

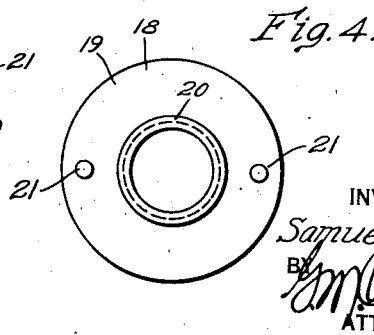
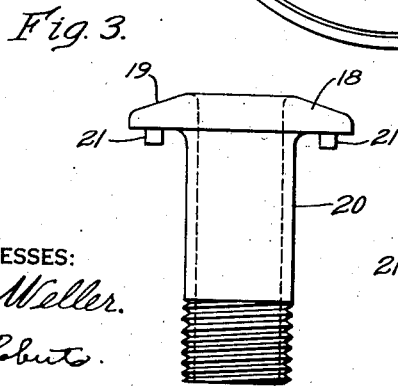
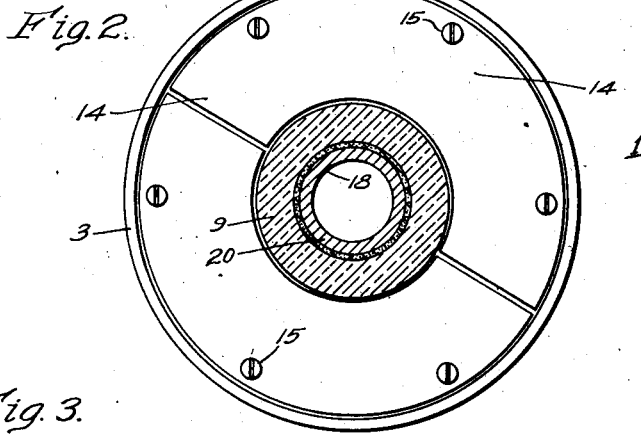
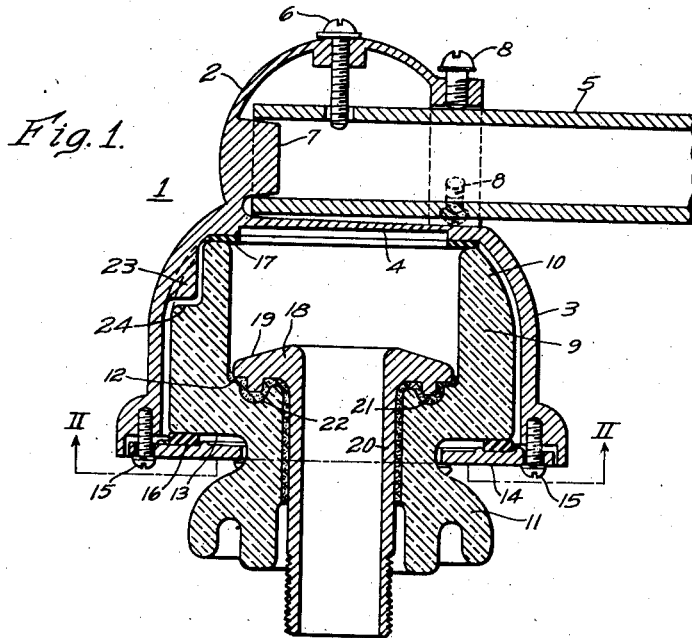
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INSULATED SUPPORT FOR LIGHTING UNITS

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# UNITED STATES PATENT OFFICE

2,279,170

## INSULATED SUPPORT FOR LIGHTING UNITS

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4 Claims. (Cl. 174—138)

My invention relates, in general, to supporting devices and, in particular, to an insulated support for lighting units or fixtures of the hanging type commonly used for the lighting of streets and highways.

The object of my invention generally stated is to provide an insulated support for lighting units or fixtures which shall be of simple construction, economical to manufacture and install and which will provide maximum safety both from the standpoint of electrical insulation and mechanical support.

A more specific object of my invention is to provide an insulated support for lighting units in which provision is made for preventing the lighting unit from falling in the event of mechanical failure of the insulating element of the support.

Another object of my invention is to provide an insulated support for lighting units in which the portion thereof which attaches to the supporting device is mechanically segregated or separated from the portion thereof which attaches to the lighting unit, thereby to make the insulated support waterproof.

A further object of the invention is to provide an insulated support for lighting units which may be readily mounted on a pipe bracket and adjusted to compensate for pole rake and for leveling the lighting unit.

A further object of my invention is to provide in an insulated support for a lighting unit, improved means for securing the mounting stud to the insulator.

