Nov. 26, 1957 R. G. GODFREY 2,814,788

WIPING SPRING BLADES FOR FLUORESCENT LAMPHOLDERS

Filed Oct. 31, 1955

Fig. 1.

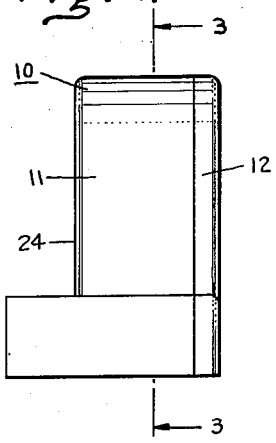


Fig. 3.

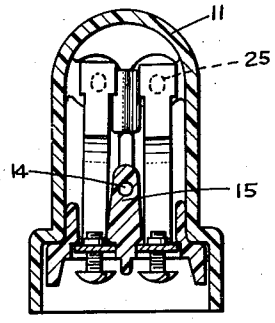


Fig. 4.

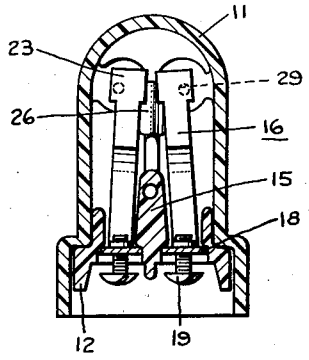


Fig. 5.

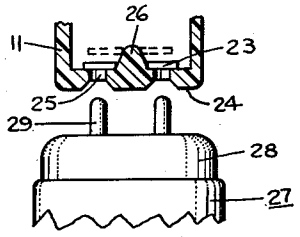


Fig. 2.

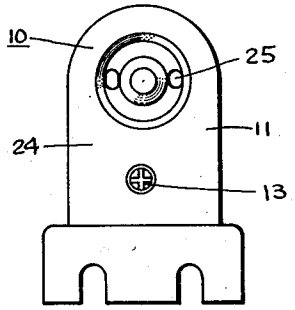
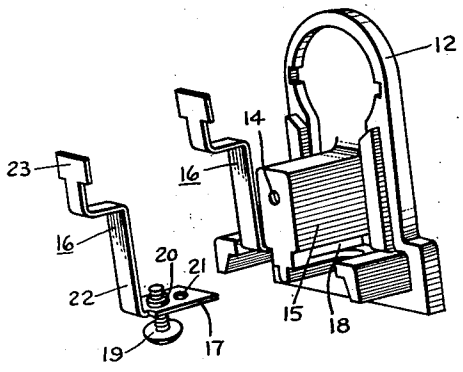


Fig. 6.



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2,814,788

WIPING SPRING BLADES FOR FLUORESCENT LAMPHOLDERS

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Application October 31, 1955, Serial No. 543,655

6 Claims. (Cl. 339—52)

The present invention relates to lampholders for tubular lamps such as fluorescent lamps and in particular to a stationary lampholder for the low voltage end of a lamp having a pair of contact pins extending from the lamp base at each end of the lamp.

It will be understood by those skilled in this art that the lampholder illustrated in the accompanying drawing is only one of a dissimilar pair of lampholders for supporting the opposite ends of the lamp. The complementary lampholder that is not shown would have a spring-biased telescopic plunger which is compressed by forcing one end of the lamp against it so that the contact pins at the opposite end of the lamp may be inserted longitudinally into the lampholder of my invention. This general combination is old, as is shown in Figure 1 of the Pistey Patent No. 2,716,738 which is assigned to the same assignee as is the present invention.

This invention represents a successful attempt to provide the contact blades of such a lampholder with a wiping engagement against the contact pins of the lamp base. This feature has been considered by the industry to be desirable in lampholders for certain applications such as rapid start lampholders that are to be used outdoors. One type of rapid start fluorescent lamp has a base at each end with a pair of contact pins and the circuit is designed to start the lamp without preheating the cathodes by virtue of delivering a high starting voltage, while the cathode heating circuit operates at about 3.5 volts when the cathode heating winding carries a load of approximately 380 ma. This small voltage contributes to the formation of corrosive oxides and the accumulation of dirt on the contacts which tends to raise the resistance and the operating temperature of the circuit elements. Since the oxides of silver do not increase the resistance of the contacts, the contacts are usually silver plated but experience has taught that if a wiping action is established between the contacts and the lamp pins, the clean engaging surface between the parts results in an improved device.

