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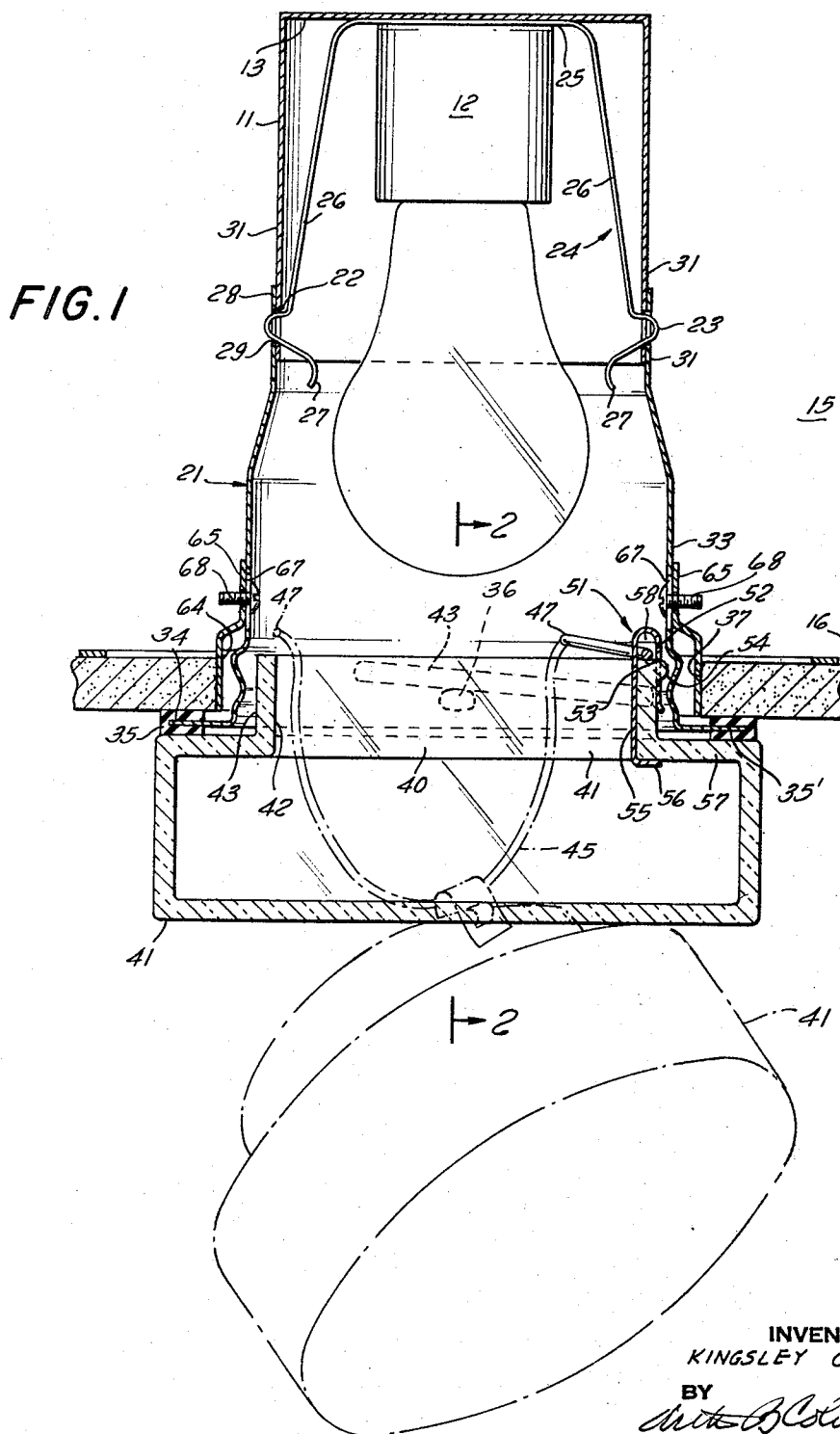
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3,370,165

RECESSED LIGHTING FIXTURE

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2 Sheets-Sheet 1



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3,370,165

RECESSED LIGHTING FIXTURE

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9 Claims. (Cl. 240—147)

This invention relates to the art of lighting fixtures, more particularly to the type using an incandescent bulb and having a light shielding element such as a translucent shade or globe that must be displaced for replacement of the bulb.

As conducive to an understanding of the invention, it is noted that where lighting fixtures of the above type are mounted on the ceiling of a room, and a workman must stand on a ladder in order to reach the fixture for replacement of a bulb, if the globe, when displaced, must be held by the workman, it is difficult for him to replace the burnt-out bulb with a new bulb and there is danger that the globe may fall to the floor and break. Furthermore, if the globe is held in place by screws or similar retaining means that require tools for release thereof, replacement of a bulb would be time-consuming. Moreover, where the support for the globe is exposed, this would be detrimental to the beauty of the design, which derives from its clean simple lines.

Where the globe is held in place by a rotary connection and the ceiling in which the fixture is mounted is subject to vibration, unless a dependable lock is provided for the globe it may disengage from its mount which is undesirable.

