

[54] **FLUORESCENT LAMPHOLDER**
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[56] **References Cited**

UNITED STATES PATENTS

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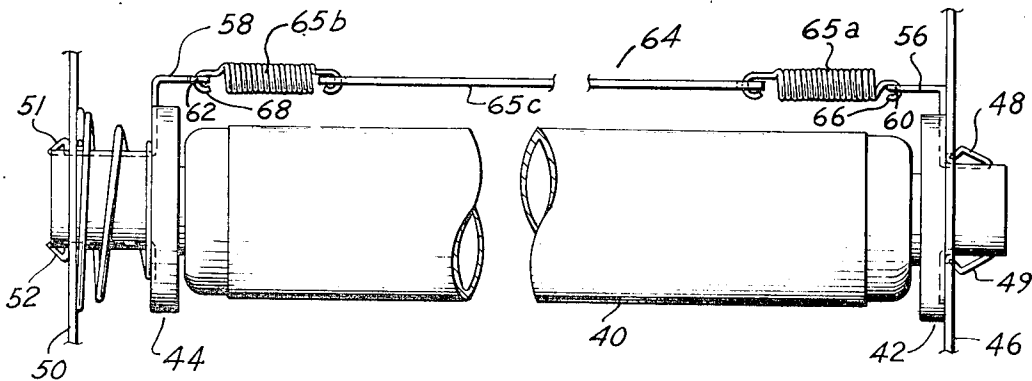
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[57] **ABSTRACT**

The fluorescent lampholder includes a first compressible end for receiving one end of the lamp and a second fixed end for receiving the other end of the lamp. Mounting clips are provided on each of the lamp-holding ends to secure each of the ends in a base panel. Extension tabs are joined to mounting clips on the compressible end and on the fixed end. The tabs are adapted to receive and support a grounding wire or spring for the fluorescent lamp therebetween.

7 Claims, 4 Drawing Figures



FLUORESCENT LAMP HOLDER

BACKGROUND OF THE INVENTION

A fluorescent lamp is a glass envelope generally of tubular shape having a fluorescent coating on the inner surface thereof and filled with an ionizable gas vapor. A starter is employed to generate a high voltage across the electrodes of the lamp to induce ionization of the gas. Once the ionization occurs, the vapor is ionized to excite visible radiation on the fluorescent tube coating. Thereafter, the high voltage dissipates and the lamp continues to emit visible radiation.

Such fluorescent lamps are used in a variety of applications out-of-doors. One such use is the illumination of outdoor advertising signs. When fluorescent lamps are used outdoors, moist or cold weather conditions often make it difficult or impossible to start the fluorescent lamps due to a difficulty in building up the necessary voltage across the ends or electrodes of the lamp to produce ionization.

A common method of alleviating this problem in the prior art has been to extend a grounded conductor along each lamp. The conductor, which may be a metal strip or a coiled tension spring, is fastened at its ends to the panels which support the fluorescent lampholders by means of a screw-nut assembly.

Such an assembly is relatively costly in construction and fails to provide an accurate location of the grounding conductor with respect to the fluorescent lamp. Also, such an assembly is costly and time consuming to install.

Accordingly, it is desirable to provide a fluorescent lampholder of simple and economic construction which will facilitate ready installation and provide for the accurate location of the grounding conductor with respect to the fluorescent lamp.

Examples of the construction of fluorescent lampholders in the prior art are shown in the following patents: U.S. Pat. No. 2,368,897, F. H. Reeves, issued Feb. 6, 1945; No. 3,252,125, A. Moss, issued May 17, 1966; and No. 3,116,098, E. R. Kulka, issued Dec. 31, 1963. The Reeves and Moss patents disclose tab spring arrangements which are adapted to flexibly secure the fluorescent lampholders to the base panel in which the holders are mounted.

For completion of the detailed description of the preferred embodiment of this invention, the description of that portion of the fluorescent lampholder which is believed to be extraneous to this invention will relate to lampholders similar to those described in U.S. Pat. No. 3,116,098, entitled "Fluorescent Lamp Holder".

