April 10, 1962 P. A. JONES 3,029,335

LIGHT RECEPTACLE

Filed May 31, 1957

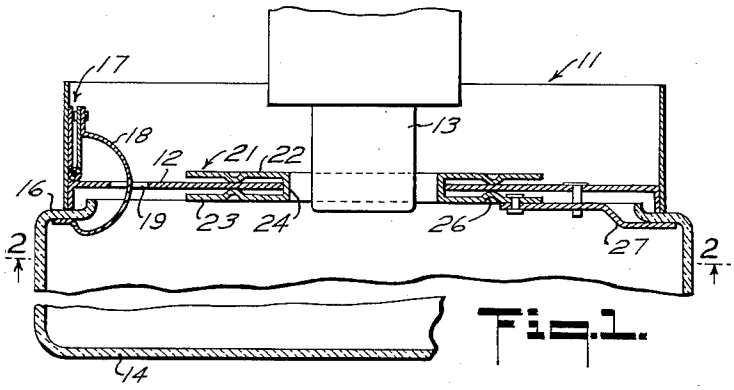

Fig. 1.

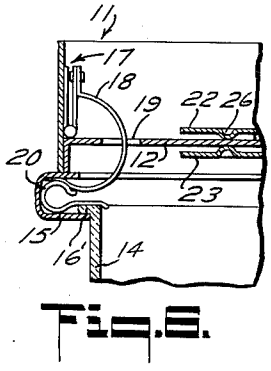

Fig. 6.

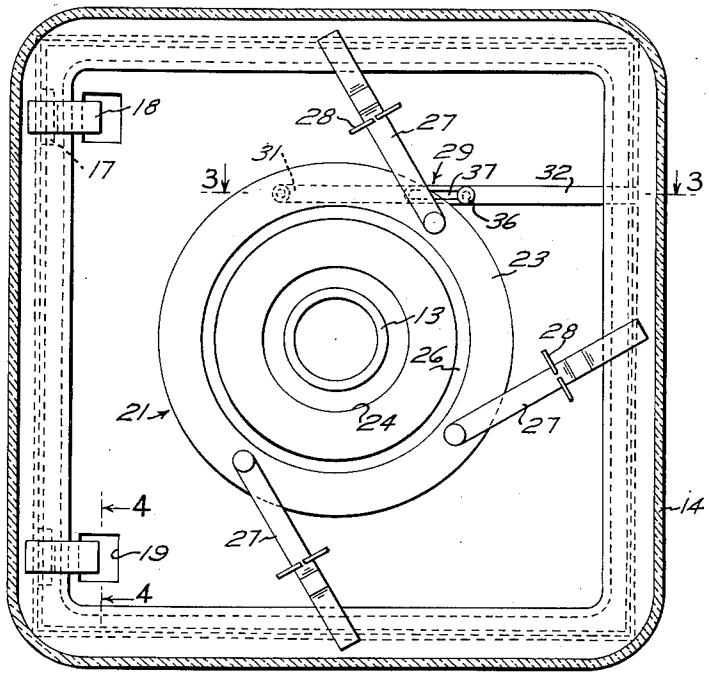

Fig. 2.

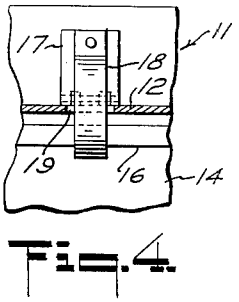

Fig. 4.

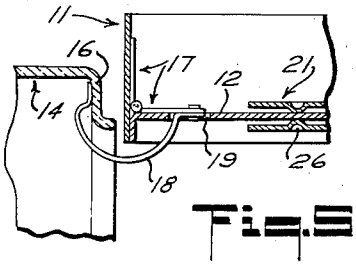

Fig. 5.

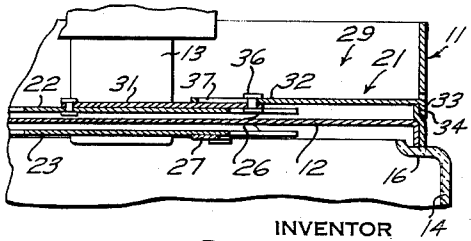

Fig. 3.

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3,029,335

LIGHT RECEPTACLE

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The present invention relates to a lighting fixture and more specifically to a light receptacle adapted for attachment to a ceiling for completely enclosing a light bulb.

