March 3, 1953 S. L. BEBER ET AL 2,630,235

COLLAR FOR RECESSED LIGHTING FIXTURES, AND OTHER USES

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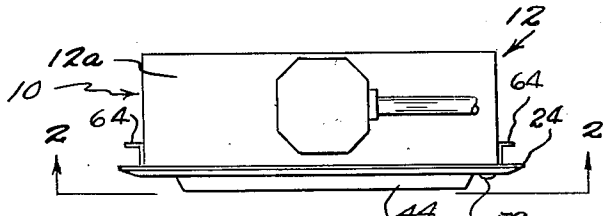



Fig. 1

Fig. 2

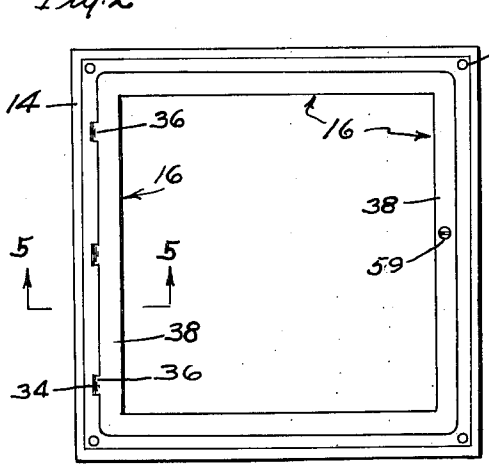
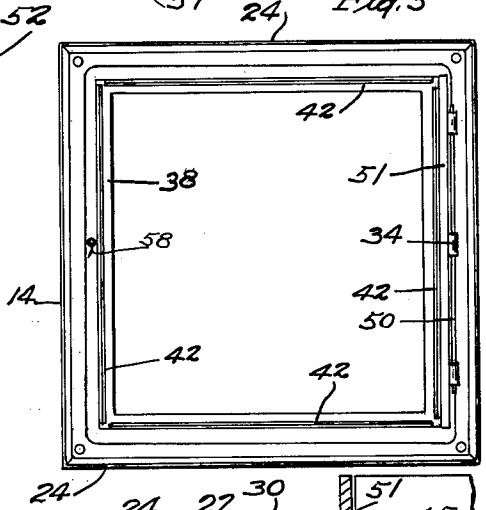



