

[54] TRIM RING FOR ARCHITECTURAL LIGHT INCLUDING MEANS FOR STEPPED ROTATIONAL AND AXIAL ADJUSTMENT

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[58] Field of Search240/2 V, 2 W, 67, 68, 73 BC, 240/78 R, 78 H, 78 HH, 78 CF, 78 CD, 151, 152; 98/101, 107, 110, 111, 112, 114, 40 DL; 248/27, 56, 342, 343

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[57] ABSTRACT

A recessed lighting fixture is provided in which the trim ring has a number of substantially vertical hanger members which cooperate with stepped shoulders carried by the lower portion of the main cylindrical frame of the fixture to provide selective axial height adjustment of the trim ring with respect to the frame.

5 Claims, 6 Drawing Figures

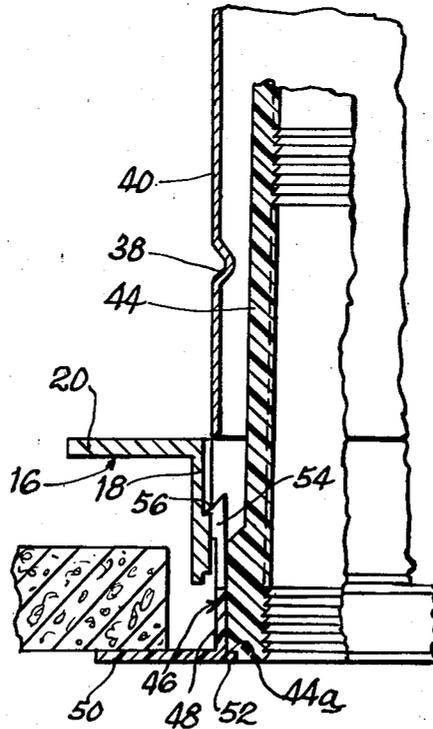


FIG. 1

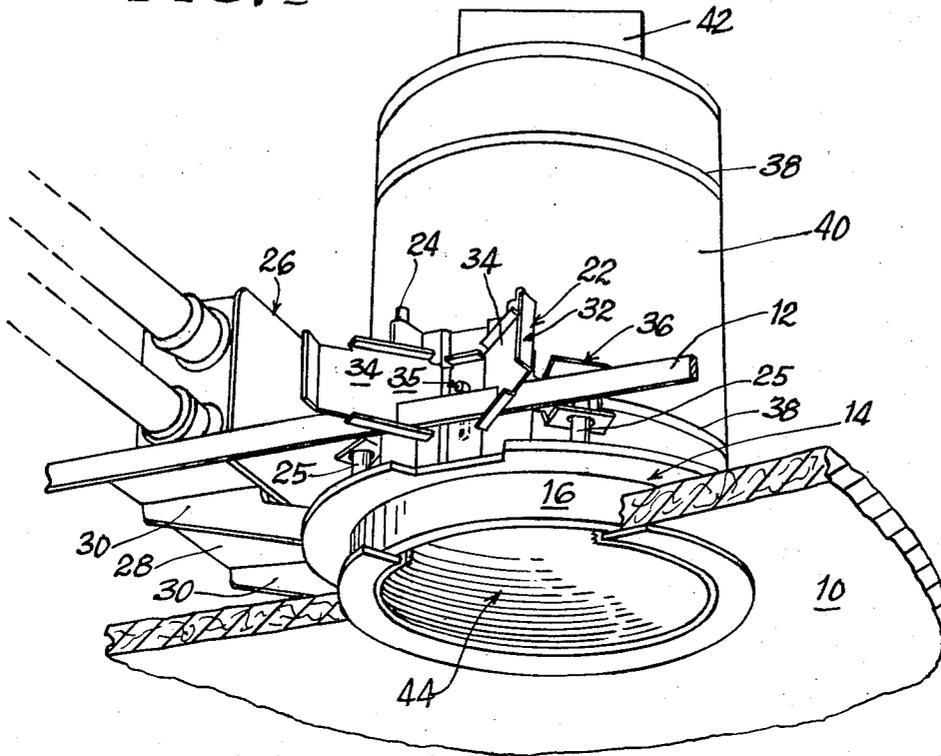


FIG. 2

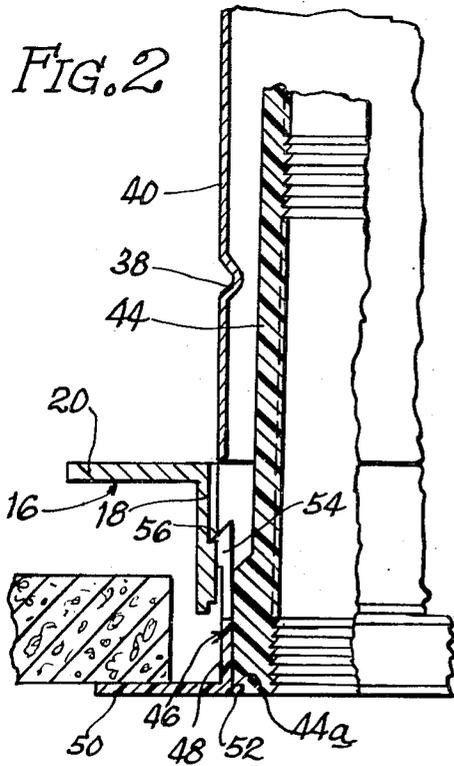
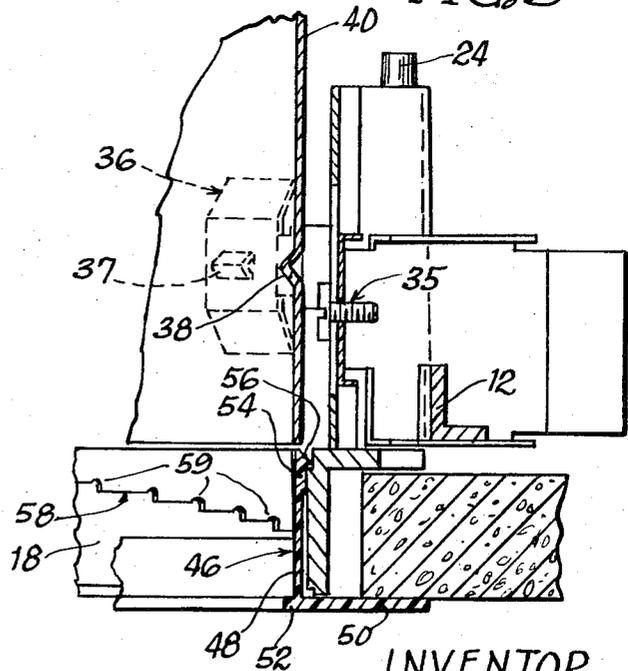
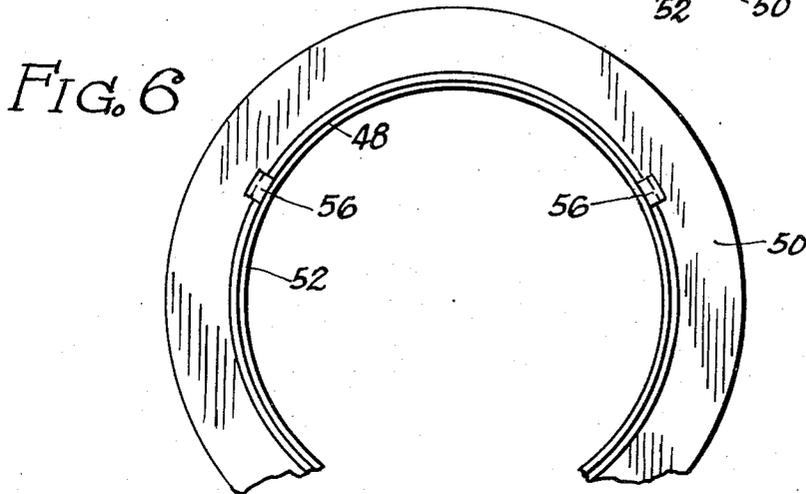
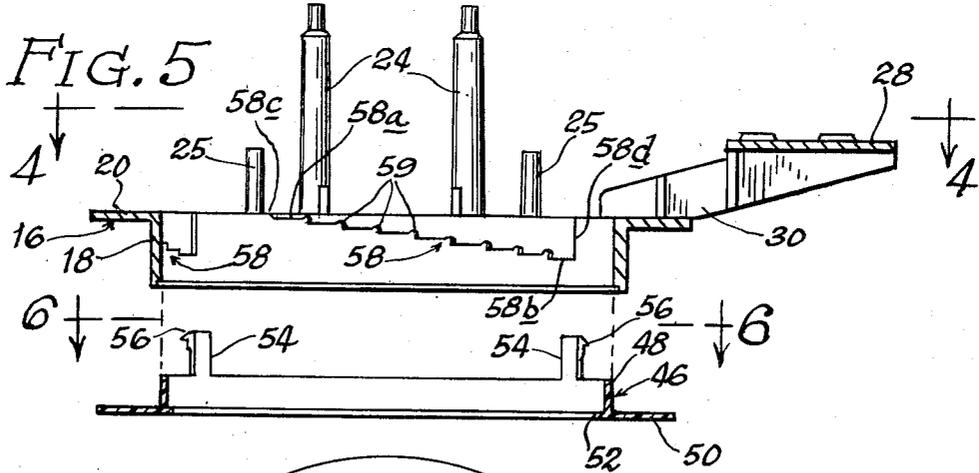
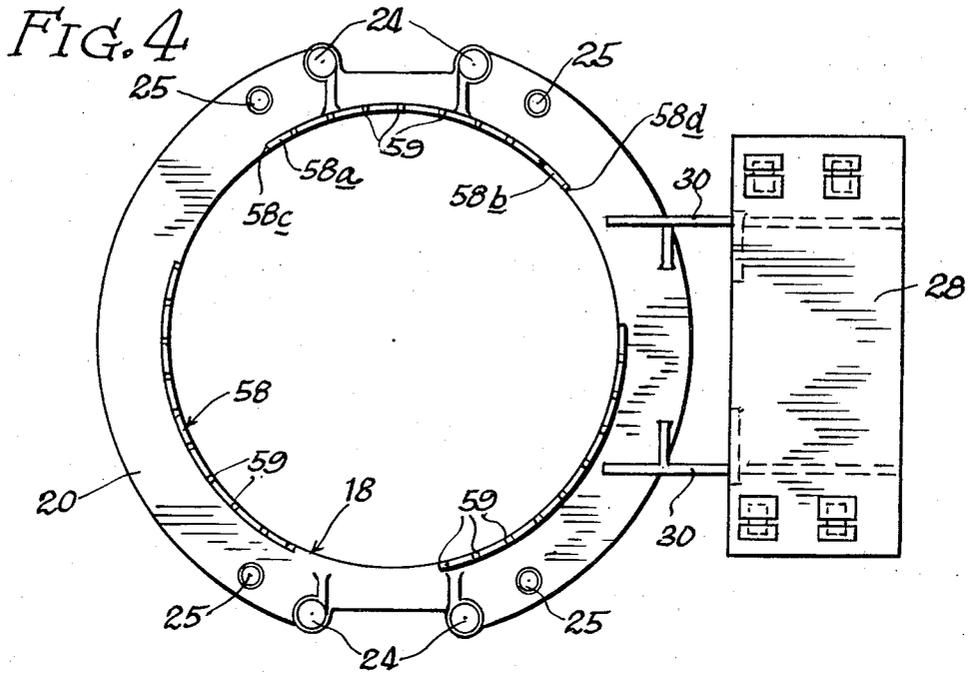


