June 29, 1943. E. H. WHITTAKER 2,323,172

FLUORESCENT LAMP

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FIG. 1.

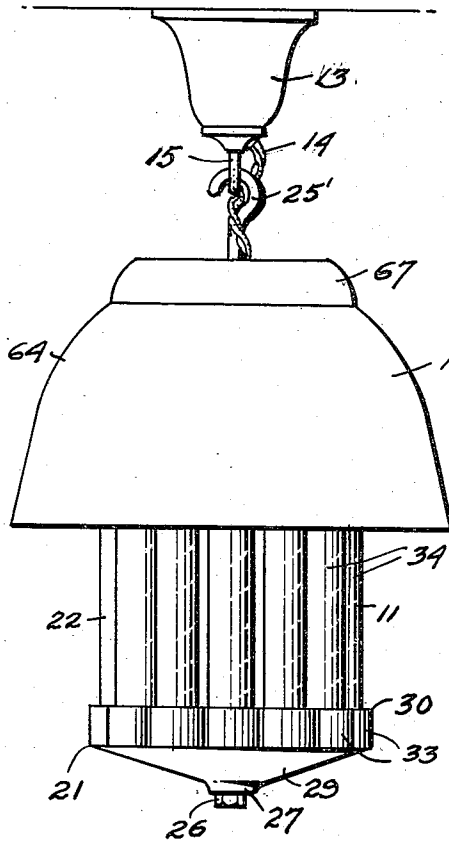


FIG. 2.

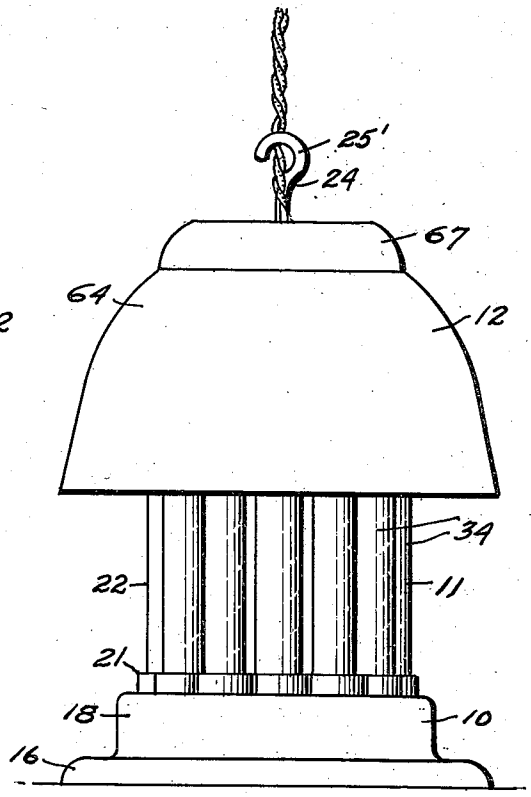


FIG. 8.

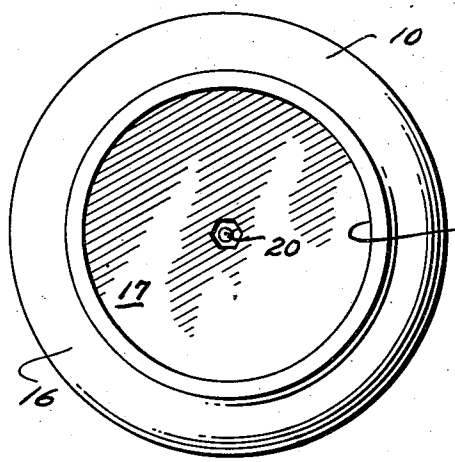
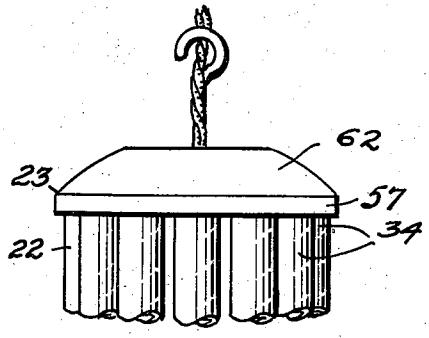


FIG. 3.



INVENTOR.