It is accordingly among the objects of the invention to provide a lighting fixture that may be mounted in the ceiling of a room and which has a translucent globe associated therewith, that may be readily removed by a workman without use of any tools and which will remain suspended below the lighting fixture without need for any support by the workman, and provide ample clearance into the body of the lighting fixture for removal and replacement of a defective bulb, which lighting fixture is relatively simple in construction and may readily be manufactured at relatively low cost and in which the support for the globe is invisible when the globe is secured in position and which globe, when secured to the fixture, will dependably remain in position regardless of vibration of the ceiling in which the fixture is mounted.

According to the invention, these objects are accomplished by the arrangement and combination of elements hereafter described and more particularly recited in the claims.

In the accompanying drawings in which is shown one of various possible embodiments of the several features of the invention,

FIG. 1 is a longitudinal sectional view of the lighting fixture, showing the globe in suspended position in broken lines,

FIG. 2 is a fragmentary longitudinal sectional view of the lighting fixture taken along line 2—2 of FIG. 1 showing the rotary connection of the globe to the fixture,

FIG. 3 is a transverse sectional view taken along line 3—3 of FIG. 2,

FIG. 4 is a perspective view of the ceiling mount for the fixture, and

FIG. 5 is a perspective view of the globe.

Referring now to the drawings, as shown in FIG. 1, the lighting fixture comprises a cup-shaped housing 11 in which a conventional electric light socket 12 is mounted, preferably being secured to the floor 13 of the housing.

Releasably mounted on the housing 11 is a substantially cylindrical globe supporting sleeve 21. As shown in

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FIG. 1, the housing 11 has two diametrically opposed slots 22, through each of which extends a detent 23.

More particularly, the detent is formed at the end of a U-shaped member 24 of spring steel, said member having a cross piece 25 secured to the floor 13 of the housing and two depending legs 26 which are normally resiliently urged outwardly. The detent 23 is formed adjacent to the extremity of each of the legs 26 by reversely bending the legs 26 as shown so that such detents will normally protrude outwardly from the slots 22, with the free end 27 of each of the legs being positioned inwardly of said housing and defining release fingers.

The sleeve 21 at its inner end 28 has a pair of slots 29 complementary to the slots 22 in the housing 11. The housing 11 and the sleeve 21 have opposed flat surfaces 31 in which the respective slots 22 and 29 are formed and the diameter of the inner end 28 of the sleeve is such that it may encompass the free end of the housing, in which position the slots 22 and 29 will be aligned.

Consequently, the detents 23 will also extend through the slots 29 in the sleeve 21, releasably to retain the sleeve in position.

The sleeve has an enlarged diameter cylindrical portion 33 adjacent its outer end, said outer end having an outwardly extending annular flange 34, the periphery of which is preferably encompassed by a resilient gasket 35, desirably of neoprene, which has an internal groove 35' in which the periphery of flange 34 is positioned. The portion of the sleeve 21 adjacent the flange 34 has a plurality of inwardly extending circumferentially spaced protrusions 36 for the purpose hereafter to be described.

Associated with the sleeve 21 is a shade or globe 41 preferably of translucent material, such as glass. The globe is illustratively disc-shaped, being substantially rectangular in cross section, as shown, and has a central opening 40 from which rises a sleeve portion or extension 42. The outer surface of sleeve 42 has a plurality of circumferentially spaced arcuate ribs 43 formed thereon, each positioned at an incline, said ribs and said protrusion 36 defining complementary rotary locking conformations so that the globe may be screwed into said sleeve portion for secure retention thereof.

Means are provided to retain the globe suspended from the sleeve 21 when it is unscrewed therefrom. To this end, as shown in the drawings, an arcuate support member 45 is provided, preferably a wire, which is bent into a semicircle, with the ends of the wire having diametrically outwardly extending support fingers 46, which extend through diametrically opposed openings 47 in the sleeve 21 immediately above the plane of protrusions 36 thereof. Thus, the support member 45 is free to pivot between vertical position as shown in broken lines in FIG. 1, to horizontal position as shown in FIGS. 2 and 3.

The globe 41 is mounted on the support member 45 by means of a U-shaped spring clamp 51. The spring clamp has an outer leg 52 with an opening 53 therein through which extends a boss 54 formed integrally with the sleeve portion 42 of the globe. The inner leg 55 of the clamp 51 extends downwardly along the inner surface of sleeve portion 42 and preferably has an turned flange 56 at its lower edge which extends beneath the top wall 57 of the globe. By reason of the resilience of said clamp 51, it will remain securely mounted on the sleeve portion 42.

Prior to mounting of the spring clamp 51 on the sleeve portion 42, it is positioned over the support wire 45 so that when the clamp is mounted on the sleeve portion 42, the wire will extend through the passageway 58 defined between the upper end of the spring clamp and the free edge of the sleeve portion 42.

The lighting fixture above described is mounted in the

plaster ceiling 16, for example, of a room, said ceiling defining the lower wall of a plenum chamber 15. The ceiling 16 has an opening 37 therein with which is associated a mount 61 shown in FIG. 1 and FIG. 4.

