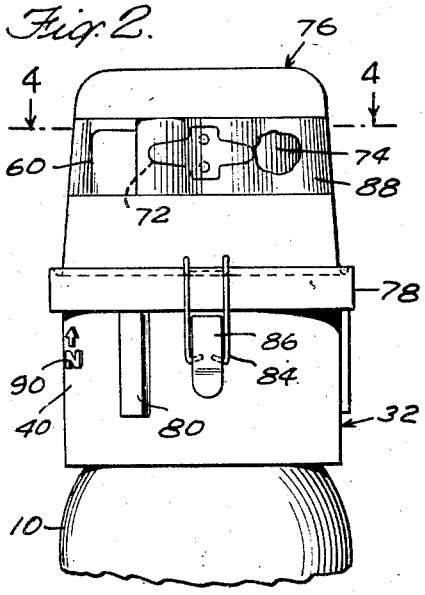


Fig. 2.



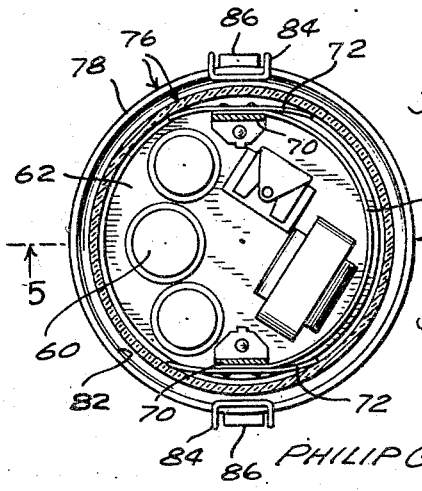


Fig. 4.

Inventor
PHILIP GARNICK

By
Moses, Nolte, Crews + Berry
Attorneys

May 24, 1955 P. GARNICK 2,709,224

PHOTO-ELECTRIC LIGHTING CONTROL UNIT

Filed Oct. 22, 1952 2 Sheets-Sheet 2

Fig. 5

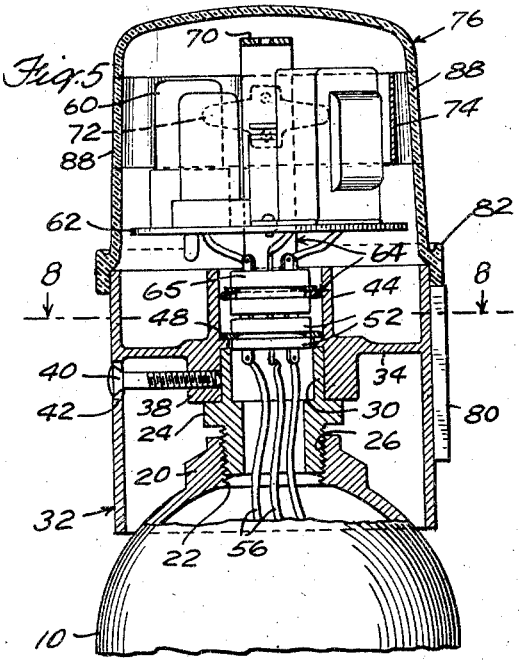


Fig. 6

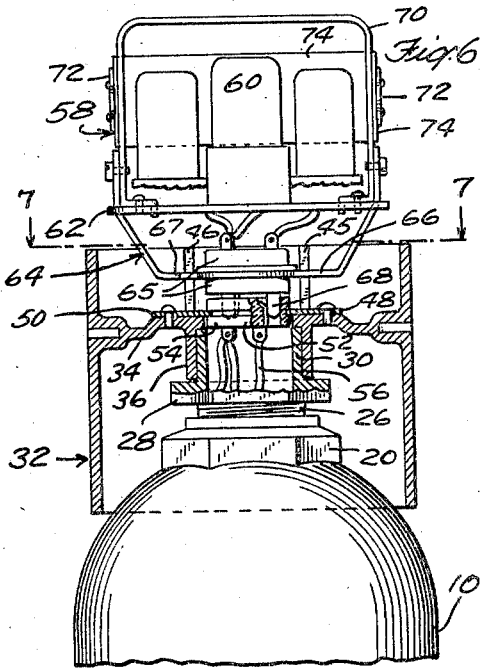


Fig. 7.