Edward H. Whittaker

BY Lancaster, Allwine & Rommel

ATTORNEYS.

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FIG. 5.

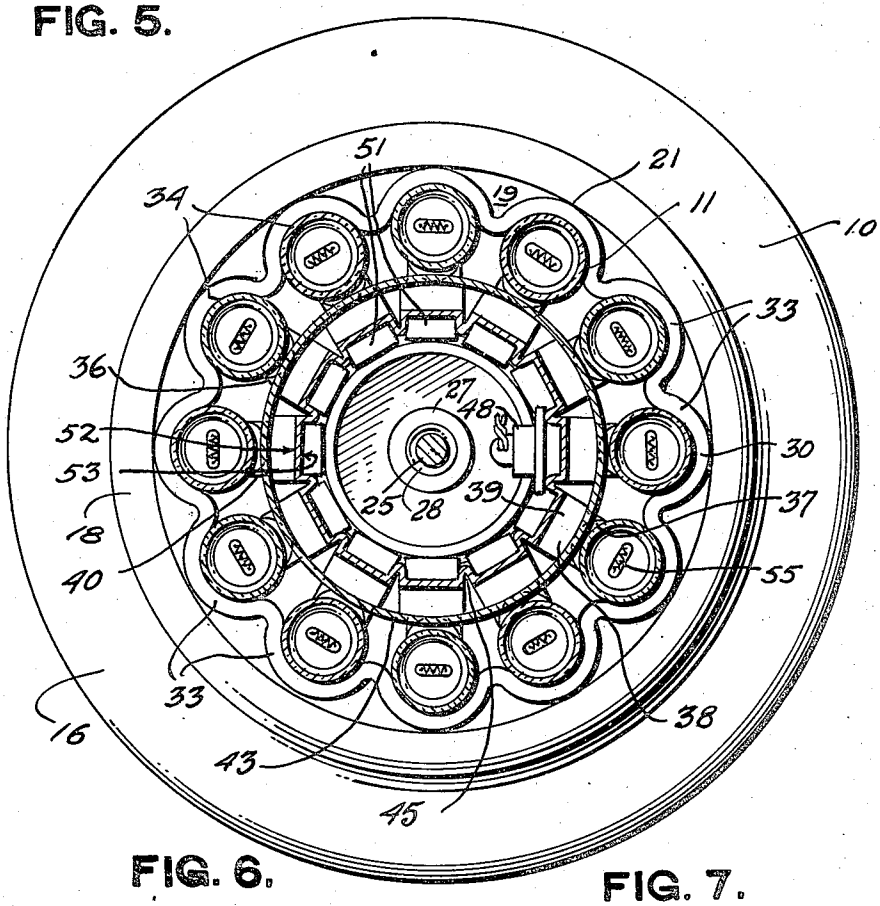


FIG. 6.

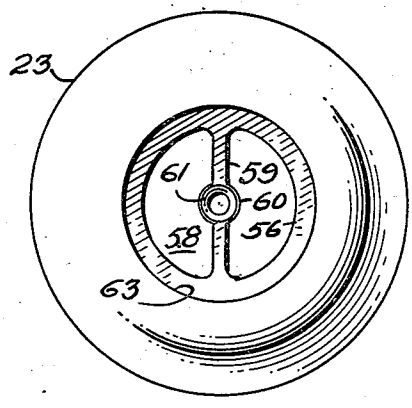
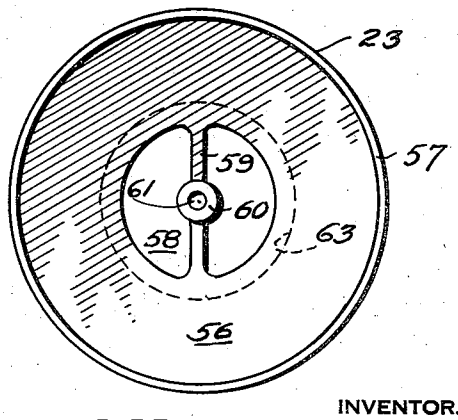


FIG. 7.



INVENTOR.

Edward H. Whittaker

BY Lancaster, Allwine & Rommel

ATTORNEYS.

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FIG. 4.