Conventional room lighting fixtures include a base or holder adapted for attachment to a wall or ceiling about an electrical outlet adapted to receive one or more light bulbs, and a removable translucent cover for such light bulb to diffuse or otherwise operate upon light emitted from the bulb and to protect the bulb. Commonly the translucent cover of lighting fixtures is formed of glass, possibly having a roughened surface for light diffusion, inasmuch as glass has such good light transmission properties. Although plastics may be employed in this respect, it is generally necessary to use a very hard plastic for suitable resistance to scratching during cleaning and to properly withstand the heat generated by a proximate light source. Either of the foregoing cover materials are easily breakable, and in overhead fixtures wherein removal of the cover for light bulb replacement is required, a dangerous circumstance is present during cover removal, as the necessarily awkward position of one manipulating same may easily result in breakage of the cover.

Additionally, it is desirable in fixture design to conceal any cover retaining means, whereby conventional threaded elements bearing upon the cover are not necessary. In an effort to achieve the functionality of design that is desired in modern architecture, many wall and ceiling fixtures are so formed as to require the flexing or bending of metal portions in contact with the translucent cover, and this is conducive to cover breakage and permanent fixture element deformation necessitating replacement of parts of the fixture.

The present invention is directed to a novel light fixture cover connection, whereby the cover is movable for access to the light bulb or bulbs enclosed by the fixture and yet wherein the cover is retained by the fixture from inadvertent separation therefrom, even during cover movement. There is provided by the invention means for retaining the cover in closing relation to the fixture and for moving the cover out of closing relation to the fixture, while yet retaining same in connection therewith. Further, the cover is removable from the fixture as for cleaning thereof and the cover retaining means are substantially entirely hidden from view exteriorly of the fixture with no unsightly protuberances, but instead simple functional exterior design pleasing to the eye and yet readily operable by fingertip control to release the cover from closing relation to the remainder of the fixture.

It is an object of the present invention to provide an improved lighting fixture having a retained movable translucent cover.

It is another object of the present invention to provide in a lighting fixture having an enclosure with light-transparent cover means for removably hinging said cover for ready access to the enclosure.

It is a further object of the present invention to provide a cover for a light fixture that is hinged and separately removable from the hinge means.

It is yet another object of the present invention to provide for a wall lighting fixture a light-transparent cover that is hinged for ready access to the fixture interior and is spring-clipped to the fixture for retention thereon during cover movement and release therefrom for cover removal.

The invention possesses other objects and features of advantage, some of which with the foregoing will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

The invention is illustrated in the accompanying drawing, wherein:

FIGURE 1 is a sectional view of the fixture taken in a central vertical plane.

FIGURE 2 is a sectional view taken at 2—2 of FIGURE 1.

FIGURE 3 is a partial sectional view showing the control aim and taken at 3—3 of FIG. 2.

FIGURE 4 is a sectional view showing the cover hinge and taken at 4—4 of FIG. 2.

FIGURE 5 is a sectional view through the cover hinge and showing the cover removed from closing relation to the remainder of the fixture.

FIG. 6 is a partial sectional view showing an alternate cover configuration and connection.

Considering now the structural details of the invention and referring to the drawing, there will be seen to be provided a holder or base 11, formed as an upright closed wall having an inwardly extending flange or transverse plate 12, defining a central opening therethrough and formed either integrally as a casting or from a plurality of plates joined together as by welding. The base is adapted for attachment, by means not shown, to a wall or ceiling about a light socket 13, with the latter aligned with and possibly extending through the central base opening. The base 11 is provided as a means for mounting a translucent or light-transparent cover or closure 14 over the light socket to diffuse the light from one or more light bulbs adapted to be inserted in the socket. The cover may be formed of glass or plastic in part or in whole, and as regards the cover shown in FIGS. 1–5 includes a flat or curved bottom with upright sides having a short inwardly extending lip 16 about the top thereof. An alternative cover shown in FIG. 6 includes in addition to the translucent bottom a rim or ring 15 formed of metal or the like, secured about the top thereof as by engaging flanges and removably attached thereto as by a number of spring clips 20 inserted between the lip 16', in this instance on the rim of the cover, and the cover flange. It is only required that some desired part of the cover be light-transparent and that an upper lip 16 be formed thereon, for attachment to the base, as set forth below, and thus innumerable cover configurations are possible with the term cover being herein employed to denote a base closure member that is at least in part light transparent. Such covers are commercially available in a wide variety of shapes, sizes and colors.