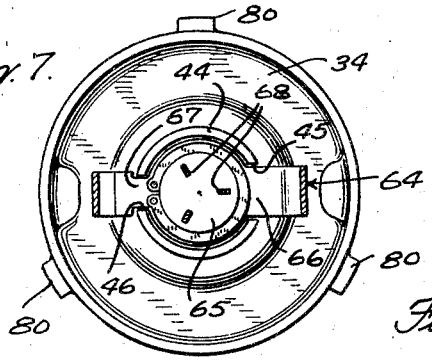


Fig. 8.

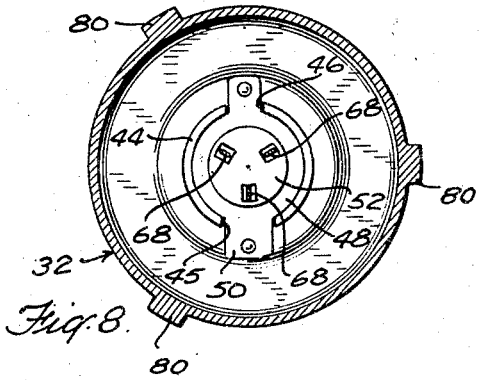
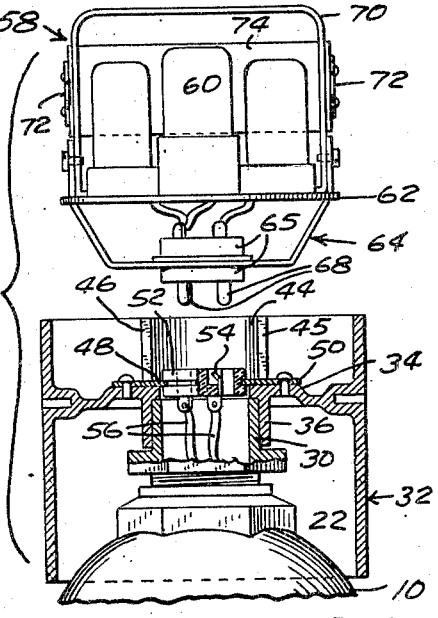


Fig. 9.



Inventor
PHILIP GARNICK

By
Moses, Nolte, Crews + Berry
Attorneys

United States Patent Office 2,709,224 Patented May 24, 1955

2,709,224

PHOTO-ELECTRIC LIGHTING CONTROL UNIT

Philip Garnick, Chelsea, Mass., assignor to Fisher-Pierce Company, Incorporated, a corporation of Massachusetts

Application October 22, 1952, Serial No. 316,161

4 Claims. (Cl. 250—239)

This invention relates to photo-electric lighting control units and particularly to self-contained units adapted to be mounted directly upon a luminaire, such for example as a street lighting luminaire.

The use of photo-electric control units for turning lights, for example street lights, off and on, depending upon the intensity of the surrounding general illumination, is well known. It is common practice to provide photo-electric control units for this purpose, these being usually mounted upon an adjustable bracket or supporting means attached to a light pole or to a cross arm supported thereby.

The present invention relates to a unit of such construction that it may be adjustably mounted directly upon the top of a luminaire housing of ordinary construction, whereby the use of special mounting brackets is dispensed with, and a compact and sightly installation is achieved.

The invention has for its general object the provision of a photo-electric control unit which may be readily applied to many types of luminaire in an extremely firm and simple manner so as to achieve the advantages above mentioned.

Further objects and advantages of the invention will be apparent in the course of the description of one specific embodiment thereof, chosen to illustrate the invention.

