Oct. 30, 1956 J. L. ARCHER 2,769,083

LIGHTING FIXTURE FOR CIRCULAR FLUORESCENT LAMPS

Filed Oct. 5, 1953

Fig. 1.

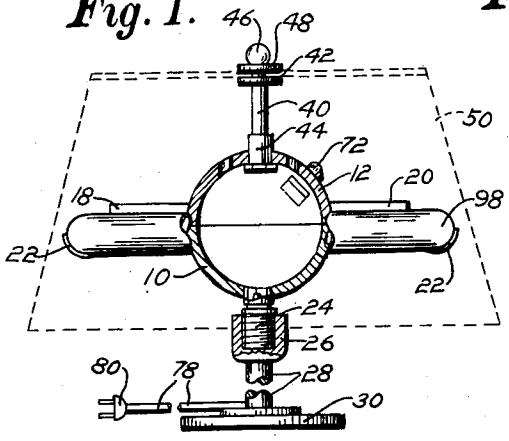


Fig. 2.

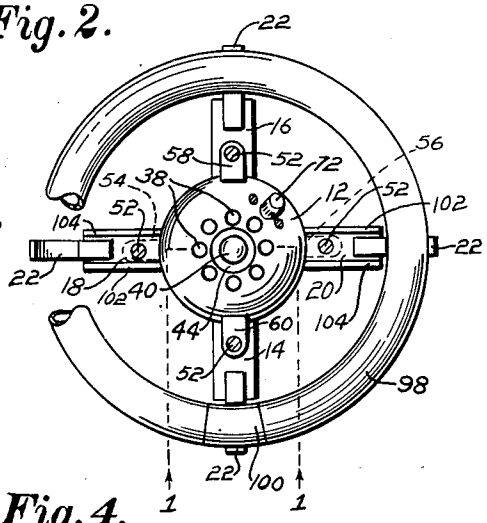


Fig. 3.

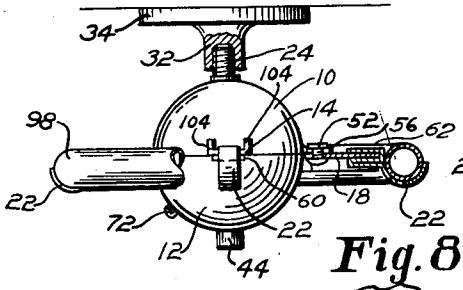


Fig. 4.

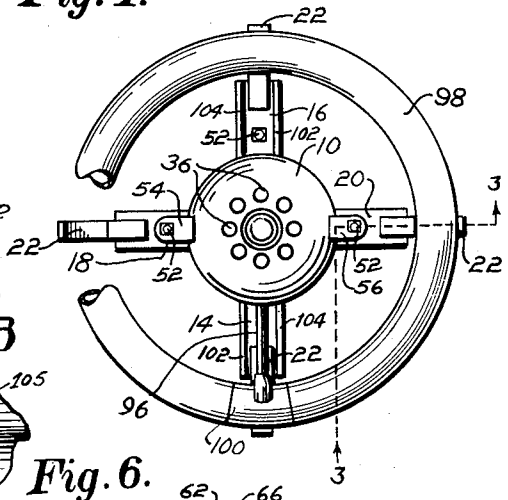


Fig. 8

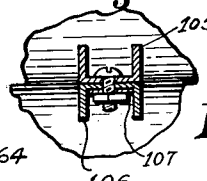


Fig. 5.

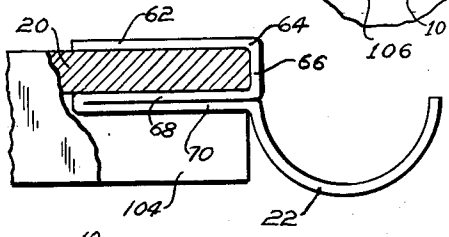


Fig. 6.