One embodiment of my invention comprises a lampholder with a hollow housing having a pair of lamp pin-receiving openings through one face thereof and a cooperating pair of resilient contact blades positioned in the housing. Each contact blade is fixed at its terminal end toward the back of the housing while its free end presses firmly against the inner surface of the face containing the lamp pin-receiving openings, and overlies one of said openings. An insulating barrier is formed on said inner face to normally hold the free ends of the contact blades apart. This barrier in the area adjacent the lamp pin-receiving openings is tapered in horizontal cross-section to converge inwardly into the housing. Thus, when the pins of a lamp base are inserted through the openings in the lampholder, they will force the contact blades inwardly of the housing and because of the reduction in the width of the barrier between the contact blades at that point, the blades will naturally move toward each other, thereby effecting a wiping action between the contacts and the lamp pins.

The principal object of this invention is to provide a bi-pin fluorescent lampholder with a pair of resilient contact blades which will effect a wiping action between the blades of the lamp pins.

A further object of this invention is to provide a fluorescent lampholder of the class described with an internal insulating barrier of tapered form which will normally hold the contact blades apart while providing a wiping engagement between the blades and the lamp pins.

My invention will be better understood from the following description taken in connection with the accompanying drawing and its scope will be pointed out in the appended claims.

Figure 1 is a side elevational view of a lampholder embodying my invention.

Figure 2 is a front elevational view of the lampholder of Figure 1.

Figure 3 is a cross-sectional elevational view taken on the lines 3—3 of Figure 1.

Figure 4 is a cross-sectional view similar to that of Figure 3 showing the relative positions of the contact blades after the lamp pins have been inserted in the holder.

Figure 5 is a partial view of the end of a bi-pin lamp as well as a horizontal cross-sectional plan view taken through the axes of the lamp pin-receiving openings in the holder showing the intended movement of the blades when the lamp pins are inserted in the holder.

Figure 6 is a partially exploded isometric view of the back cover of the lampholder of Figure 1 showing how the terminal ends of the contact blades are mounted therein.

Referring in detail to the drawing, Figure 1 shows a lampholder embodying my invention comprising a hollow housing **10** formed by assembling together a recessed body member **11** and a back cover plate **12**. These two elements are molded of suitable insulating material and are fastened together by a screw fastener **13** which extends through the front face **24** of the body **11** and into the threaded opening **14** located in the vertical partition **15** of the back cover plate **12**.

A pair of similar contact blades **16** are incorporated in the housing and, as seen in Figure 6, the terminal end **17** of each blade is supported horizontally in a pair of opposed side grooves **18** adjacent the bottom of the cover **12**. Thus, these terminals are separated from each other by the before-mentioned partition **15** which includes the threaded opening **14** into which the assembly screw is fastened. These contact blades are basically of strip material of phosphor bronze or other similar copper alloy which are silver plated to produce the best results. A binding screw **19** is mounted in a threaded opening **20** in the terminal end of each contact blade so that a lead wire may be attached quickly thereto. An additional aperture **21** is likewise located in the terminal end so that the lampholder may be wired quickly by first inserting the bare wire (not shown) in aperture **21** and then twisting the wire around the shank of the screw and, finally, tightening the screw down on the wire to make a firm connection. The central portion **22** of each contact blade is generally of L-shape which extends upwardly and then toward the front of the lampholder. The free end **23** of each blade also extends vertically and when the cover **12** is assembled to the base **11**, the end **23** of each contact blade is forcefully pressed against the interior surface of the front face **24** of the base **11**.

Now looking at Figure 2 of the drawing, a pair of horizontally spaced lamp pin-receiving openings **25** extend through the front face **24** of the housing and are generally in alignment with the free ends **23** of the contact blades. In Figure 3, which is a cross-sectional view taken on the lines 3—3 of Figure 1, the blades **16** are shown in the position that they would take when the

lamp base is not supported in the holder. An insulating barrier 26 shown in Figure 5 extends from the interior surface of the front face 24 inwardly of the housing in the area between the lamp pin-receiving openings 25. The purpose of this barrier is to spread the free ends 23 of the contact blades apart when the cover 12 is fastened on the base 11. This is as shown in full lines in Figure 5. Likewise shown in this figure is a partial view of a bi-pin lamp 27 comprising the lamp base 28 and the pair of lamp pins 29. It should be understood that when the pins 29 are inserted in the openings 25, the free ends 23 of the contact blades will be forced inwardly of the housing and due to the reduced cross-section of the barrier 26 at that point, the blades will normally move toward each other as shown in dotted lines in Figure 5. This same condition is shown in full view in related Figure 4. Hence, there is a strong wiping engagement between the ends of the pins 29 and the surface of the contacting portion 23 of the blades.

