Dec. 8, 1970 M. N. GILBERT, JR 3,546,523

CIRCULAR LAMP BASE

Filed Dec. 5, 1968

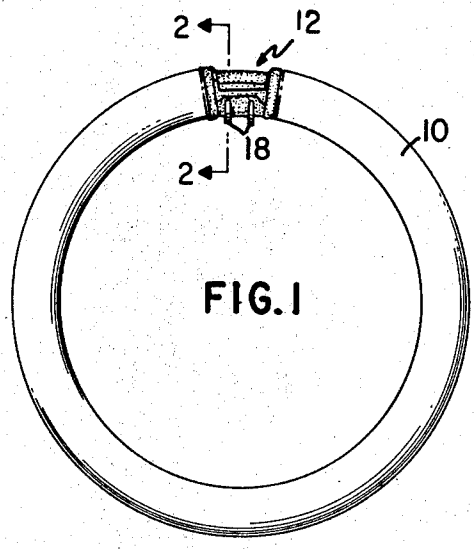

FIG. 1

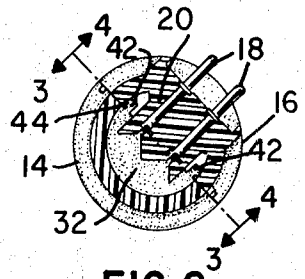

FIG. 2

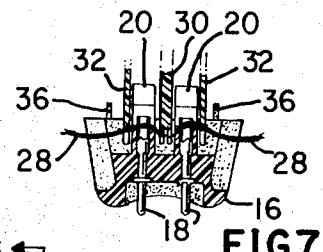

FIG. 7

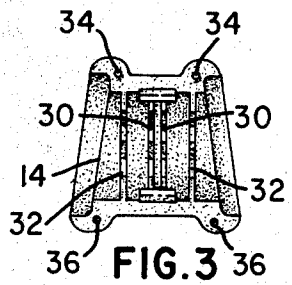

FIG. 3

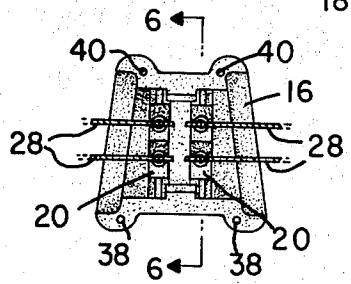

FIG. 4

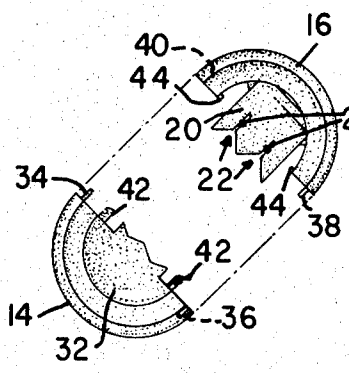

FIG. 5

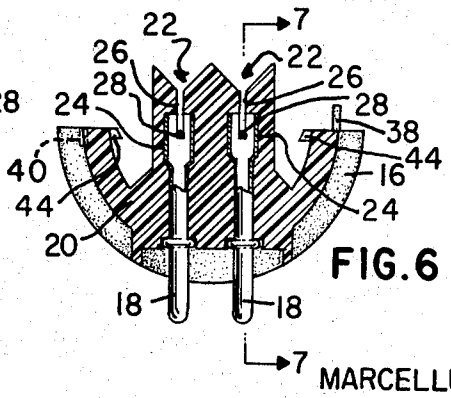

FIG. 6

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3,546,523

Patented Dec. 8, 1970

3,546,523

CIRCULAR LAMP BASE

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Filed Dec. 5, 1968, Ser. No. 781,402
Int. Cl. H01j 5/48
U.S. Cl. 313—318 8 Claims

ABSTRACT OF THE DISCLOSURE

A base bridging the adjacent ends of a circular fluorescent lamp comprising a pair of half sections, one of which includes connector pins to which the lamp lead-in wires are mechanically connected and the other of which comprises a cap which is snapped closed without the need for screws or the like to join the two half sections to one another.

This invention relates to circular fluorescent lamps and more particularly to a base therefor.

