May 1, 1945. R. HAYNES 2,374,993

OUTLET COLLAR FLANGE

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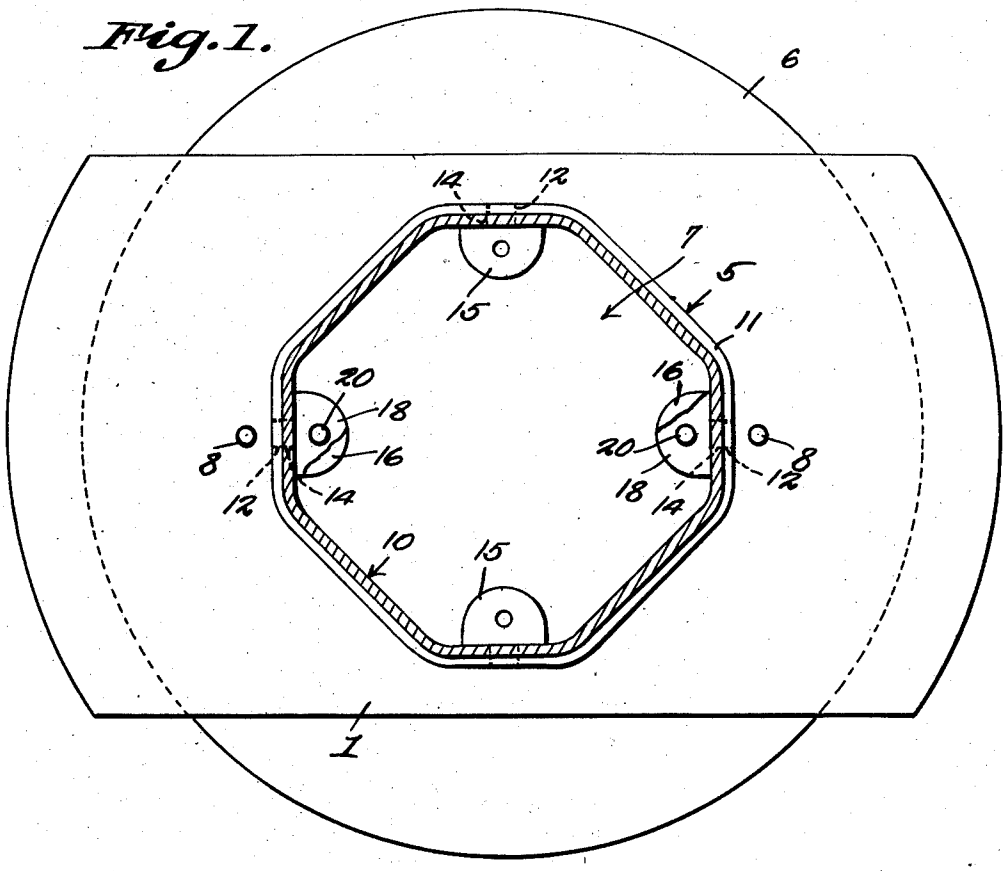
Fig. 1.



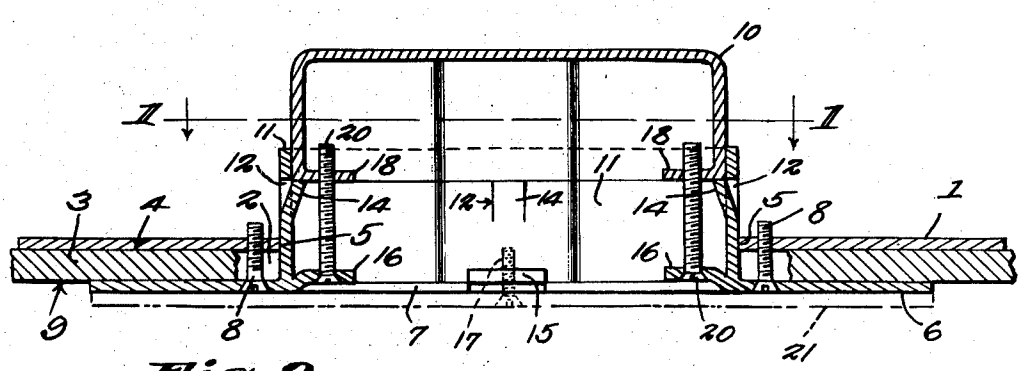


Fig. 2.