FIG. 3



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TRIM RING FOR ARCHITECTURAL LIGHT INCLUDING MEANS FOR STEPPED ROTATIONAL AND AXIAL ADJUSTMENT

BACKGROUND OF THE INVENTION

This invention relates to an improved recessed lighting fixture of the type which uses a trim ring that is connected to the bottom of the lighting fixture frame.

It is an object of the present invention to provide a recessed lighting fixture that is simple in construction and can be assembled rapidly at the point of installation.

Another object of the present invention is to provide a recessed lighting fixture having a trim ring which can be adjusted axially in a simple and effective manner without the use of external fastening means such as screws.

A still further object of the present invention is to provide a recessed lighting fixture having a light baffle which rests on a trim ring and effectively locks the trim ring to the lighting fixture frame once the components are in place.

Other objects and advantages will become apparent from the explanation which is provided in the following description and claims, and is illustrated in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a recessed lighting fixture constructed in accordance with the principles of the present invention with portions of structure broken away for purposes of clarity;

FIG. 2 is a fragmentary, enlarged cross-sectional view taken substantially along the line 2—2 of FIG. 1 and showing the trim ring in a lowered position;

FIG. 3 is a fragmentary enlarged cross-sectional view thereof, taken substantially along the line 3—3 of FIG. 1, but showing the trim ring in its uppermost raised position;

FIG. 4 is a fragmentary top plan view of the lower frame portion of the lighting fixture of FIG. 1, taken substantially along the line 4—4 of FIG. 5 and showing the stepped elements for cooperation with the trim ring;

FIG. 5 is an exploded view comprising a cross-sectional view of the lower frame portion of FIG. 4, taken substantially along the line 5—5 of FIG. 4, and a similar cross-sectional view of the trim ring that connects to the lower frame portion; and

FIG. 6 is a fragmentary top plan view of the trim ring taken substantially along line 6—6 of FIG. 5.