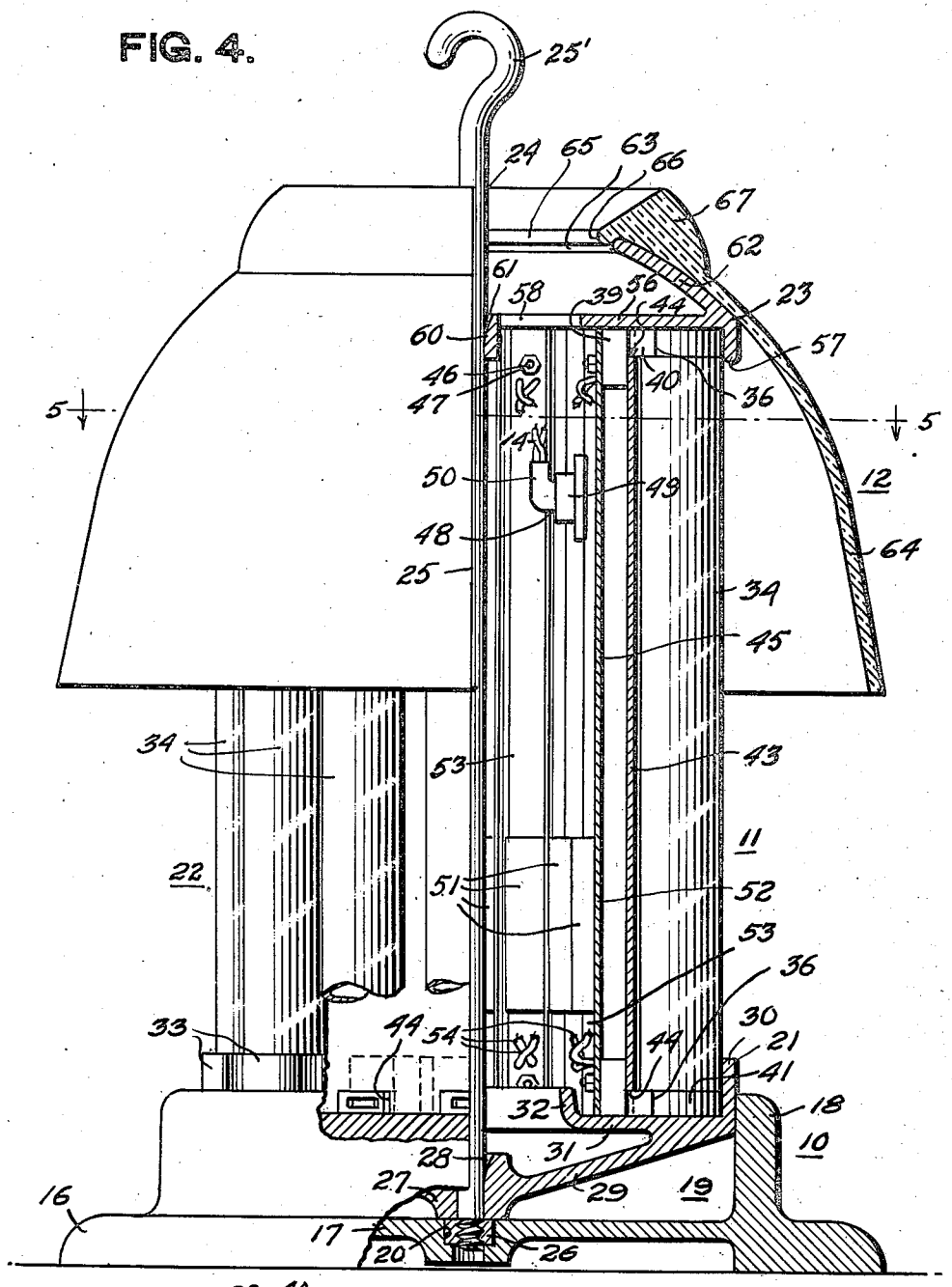
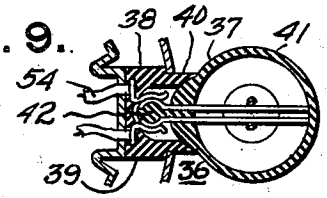


FIG. 9.



INVENTOR.

Edward H. Whittaker

BY Lancaster, Allwine & Rommel

ATTORNEYS.