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Fig. 3.

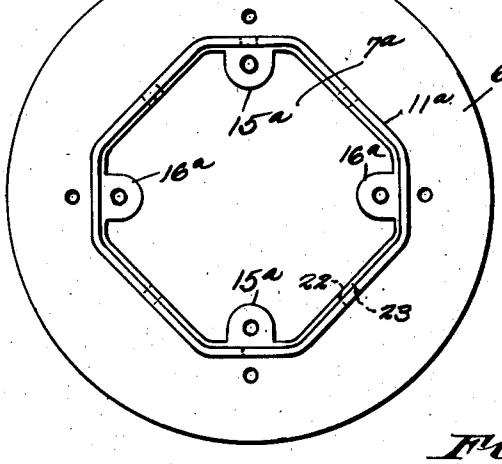
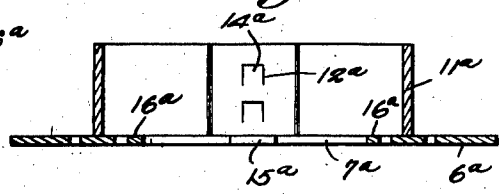


Fig. 4.



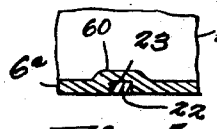


Fig. 5.

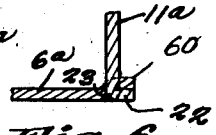
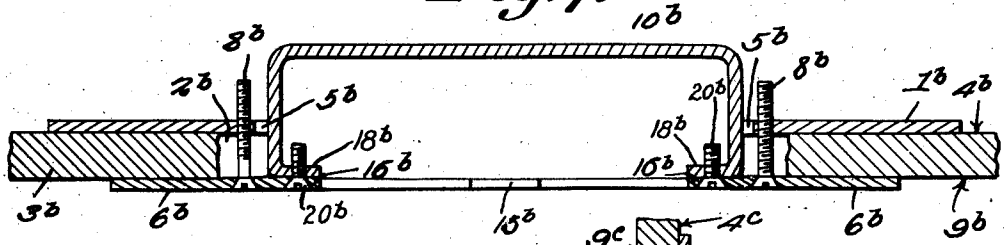


Fig. 6.

Fig. 7.



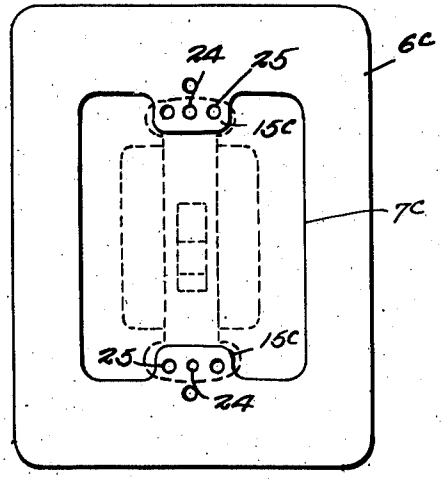


Fig. 8.

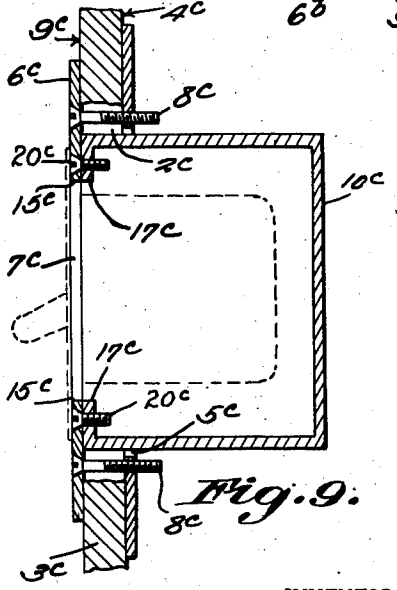


Fig. 9.