DETAILED DESCRIPTION OF THE ILLUSTRATIVE EMBODIMENT

Referring to the drawings, the fixture disclosed herein is generally of the well-known architecturally recessed type wherein the opening through which light is directed is intended to appear flush with the opening in the structural wall element.

As illustrated in FIG. 1, the structural wall element, in this instance a ceiling 10, has positioned therebehind a plurality of structural elements such as elongated mounting bar 12 which supports the lighting fixture. It will be understood that the spacing between mounting bar 12 and the outer surface of wall 10 is variable,

which requires the presence of an adjustable trim ring upon the light fixture as will be provided for by the instant invention.

The lighting fixture includes a lower frame portion or mounting as best seen in FIGS. 4 and 5 which has thereon a means for securement of the lighting fixture to the mounting bar 12. The lower frame portion 14 provides certain elements as herein identified, and may conveniently be an aluminum die-casting. Frame portion 14 includes annular section 16 shaped to provide a depending ring 18 having an out-turned flange 20 at its upper end. A pair of spring-mounting means 22, that each includes a pair of elongated studs 24, and adjacent shorter studs 25 extend upwardly from diametrically opposite portions of ring flange 20. At right angles to said diametric arrangement of means 22 is a junction box means 26 that includes a box base 28 supported laterally of flange 20 by a pair of cantilever support flanges 30 appropriately rigidified and reinforced by transverse flanges as shown.

Spring-biased sheet metal mounting means 32 carried on studs 24 are provided with outwardly-extending apertured flanges 34 through which extend an elongated support bar 12. Although only one such means 32—34 is shown in FIG. 1, the diametrically arranged studs 24 are adapted to provide two such supports for connection to two parallel space bars 12. It will thus be understood that the arrangement operates to locate flange 20 and the lower end of ring 18 in planes parallel to and spaced below the plane of support bars 12. While the support means 32—34 may be provided with additional slot-and-screw adjustment means 35 for vertical adjustment, the type of vertical adjustment that we are here interested in relates to a trim ring that cooperates with ring 18 in a manner as hereinafter disclosed.

Before discussing the trim ring it will be noted that the mounting means 32 also includes inwardly-extending spring-biased means 36 with inwardly directed offsets 37 for positional cooperation with spaced circumferential grooves 38 in the wall of a can-shaped body 40 that is spaced above the lower frame portion 14 of the light fixture. The studs 25 passing through enlarged apertures in the means 36 operate to limit movement of means 36. The two sets of means 36 provide four in-turned offsets 37 which enter a groove 38 to substantially rigidly hold the can-shaped body in desired position spaced from frame 14. A junction box 42 on the top of the can provides a means for effecting an electrical connection to a light bulb within the can as is well known in the art.

It is sufficient to note that interiorly of ring 18 and can 40 there is located a baffle for a purpose that is well known in the art. The baffle may be of various shapes, but typically may be a cylindrical body as shown at 44 in FIGS. 1 and 2. The baffle 44 is generally loosely positioned within the recess defined by the fixture, but the outermost end 44a is generally closely concentric within frame ring 18.

Now, the location of the outside of wall 10 may be varying distances from flange 20 as illustrated in FIGS. 2 and 3 where the spacing between the two is greater in FIG. 2 than in FIG. 3. The purpose of a trim ring is to provide a neat-appearing joint at the lower end of the fixture and to hide the appearance of the structural parts located thereabove.

The trim ring 46, which is preferably formed of a plastic material or of aluminum, includes an elongated cylindrical sleeve 48 having at one end an out-turned flange 50 of substantial radial extent and an in-turned flange 52 of lesser radial extent. Projecting from the other end of sleeve 48 are three equally-spaced extension members 54. Each extension member 54 is long relative both to the radial thickness of the member and to its arcuate width, so that extension member is readily flexible. Each member 54 has at its distal, or extended, end an out-turned flange or hook 56. The body of each member 54 lies in the cylindrical plane of sleeve 48 so that in effect only hook 56 extends radially outwardly of the cylindrical plane of sleeve 48.