Fig. 3



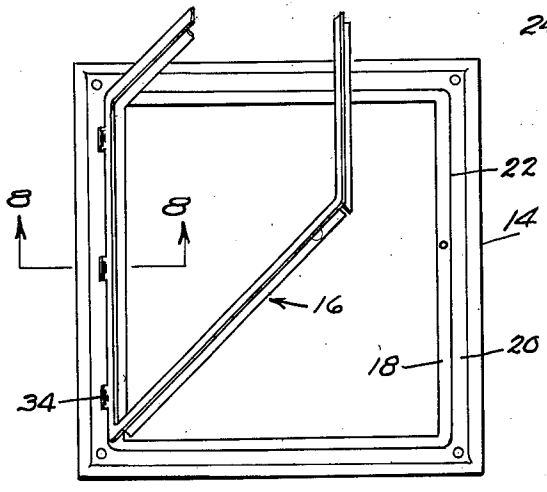




Fig. 4

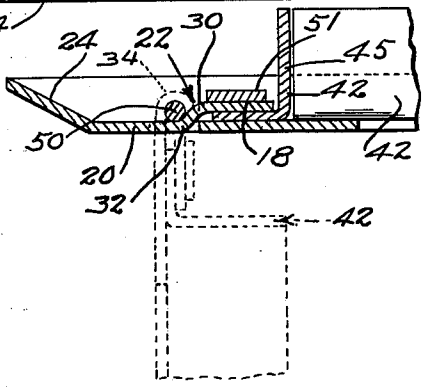



Fig. 5

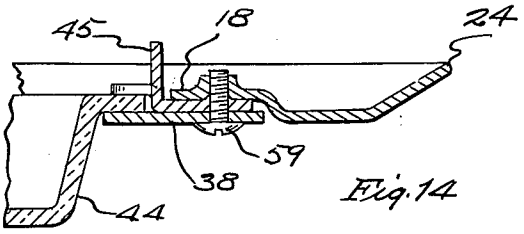



Fig. 14

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COLLAR FOR RECESSED LIGHTING FIXTURES, AND OTHER USES

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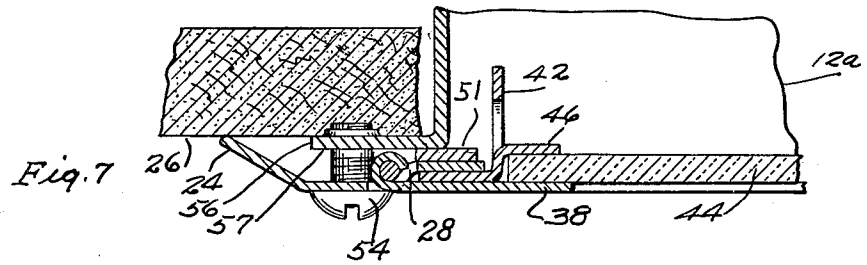