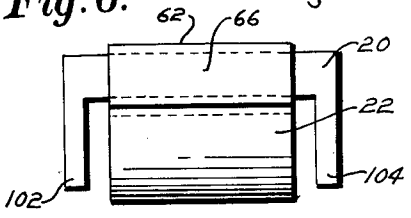
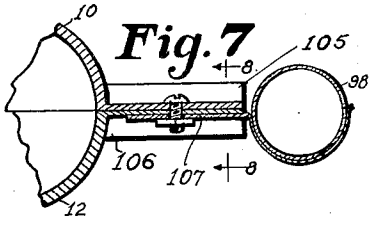


Fig. 7



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LIGHTING FIXTURE FOR CIRCULAR FLUORESCENT LAMPS

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10 Claims. (Cl. 240—51.12)

This invention relates to lighting fixtures generally, but more particularly to an adapter using a circular fluorescent lighting tube as a part thereof.

The principal object of this invention is to so construct such an adapter that it can be readily, easily and rapidly installed by practically anyone, without the use of tools or of special skill, wherever it is desired to substitute fluorescent lighting for the usual incandescent lamp bulbs.

The invention has among its objects the production of such a device that may be installed to any of the commonly used electrical outlets, in substantially all devices and positions wherein said outlets occur, as for example, in wall, ceiling or floor outlets, or in pedestal or table lamp structures, and may be used with or without a shade, as preferred.

Other objects of my invention are to so construct a fixture of the kind described, shaped of a pair of mating members detachably secured together, and together forming a substantially enclosed shell or chamber to conceal the ballast and wiring or other unsightly elements, and yet provide access to the interior of said chamber as the need therefor arises and without removing the entire fixture from its position in the electrical outlet, if so desired.

A still further object of the invention is to so construct said device that it has as an element thereof, a circular fluorescent lighting tube holder that removably receives and supports said tube and is in turn firmly, but detachably mounted on the device itself.

An added object of my invention is to so construct said adapter fixture with said enclosing shell portions, with arms projecting outwardly from the latter, the arms of both shell portions being secured together to hold the entire device in assembled relation.

Many other objects and advantages of the construction herein shown and described, and the uses mentioned, will be obvious to those skilled in the art to which this invention appertains, as will be more clearly evident from the disclosures herein given.

To this end, my invention consists in the novel construction, arrangement, and combination of parts herein shown and described, and the uses mentioned, as will be more clearly pointed out in the claims hereunto appended.

In the drawings, wherein like or corresponding reference characters represent like or corresponding parts throughout the views,

Figure 1 is a side elevation, with parts broken away and shown in cross-section, of an adapter connected to a table lamp, and taken substantially along the line 1—1 of Fig. 2;

Figure 2 is a top plan view of the same, with a portion of the fluorescent lighting tube broken away in order to show the construction more clearly;

Figure 3 is a side elevation, with parts in section taken substantially along the line 3—3 of Fig. 4, showing the device applied to an overhead electric socket outlet;

Figure 4 is a plan view of the fixture shown in Fig. 3, but with parts broken away, and viewed from below the fixture;

Figure 5 is an enlarged detail view, showing one form of fluorescent tube receiving clip detachably mounted on the fixture;

Figure 6 is an end view of the parts shown in Fig. 5;

Figure 7 is an enlarged detail view, showing another manner of detachably mounting the clip to the fixture members; and

Figure 8 is a cross-sectional view of the same, taken substantially along the line 8—8 of Fig. 7.

This application is a continuation in part of my prior, now abandoned, application, Serial No. 173,992, filed July 15, 1950.

Referring more particularly to the drawings, wherein I have illustrated the preferred forms of my invention, there is shown any suitable electrical connector outlet, such as the screw-threaded shell or socket **26** already assembled as part of the table lamp structure indicated. It is to be stressed at this point that although such a table lamp is shown, the invention is not limited to such lamp, but may be used in any and all places that have an electrical outlet available for attachment of the adapter.