The mount comprises a plate 62 which rests on the top surface of the ceiling 16 and is secured thereto in any suitable manner. The plate has a central opening 63 with a depending flange 64 that extends into the opening 37 and a plurality of circumferentially spaced arms 65 rise from the periphery of the opening 63 in the plate, each of said arms having a threaded opening 66 near their upper end.

To install the lighting fixture above described, after the electric wires (not shown) which extend through the opening 63 in plate 62 are connected to socket 12, the sleeve 21 is connected to housing 11. This is accomplished by positioning the end 28 of the sleeve 21 so that it encompasses the free end of the housing 11. This will cause the detents 23 first to be cammed inwardly and then they will snap outwardly through the slots 22, 29 when they are in alignment, to retain the sleeve 21 and housing 11 together.

The assembled unit is then moved upwardly through the flange 64 of the mount 61 so that the threaded openings 66 in arms 65 of the mount will be aligned with slots 67 in the wall of the sleeve. Thereupon, the sleeve is secured to the arms 65 by means of screws 68.

Due to the resilience of gasket 35 which will abut against the undersurface of the ceiling 16 adjacent the periphery of opening 37 thereon, an effective seal will be provided between the fixture and the ceiling.

With the globe suspended from the support wire 45, carried by sleeve 21, as shown in broken lines in FIG. 1, there will be ample access for a light bulb to be manually inserted into the sleeve and screwed into the socket 12.

Thereupon, the globe is moved upwardly so that the space between adjacent inclined ribs 43 will be aligned with the protrusions 36 at the lower end of the sleeve 21 and the globe is then rotated securely to retain the latter in position, the top surface 57 of the globe pressing against the resilient gasket 35 to form a seal and to securely retain the globe against the fixture.

Thus, even if vibration is imparted to the ceiling in which the fixture is mounted, the resilient gasket will take up any looseness in the rotary connection of the globe to the sleeve 21, to retain the globe in secure position.

It is apparent that when the globe is moved upwardly the support wire 45 will be pivoted from its substantially vertical position shown in FIG. 1 to its substantially horizontal position shown in FIGS. 2 and 3. As a result, rotation of the globe to permit its secure retention will be permitted as the passageway 58 of the spring clamp 45 will be moved into a plane that is now substantially parallel to the plane of the support wire, due to the horizontal position of the latter.

With the construction above described, the globe may readily be displaced from the support sleeve 21 and will be supported without possibility that it will fall to the floor and break, and without need for it to be manually held by a workman, who will consequently have both hands free for relamping of the fixture and when the globe is secured in the sleeve 21, the support means for the globe will be concealed.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A lighting fixture comprising a support sleeve having rotary locking conformations, a light shielding element having an extension with complementary rotary locking conformations adapted to coact with the locking conformations of said sleeve, for releasable support of said light shielding element, support means carried by said sleeve, and means slidably connecting said light shielding element to said support means, said connecting means being movable along said support means when the locking conformations of said light shielding element are in proximity to the complementary locking conformations of said sleeve to permit rotation or said light shielding element with respect to said sleeve for engagement of said complementary locking conformations.

2. The combination set forth in claim 1 in which said support means comprises a substantially semi-circular wire having its free ends pivoted to said sleeve and movable between vertical and horizontal position, said connecting means encompassing said wire.

3. The combination set forth in claim 1 in which said connecting means comprises a U-shaped clamp secured to said extension and rising therefrom, said clamp defining a passageway and said support means comprises a substantially semi-circular wire having its free end pivoted to said sleeve and movable between vertical and horizontal position, said wire extending through said passageway.

4. The combination set forth in claim 3 in which said light shielding element is a globe and said extension is a sleeve integral with said globe, and said clamp is releasably secured to the sleeve of said globe.

5. The combination set forth in claim 3 in which said sleeve has a pair of diametrically opposed openings positioned above the threaded end thereof, and the free ends of said wire have outwardly extending fingers extending through said openings.

6. The combination set forth in claim 1 in which said support sleeve has an outwardly extending annular flange at its outer end, a resilient ring encompasses the outer periphery of said flange and said light shielding element is a globe having a top surface, said extension is a sleeve rising from said top surface, said top surface of said globe abutting against said resilient ring when the globe is screwed into the sleeve.

7. The combination set forth in claim 6 in which a lighting fixture mount is provided, said mount comprising a plate having an opening with a depending flange and support means rising from said plate and means securing said sleeve to said support means.

8. The combination set forth in claim 1 in which the lighting fixture comprises a cup-shaped housing having a lamp socket therein, the side wall of said housing having diametrically opposed slots adjacent the free end thereof, said sleeve encompassing said housing and having slots therein aligned with the slots in said housing, and releasable detents extending through said slots to retain the sleeve on said housing.

9. The combination set forth in claim 8 in which a U-shaped member of spring steel is provided having a crosspiece secured in said housing and a pair of depending legs, each of said legs having a reversely bent portion adjacent its free end defining said detent and resiliently urged outwardly.

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