Fig. 7

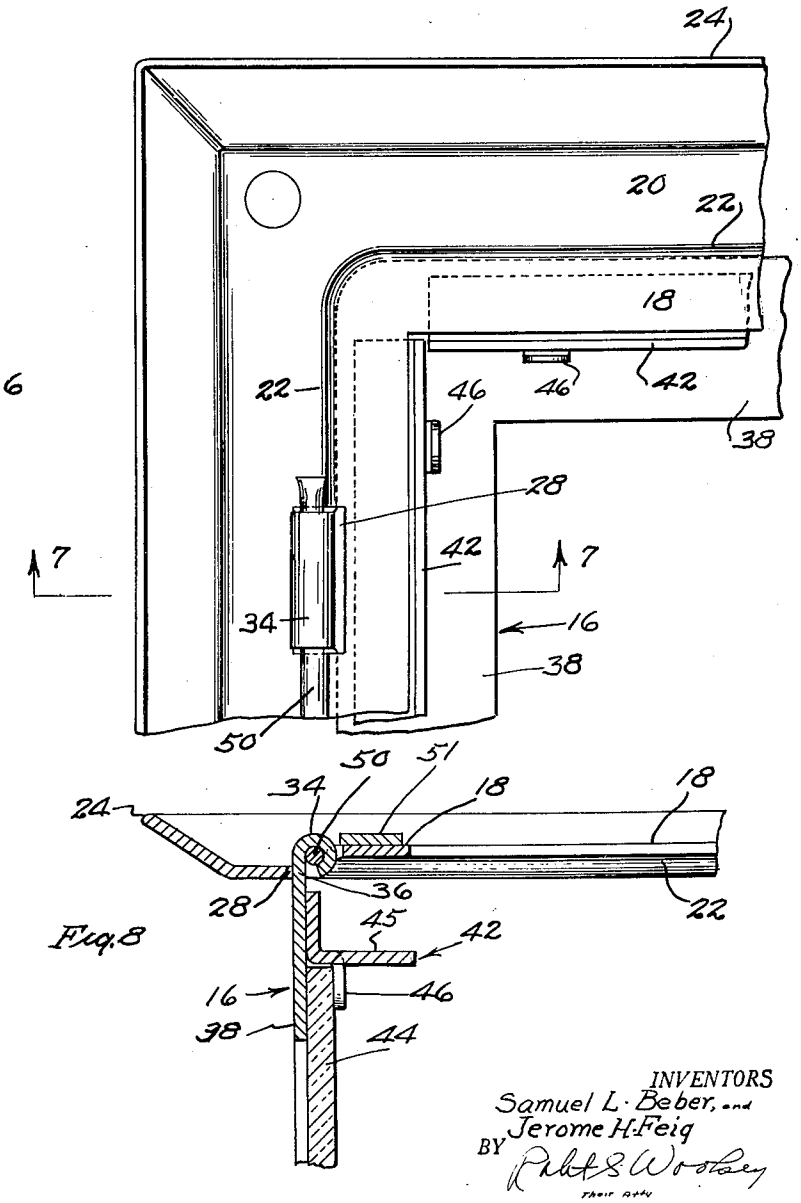



Fig. 6

Fig. 8

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Fig. 9

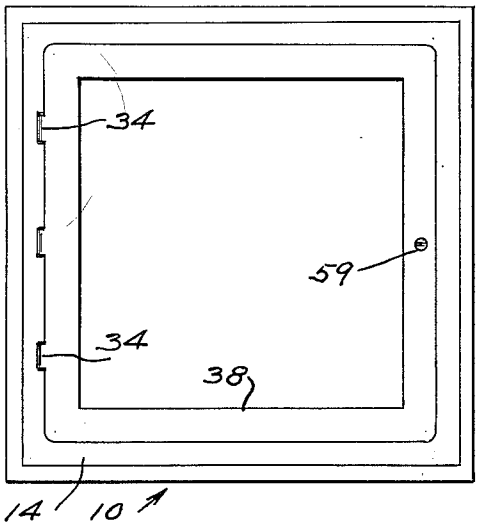



Fig. 10

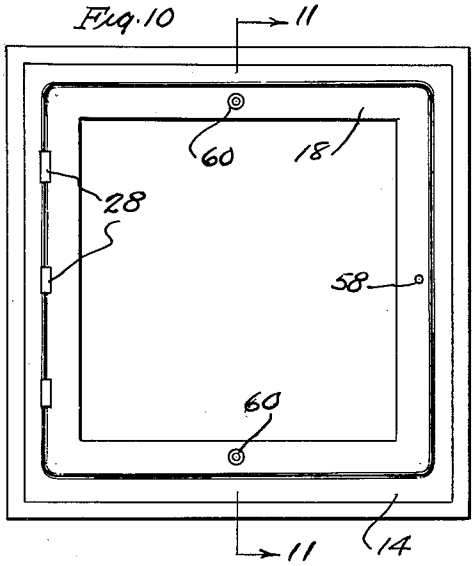
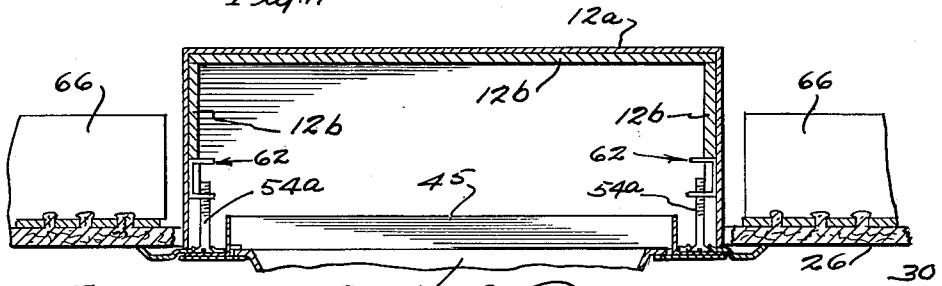



Fig. 11



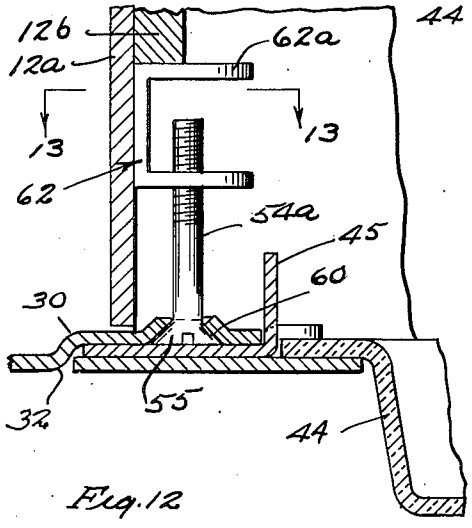




Fig. 12

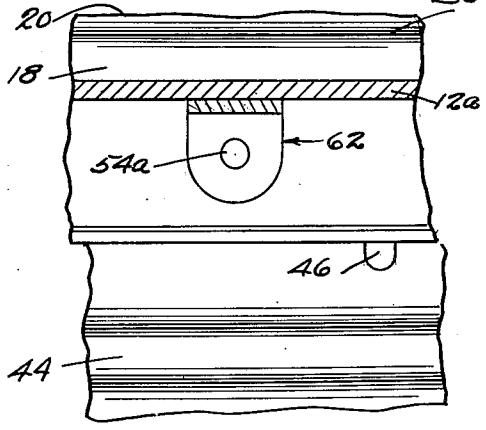



Fig. 13

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Patented Mar. 3, 1953

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# UNITED STATES PATENT OFFICE

