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(54) **RECESSED LIGHTING FINISH TRIM**

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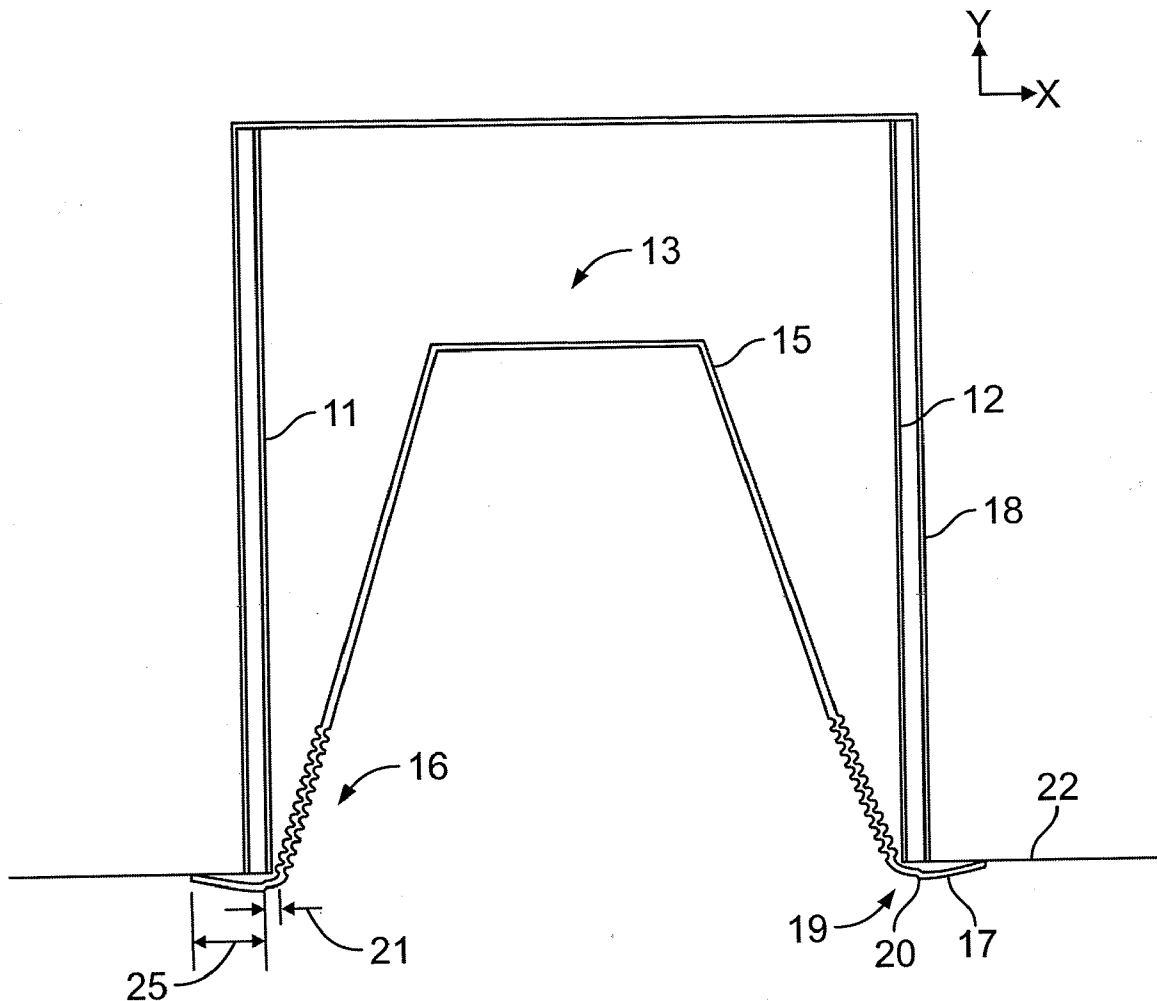
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(57) **ABSTRACT**

Housings, for recessed light fixtures of the same nominal size, may come in a range of actual diameters sizes. A trim unit is designed to fit into such range of housing diameters for a nominal size. The trim unit has a divided flange area providing a small appearance and structural rigidity.