In the accompanying drawings forming part of the specification:

Figure 1 is a side elevation of a typical street lighting luminaire having an illustrative embodiment of the invention mounted on top thereof;

Figure 2 is a side elevation showing the unit in position on a somewhat larger scale;

Figure 3 is a side elevation showing the unit with the cover glass lifted;

Figure 4 is a horizontal section taken on line 4—4 of Fig. 2;

Figure 5 is a vertical section through the unit and upper part of the luminaire housing, taken on line 5—5 of Fig. 4;

Figure 6 is a similar section taken at right angles to the section shown in Fig. 5, omitting the cover glass;

Figure 7 is a fragmentary transverse section on line 7—7 of Fig. 6;

Figure 8 is a horizontal section taken on line 8—8 of Fig. 5; and

Figure 9 is a view similar to Fig. 6 showing the photo-electric unit lifted above the base housing.

Referring to the drawings in detail, Fig. 1 shows a typical example of a street lighting luminaire comprising a body or hood 10 carrying a reflector 12 and a globe 14. In the example shown, the hood 10 is supported by means of a side bracket 16 which may be attached to a pole in the usual manner. Mounted on top of the hood 10 is a control unit indicated as a whole by the numeral 18.

The hood or body 10 of the luminaire is shown as

provided with a boss 20 at its upper end (Figs. 5, 6 and 8) which is internally threaded as indicated at 22. This construction is common in luminaires, the threaded opening at the top being normally closed by an ordinary screw plug, (not shown). In applying the unit of the present invention to the luminaire, the screw plug is discarded and in its place is fitted an adapter fitting 24 having a threaded nipple 26 at the bottom screwing into the threaded hole in the top of the luminaire hood, and having a hexagonal or other suitably shaped collar 28 by which it may be screwed in place. Above the collar is a cylindrical neck 30.

Mounted on the adapter is a base housing 32 preferably in the form of a cylinder of cast aluminum or the like having an inwardly projecting flange, partition or bracket 34 formed between its ends, the flange carrying a downwardly projecting ring portion 36 having a cylindrical inner surface adapted to fit over the neck 30 of the adapter fitting. The ring portion 36 is preferably provided with one or more thickened bosses 38 (Fig. 5), at least one of which is horizontally threaded so as to receive a long set screw 40. A hole 42 is formed in the wall of the housing 32 opposite to the hole for the set screw and the set screw head is exposed in this opening so that the screw may be readily tightened or loosened from outside. By means of the set screw the housing is firmly secured to the adapter fitting and may be adjusted thereon to any desired angular position.

Also carried by the flange 34 in the housing is an upwardly projecting ring 44 having slotted openings 45 and 46 in opposite sides thereof, one of said slots preferably being made wider than the other. Mounted on the flange 34 is a power socket assembly shown as comprising a plate 48 having ears 50 projecting through the slots 45 and 46 and secured to the flange 34 by screws or rivets, the plate 48 carrying an insulator member 52 having sockets 54 thereon which are connected by wires 56 passing through the fitting 24 to the lamp (not shown) carried by the luminaire body. A photo-electric control unit indicated generally by the numeral 58 is mounted above the flange 34, it preferably being so organized as to be removed or applied as a unit.

The photo-electric control unit may be of any suitable construction comprising the necessary tubes, transformers, and relays, not necessary to be described herein, the photo sensitive element of the unit being represented in this instance by the tube 60. The members constituting this photo-electric control are shown as mounted on a chassis plate 62 having attached to its under side a bracket 64 which carries a power plug 65 wired to the elements of the control unit. The lower transverse member of bracket 64 is provided with a wide portion 66 adapted to fit in the wider slot 45 in the upwardly projecting ring 44 and with a narrower portion 67 adapted to fit in the narrower slot 46 of the ring. This construction insures that the photo-electric control unit can only be inserted in proper position, and also guides the control unit so as to bring the contact blades 68 on the power plug into engagement with the sockets 54 in the member 52 without placing undue strain on the power plug and socket members. The chassis plate is also shown as carrying a handle bracket 70 attached to which are a pair of guide springs 72 and a shield plate 74.