2,630,235

## COLLAR FOR RECESSED LIGHTING FIXTURES, AND OTHER USES

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Application April 21, 1949, Serial No. 88,754

5 Claims. (Cl. 220—3.3)

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The device of this invention relates in general to recessed flush lighting fixtures, and is more specifically concerned with a collar or covering for the recessed box of such a fixture, although the principle involved in the construction of the hinge included in the structure is susceptible of other uses.

It is an object of the present invention to provide an improved collar assembly for a recessed lighting fixture which is formed of two elements, one element constituting a stationary detachable marginal finish for the recessed box of the fixture, the other element comprising a frame in hinged relationship to the stationary element, to support a lens, or other transparent or translucent member, the said other element being hingedly secured to the stationary element to permit ready access to the recessed box of the lighting fixture for such need as may be at hand, as for example, the replacing of lamps, making repairs, etc.

Another object of the invention is to provide a novel hinge construction between a swingable element and a stationary element wherein all surfaces relating to the forward face of the swingable element are flush with the stationary element and lie in a horizontal plane common to both of said elements.

A further object of the invention is to provide a hinged relationship between a swingable element and a stationary element, the swingable element being formed with tongues turned about a center, the stationary element being formed with integral off-set surfaces and having slots formed therein at the place of intersection of said off-set surfaces to receive said tongues whereby upon assembly, the swingable element rests within and upon the innermost of said off-set surfaces and is flush with the outermost of said surfaces, said swingable element and said stationary element being joined by means of a pintle inserted through said tongues and bearing against the stationary element adjacent the intersection of said off-set surfaces whereby the one element may be swung with respect to the other.

The precedingly stated and other objects, features and advantages of the invention may be noted from the accompanying drawing, the detailed specification and the subjoined claims.

In the drawing:

Figure 1 is a side view of an embodiment of the invention in the form of a recessed flush lighting unit.

Figure 2 is a face or bottom view of the collar

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which constitutes present invention, being a view taken as indicated by line 2—2 on Fig. 1.

Figure 3 is a view of the opposite side of the collar.

Figure 4 is a view similar to Figure 2, excepting that it is taken at an angle and shows the collar in partially extended position, a portion thereof being broken in view of the position of the figure with respect to Figure 2.

Figure 5 is a detail drawn to an enlarged scale along line 5—5, Figure 2, showing the positioning of the several pieces of material involved in creating the flush hinge used to join the stationary and swingable elements of the collar, dotted lines indicate the open position of the frame within the collar.

Figure 6 is an enlarged elevational view of a corner of the device as seen from the inner side thereof with a hinge spacer strip removed to more clearly illustrate the position of the slots through which the tongues of the swingable element of the combination are inserted.

Figure 7 is a detail sectional view taken along line 7—7, Figure 6, and is similar to Figure 5 in full lines, except that the collar is shown attached to a lighting fixture box.

Figure 8 is another detail taken transversely of the hinge of the unit similar to Figure 5 and showing the hinged element in an open position.

Figure 9 is a face view of a modified form of collar for a recessed lighting fixture, wherein the means fastening the collar to the recessed box are concealed under the frame thereof.

Figure 10 is a view similar to Figure 9, except that here the frame has been removed to disclose the collar with recessed openings to receive a screw with the head flush therein so as not to interfere with the frame of the collar when in closed position.

Figure 11 is a sectional view taken substantially along lines 11—11, Figure 10, showing in general the construction involved in this modified form of the invention.

Figure 12 is a detail drawn to an enlarged scale showing construction generally illustrated in Figure 11.

Figure 13 is a plan view as seen along line 13—13, Figure 12; and

Figure 14 is a detail drawn to an enlarged scale showing the fastening means used to hold the frame of the unit in closed position.