The inner wall of depending ring 18 of lower frame portion 14 is formed and shaped to provide three equally spaced identical sets of steps or shoulders 58, with each set adapted for cooperation with the hook 56 of one of the extension members 54. As seen in FIG. 5, each set of steps 58 provides nine equal steps arranged from left to right, or counterclockwise when looking upwardly, in descending order with the uppermost step 58a spaced closely below the upper edge of ring 18 and the lowermost step 58b spaced about midway of the axial height of ring 18. Axially extending edges 58c adjacent uppermost step 58a and 58d adjacent lowermost step 58b serve as abutments that limit rotation of trim ring 46. Each of the steps 58 has a flat arcuate width that is at least as great as the arcuate width of hook 56 on extension member 54. At the edge of each step 58 there is a small raised protuberance, or tit, 59 which provides limited but effective resistance against hook 56 inadvertently slipping from one step 58 to the next lower step 58. The height or spacing between upper step 58a and the lower edge of ring 18 is slightly less than the spacing between hook 56 and out-turned flange 50, as best seen in FIG. 3.

When the trim ring 46 is in position on ring 18, the in-turned flange 52 serves to engage the lower edge 44a of baffle 44 to support same. With baffle 44 resting on flange 52, the outer wall of baffle 44 lies closely adjacent the extension members 54 to hold same in position for each of the hooks 56 to engage with the sets of steps 58. Thus, the hooks 56 cannot inadvertently disengage and there is no possibility of the trim ring 46 falling out of the frame ring 18. However, the trim ring 46 may still be rotated about its center or axis to move the ring to a higher or lower height as desired. If it is necessary to have access to the interior of the light fixture, the baffle 44 is pushed axially away from trim ring 46 sufficiently to expose the distal ends of the extension members 54 and by flexing the members 54 away from frame ring 18 the hooks 56 are released to release the trim ring 46. Since the hooks 56 may be moved to the lowermost shoulders 58b, the minimum amount of axial movement required of baffle 44 to permit disengagement of trim ring 46 from frame ring 18 is less than the axial height of ring 18.

It will be understood that the radial dimension of out-turned flange 50 may vary depending upon the installation. It is contemplated that trim-rings of a few basic sizes of out-turned flange 50 (say three in number) may be provided packaged with a fixture, so that the in-

staller will be able to properly install the fixture with one of the trim rings supplied. The cost of such trim rings is relatively small, but at the same time the installation may be easily and quickly performed from outside the fixture without use of any separate fastening means such as screws or the like.

Although an illustrative embodiment has been shown and described, it is to be understood that various substitutions and modifications can be made by those skilled in the art without departing from the spirit and scope of the present invention.

What is claimed is:

1. In a recessed lighting fixture of the type that provides a recess in a wall for receiving therein the light and a baffle member, and which includes a trim ring located at the edge of the recess for shielding the mounting of the fixture in the wall, the improvement comprising, in combination, a frame member providing a cylindrical inner wall bounding the recess, a baffle having a cylindrical end that is adapted to be positioned generally concentrically within said inner wall in spaced relation thereto, said frame member having means for supporting a trim ring, said supporting means being arcuately arranged around the wall of said frame member at different levels, a trim ring having means for releasably coacting with said arcuately arranged means whereby there is provided a releasable, rotational and axially adjustable connection of said trim ring to said frame without separate connector means, said trim ring having an in-turned flange for engaging the baffle to prevent movement of the baffle axially outwardly past said cylindrical inner wall, and the presence of the baffle engaging said in-turned flange cooperating with the trim ring to prevent inadvertent release of the trim ring from the frame member while permitting axial adjustment of the trim ring relative to the cylindrical inner wall of the frame member.

2. A construction as in claim 1 wherein said supporting means comprises three sets of supports each arranged in a stepped series for incremental axial adjustment, and the trim ring having three axially extending members with out-turned hooks thereon for cooperation with the three sets of support.

3. A construction as in claim 1 wherein axial adjustment of the trim ring is effected by rotation of the trim ring.

4. A construction as in claim 2 wherein the steps of each set of supports are arranged arcuately along the cylindrical inner wall of the frame member, each step having an arcuate extent to fully support the hook, and a raised impediment at the end of each step that is above an adjacent step for preventing a hook from slipping from one step to the next lower step.

5. A construction as in claim 2 wherein the trim ring includes a sleeve portion and the axial extension members are elongated and lie within the axially projected plane of said sleeve with the out-turned hooks located outwardly of said projected plane of the sleeve, the length of the extension members affording flexibility thereof to permit release of the trim ring from the frame member when the baffle has been moved axially away from the in-turned flange a distance sufficient to expose the distal ends of the extension members.

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