This table lamp usually has a relatively large-area base element **30** for supporting the lamp for use, and with an upright pedestal **28** through which the wiring **78** may be conducted to lead to said outlet **26** from an attachment plug **80**.

When the adapter is used as a ceiling light, the relatively permanent or stationary element is indicated at **34** in Fig. 3, the same having the socket or threaded element **32** to receive the threaded nipple or plug **24** of the adapter fixture.

Referring to Figs. 1–6 inclusive, there is shown a lower section or member having a central hollow, cup portion **10**, herein shown as being approximately semi-spherical in shape for the sake of simplicity in the drawing, and a similar mating section or member having the cup portion **12**, the two cup portions being opposed to one another so that when both are positioned in assembled operative relation with the open ends of the cups abutting one another, there is formed a substantially enclosed chamber in which the transformer or ballast, the starter, and wiring required for the operation of the device, may be contained and concealed from external view. Obviously, this positioning of these accessory items within the chamber or shell enhances the ornamental appearance of the device, and yet enables ready access to the interior of the shell whenever it is desired to inspect said items or to replace any of the same.

For the sake of convenience we may term the lower of the mating fixture parts the base member, and call the upper member the cap member, although when the device is attached to an overhead electric outlet, the cap member is then positioned underneath the base member, as indicated in Fig. 3.

Each of said sections or members is provided with laterally extended angularly spaced-apart arms, there being two such arms **14** and **16** provided on the base member, and a similar pair of arms **18** and **20** provided on the cap section, the arms of both members cooperating in a manner to be hereinafter pointed out.

Although these arms may be approximately of uniform length, I have illustrated one or more of the arms of each of said members as being shorter than other arms of the structure, as for example in the form of tabs **54** and **56** alternating with the longer arms **14** and **16** of the base member, and the tabs **58** and **60** that alternate with the longer arms **18** and **20** of the cap member.

The arms, and more especially the longer arms may be made channel-shape in transverse cross-section, if desired, with the webs and the upright flanges to comprise said channels, the side flanges **102** of the base member arms extending in a direction opposite to the flanges **104** of

the cap member when the said cooperating members are in assembled relation.

Also, one or both of the cup portions may be provided with air vents or openings 36 and 38 therethrough, whereby heat from within the chamber may escape to the atmosphere.

Tube-receiving and supporting clips may be detachably mounted on the assembled base and cap sections, the clips shown in Figs. 1–6 inclusive being formed of flat strips of material of suitable strength and thickness, with their ends 62 bent at the points 64 to form the straight portions 66, and from said ends of the portion 66 the strip is bent parallel to the end 62 to form the substantially U-shaped base sections having coacting spring gripping jaws 68 which with the ends 62 may be yieldably slidably positioned on the ends of the arms to frictionally retain the clips on said arms. From the ends of the jaws 68, the strips bend backwards against the jaws and from the ends of these sections, indicated by the reference numeral 70, the clips extend outwardly in any preferred tube-receiving and supporting cross-sectional shape, as for instance the arcuate form indicated at 22.

The tube-holding clips 22 are frictionally held on the outer ends of the arms and the fluorescent tube or envelipe rests in the outer ends or hook portion of the same, whereby the tube is free to expand and contract. Lateral movement of the clips is limited by the flanges 102 and 104 of the arms, as shown in Fig. 6, and when it is desired to use the adapter in an inverted position, the clips may be removed, and then replaced in inverted or turned over position.

A starter button 72 is provided to extend through an opening in the chamber, as for example through the cap member 12, and a light cord 78 having a plug 80 on its farthermost end is provided for connecting the fixture to a source of current supply where the adapter is used on a portable pedestal or table lamp. A cord 96 extends from the casing of the fixture to a conventional fluorescent light tube or envelope 98 supported on the arm ends by the spring clip, there being a connecting element 100 to which the cord extends between the source of electrical current and the light tube.