Provision is made for removably attaching the cover 14 in closing relation to the base 11 to form an enclosure about the light socket, and in this respect a number of hinges 17 are secured to the base with one hinge plate of each fixed to the upright base wall interiorly thereof. The hinges are disposed with the hinge pins thereof directly above the base plate 12, so that the unsecured hinge plates are pivotal from a vertical to a horizontal position onto the base flange 12. Attached to the pivotal hinge plates of each hinge is a leaf spring or spring clip 18 and formed in somewhat of a semicircle, curving away from the hinge and extending through a slot 19 in the base plate 12 down under same and back under the hinge. Attachment of the cover 14 to the base 11 is accomplished by slipping the cover lip 16 over the outwardly curved spring clips 18,

which extend upward sufficiently to clamp the cover against the lower base edge. With the hinges 17 pivoted open, the spring clips 18 have their outer ends extending upward outside of the base wall, so that the cover lip 16 will readily slide thereover and the cover will depend generally vertically therefrom without falling and in retracted or open position relative to the base 11. In this position, the cover will not fall, as the spring clips 18 support the cover securely; however, the cover may be readily removed by raising same up and off of the spring clips, as best seen in FIGURE 5.

The alternative cover composition illustrated in FIG. 6 is mounted in the same manner to the base, by placing the rim lip 16' under the spring clips 18. The only difference in this cover lies in the upper portion or rim thereof being formed as a separated piece and normally secured to the cover proper by U-shaped leaf springs 20 bearing against the lip 16' and the cover flange to hold the rim and cover together. As to the use of the cover with the base, no difference is found between either illustrated covers, and usually the rim would remain attached to the cover proper; however, detachment of the rim therefrom is easily accomplished by pressing together the free ends of the U-shaped spring 20.

It will be appreciated that inasmuch as the cover is adapted to pivot upon the hinge via the connecting spring clip 18, only a single hinge can be employed to round bases, although more may be used where straight sides are provided on the base, as herein illustrated. Closure of the cover 14 or movement of same into closing relation to the base is accomplished by pivoting same on the hinges 17 upward to contact the entire cover lip 16 with the lower edge of the base about the periphery thereof. The cover is removably secured in this position, closing the base, and while various possible securing means may be employed, the one herein illustrated and described below is particularly advantageous.

To the end of removably securing the cover against the base in closing relation thereto, there is provided about the central opening in the base plate 12 a collar 21, comprising upper and lower annular plates 22 and 23, respectively joined by a stub cylinder 24, fitting through the base plate opening. The collar plates are provided with pressed bosses 26 directed toward the base plate and contacting same for providing bearing surfaces for the collar on the base plate, whereby the former is freely rotatable on the latter. A plurality of arms 27 are pivotally mounted on the under side of the lower collar plate 23, with vertical offsets of sufficient extent that the arms may be slid under the cover lip 16 when same is engaging the base 11 thereabout. These arms 27 are adapted to be slid under the collar lip 16 in bearing relation thereto for holding the same against the base and for retraction from such position for releasing the cover. To this end, the arms extend generally tangentially from the cover and each pass through brackets or guides 28 depending from the base plate. These guides 28 may be simply formed by cutting the base plate and pressing opposite lugs downward therefrom, with the arm extending therethrough. The guides not only provide vertical support for the arms 27, but also limit lateral motion thereof; however, the surround the arms loosely, so that the arms may easily slide therethrough and also may move laterally a small amount, as seen in FIG. 2.

Engagement of the arms 27 with the cover 14 is controlled by a limitedly extensible control rod 29, as seen in FIG. 3. This control rod includes a first or inner bar 31, pivotally mounted upon the upper plate 22 of the collar 21 and extending therefrom into engagement with a second bar 32, that in turn extends through the wall of the base 11. The second or outer bar 32 has a right angle bend near the outer end thereof, defining a tab 33 that is designed to fit into a small recess 34 in the base wall so as to lie flush with the outer surface of the base when the control rod is fully engaged or inserted. The engagement of the first and second bars of the control rod is limitedly slidable and may include a rivet or pin 36, extending through the inner bar 31 and through a slot 37 longitudinally of the outer bar 32. By this connection, the outer bar may be easily slid longitudinally of the inner bar some short distance by pulling the tab 33 before the two bars of the control rod become inextensible. Further pulling of the control rod 29 will be seen to turn the collar 21 so as to withdraw or retract the arms 27 from engagement with the cover 14. As the control rod extends across a small portion of the collar in the actuated or hold position of the collar arms, it will be seen that the pivoted end of the control rod is laterally displaced only slightly in moving from an actuated to a release position. The limited extensibility of the control rod 29 permits the tab thereof to be easily withdrawn from the base recess 34 far enough to firmly grip same before the collar is turned by additional control rod movement, and this is highly desirable where prolonged periods of disuse and repeated heating of the fixture may tend to bind collar rotation.