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Patented May 1, 1945 2,374,993

UNITED STATES PATENT OFFICE

2,374,993

OUTLET COLLAR FLANGE

Robert Haynes, San Francisco, Calif.

Application October 13, 1943, Serial No. 506,117

3 Claims. (Cl. 220—3.3)

In many places where electrical outlet boxes are required, especially in connection with old work, there is not sufficient working room for a proper installation, such as could be done on new work, and when the ordinary box and hanger are employed, the hanger bar rests on the upper surface of the ceiling. There is no way of fastening the hanger bar, unless the ceiling is cut away to give access to the hanger: but a cutting away of the ceiling is undesirable, because it calls a plasterer on the job, to close the breach in the ceiling.

The present invention aims to provide such a structure whereby the difficulties above referred to may be remedied, novel means being employed for mounting the box in place and holding it securely anchored.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings:

Fig. 1 shows in transverse section, on the line 1—1 of Fig. 2, a device constructed in accordance with the invention, most parts appearing in top plan;

Fig. 2 is a longitudinal section of the structure delineated in Fig. 1;

Fig. 3 is a top plan showing a modified base plate and attendant parts;

Fig. 4 is a transverse sectional view of the modified structure depicted in Fig. 3;

Figs. 5 and 6 are sectional views showing the means whereby the collar of Figs. 3 and 4 is connected to the base plate;

Fig. 7 is a transverse sectional view showing another modified form of the invention;

Fig. 8 is an elevation showing a further modification of the invention; and

Fig. 9 is a vertical section of the structure disclosed in Fig. 8.

The device forming the subject matter of this invention, may be made of metal throughout, although some other material may be employed if there is a scarcity of metal. It includes an electrical outlet structure, comprising an elongated clamp plate 1 (Figs. 1 and 2), which is narrow enough to be passed through a hole 2 in a barrier 3, such as a ceiling. The clamp plate 1 engages one surface 4 of the barrier 3. The clamp plate 1 has an opening 5.

A base plate 6 is provided, the base plate having an opening 7 registering with the opening 5 of the clamp plate 1. The base plate 6 is of such size as to engage the opposite surface 9 of the barrier, and to overlap the barrier, about the hole 2.

Tightening devices 8, such as screws, connect the base plate 6 and the clamp plate 1, to cause them to bind upon the barrier 3. The tightening devices 8 are spaced apart at such distance that they pass through the hole 2 in the barrier 3.

An inverted, cup-shaped box 10 is supplied, and means is provided for connecting the box with the base plate, in communication with the opening 7 therein.

The device forming the subject matter of this application includes modifications, and generic structure has been described, up to this point.

About its opening 7, the base plate 6 is provided with an upstanding integral collar 11 (Figs. 1 and 2) which is polygonal, and preferably octagonal in cross section. Near its upper end, the collar 11 is slit as shown at 12, to fashion inwardly inclined stop tongues 14.

At its place of connection with the collar 11, the base plate 6 is supplied with oppositely-disposed, inwardly projecting ears 15 and oppositely disposed ears 16, the ears 15 and 16 being alike, the ears 15 being oppositely disposed, the ears 16 being oppositely disposed, and the ears 15 being ninety degrees remote from the ears 16.

The box 10 is provided with oppositely-disposed, inwardly projecting ears 18, disposed directly above the ears 16 of the base plate 6. The box 10 is octagonal in cross section, and fits against rotation, within the collar 11, the box resting on the stop tongues 14.