It should be readily appreciated by those skilled in this art that while I have chosen to illustrate my invention as comprising an insulating barrier 26 formed as an integral part of the body 11, other means may be devised for controlling the spacing between the contact blades which are not an integral part of the body member. The theory behind the insulating barrier is that when the contact blades are assembled in the cover plate which is then assembled on the body member to constitute the housing of the lampholder, the barrier separates the free ends of the contact blades. Since the barrier converges inwardly in plan view, the blades are permitted to assume their normal position when the lamp pins are inserted in the housing because the blades then move toward the apex of the converging barrier. Also, it is conceivable to employ other types of lampholder contacts such as coil springs to replace the spring blades of my illustrated and preferred embodiment. Likewise, the barrier might be formed integrally with the back cover plate to converge toward the inner surface of the face 24. This would represent a reversal of parts and operation to the preferred embodiment taught above.

Modifications of this invention will occur to those skilled in this art and it is to be understood, therefore, that this invention is not limited to the particular embodiment disclosed but that it is intended to cover all modifications which are within the true spirit and scope of this invention.

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

1. A fluorescent lampholder for receiving a pair of lamp pins comprising a hollow housing with a pair of lamp pin-receiving openings extending through an outer face, a pair of resilient contact blades located within the housing, the terminal end of each being fixed within the housing while the opposite end of the blade overlies the adjacent lamp pin-receiving opening in the housing, and an insulating barrier formed on the interior of the housing between the said lamp pin-receiving openings and normally holding the free ends of the contact blades apart when the lamp is not being supported by the housing, said barrier converging inwardly of the housing so that when the lamp pins are inserted, the free ends of the blades move further into the housing and likewise toward each other due to the reduced cross-section of the barrier to produce a wiping engagement between the blades and lamp pins.

2. A stationary fluorescent lampholder for receiving the pins of a lamp base comprising a hollow housing with a pair of lamp pin-receiving openings extending through the front face, a pair of resilient contact blades fixed at their terminal ends within the housing while their free ends cover one of the said openings, and an insulating barrier fixed within the housing between the free ends of the said blades and normally holding them apart when the lamp is removed, said barrier being tapered in plan

view and converging inwardly of the housing so that when the lamp pins are inserted, the free ends of the blades are compressed into the housing and they likewise move toward each other due to the reduced cross-section of the barrier therebetween to effect a wiping engagement between the blades and lamp pins.

3. A stationary fluorescent lampholder for receiving the pins of a bi-pin lamp comprising a hollow housing formed by assembling together a recessed base member and a back cover member, a pair of lamp pin-receiving openings extending through an outer face of the base, and a pair of resilient contact blades each having a terminal end mounted in the lower portion of the cover while its free end overlies one of the said openings, and an insulating barrier of tapered cross-section formed on the interior surface of the said outer face between the free ends of the said blades normally holding said ends apart, so that when the lamp pins are inserted through the openings in the face of the free ends of the blades will move further into the housing and likewise toward each other due to the reduced cross-section of the barrier at that point to effect a wiping engagement between the blades and lamp pins.

4. A stationary fluorescent lampholder for receiving the pins of a bi-pin lamp comprising a hollow housing with a pair of lamp pin-receiving openings extending through an outer face, a pair of resilient contact members each having a terminal end fixed in the housing while its free end overlies one of the said openings, and an insulating barrier of tapered cross-section formed on the interior surface of the said outer face between the free ends of the contact members to normally hold these ends apart when the lamp is removed, so that when the lamp pins are inserted through the openings in the said outer face the contact members will move further into the housing and likewise toward each other due to the reduced cross-section of the barrier at that point to effect a wiping engagement between the contact members and lamp pins.

5. A fluorescent lampholder for receiving the pins of a lamp base comprising a hollow housing with a pair of lamp pin-receiving openings extending through a front face thereof, a pair of contact spring members fixed at their terminal ends within the housing while their free ends are spring urged to cover one of the said openings, and an insulating barrier of tapered cross-section in plan view between the free ends of the said contact members, so that when the lamp pins are inserted the free ends of the contact members are compressed into the housing and move sidewise relative to each other due to a change in the cross-section of the barrier therebetween to effect a wiping engagement between the contact members and the lamp pins.

6. A fluorescent lampholder for receiving the pins of a lamp base comprising a housing with a pair of lamp pin-receiving openings extending through a front face thereof, a pair of resilient contact members fixed at their terminal ends within said housing at the end opposite said pin-receiving openings, said contact members having free ends biased toward each other and also toward said front face, each contact member covering one of said pin-receiving openings, and a barrier between the free ends of said contacts, said barrier being tapered in the direction away from said front face whereby when lamp pins are inserted the free ends of the contact members are displaced away from said front face and toward each other to effect a wiping engagement between the contact members and the lamp pins.

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