In the drawing the reference character 10 indicates the collar of this invention used upon a recessed flush lighting unit 12, and as shown the collar in a generic sense, comprises a rec-

tangular pressed metal shape or stationary element 14 which is adapted to cover the roughed-in opening in the ceiling in which the box 12a of the lighting unit 12 is positioned, and a swingable or shiftable cover 16 adapted to provide ready access to the interior of the box for such purposes among others, as cleaning and replacement of lamps etc.

The element 14, as aforementioned, is rectangular in form for the prime reason that this shape is generally preferred as a matter of economy in construction. The section of each side of element 14 is such as to have a relatively flat or horizontal inner portion 18, and an outer portion 20 which is flat and horizontal and is in a plane below the portion 18. The portions 18 and 20 are joined by a continuous S-shaped bend 22 extending around the element 14. The outer portion 20 is provided at its outer margin with an up-turned lip 24 which is adapted to contact with the ceiling 26 when the assembly is in functional position.

The element 14 is provided with one or more slots 28 located in or at the bend 22 and the slots are of sufficient width to freely receive curled or rolled tongues 34 formed in the free ends of the tongue projections 36 which extend laterally of one side of the frame 38 of the swingable cover element 16 afore-mentioned. The frame 38, as shown in the drawing, is flat except for the inwardly turned tongues 34, and it is adapted to rest within the confines of the continuous bend 22 and against the part 18. A relatively small right angled strip of metal in the nature of a bracket 42 has a foot spot welded to the inner face of the frame 38 at each of the four sides thereof. The vertical legs 45 of bracket 42 form shoulders against which the edges of a translucent or a transparent plate 44 abut. Tabs 46 are struck from the legs 45 and are bent outwardly over the plate to retain the same in place within the frame 38.

Reference to the drawing will show that the degree of curvature effected at points 30 and 32 is such as to create a sufficient degree of off-set between portions 18 and 20 to permit the frame 38, when in closed position, to rest on portion 18 while its front face is flush with the front surface of the portion 20 of the collar.

Upon assembly of the cover element 16 with the collar element 14, which operation involves insertion of the tongues 34 through the slots 28, a single pintle 50 is inserted through the several tongues and lies upon or bears against the inner surface of the portion 20 where it joins the curved part 32. A fillet strip or spacer 51 is spot welded to the inner face of the portion 18 preferably on the foot of the bracket 42 and is adapted to slightly space the lower face 57 of the flange 56 on box 12a from the tongues 34, when the collar is held in place against the ceiling 26 by means of the screws 54 which detachably join the collar and the flange 56. When the box 12a is in working position its flange 56 bears up against the margin of the opening provided in the ceiling 26 to receive the box. The frame is also provided with an opening 58 in registry with a threaded opening in the collar element 14. Opening 58 passes a screw 59 which serves as a means of holding the frame element in closed position against the undersurface of the collar element, and which upon removal permits the frame to swing downwardly to a vertical or hanging position as shown in Figure 8, whereby access to the interior of the box 12a may be had for such utilitarian purposes as may need be.

In Figures 9–13, we show a modified form of construction wherein the collar element is detachably secured to the box 12a by means of screws 54a, the heads 55 of which are normally concealed under the frame 38 whereby the appearance of the unit is enhanced.

Figure 9 shows the unit as it appears without a reflector plate or bowl 44, while Figure 10 illustrates the collar without the frame and shows dimpled openings 60 formed in the portion 18 of the collar to provide flush setting for the flat heads 55 of the screws 54a as shown in Figure 12. As will be noted, in this form of the construction, the flanges 56 on the box 12a have been dispensed with as a means for attaching the collar thereto, thereby lessening the amount of metal used in the construction and hence tending to lower the cost thereof. We spot weld a clip 62 upon each of the inner faces of the box 12a which clips are aligned with the openings 60. Each clip has one of the legs thereof drilled and threaded to adjustably receive a screw 54a therein as shown in Figures 11 and 12, while the other leg thereof, that is, leg 62a, provides a support for sheets of thermal insulating material 12b arranged at the inner walls of the box. In this form of construction as well as in the previously described arrangement, flanges 64 upon opposed exterior faces of the box provide means of attaching the unit to timbers 66 or frame-work within the ceiling 26. The screw 59 extending through the frame 38 and into the collar 14 serves to hold the frame in horizontal position during normal use, and is removable to permit the frame to swing downwardly upon its hinge, as shown in Figure 8, for full and complete access to the interior of the box for such need as may be.