Mounted on top of the housing 32 is a dome or cover glass 76 having an enlargement 78 at its lower end adapted to surround the upper end of the housing 32 and seat upon seating lugs 80 formed on the outside of the housing. The dome is shown as secured to the housing by means of an annular flange 82 projecting

upwardly from the enlargement **78** and engaged by spring loops **84** forming part of latches **86**, which may be of any well-known construction permitting tension to be applied to the loops so as to hold the dome firmly upon its seats. The dome preferably has a central zone **88** which is transparent, the glass forming the balance of the dome being coated or otherwise treated to render it opaque. The zone **88** is preferably transparent all the way around, but a part of it is shielded against entrance of light by the shield **74**. The photo sensitive tube **60** is located opposite the unshielded part of the transparent zone or window.

The housing preferably has indicia **90** on one face thereof adjacent to the set screw and opposite to the position of the exposed face of the photo sensitive tube. This facilitates the adjustment for the entire photo sensitive unit upon the luminaire to a position in which the photo sensitive element has the proper exposure, usually to the north. Once this adjustment is made the set screw **40** is tightened and the unit is permanently fixed in its proper position.

While certain preferred embodiments of the invention have been illustrated and described in detail, it is to be understood that changes may be made therein and the invention embodied in other structures. It is not, therefore, the intention to limit the patent to the specific construction illustrated, but to cover the invention broadly in whatever form its principles may be utilized.

The disclosure in this specification pertaining to the removable chassis assembly of the photo-electric control unit and the associated cover dome therefor, has been made the subject matter of divisional application Serial No. 503,845 filed April 26, 1955.

I claim:

1. In a photo-electric street lighting control for mounting on a luminaire body, an adapter fitting adapted to be mounted on said body comprising a tubular member having an axial cylindrical flange at the top thereof, a control unit housing having an intermediate transverse partition therein, said partition having a portion cooperatively nesting with said cylindrical adapter flange for adjustable rotation with respect thereto about the axis thereof, the lower part of said housing forming a skirt enclosing said adapter fitting and adapted to enclose the joints between it and the luminaire body and housing, means for securing said housing in adjusted angular position on said adapter comprising a fastening member having an operating head accessible from outside of said skirt and having a locking portion engaging said adapter and operable by manipulation of said head, a photo-electric control unit mounted on said housing, and said housing further including a dome enclosing said control unit, said dome having a transparent window therein.

2. In a photo-electric street lighting control for mounting on a luminaire body, an adapter fitting adapted to be mounted on said body comprising a substantially tubular member having an axial flange at the top thereof having a bearing surface formed as a surface revolution about the axis, a control unit housing having a transverse bracket therein, said bracket having a portion cooperatively nesting with said adapter flange for adjustable rotation with respect thereto about the axis thereof, the lower part of said housing forming a skirt enclosing said adapter fitting and adapted to enclose the joints between it and the luminaire body and housing, means for securing said housing in adjusted angular position on said adapter, said securing means being accessible from the outside of said housing, a photo-electric control unit mounted on said housing, and said housing further including a dome enclosing said control unit, said dome having a transparent window therein.

3. The combination as set forth in claim 1, and further including a means for mounting said control unit comprising an electric plug receptacle carried by said partition and positioned centrally thereof over the tubular adapter.

4. The combination of claim 1, wherein said partition portion nesting with said adapter flange overlies said flange and is provided with an exteriorly thickened portion having a threaded radial bore therethrough, said skirt having an aperture therethrough in alignment with said bore, and said fastening member being a screw threaded in said bore to abut said adapter flange with its head extending through said skirt aperture.

References Cited in the file of this patent

UNITED STATES PATENTS

2,489,076	Bjontegard	Mar. 22, 1949
2,631,247	Shaw	Mar. 10, 1953