Most fluorescent lamps are linear in configuration and are provided with a base on each end thereof. Each base is usually provided with one or two electrical connectors, to the inner ends of which lamp lead-in wires are connected. The outer or exposed ends of these electrical connectors are usually inserted into some form of electrical socket or receptacle, to which a source of electrical energy is connected. It is in this manner that the lamp is energized.

In some applications, fluorescent lamps which are circular in configuration are employed. Circular fluorescent lamps are usually provided with a single base which bridges the adjacent ends thereof, and the base usually comprises two semicyclindrical sections which, when assembled in position, are secured to one another by screws, rivets or the like. One of these base sections is provided with metal pins, to the inner ends of which the several lamp lead-in wires are connected, whereas the other base section usually serves as a cap or cover member.

Heretofore the connection of lamp lead-in wires to the base pins has usually been effected either by welding or soldering. Both of these techniques leave much to be desired, particularly in the circular fluorescent lamp application. Solder and flux tend to corrode the pins and wires. Erratic welding causes nonuniformity in appearance of the base pins. There is a tendency for welded pins to develop burrs on the ends thereof, thus contributing to malfunctions and difficulties in seating the base properly in its socket or receptacle and withdrawing it therefrom. Sometimes it becomes necessary to clean the base to free it from welding products, i.e., carbon and weld splatter.

The two sections which usually comprise the base are usually secured to one another by screws, rivets or the like. These metal members form a short external arc path between the pins and they also detract from the appearance of the finished product.

In view of the foregoing, the principal object of this invention is to provide a circular fluorescent lamp base which does not require the use of screws, rivets or the like to join the sections thereof to one another and which includes a weldless, solderless connection of the lamp lead-in wires to the base pins.

These and other objects, advantages and features are attained, in accordance with the principles of this invention, by driving the lamp lead-in wires into slots provided therefor in the base pins located in one section of the base and then snapping the two sections closed with respect to one another.

In the specific embodiment of the invention illustrated in the accompanying drawing:

FIG. 1 is a plan view of a circular fluorescent lamp with a base of this invention secured thereto.

FIG. 2 is a sectional view of the base of FIG. 1 taken along the line 2—2 thereof.

FIG. 3 is a plan view of the cap section of the base as viewed along the line 3—3 of FIG. 2.

FIG. 4 is a plan view of the pin section of the base as viewed along the line 4—4 of FIG. 2.

FIG. 5 is an exploded view of the base with the lamp lead-in wires in position therein.

FIG. 6 is a sectional view on an enlarged scale of the pin section of the base showing particularly the base pins and the lamp leadin wires secured therein, as viewed along the line 6—6 of FIG. 4.

FIG. 7 is a sectional view of the pin section of the base, taken along the line 7—7 of FIG. 6, showing in addition the lamp lead-in wires held by the base pins and a fragmentary portion of the cap section disposed in closed relationship with respect to the pin section.

In the specific embodiment of the invention illustrated in the accompanying drawing, particularly FIG. 1 thereof, a circular fluorescent lamp **10** is shown with a base **12** secured thereto. As illustrated in the remaining figures and as noted above, the base **12** comprises two semicylindrical sections, a cap **14** (FIG. 3) and a holder **16** (FIGS. 4 and 6) within which a plurality of base pins **18** are located and supported.

As shown in FIGS. 4 and 6, the holder **16** is provided with a pair of spaced walls **20**, serrated at the top to define a pair of V's **22** in the top of each wall. Each wall **20** is provided with two bores and counterbores **24** etxending from the apex of the V's **22** to the outside face of the holder **16**. Base pins **18** are located in these bores **24**, extending from the apex of the V's **22** to a point somewhat beyond the outside face of the holder **16**. Each wall **20** is provided with a slot **26** cut therein from the apex of each of the V's **22** and the top of each pin **18** is slotted similarly to receive a lamp lead-in wire **28**. Thus, as shown particularly in FIG. 4, the free end segment of each lead-in wire **28** lies across and within one of the slotted pins **18** and its corresponding slot **26** in the walls **20**.