It is believed that the preceding description will clearly show that we have conceived a novel construction in collars or finish plates for recessed flush lighting fixtures, a finish plate which is pleasing in appearance and which is adapted to provide ready and convenient full access to the interior of the box upon which it is situated by the simple expedient of removing a single screw which permits the frame to swing downwardly upon the hinge thereof. This arrangement frees a workman's hands for the task at hand, saves time and labor, and eliminates the otherwise ever present possibility of dropping and breaking the glass plate bowl positioned in the frame, and further, the hinge employed in the present construction is believed to be novel per se, in that the swingable frame alone is formed with rolled tongues to receive the pintle or pivot pin, the stationary element being merely slotted to receive the inwardly extending tongues, and providing a surface upon which the pintle rests.

Having thus described our invention in its presently preferred form, that which we believe to be novel and for which we seek Letters Patent is:

1. A structure applicable to a ceiling having an opening therein including, a box entering the opening and having a marginal flange bearing against the ceiling, a collar element, means releasably fastening the collar element to the flange to bear against the ceiling, the collar element having substantially flat parallel portions in spaced planes and joined by a curved part, there being openings through the curved part, a plate

carrying frame having curled tongues projecting therefrom and through the openings, means carried by the tongues and bearing on the inner side of the collar element joining the frame to the collar element, and releasable means connecting the frame and collar element with the frame bearing on one of said portions of the collar element to be flush with the other of said portions.

2. A structure applicable to a ceiling having an opening therein including, a box entering the opening and having a marginal flange bearing against the ceiling, a collar element, means releasably fastening the collar element to the flange to bear against the ceiling, the collar element having substantially flat parallel portions in spaced planes and joined by a curved part, there being openings through the curved part, a plate carrying frame having curled tongues projecting therefrom and through the openings, means carried by the tongues and bearing on the inner side of the collar element joining the frame to the collar element, releasable means connecting the frame and collar element with the frame bearing on one of said portions of the collar element to be flush with the other of said portions, and a part in the collar engaging the flange so the frame is held in position where the tongues clear the flange.

3. A structure applicable to a ceiling having an opening therein including, a box entering the opening and having a marginal flange bearing against the ceiling, a collar element, means releasably fastening the collar element to the flange to bear against the ceiling, the collar element having substantially flat parallel portions in spaced planes and joined by a curved part, there being openings through the curved part, a plate carrying frame having spaced curled tongues projecting therefrom and through the openings, a single pivot pin carried by the tongues and bearing on the inner side of the collar element joining the frame to the collar element, and releasable means connecting the frame and collar element with the frame bearing on one of said portions of the collar element to be flush with the other of said portions.

4. A structure applicable to a ceiling having an opening therein including, a box entering the opening and having a marginal flange bearing against the ceiling, a collar element, means releasably fastening the collar element to the flange to bear against the ceiling, the collar element having substantially flat parallel portions in spaced planes and joined by a curved part, there being openings through the curved part, a plate carrying frame having curled tongues projecting therefrom and through the openings, means carried by the tongues and bearing on the inner side of the collar element joining the frame to the collar element, releasable means connecting the frame and collar element with the frame bearing on one of said portions of the collar element to be flush with the other of said portions, a plate holding bracket on the inner side of the frame and having a foot attached to the frame, and a spacer on the collar inward of the foot of the bracket and engaging the flange holding the tongues clear of the flange.

5. A structure applicable to a box inserted in a ceiling opening and having a flange bearing against the ceiling including, a collar, means connecting the collar to the box so it is stationary relative thereto and bears against the ceiling, the collar having two substantially flat portions in spaced parallel planes and a connecting part between said portions and having openings therethrough, a frame having curled tongues projecting therefrom and each extending through an opening and carrying a member bearing against the inner side of the collar to hold the frame joined to the collar, and means releasably holding the frame seated on one of said portions of the collar to be substantially flush with the other of said portions of the collar, the first mentioned means including screws engaged through the collar and held by the flange of the box.

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