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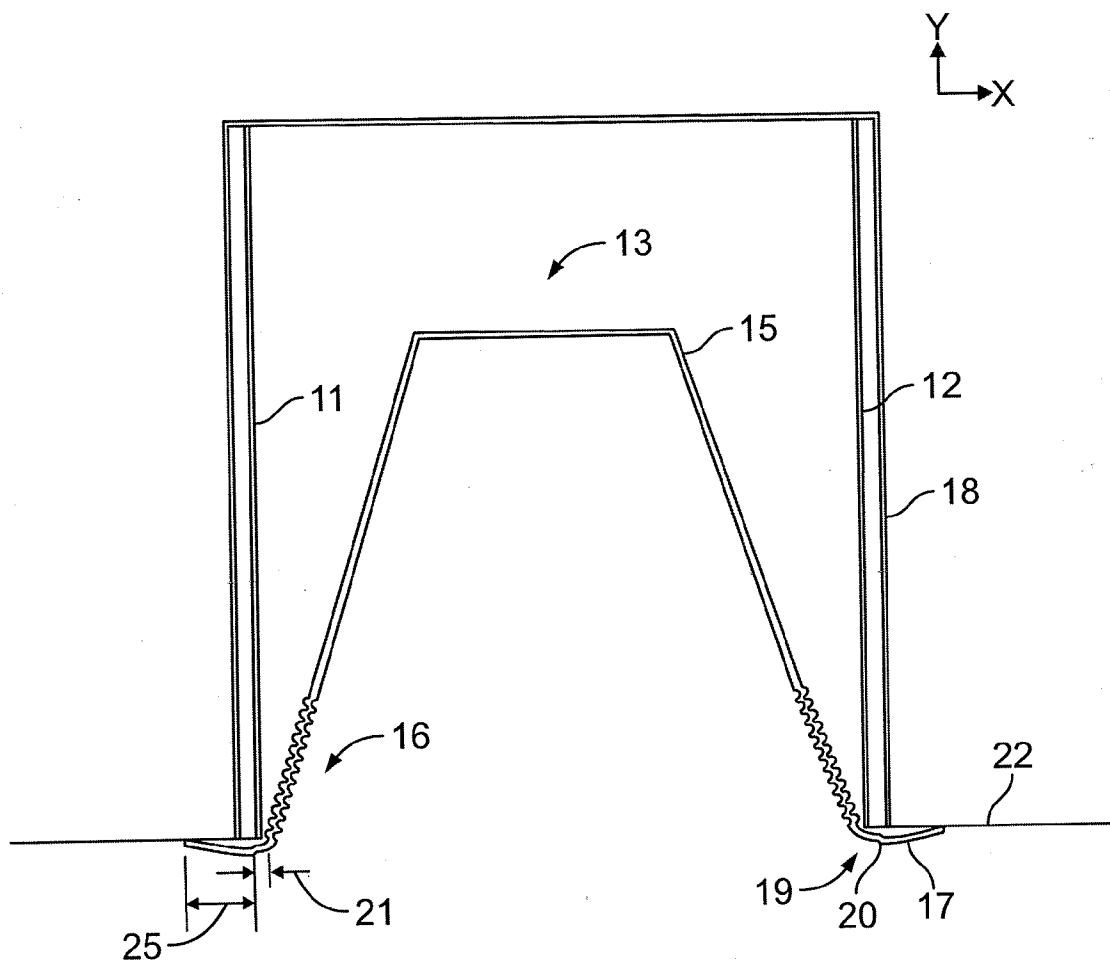