These and other objects will become more apparent from the following detailed description taken in conjunction with the drawing, in which:

Figure 1 is a view in section of an insulated support embodying the principal features of the invention showing the support mounted on a straight pipe,

Fig. 2 is a view, in section, taken along the line II—II of Fig. 1, and showing the split plate which secures the insulator and supporting stud within the support housing,

Fig. 3 is an elevational view of the mounting stud which is cemented to and supported by the insulator, and upon which the luminaire is mounted; and,

Fig. 4 is a bottom plan view of the stud shown in Fig. 3.

Referring to Fig. 1, which illustrates a preferred embodiment of my invention, the numeral 1 designates generally a support housing or canopy which may be of bell-like shape divided into upper and lower sections or compartments 2 55

and 3, respectively. A partition 4 separates the upper section 2 from lower section 3. To provide means for mounting the insulated support on a pipe bracket 5, an opening is provided in one side of the upper section 2 to receive the end of the pipe bracket. A screw 6 which threads through an opening in the upper section and enters an aligned opening in the pipe bracket 5 serves to lock the insulated support on the pipe bracket. A boss 7 on the interior face of the upper section is disposed opposite the opening therein to engage the end of the pipe bracket and serves as an additional support for the device, and also acts as a pivot for vertically aligning the insulated support. In order to provide for adjusting the position of the device with respect to the pipe bracket, a plurality of screws 8 which may be set at approximately 120° apart are threaded through the upper section of the housing adjacent the side opening therein and functions to raise and lower one side of the housing which tilts or pivots about the end of the pipe bracket. As will be readily understood, the side opening in the upper section of the housing is made larger than the pipe to permit such relative movement. Such adjusting means is desirable in that pole rake or misalignment of the pipe bracket on the pole will often throw the insulated support out of a vertical plane resulting in suspension of the lighting unit in an undesirable position. The floor of the upper section of the housing formed by the upper face of the partition 4 is sloped towards the side opening through which the pipe bracket extends so that any water coming through the interior of the pipe bracket or through the opening itself will drain off.

In order to provide for electrically insulating the lighting unit supported by the insulating support from the pipe bracket or other supporting device, an insulator 9 of tubular shape is utilized. The insulator may be composed of porcelain, or other suitable material, and in this instance has an upper portion 10 of large diameter which is positioned within the lower section 3 of the housing, and a lower portion 11 of reduced diameter extending below the housing. On the outside of the insulator 9, at the junction of the upper portion 10 and the lower portion 11, there is provided an external shoulder 13 which is utilized in securing the insulator within the housing. On the inside of the insulator an internal shoulder 12 is provided which is located above the external shoulder and which is utilized to support the

mounting stud for the lighting unit as will be described more in detail hereinafter.

In order to provide for holding the insulator 9 within the lower section of the housing, a split ring or plate 14 is positioned about the necked-down portion of the insulator and secured to the bottom edge of the housing by means of a plurality of screws 15 as shown in Fig. 2. Cushion gaskets 16 and 17 in the form of rubber or fibrous material which may be placed on the lower and upper faces of the insulator serve to prevent contact between the metal portions of the device and the porcelain insulator, thereby preventing strains from being set up in the insulator.

A tubular mounting stud 18 is provided for mechanically connecting the lighting unit to the insulating support. The stud is provided with a flanged head portion 19 on the upper end thereof and a straight stem portion 20, the lower part of which is threaded to provide for attaching the lighting unit thereto in a well known manner.

To prevent the mounting stud 18 from turning with respect to the insulator 9, one or more depending projections 21 which may be of cylindrical shape are provided on the lower face of the flanged head portion 19 of the mounting stud and engage corresponding recesses 22 in the internal shoulder 12 of the insulator 9. The flanged portion 19 and projections 21 are seated on the shoulder 12 and recesses 22 of the insulator, respectively.

In order to provide for securing the mounting stud to the insulator and prevent it from raising or turning, it is cemented to the internal walls and internal shoulder portion of the insulator by any suitable cement or binder. It will be apparent that this construction eliminates the necessity for use of a locking nut or other mechanical devices to retain the stud in the desired position.

To prevent the insulator 9 from turning within the lower section 3 of the support housing, one or more internal bosses 23 may be provided which engage corresponding recesses 24 in the insulator 9.

It will be readily understood that the insulator element 9 of this device will be subject both to mechanical strain and temperature changes which may in some instances cause breakage thereof. With a view to making it impossible for the mounting stud and lighting unit supported thereby to drop to the ground in the event of such insulator failure or breakage, provision is made for utilizing the split ring or plate 14 to catch and hold the mounting stud. In order to accomplish this, the diameter of the flanged head 19 of the mounting stud is made larger than the diameter of the opening in the split ring 14. Because of such relationship in dimensions, the mounting stud 18 cannot fall out of the lower section 3 even though the insulator should break. Upon such breakage the flange portion of the mounting stud would seat on the upper face of the split plate 14 until the unit was serviced and the broken parts replaced.