Patented June 29, 1943

2,323,172

UNITED STATES PATENT OFFICE

2,323,172

FLUORESCENT LAMP

Edward H. Whittaker, Jersey City, N. J.

Application April 15, 1942, Serial No. 439,122

5 Claims. (Cl. 240—78)

The present invention relates to lamps of the character embodying a plurality of fluorescent or luminous tubes of the double ended discharge type.

The principal objects of the invention are to provide a body part including a plurality of such tubes, which may be used as a ceiling or hanging lamp, as a lantern, or in combination with a detachable base support, as a table lamp or torchère; and to provide a lamp including a plurality of fluorescent or luminous tubes of the double-ended discharge type which are in closely spaced parallel relation and which may be easily placed and removed, so as to permit change of tubes to obtain different colored lighting effects, such as two or more series of red, white and blue colored lights generated by the tubes, or lights all of one color such as white, green, or blue.

Another object of the invention is to provide in fluorescent lamps a simple yet sturdy sleeve-like unit, including a plurality of such tubes, their bases being of the separable plug and socket type, and such accessories as may be necessary, such as transformers or control boxes and separable current connector, to facilitate use of the unit as a part of a ceiling or hanging lamp, or as a table or reading lamp etc., as above set forth.

A further object is to provide a lamp which may be easily and quickly converted from a hanging to a table lamp or vice versa, and which includes a base support which facilitates dismembering of the superjacent main body portion, in the event it becomes necessary or desirable to change one or more of the luminous tubes.

Other objects and advantages of the invention will appear in the following detailed description of the preferred embodiment of my invention, taken in connection with the accompanying drawings forming a part of this specification, and in which drawings:

Figure 1 is a view in elevation of a ceiling or hanging lamp constructed according to my invention.

Figure 2 is a similar view showing it adapted to be used as a table or reading lamp.

Figure 3 is a fragmentary view in elevation showing a portion of the elements of the lamp adapted to be used to give a lantern or torchère effect.

Figure 4 is an enlarged detail view partly in elevation and partly in vertical section of the assembly shown in Figure 2, some parts being broken away to disclose details.

Figure 5 is a horizontal sectional view on substantially the line 5—5 of Figure 4.

Figure 6 is a top plan view on a reduced scale of a top part of the lamp.

Figure 7 is a bottom plan view of the same.

Figure 8 is a top plan view of a base support used to render the invention useful upon some surface such as a table top.

Figure 9 is a view in horizontal section showing a typical base of the separable plug and socket type, and adjacent parts which may be used with my invention.

In the drawings, I have shown the preferred embodiment of my invention. It comprises a base support 10, for table use, a barrel-like main body part 11 detachably resting upon the support, and a globe 12 removably carried by body part 11. In Figure 1 is shown a ceiling canopy 13, with electric current wires 14 extending therefrom, and a depending eye 15 as a typical example of means for suspending pendant lamps which may be used with my invention.

The support 10 may be made relatively plain or ornamental as desired. In the example shown, it comprises a horizontal flange 16, a raised bottom 17 and an upstanding annular flange 18, providing an upwardly opening circular recess 19. For a purpose to be subsequently set forth, the bottom 17 has a centrally located upwardly opening polygonal socket 20.

Referring now to the main body part 11 which is barrel-like in shape, it comprises a lamp bottom 21, a sleeve-like luminous tube supporting unit 22; a lamp top 23; and means 24 detachably supporting the bottom 21 and top 23 with the sleeve-like unit 22 therebetween or for rendering these units 21, 22 and 23 co-axial or centered. This means 24 may comprise a vertical centering rod 25 provided with a handle or hook 25' at its upper end and a polygonal nut 26 in screw threaded engagement with its lower end.

In the example shown, the bottom 21 comprises a hub portion 27 having an upwardly flaring way 28 for the reception of the lower end portion of rod 25; and upwardly and outwardly extending conical bottom 29 extending therefrom; and upstanding peripheral flange 30 at the upper portion of bottom 29; a horizontal ledge 31 extending inwardly of the bottom of flange 30; and an upstanding flange 32 at the inner edge of ledge 31. The flange 30 is preferably made up of a great number of joined horizontally arcuated wall sections 33, as shown in Figure 5 for a purpose to be subsequently set forth.