SUMMARY OF THE INVENTION

In a principal aspect, the present invention relates to an improvement in a fluorescent lampholder of the type having a pair of lamp receiving ends which are mounted by clips in support panels. The improvement relates principally to the employment of grounding clips mounted on each of the lamp holding ends and electrically connected to the mounting clips. The grounding clips are adapted to receive and support a metallic grounding strip in fixed relation to the fluorescent lamp.

Accordingly, it is an object of the present invention to provide an improved fluorescent lampholder with grounding clips of simple and economic construction.

It is another object of the present invention to provide such a lampholder designed to be readily installed for use.

It is a further object of the present invention to provide such a lampholder which will accurately secure and support a grounding strip in fixed relation to the fluorescent lamp.

BRIEF DESCRIPTION OF THE DRAWINGS

There is shown in the attached drawings a presently preferred embodiment of the present invention, wherein like numerals refer to like elements and wherein:

FIG. 1 is a side view of grounding strip arrangements in the prior art;

FIG. 2 is a side view of the improved fluorescent lampholder of this invention with grounding clips and a grounding strip;

FIG. 3 is a side cross section view of the improved lampholder of this invention; and

FIG. 4 is an exploded perspective view of the fluorescent lampholder of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A grounding strip 10 and a grounding coiled metal spring and strip arrangement 12, both used in the prior art, are shown in FIG. 1. The strip 10 is formed of a conductive metal and is attached to a pair of panels 14 which also secure the lampholders 15. The strip 10 is fastened to the panels 14 by means of screw-nut assemblies 16.

The arrangement 12 includes springs 13A and 13B and a grounding strip 13C supported therebetween. Metal brackets 18 are secured to the panels 14 by means of screw-nut assemblies 20. In mounting the springs 13A and 13B, the hooks 22 of the springs 13A and 13B are placed into eyelets 26 defined in the metal brackets 18.

In the employment of each of the grounding conductors 10 and 12, holes are required in the panels 14 for receiving the conductors 10 and 12. There holes must be placed in fixed relation to the lampholder receiving channels 28 on the panels 14 in order to orient the grounding conductors 10 and 12 in fixed relation to a fluorescent lamp 30.

As shown in FIG. 2, a fluorescent lamp 40 is secured between a fixed lampholder 42 and a compressible lampholder 44. As will be explained more fully, the fixed lampholder 42 is secured to a panel 46 by means of mounting clips 48 and 49 and the compressible lampholder 44 is secured to a panel 50 by means of mounting clips 51 and 52.

The mounting clip 48 has an L-shaped tab member 56 integrally formed thereon. Likewise, the mounting clip 51 for the compressible lampholder 44 also has an L-shaped tab 58 integrally formed thereon. With the lampholders 42 and 44 secured to the panels 46 and 50 respectively, the tabs 56 and 58 extend outwardly from the lampholders 42 and 44 respectively. The tabs 56 and 58 have eyelets 60 and 62 respectively, defined thereon.

In the preferred embodiment of this invention, a coiled metal spring and strip arrangement 64 similar to the spring and strip arrangement 12 of FIG. 1 is employed as the grounding strip for the lamp 40. The ar-

rangement 64 includes springs 65A and 65B and a strip 65C supported therebetween. The springs 65A and 65B have hooks 66 and 68 attached to the ends thereof. When the spring 64 is employed as the grounding conductor, the hooks 66 and 68 are attached in the eyelets 60 and 62 respectively of the tabs 56 and 58. The springs 65A and 65B together with strip 65C are selected to have a non-compressed length less than the distance between the eyelets 60 and 62. Thus, when the springs 65A and 65B are attached to the tabs 56 and 58, the spring strip arrangement 64 is in tension and is thereby mounted in fixed relation adjacent to the lamp 40.

The improved lampholder assembly of this invention with grounding tabs is more clearly shown in FIGS. 3 and 4. FIG. 3 shows the cross-sectional view of the fixed lampholders 42 and 44 shown in FIG. 2.