The insulated support may be assembled as follows. The mounting stud 18 is inserted within the tubular insulator 9, and cemented thereto as shown. The insulator and supporting stud and cushion washers may now be fitted within the lower section 3 of the support housing and locked therein by the split plate 14. The assembled unit is now ready for installation. Any suitable lighting unit may be screwed to the lower threaded section of the mounting stud and after installation

of the unit on a pipe bracket, may be connected to the lighting circuit.

When lighting units are operated on high potential circuits such as are found in most series street lighting systems where the potential may reach as high as 12,000 volts, it is necessary that the maximum in protection against grounding out of the unit against the pipe bracket be afforded so as to prevent injury to any one who might come in contact with an iron pole or even a wood pole which has become wet and to which the pipe bracket is attached.

Water or moisture and its exclusion from the support housing has long been a problem in connection with such protection. Protection against the falling of the lighting unit to the ground upon breakage of the insulator has also been a problem in apparatus of this type. Not only is there danger of injury to persons passing below, but also where such units are connected in a series system such falling often results in a breakage of the series circuit thereby causing an outage of all the lighting units on that particular circuit until repairs can be made.

My invention, as has been explained, presents a solution to these problems. Due to the integral construction of my device, wherein a separate upper section for mounting the insulated support is provided, all water is effectively excluded from the lower section of the support. Therefore, should the lighting circuit become grounded, there will be no water within the lower section to carry such grounding from the mounting stud 18 to the lower section 3. Also as hereinbefore explained, the mounting stud 18 and the lighting unit carried thereby are supported at all times regardless of insulator breakage, thus assuring continuity of the series street light circuit and preventing injury to any one passing beneath the luminaire.

Numerous changes and modifications may be made in my invention without departing from the spirit and scope thereof, and I desire that only such limitations shall be placed therein as are imposed by the prior art.

I claim as my invention:

1. An insulated support for a lighting unit comprising, an inverted cup-shaped metal housing member provided with means for attachment to a support, a substantially tubular insulator disposed within the housing and having an enlarged head portion, an external shoulder and an internal shoulder provided with a recessed portion, a mounting stud having an enlarged head portion carried by said internal shoulder of the insulator and provided with a depending boss member to engage said recessed portion of the internal shoulder, cementing material interposed between adjacent surfaces of the insulator and stud, means for preventing relative rotational movement between said insulator and said housing comprising a boss projecting inwardly of said housing adapted to engage a corresponding recess in the head portion of said insulator, a split plate member adapted to engage said external shoulder to support the head portion of said insulator within said housing, and means for detachably securing said plate to said housing.

2. A support for an insulator and mounting stud carried thereby comprising, a unitary housing divided into upper and lower sections by a substantially transverse partition, said upper section being dome-shaped and having an opening in a side wall thereof and a boss member projecting inwardly from an opposite wall and aligned opposite said opening for receiving a pipe support

bracket, said transverse partition being sloped downwardly toward the side opening to drain moisture from the upper section, means carried by the housing for adjustably securing it to the pipe support bracket, and means engaging the bottom edge of said lower section of the housing and adapted to support said insulator partially within said lower section.

3. A support for an insulator having internal and external shoulder portions intermediate its ends and a mounting stud carried thereby having a flanged head portion adapted to engage said internal shoulder portion comprising, a unitary housing having upper and lower sections defined by a transverse partition between said sections, said transverse partition sloping downwardly toward the side opening to drain moisture from the upper section, said upper section being dome-shaped and having an opening in a side wall thereof and a boss member extending inwardly from an opposite wall and aligned opposite said opening to receive the tubular portion of a mounting bracket, said side opening in the upper section being of larger diameter than the tubular portion of the mounting bracket, means for detachably securing said tubular portion in said upper section, means for adjusting the angular relation between the housing and mounting bracket, and means for supporting said insulator within the lower section comprising a split ring adapted to engage the external shoulder of said insulator having an internal opening smaller than the flanged head por-

tion of said mounting stud and means for securing said split ring to the bottom of said lower section.

4. A support for a substantially tubular insulator having internal and external shoulder portions intermediate its ends and a mounting stud carried thereby having a flanged head portion adapted to engage said internal shoulder comprising, a unitary housing having vertically disposed upper and lower sections defined by a downwardly sloping transverse partition, said upper section being dome-shaped and provided with an opening in a side wall thereof and an internal boss member aligned opposite said opening for receiving the end of a support bracket, the bottom of said side opening being substantially flush with the upper side of the sloping partition to drain moisture from the upper section, said side opening being of larger diameter than the end of the support bracket, means for detachably securing said end of the support bracket in said upper section, adjustable means carried by the housing adjacent the side opening to adjust the angular relation of the housing with respect to the support bracket, and means for supporting said insulator within the lower section of the housing comprising a split ring member engaging the external shoulder of said insulator having an internal opening of smaller diameter than that of the flange on said mounting stud and means for detachably securing said split ring member to the bottom of the lower section of the housing.

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