The unit 22 comprises a great number of elec-

tric lamps 34 of the tubular double-ended discharge type, such as is shown in the C. S. Peterson patent 2,160,786 granted May 30, 1929; a lamp base 36 for each end of each lamp 34, said bases 36 each comprising separable plug and socket members 37 and 38, respectively, and preferably of the type shown in said Peterson patent, so that the socket member 38 has a main body portion 39 and a lateral socket extension 40, and the plug member 37, a main body portion 41 secured to the lamp 34 and a terminal carrying extension 42 adapted to be frictionally held in the extension 40; an upright sleeve-like reflector 43 provided with notches 44 at spaced intervals along its upper and lower margins, the notches of either margin aligned with the notches of the other margin, and with the extensions 40 of the bases 36 projecting thru the notches 44, and the main body portions 39 of the socket members 38 abutting the inner face of the reflector; and an upright sleeve-like carrier 45 for the lamp bases 36, which have the main body portion 39 thereof secured to the outer face of the carrier 45 as by stud bolts 46 and nuts 47. The unit 22 may also include a separable current conductor 48 of any suitable type, such as one having a socket member 49 and a plug member 50, the socket member being secured to the carrier 45 in any suitable manner. The unit 22 may also include any necessary control boxes 51 containing the usual relay and reactor or transformer (not shown in the drawings) which may be necessary for operation of the lamps 34.

It is preferred to make the sleeve-like carrier 45 corrugated as shown in Figures 4 and 5, so as to provide crowns or ribs 52 against which the socket members 38 abut and are secured, and valleys 53 in which the control boxes 51 may be accommodated, as well as wires 54 for conducting current to the lamps 34.

In assembling the unit 22, the reflector 43 and carrier 45 are held in concentric relation with their upper and lower ends in parallel planes by securing the socket members 38 to the carrier with the extensions 40 extending thru the notches 44 of the reflector. Using the type of lamp bases shown in the aforesaid Peterson patent, permits the lamps 34 to be closely spaced and easily placed or removed without revolving the lamps, a push or pull motion sufficing to place or remove the lamps together with their plug members.

The unit 22 rests on ledge 31 of lamp bottom 21, with the outer and inner flanges of the latter engaging or closely related to the plug members 37 and the corrugations of the carrier 45, respectively, thus centering the unit 22 on the lamp bottom. The arcuate walls 33 are preferably shaped to conform to the circumferential faces of the plug members 37 and lamps 34, lending good appearance to the asesmbly, concealing the plug members 37 and if desired, the zones of the lamps 34 where the filamentary electrodes or heating coils 55 are located.

The lamp top 23 preferably comprises a cap portion 56, to rest upon unit 22 and having a depending flange 57 surrounding the upper portions of the lamps 34, the cap portion having a hand-hole 58 thru which access may be had to the interior of unit 22, as for placing or removing the plug member 50; a spider 59 carrying a hub 60 having an upwardly flaring way 61 for reception of the upper portion of rod 24 and to center the lamp top with respect thereto; and a dome-like portion 62 having a hand-hole 63 similar to hand-hole 58.

The globe 12 is adapted to rest upon the dome-like portion 62 and in the example shown comprises a dome-like portion 64 mainly to shade the upper portions of the lamps 34 and to reflect illumination therefrom downwardly when used as a table or reading lamp; this dome-like portion having a hand-hole 65 in the upper portion thereof for access to the interior of the unit 22; and a downwardly and inwardly extending flange 66 to engage the margin of hand-hole 63. The globe may be made relatively thick at its upper portion, as by a rim bulge 67, to reinforce it throughout the major portion of its engagement with portion 62 of the lamp top. It is, of course, understood that this globe may be plain or ornamented as desired; and may be dispensed with in the event it is desired to use the unit 22 as a lantern or torchère, as suggested by Figure 3.