With the cover 14 held against the base 11 by the collar arms 27 and the hinge spring clips 18, release of the cover is easily accomplished by withdrawing the tab 33 to the limit of the control rod extensibility and then firmly withdrawing the control rod further to rotate the collar whereby the arms 27 extending generally tangentially from the collar are withdrawn from beneath the cover lip 16. The cover 14 is then freed from the base, except for the spring clips engaging same at one side only, so that the cover swings down by pivoting the hinges 17 into the position of FIG. 5 wherein the cover hangs generally vertically with the spring clips 18 still engaging the cover lip to prevent same from falling. In this position, the light socket is readily available as for changing light bulbs therein, and the cover need not be completely removed. Following such maintenance or repair as is desired within the fixture, the cover may be swung back up into peripheral contact with the base and by pressing inward upon the control rod tab 33 to force the control rod back into the base, the collar is rotated back to a position wherein the arms 27 thereof extend outward under the cover lip 16 to hold the cover in position. Removal of the cover from the base is easily accomplished in the open cover position merely by lifting the cover off of the spring clips 18; however, the cover will be seen to be normally retained in attachment with the base so that the cover is retained from falling during movement thereof from closing relation to the base.

What is claimed is:

1. A lighting fixture comprising a base member having a transverse plate and upright walls thereabout, a translucent cover for said base, said cover having an inner lip, a hinge having one plate affixed to said base wall interiorly thereof above said transverse plate with the hinge pin adjacent said plate, a semicircular leaf spring secured at one end to the free hinge plate and extending through a plate aperture beneath said base for engagement with the lip of said cover for removably retaining same in pivotal disposition relative to said base beneath same, and releasable securing means on said base having an operated position engaging said cover to hold same on said base in closing relation thereto and a release position out of contact with said cover whereby the cover is pivotable out of closing relation to said base.

2. A lighting fixture as claimed in claim 1, further defined by said releasable securing means comprising a rotatable collar within said base having arms pivotally connected thereto and extending therefrom for engaging said cover under the lip thereof, and a limitedly extensible control rod pivotally secured to said collar and extending through said base in termination immediately adjacent the exterior surface thereof whereby reciprocation of said control rod advances and retracts said collar arms for controlled retention of said cover against said base.

3. A lighting fixture comprising a base member, a translucent cover for said base member and defining a lamp chamber therewith, means disposed substantially entirely within said chamber for releasably securing said cover in closing relation to said base whereby said cover is pivotable between open and closed position relative to said base and is releasably retained upon said base in the open cover position, at least one hinge having one side secured to said base internally thereof, and a semicircular leaf spring fixed to the free hinge side and extending outside said base for engagement with said cover for releasably retaining said cover in connection with said base and in pivotable relation thereto.

4. A lighting fixture comprising a base, including a transverse plate having a collar thereon for rotation relative to said plate, a plurality of arms pivotally mounted on said collar for extension substantially tangentially therefrom, a control rod connected to said collar and extending through said base for limitedly rotating said collar to extend and retract said collar arms, and a light-transparent cover releasably connected to said base in pivotal relation thereto for engagement by said collar arms to hold said cover in closed position relative to said base, said cover having an inner lip, the connection of said cover to said base comprising at least one hinge secured to said base with the pivotal portion thereof forming an attaching clip extending without said base for engagement with said lip for pivotally mounting said cover in releasable relation to said base.

5. A lighting fixture comprising a rectangular base member with side walls and including a transverse bottom

plate and a member mounted centrally on the plate for rotation relative thereto, a plurality of arms pivotally connected to said rotatable member for extension inwardly and outwardly thereof, a control rod pivotally connected with the rotatable member and extending through said base member for limitedly rotating said rotatable member to extend and retract said arms, and a light diffusion cover releasably connected to said base member in pivotal relation thereto for engagement by said arms to hold said cover in closed position relative to the base member, said cover having an inner lip defining an opening arranged to overlie said plate in the closed position of the cover, the connection of said cover to said base member comprising at least one hinge member pivotally secured to and extending without the base for engagement with said lip for pivotally mounting said cover in an open or closed relation to the base.

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