Securing elements 20, such as screws, are engaged with the ears 16 and 18, to hold the box 10 in place. The ears 15 may carry screws 17, employed to hold a closure 21 (shown in dash line in Fig. 2) against the base plate 6, the closure extending across the opening 7 of the base plate or the screws 17 may be employed to hold in place, a hanger bar or other electrical fixture not shown.

In assembling the device as shown in Figure 2, the operator locates the box 10 above the ceiling 3, and attaches the flexible wiring conduits (not

shown). The collar 11 is slipped upwardly through the ceiling-hole 2 until the base plate or flange 6 is close to the ceiling 3, and the screws 8 are set up to clamping position. The operator reaches upwardly with one hand through the collar 11 and pulls down the box 10 until it is within the collar and resting on the stop ears 14. By means of the other hand, draw screws 20 are mounted in the ears 16 and 18, and are tightened, and the parts appear as in Fig. 2.

The construction is such that the box 10 is spaced from the base plate 6 by a greater distance than ordinary, to provide a structure of greater height than the one shown in Fig. 7, which is to be described hereinafter.

In Figs. 1 and 2 of the drawings, the collar 11 is integral with the base plate 6. This detail is not necessary, as Figs. 3, 4, 5 and 6 show. In the figures last mentioned, parts hereinbefore described have been designated by numerals already used, with the suffix *a*. The collar 11*a* is provided at its lower end with depending fingers 22, adapted to be inserted through openings 23 in the base plate 6*a*. When the fingers 22 are bent upwardly, they distort or hump upwardly small portions of the base plate 6*a*, as at 60, until the lower surfaces of the laterally-extended portions of the fingers are flush with the lower surface of the base plate. The aggregate result is that the base plate 6*a* is provided with recesses for the reception of the bent portions of the fingers 22. The construction is such that a smooth surface is provided, to receive the blanking disc or closure 21 of Fig. 2.

In Fig. 7, the collar 11 of Fig. 2, or the collar 11*a* of Fig. 4, has been omitted, parts hereinbefore described having been designated by numerals already used, with the suffix *b*. The ears 18*b* of the box 10*b* rest immediately upon the ears 16*b* of the base plate 6*b*, and the screws 20*b* connect the parts specified.

In Figs. 8 and 9 there is shown a form of the invention which is adapted to be used to house a switch structure, parts hereinbefore described having been designated by numerals already used, with the suffix *c*.

This form of the invention is much like the one shown in Fig. 7. The ears 15*c* of the base plate 6*c* are provided with openings 24, for the reception of the binding screws 20*c*, and on opposite sides of each opening 24 there are other openings 25 which facilitate the mounting of the switch in place.

Having thus described the invention, what is claimed is:

1. An electrical housing structure comprising a clamp plate having an opening, a base plate spaced from the clamp plate and having an opening registering with the opening of the clamp plate, a collar carried by the base plate and disposed about the opening of the base plate, the collar extending through the opening of the clamp plate and having inwardly projecting stop means, an inverted box extended within the collar and seated on the stop means, the box and the base plate having inwardly projecting structures, an adjustable tightening device connecting the inwardly projecting structures of the box and of the base plate, to hold the box seated on the stop means, and an adjustable tightening device connecting the base plate with the clamp plate and located outwardly of the collar.

2. An electrical housing structure constructed as set forth in claim 1, and wherein the collar and the base plate are integral.

3. An electrical housing structure comprising a clamp plate having an opening, a base plate spaced from the clamp plate and having an opening registering with the opening of the clamp plate, a collar carried by the base plate and disposed about the opening of the base plate, the collar extending through the opening of the clamp plate and having inwardly projecting stop means, an inverted box extended within the collar and seated on the stop means, the box and the base plate having inwardly projecting structures, an adjustable tightening device connecting the inwardly projecting structures of the box and of the base plate, to hold the box seated on the stop means, an adjustable tightening device connecting the base plate with the clamp plate and located outwardly of the collar, the base plate being provided with inwardly projecting ears, and adjustable tightening devices mounted in the ears and extended beyond the base plate, to hold an article against the base plate.

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