The base section 10 may be provided with a threaded nipple 24, or other suitable form of electrical detachable connection, as for instance a socket plug, which when the adapter is used on a lamp structure such as is shown in Fig. 1, is removably threaded into a socket outlet 26 provided at the end of a stem 28 extending upright from the base 30. When the adapter is used in inverted position, as indicated in Fig. 3, the electrical plug 24 is threaded into the overhead socket 32 of the base member 34.

A post 40 may be secured to one of said mating sections, as for example to the section 12, having a removable knob 46 at its end, so that a shade 50, indicated in dotted lines, may be clamped between washers 42 and 48 between said knob and adjacent end of the post.

The sections are detachably secured together in assembled operative relation as indicated, with fastening means such as bolts 52 extended through registering bolt holes through said registered arms, or arms and tabs, as the case may be.

In the modification illustrated in Figs. 7 and 8, all of the arms of both members are made of approximately equal length, as indicated at 105 and 106 respectively, and a modified form of tube-receiving clip 107 may be employed. In this instance, the clip is made substantially horizontal at its inner end and lies flat against the web portion of one of the registering pair of arms and is provided with a bolt hole therethrough adapted to register with those through the pair of opposed arms, so that the same bolt that interlocks said pair of arms together is common to the clip to interlock the latter in place at the same time. Obviously in this case too, the clips may be detached and inverted whenever the need for so doing arises.

From the foregoing it is clear that by means of this adapter, any type of floor, pedestal or table lamp may be converted with the utmost ease, to one using a fluorescent lighting tube, and as a matter of fact, this adapter may be screwed or otherwise detachably applied into any existing electrical outlet, whether the latter be on the floor, wall or ceiling, all without detracting from the appearance of the device.

Having thus described my invention it is obvious that various immaterial modifications and changes may be made in the same without departing from the spirit of the invention; hence I do not wish to be understood as limiting myself to the exact form, arrangement, construction and combination of parts herein shown and described, except as limited by the state of the art to which this invention relates, or by the claims hereunto appended.

I claim:

1. In a fluorescent light bulb fixture adapted to be detachably supported by an electric socket outlet, a pair of mating spider members each provided with a cup portion with angularly spaced apart arms channel-shape in transverse cross-section projecting outwardly therefrom, both of said cup portions mating to together form a chamber therebetween with the arms of one of said spider members in registry with the arms of the other spider member, means for detachably interlocking said registered arms together to hold said spider members together in assembled relation and to provide immediate access to the entire interior of said chamber, laterally extending means having inner ends connected to the exterior of and carried by said pairs of registered arms and provided at their outer ends with hook ends to receive and support a fluorescent light tube, and an attaching plug for removable mounting interconnection of said fixture with said socket outlet.

2. In an electric fixture adapter for detachable mounting to an electrical outlet, the combination of a base member comprising a cup having laterally extending arms and also having laterally extending tabs, a complementary cap member comprising a cup having laterally extending arms and tabs corresponding to those on said base member and adapted to be mounted in inverted position upon said base member with the tabs of one member in registry with the arms of the other member, means extending from one of said members perpendicularly to a plane extended through the arms and tabs of the same for detachable operative interconnection with said electrical outlet, and clips having inner ends frictionally held on the ends of said longer arms only for supporting a fluorescent light tube.

3. In an electric fixture adapter for detachable interconnection with an electric outlet, the combination of a base member and a cap member each having a central cup provided with laterally projecting arms and tabs alternately arranged, said members adapted to be assembled together in mutually inverted position with the tabs of one member in registry with the arms of the other member and with the cups forming a chamber therebetween, electrical means extending from the cup of one of said members for detachable electrical connection with said electric outlet and for supporting the fixture, and clips having their inner ends frictionally mounted on the ends of only the longer of said arms and with their outer ends shaped for receiving and supporting a fluorescent light tube.