The mounting clips 48 and 49 are connected to the fixed lampholder 40 by rivets 84 and 86. In like fashion, the mounting clips 51 and 52 are connected to the compressible lampholder 42 by rivets 88 and 90. Because the tabs 56 and 58 are integral with clips 48 and 51 respectively, the assembly of these tabs 56 and 58 onto lampholders 42 and 44, respectively, is automatically accomplished when the clips 48 and 51 are connected to lampholders 42 and 44.

As these tabs 56 and 58 are positioned in fixed relation to the lampholders 42 and 44, and therefore positioned in fixed relation to the lamp 40, the grounding spring 64, when mounted on the tabs 56 and 58 is placed in fixed relation, adjacent to the lamp 40.

It should be understood that the tabs 56 and 58, need not be integral with the mounting clips 48 and 51. As an alternative, the tabs 56 and 58 may be electrically connected to the mounting clips and still perform the function of grounding of the spring strip arrangement 64 and positioning the arrangement 64 adjacent the lamp 40. It should also be understood either of the springs 65A or 65B may be eliminated from the arrangement 64 and that additional springs (not shown) may be added to the arrangement 64.

The exploded view shown in FIG. 4 is added to clarify one example of a lampholder assembly employing the electrically conductive tabs 56 and 58 of this invention integrally formed with the mounting clips 48 and 51. The assembly includes a fixed lampholder 42 having an annular collar 92 connected to a neck 94. Defined along the neck 94 are channels 96 and 98 adapted to receive mounting clips 48 and 49 respectively as has been explained. A panel section 100 is provided with a slot 102 adapted to fit complimentary with the neck 98.

The compressible lampholder 44 includes an annular collar 104 connected to a neck section 106. Channels 108 and 110 are defined in the lampholder 42 and adapted to receive mounting clips 51 and 52. A second panel section 112 is provided having a slot 114 defined therein and adapted to receive the neck 106 of lampholder 44. A spring 116, adapted to fit over the neck 106, biases the lampholder 44 away from the panel section 112.

While in the foregoing, there has been described a preferred embodiment of the present invention, it is to be understood that numerous embodiments may be made to this invention by those skilled in the art, without departing from the true spirit and scope thereof.

What is claimed is:

1. In a fluorescent lampholder of the type having first and second lamp receiving ends, each of said ends having a pair of electrically conductive mounting clips connected thereto and adapted to mount each of said ends on a base panel and an electrically conductive grounding strip, an improvement comprising, in combination:

a first electrically conductive tab secured and electrically connected to one of said mounting clips on said first end, and

a second electrically conductive grounding tab secured and electrically connected to another of said mounting clips on said second end, said conductive clips adapted to support said grounding strip therebetween in fixed relation to said lamp.

2. The improvement as set forth in claim 1 wherein said first and second grounding tabs are integral with said one mounting clip and said another mounting clip respectively.

3. The improvement as set forth in claim 1 wherein said first and second grounding tabs have eyelets defined thereon and wherein said grounding strip includes a first hook connected to one end of said strip and a second hook connected to the other end of said strip, said hooks adapted to fit into said eyelets.

4. The improvement as set forth in claim 1 wherein said first and second tabs are separately joined to said one mounting clip and said another mounting clip respectively.

5. In a fluorescent lampholder of the type having first and second lamp receiving ends, each of said ends having a mounting clip connected thereto, said clips adapted to secure said lamp receiving ends to a base panel for receiving said fluorescent lamp and a grounding spring expansible to the length of said fluorescent lamp, an improvement comprising, in combination:

a first electrically conductive tab integral with said mounting clip on said first end having a section extending outwardly from said first end, said section having an eyelet defined thereon;

a second electrically conductive tab integral with said mounting clip on said second lampholding end having a section extending outwardly from said second end, said section having an eyelet defined thereon whereby the ends of said grounding spring may be secured in said eyelets so that said spring is supported in fixed relation to said lamp.

6. The improvement to said lampholder as set forth in claim 5 wherein said first and second tabs are substantially L-shaped.

7. The improvement as set forth in claim 5 wherein said first and second tabs are secured to said lamp receiving ends to align said grounding spring substantially parallel with the longitudinal axis of said lamp.

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