As shown in FIGS. 3 and 5, the cap **14** of the base **12** is provided with a pair of closely spaced center blades **30** and a pair of end blades **32**, all of which are double V's at the top thereof. When the two sections of the base **12** are assembled, the center blades **30** of the iap **14** are located between the pair of spaced walls **20** of the holder **16** and the end blades **32** of the cap **14** lie adjacent to and outside of the pair of spaced walls **20** of the holder **16**. When so assembled, the double V's at the tops of the blades **30** and **32** of the cap **14** cooperate with the slots **26** in the walls **20** of the holder **16** so as to define a precise locus for that segment of each of the lead-in wires which lies therein. In addition, this arrangement also contributes to the retention of the lead-in wires in their proper positions.

As shown in the drawing, particularly FIG. 3 thereof, the top of the cap **14** is provided with a pair of pins **34** on one side thereof and a pair of holes **36** on the other side thereof. Similarly, holder **16** is provided with a pair of pins **38** on one side thereof and a pair of holes **40** on the other side thereof. This hole-pin arrangement provides an orienting alignment means which precludes assembly of the two base sections in any manner other than the correct one.

The means employed to effect securing of the cap **14** and holder **16** to one another, as shown for example in FIGS. 3 and 4 and also in the assembled state in FIG. 2, comprises a pair of tongues **42** (FIG. 5) formed integral with the cap **14** and a pair of cooperating lips **44** (FIG. 5) formed integral with the holder **16**. Thus the cap

14 and the holder 16 are secured to one another by forcing these tongues and lips into interlocking engagement with one another.

A suggested procedure for fitting a circular fluorescent lamp with a base of the type to which this invention is directed will now be described. The pair of lead-in wires 28 extending from each end of the circular fluorescent lamp 10 are straightened out so that they are substantially parallel to one another and then a holder section 16 of a base 12 is brought into position from within the circle defined by the lamp so that it bridges the ends of the lamp and the lead-in wires 28 lie across and within the V's 22 in the top of walls 20 as shown in FIG. 4. A suitable tool is then employed to drive each lead-in wire 28 down into one of the slots 26 in the wall 20 and into the slotted base pin 18. The diameter of the lead-in wire is slightly larger than the width of the slot in the base pin and thus it will be deformed as it is driven into the pin, thereby providing a very tight joint between the two members, so strong that in tests the lead-in wire usually breaks before the joint is broken. The cap 14 is then positioned on the holder 16 by first aligning the pins and holes 34, 36 in cap 14 with the holes and pins 40, 38 in the holder 16 to insure proper orientation and then forcing the cap and holder against one another until the tongues 42 and lips 44 snap into interlocking engagement with one another.

What we claim is:

1. A base bridging the adjacent ends of a circular fluorescent lamp having a pair of lead-in wires extending from each end thereof, said base comprising: a substantially semicylindrical holder and mating, substantially semicylindrical cap, said holder having a pair of spaced walls, each of said walls having a pair of bores formed therein and extending therethrough, a base pin located within each of said bores, the inner end of each base pin being slotted and having one of said lead-in wires lying thereacross and force-fitted therein.

2. The combination of claim 1 in which the tops of said pair of spaced walls are serrated to provide each of said walls with a pair of V's, with the inner end of each of said bores extending into one of said V's.

3. The combination of claim 2 in which each of said walls is provided with a transverse slot therein extending from the apex of each of said V's and being aligned with the slots in said base pins whereby said lead-in wires extend therethrough.

4. The combination of claim 3 in which said cap has at least one center blade and a pair of end blades, said center blade being disposed between the spaced walls of said holder and said end blades being disposed along the outside of said spaced walls, the tops of said center blade and said end blades being serrated to provide each of them with a pair of V's, said V's in said blades and said V's in said walls being aligned whereby said lead-in wires extend therethrough and thus occupy a predetermined locus within said base.

5. The combination of claim 1 and cooperating means in said holder and said cap defining a force-fit arrangement securing said cap and said holder to one another.

6. The combination of claim 2 and cooperating means in said holder and said cap defining a force-fit arrangement securing said cap and said holder to one another.

7. The combination of claim 3 and cooperating means in said holder and said cap defining a force-fit arrangement securing said cap and said holder to one another.

8. The combination of claim 4 and cooperating means in said holder and said cap defining a force-fit arrangement securing said cap and said holder to one another.

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R. F. POLISSACK, Assistant Examiner

U.S. Cl. X.R.

313—49, 51, 331