FIG. 1

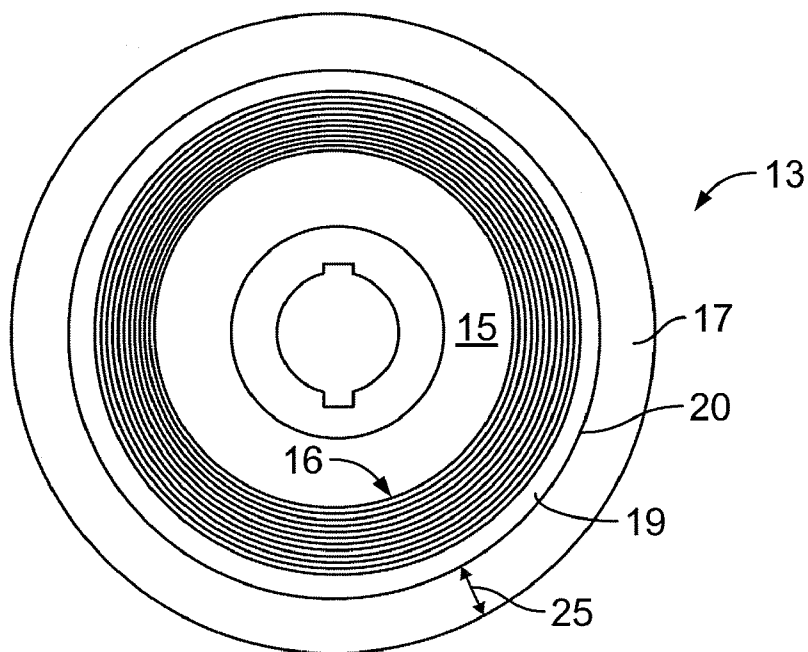


FIG. 2

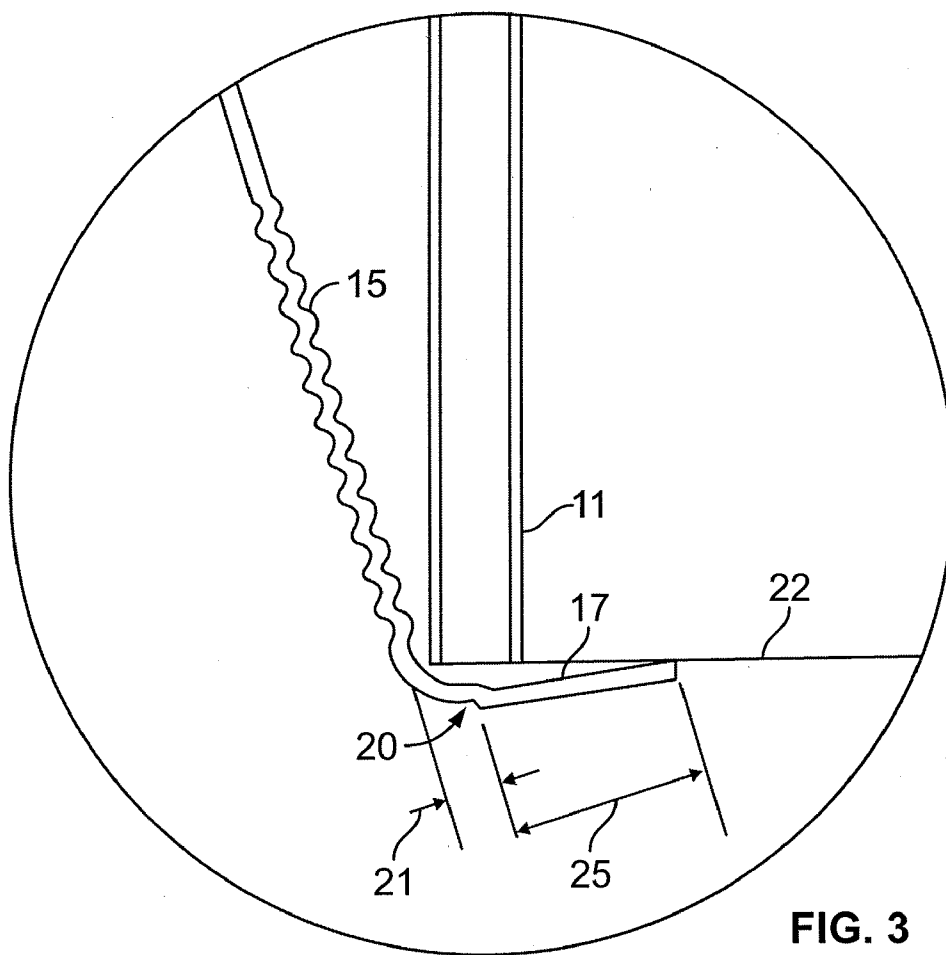


FIG. 3

RECESSED LIGHTING FINISH TRIM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates generally to recessed lighting fixtures. The invention relates more specifically to trim assemblies for recessed lighting fixtures.

[0003] 2. Discussion of the Related Art

[0004] A typically recessed lighting fixture will have a housing portion fastened to the ceiling joists. The housing carries the electrical connection for the lamp, i.e. the socket, and the wiring connection to proper line voltage. An opening is cut in the ceiling allowing access to the housing. A trim assembly including a first insert portion, which provides optical properties for light exiting the fixture is then placed in the housing. The insert portion may be a cone or straight walled insert with or without baffles, as known to those in the art. The trim assembly also provides a finished appearance by including a flange, which covers the rough opening in the ceiling material. It is generally desirably from an esthetic point of view to make the trim flange as small as possible.