4. In an electric fixture adapter, the combination which comprises a cup-shaped base having arms channel-shape in cross-section, extended from opposite sides thereof and having relatively shorter tabs with bolt holes therethrough positioned in a plane perpendicular to a plane extended through the centers of the arms and also extended from opposite sides of the base, a complementary cup-shaped cap having arms and tabs corresponding to the arms and tabs of the base mounted in

an inverted position upon the base and positioned with the tabs thereof in registering relation with the arms of the base and whereby the arms thereof are in registering relation with the tabs of the base, bolts connecting the tabs of the base to the arms of the cap and the tabs of the cap to the arms of the base, an electrical fitting extended through said base and positioned to extend substantially perpendicular to a plane extended through the arms and tabs of the base and cap, and clips having horizontally disposed approximately U-shaped inner ends providing gripping jaws frictionally held on the ends of the arms only for supporting a fluorescent light tube.

5. In an electric fixture adapter, the combination which comprises a cup-shaped base having arms channel-shape in cross-section extended from opposite sides thereof and having relatively shorter tabs positioned in a plane perpendicular to a plane extended through the centers of the arms and also extended from opposite sides thereof, a complementary cup-shaped cap having arms and tabs corresponding with the arms and tabs of the base mounted in an inverted position upon the base and positioned with the tabs thereof in registering relation with the arms of the base and whereby the arms thereof are in registering relation with the tabs of the base, means connecting the tabs of the base to the arms of the cap and the tabs of the cap to the arms of the base, threaded means extended from the intermediate part of the base, a supporting base into which said threaded means is threaded, a post extended from the intermediate part of said cap and aligned with said threaded means and positioned perpendicularly to a plane extended through the tabs and arms of the base and cap, and straps having horizontally disposed U-shaped base sections providing gripping jaws frictionally retaining the straps on the ends of the arms only and having hook ends extended from said base sections for receiving and supporting a fluorescent light tube.

6. A fixture as described in claim 2, but further characterized in that said tube-supporting means is frictionally detachably mounted to the exterior of said arms.

7. A fixture as described in claim 1, but further characterized in that said tube-supporting means is secured to said arms by the same means that detachably interlocks said mating arms together.

8. A fixture as described in claim 1, but further characterized in that at least one of said arms of each spider member is shorter than other arms thereof, so that when said members are in assembled relation, said shorter arms of one member will be in registry with the relatively longer arms of the other member, the inner

ends of said laterally extending means being mounted on the longer arms and terminating adjacent the outer ends of the shorter arms.

9. In a fluorescent light bulb fixture adapted to be detachably supported by an electric outlet, a pair of mating spider members each having a cup portion with angularly spaced arms projecting outwardly therefrom, both of said cup portions mating together to form a chamber therebetween with an arm of one spider member shorter than and in registry with an arm of the other spider member when said members are in assembled mating relation, means for detachably interlocking said registering arms together to hold said mating members together in assembled relation and to provide immediate access to the entire interior of said chamber, laterally extending means carried by said arms to receive and support a circular fluorescent light tube, the inner ends of said laterally extending means being mounted on the longer arm and terminating adjacent the outer end of the shorter arm, and electrical means on one of said spider members for removably interconnecting with said electric outlet and supporting said fixture from the latter.

10. In a fluorescent light bulb fixture adapted to be detachably supported by an electric outlet, a pair of mating spider members each having a cup portion with angularly spaced arms projecting outwardly therefrom, both of said cup portions mating to together form a chamber therebetween with an arm of one of said spider members in registry with an arm of the other spider member, means for detachably interlocking said registered arms of the mating members together to hold the latter in assembled relation and to provide immediate access to the entire interior of said chamber, means frictionally detachably mounted on the exterior of said arms to receive and support a circular fluorescent light tube, said tube-supporting means being secured to said arms by the same means that detachably interlocks said mating arms together, and electrical means on one of said spider members for removably interconnecting with said electric outlet and supporting said fixture from the latter.

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