March 9, 1948. O. H. VAN AMBURG ET AL 2,437,569

LAMP FIXTURE

Filed March 18, 1946

Fig. 1.

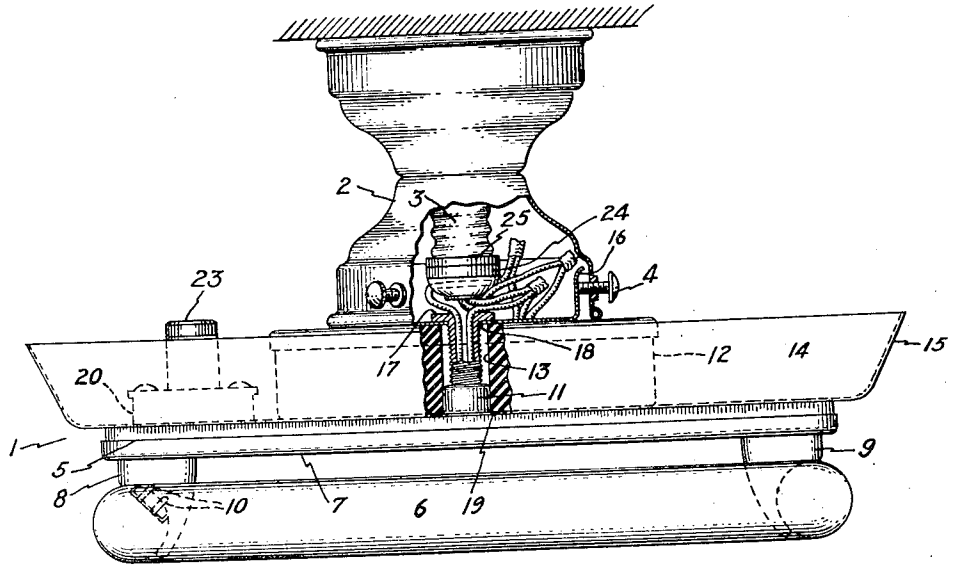


Fig. 2.

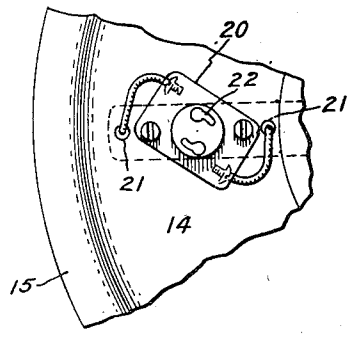
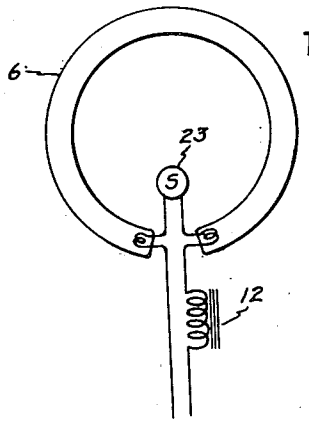


Fig. 3.



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UNITED STATES PATENT OFFICE

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LAMP FIXTURE

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1 Claim. (Cl. 240—51.12)

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Our invention relates to lamp fixtures and more particularly to lamp fixtures for circular fluorescent lamps of the type now appearing on the market.

An object of our invention is the provision of a new and improved lamp fixture especially designed to accommodate a circular fluorescent lamp and which incorporates the ballast and starting switch customarily employed with a fluorescent lighting system.

Another object of our invention is the provision of a lamp fixture for circular fluorescent lamps which employs a reflector and which is particularly adapted for use with ceiling canopies.

In the accompanying drawing, Fig. 1 is a view, partly in section, of a lamp fixture constructed in accordance with our invention; Fig. 2 is a view broken away to show a starter socket, and Fig. 3 is a wiring diagram of the lamp fixture.

Referring to Fig. 1 of the drawing, our lamp fixture 1 has been illustrated as supported from a conventional ceiling bracket which includes a decorative shell 2 and an inner screw shell socket 3 for receiving an ordinary incandescent lamp bulb. The cover 2 is provided with a plurality of thumb screws 4 for holding a globe or shade on the decorative shell. These thumb screws are used to support our lamp fixture on the shell in the same way that the globe is supported. Hence, it will be manifest that our fluorescent lamp fixture may be used in place of an ordinary incandescent lamp and globe without the necessity of making any change in existing wiring systems.