[0005] In the current market for recessed lighting products, there are a variety of housing sizes and related finished trim types. The recessed lighting market refers to the diameter of housings based on their nominal diameter, 4 inch, 5 inch, 6 inch, etc. However, actual reference diameters, will vary in measurement depending on the manufacturer. Between manufacturers, a four inch nominal housing diameter may have an intended, or reference, diameter of 4³/₈ inches for a first manufacturer and a reference diameter of 4¹/₁₆ inches from a second manufacturer.

[0006] Creating a finished trim to fit and operate properly in two different size housings, with the same nominal diameter, would therefore require a trim assembly with an outer diameter sized to address the larger diameter housing, but a reduced inside diameter to fit the smaller diameter housing, thereby requiring a large and esthetically unacceptable flange area. This combination of size requirements thus generally prevents the use of a single trim size to properly fit, operate and maintain an esthetically acceptable appearance on two different reference size diameter housings, thus preventing one trim from being used if an installer has housings from two manufacturers. Using two different trims can add cost to the installation as well as an inconsistency in the cosmetics of the finished trim.

SUMMARY OF THE INVENTION

[0007] To overcome the above issues the present invention discloses a finished trim for a recessed lighting fixture which is designed to fit into a nominal size recessed lighting housing which may be at the low end dimension or high end dimension of the diameter range for the designated diameter.

[0008] The area of the trim flange is designed with a deliberate offset in the horizontal plane of the finished trim flange that projects from the inside radius of the vertical wall of the first insert portion trim outward towards the outer diameter of the finished trim flange. The first insert portion will be illustrated and discussed hereinafter as the "cone portion" or simply "the cone" for ease of explanation although those in the art will understand it can be straight-walled, i.e. cylindrical, as discussed above, and need not necessarily be cone shaped. This offset area of the trim flange is large enough to fool the eye and create the appearance of being a part of the

cone portion which minimizes the surface appearance of the trim flange area. An aesthetically acceptable finished trim is created for the recessed lighting housing at the minimum dimension or maximum dimension for the designated nominal housing diameter. Additionally, the offset increases the structural integrity of the flange area thus allowing the flange to maintain a level of flatness in the horizontal plane allowing the trim to seat flush with the adjoining surface material.

[0009] Thus in some embodiments of the present invention, a trim assembly for a recessed lighting fixture housing is presented comprising a cone for fitting in the housing, a flange extending from the cone in a generally horizontal position to cover the housing to ceiling interface, said flange having a first flange portion abutting the edge of the cone and extending outwardly therefrom for a first width, and a second flange portion of a second width being the outer circumference of the flange, and a break between the first flange portion and the second flange portion, said break placing the first and second flange portions on different horizontal levels and providing a visually perceptible boundary between the first flange portion and the second flange portion, wherein the apparent width of the flange area is decreased to a viewer of the trim.

[0010] In other embodiments of the present invention, a trim assembly is presented for one or more recessed lighting fixture having different actual diameters, comprising a cone for fitting in the housing, a flange area extending for the cone, said flange area having a first radiused offset portion abutting the edge of the cone and extending outwardly therefrom for a first width, a smooth flange area of a second width being the outer circumference of the flange, and a break between the radiused offset portion and the smooth flange area, said break extending at least partially in a vertical direction thereby placing the first radiused offset portion and the second smooth portion on different planes wherein the apparent width of the flange area is decreased to a viewer of the trim.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The foregoing and other advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings of the exemplary embodiment.

[0012] FIG. 1 is a vertical cross section through a trim assembly according to the present invention and a recessed lighting housing therewith.

[0013] FIG. 2 is bottom plan view of the trim assembly.

[0014] FIG. 3 is a detail view of FIG. 1 where the trim assembly meets the ceiling plane.

DETAILED DISCUSSION OF THE PREFERRED EMBODIMENT

[0015] Although the invention will be described in connection with certain preferred embodiments, it will be understood that the invention is not limited to those particular embodiments. On the contrary, the invention is intended to cover all alternatives, modifications, and equivalent arrangements as may be included within the spirit and scope of the invention as defined by the appended claims.