The nut 26 is of a size to fit the socket 20, and the upwardly and outwardly extending bottom 29 of the lamp bottom assists in centering the body part 11 on base support 10 by sliding engagement with the flange 18 of the latter, if it is not initially centered with respect thereto. The handle 25' may be a hook for engagement with the eye 15 as shown in Figure 1 to suspend the body 11 from the ceiling or other support, and to aid in rotating the rod 24, while the base support 10 acts as a wrench when it is desired to dismember the lamp. The upwardly flaring ways 28 and 62 of hubs 27 and 60 aid in reassembling. The sleeve-like unit 22 may be readily removed from the lamp bottom and top and set to one side when changing one or more of the lamps 34, such as to change the color arrangement or replace defective lamps. The lamps 34 may be closely spaced, just sufficient to permit a person to place the index finger and thumb in embracing relation to the selected tube and by a pull, and without twisting, remove same from the assembly. Likewise, a new or different tube may be placed by a mere pushing force.

No attempt has been made to show all of the wiring for the lamps 34 since such forms no part of the present invention.

I claim:

1. A convertible table-hanging lamp comprising a base support, for table use, provided with an upwardly opening polygonal socket; a centering rod provided with a polygonal nut in screw threaded engagement with the lower end of the rod, said nut resting freely in said socket; a lamp bottom resting freely upon said base support, and nub, provided with a hub surrounding the lower portion of said rod above said nut; a sleeve-like luminous tube supporting unit resting upon said lamp bottom and surrounding said centering rod; and a lamp top, resting upon said sleeve-like unit, and provided with a hub surrounding said rod whereby raising of said centering rod will raise, with it, said lamp bottom, tube supporting unit and lamp top.

2. A lamp comprising a base support, for table use, provided with an upwardly opening polygonal socket; a centering rod provided with a polygonal nut in screw threaded engagement with the lower end of the rod, said nut removably fitting in said socket; a lamp bottom removably resting upon said base support and nut, provided with a hub surrounding the lower portion of said rod; a sleeve-like luminous tube supporting unit resting upon said lamp bottom and

surrounding said centering rod and including plug members having circumferential faces; and a lamp top, resting upon said sleeve-like unit, and provided with a hub surrounding said rod, said lamp bottom provided with a vertically-extending flange comprising a plurality of horizontally arcuate wall sections, engaging the circumferential faces of said sleeve-like unit laterally to hold it centered with respect to said rod.

3. In a lamp, a lamp bottom; a vertical centering rod extending upwardly therefrom; a sleeve-like luminous tube supporting unit carried by said bottom and surrounding said rod; means to support a globe and to center said sleeve-like tube supporting unit with respect to said rod, including a lamp top resting upon said sleeve-like unit and comprising a hub surrounding and in contact with said rod, a flange, concentric with said hub, engaging the upper portion of said sleeve-like unit to center it with respect to said rod, and a dome-like portion extending upwardly and inwardly from said flange; and a globe resting upon said dome-like portion and extending downwardly therefrom in laterally spaced relation to the upper portion of said sleeve-like unit and with its bottom edge below said flange.

4. In a fluorescent lamp, the combination with a plurality of electric lamps of the tubular double-ended discharge type, of an upright sleeve-like reflector provided with notches at spaced intervals along its upper and lower margins, the notches of either margin being aligned with the notches of the other margin, a lamp base for each end of said lamps, each base comprising separable plug and socket members, one of said members of each base having a main body portion and a lateral extension, and a longitudinally corrugated upright sleeve-like carrier for said members of the lamp bases having the main body portions and extensions, said carrier disposed within and concentric to said reflector and in spaced relation thereto, said last mentioned members of said lamp bases having their main body portions disposed between said reflector and the crowns of the corrugations of said carrier and their lateral extensions projecting thru the said notches of the reflector.

5. In a fluorescent lamp, the combination with a plurality of electric lamps of the tubular double-ended discharge type, of an upright sleeve-like reflector provided with notches at spaced intervals along its upper and lower margins and inwardly-extending, spaced apart control boxes along its lower margin, the notches of either margin being aligned with the notches of the other margin, a lamp base for each end of said lamps, each base comprising separable plug and socket members, one of said members of each base having a main body portion and a lateral extension, an upright sleeve-like carrier for said members of the lamp bases having the main body portions and extensions, said carrier having a plurality of spaced apart longitudinally-extending corrugations, providing crowns and valleys, with said plug and socket members abutting said crowns and said control boxes accommodated in said valleys, said extensions projecting thru said notches, and means for supplying current to said lamps, including a separable current connector supported by said sleeve-like carrier in one of said valleys.

EDWARD H. WHITTAKER.