Turning now to the construction of our lamp fixture, we employ a holder 5 for supporting a circular fluorescent lamp 6. To this end, the holder 5 is provided with a straight channel 7 carrying spaced arms 8 and 9 which engage the loop of the lamp to mount it in position on the holder. To facilitate mounting the lamp, the arm 9 is pivoted about the channel so that it may be moved toward the arm 8 for insertion in the lamp loop. A spring, not shown, biases the arm 9 into firm engagement with the wall of the lamp and causes the lamp contact pins 10 to make good electrical connection with a contact receptacle carried in arm 8. The wires connected to the contact receptacle are hidden in the interior of channel 7. The holder 5 itself forms no part of our invention and has been illustrated as of the type disclosed in the copending application of Frederick C. Dazley for "Lamp holders," filed October 23, 1945, Serial No. 624,036, and assigned to the same assignee as the instant application. In order to mount the holder on a support, the channel 7 is provided with an internally threaded nozzle 11.

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Our lamp fixture makes use of a ballast 12 which is inclosed in a circular casing having an opening or passageway 13 extending through the center thereof to receive a mounting means and to permit wiring connections to be made therethrough. The ballast comprises either a choke coil or an autotransformer such as are customarily used with fluorescent lighting systems. It is mounted on the inner side of a dish-shaped reflector 14 having side walls 15 which serve to house the ballast and obscure it from view, particularly when the fixture is mounted on a ceiling bracket. The lamp holder 5 is mounted on the outer surface of the reflector so that the reflector serves to increase the intensity of the lamp. Reflector 14 is circular in form and is preferably made of a diameter corresponding somewhat to that of the lamp. An adapter cup 16 is mounted on top of the ballast 12.

In order to hold the adapter cup, ballast, reflector and lamp holder in assembled relationship, a threaded hollow nipple 17 is mounted through an opening 18 in cup 16 and then extends through the passageway 13 into threaded engagement with the nozzle 11 of the holder. By tightening up on the nipple 17, the parts will be locked together in assembled relationship. It should be noted that the lamp holder nozzle 11 extends through an opening 19 in the reflector into the passageway 13. In this way, it serves as a centering means to hold the reflector and ballast centered on the lamp holder.

Our lamp fixture also makes use of a starting switch for operating the fluorescent lamp. To this end, a socket 20 is mounted within the reflector 14. It is wired into the system in accordance with the circuit diagram of Fig. 3, the wires from the socket extending through openings 21 into the lamp holder channel. The starter socket itself form no part of our present invention and may comprise any one of the well known types now on the market and which employ keyhole receptacle contacts 22 for making an electrical connection with the starter switch. Similarly, a starting switch 23 may be of any known commercial type such as a glow switch or thermal starter.

As shown in Fig. 1, the lead wires to the starter and lamp holder are concealed within the lamp holder channel and are brought out through the nozzle 11 and hollow nipple 17. The electrical connections to the ballast are then made within the space provided by cup 16. Our lamp fixture

is then provided with an attachment plug cap 24 which may be plugged into any standard plug receptacle. In the instant case, an attachment plug receptacle 25 is first screwed into socket shell 3 and then the cap 24 plugged into position to make the electrical connection.

The electrical circuit illustrated in Fig. 3 shows the manner in which the holder, starter and ballast are wired into the lamp operating system. When the ceiling bracket is energized by turning on a wall switch, current flows from one supply line through the ballast 12, the right hand lamp filament, the starting switch, the left hand lamp filament to the other supply line. After a predetermined time interval, for example one second, the starting switch opens the circuit. This causes the ballast to provide a voltage kick which is applied across the lamp filaments causing a glow discharge lighting the lamp. The lamp fixture may be used with the usual 110 volt A. C. residence current supply.

Our fluorescent lamp fixture is one which may be used to replace many different types of incandescent lamp fixtures now in actual use. The fixture is mounted in position simply by removing the existing globe and inserting the adapter cup 16 in the fixture shell where it can be secured in position by the thumb screws 4. Electrical connections are made by plugging in the cap 24. The fixture gives a pleasing appearance since the starter and ballast are hidden within the confines of the reflector. An excellent light source is provided inasmuch as the circular fluorescent lamp gives a well rounded distribution of light which is enhanced by the reflector. The starting switch, ballast and fluorescent lamp are all incorporated into a single fixture which can readily be used with existing lighting installations without the necessity of rewiring.

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

A lamp fixture for circular tubular discharge lamps comprising, in combination, a lamp holder having a support with relatively movable arms at opposite ends of the support for supporting a circular tubular lamp on the holder and for making an electrical connection therewith, said support being provided with a threaded nozzle centrally disposed between the arms, a circular dish-shaped reflector carried by said lamp holder, said reflector being formed with a central opening through which said nozzle extends, a ballast having a centrally disposed passageway mounted on said reflector, the nozzle likewise extending into said passageway, an adapter cup overlying said ballast for mounting the fixture on a support and a hollow fastening screw extending through an opening in the cup, the passageway in the ballast, and being threaded into the nozzle to hold the parts in assembled relationship.

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