[0016] Referring to FIGS. 1 and 2, a recessed lighting housing 11 is shown with a trim assembly 13 according to the present invention. The trim assembly 13 is typically made from a metal stamping whose major areas include an interior portion and an exterior portion, here represented by a first

insert portion, or, cone 15, and a flange 17, respectively. The cone 15 has a taper extending generally in a vertical direction or y axis of FIG. 1, as indicated thereon, for fitting in the housing 11, with the flange 17 extending for the cone 15 at a slight upward angle to provide housing clearance but in a generally horizontal or x axis. It will be appreciated that not all trim assemblies interior portions within the art are necessarily cone shaped, however the "cone" designation will be retained throughout for convenience. The housing 11 is shown with a first smaller diameter wall 12 and a second larger diameter wall 18 illustrating the range of diameters which may be found on a nominally sized housing.

[0017] The flange 17, for covering the housing 11 to ceiling 22 interface, is defined as any portion of the trim 13 which first extends away from the angle of the wall of the cone 15 and any portion thereafter. The cone 15 may include known features such as baffles 16 for optically adjusting light emitted from the cone portion 15 of the trim 13. The transition between the flange 17 and wall of the cone 15 is a first radiusedoffset portion 19 abutting the edge 14 of the cone 15 and extending downwardly and then outwardly therefrom for a first width 21. The radiused portion 19 is preferred both for adding structurally rigidity to the flange and esthetically for the appearance of the first width 21 although a straight bend in some instances may be used. At the end of the radiused portion, i.e. the first width 21 of trim material, a sharp downward bend 20 is executed in the flange 15.

[0018] The flange 17 is then bent towards the horizontal again and continues in a second width or portion 25 away from the cone 15. Thus, the second width 25 of the flange 17 is placed at a different horizontal plane than the first width 21 and a visual break is provided between the two portions. The second width 25 of the flange 17 continuing outwardly from the cone 15 is preferably an area of smooth material, and due to the visual break of the downward bend 20, will be the entire perceived width of the flange 17.

[0019] The radiused portion 19 and first width 21 are sized to fit within the smallest reference diameter of a nominal housing size, whereby the flange 17 will cover either of the small reference diameter or the large reference diameter in the range of anticipated housing diameters for a nominal size housing. It will be appreciated by those in the art that the flange is designed to provide tolerance for covering slight protrusions of the housings, remodeling rings, unevenness of the ceiling plane, etc.

[0020] The cone and flange may be formed from any suitable material, for example, steel, aluminum, or plastics, with forming processes suitable to the material selected. It will be appreciated that the cone and flange portions may be formed as plural separate pieces which might then later be tenaciously joined or separably fitted together.

[0021] Having thus described a trim assembly for a recessed lighting fixture; it will be appreciated that many variations thereon will occur to the artisan upon an understanding of the present invention, which is therefore to be limited only by the appended claims.

We claim:

1. A trim assembly for one or more recessed lighting fixture housings having a range of actual diameters, comprising:

- a) a first insert portion for fitting in the housing,
- b) a flange extending from the first insert portion in a generally horizontal position,
- c) said flange having:
 - i) a first flange portion abutting the edge of the first insert portion and extending outwardly therefrom for a first width,
 - ii) a second flange portion of a second width, and
 - iii) a bend extending vertically between the first flange portion and the second flange portion, thereby placing the first flange portion and the second flange portion on different horizontal planes.

2. The trim assembly of claim 1 wherein the second flange portion contains the outer circumference of the flange.

3. The trim assembly of claim 1 wherein the bend provides a visually perceptible boundary between the first flange portion and the second flange portion, whereby the apparent width of the flange area is decreased to a viewer of the trim.

4. The trim assembly of claim 1 wherein the first insert portion has baffles.

5. The trim assembly of claim 1 wherein the first flange portion has a radiused edge.

6. The trim assembly of claim 1 first width is shorter than second width.

7. The trim assembly of claim 1 wherein the second flange portion comprises a smooth material.

8. A method of making a trim assembly for one or more recessed lighting fixture housings having a range of actual diameters, comprising:

- providing a first insert portion of the trim assembly to extend vertically within the housings,
- providing a flange portion to extend horizontally in two parts from the first insert portion with a bend between the two parts, thereby placing the two flange parts on different levels.

9. The method of making a trim assembly according to claim 8 further comprising: transitioning the trim assembly from the first insert portion to the flange portion with a radiused portion designed to fit within a smallest housing diameter.

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