

FACEPLATE MOUNTING FOR ELECTRICAL DEVICES

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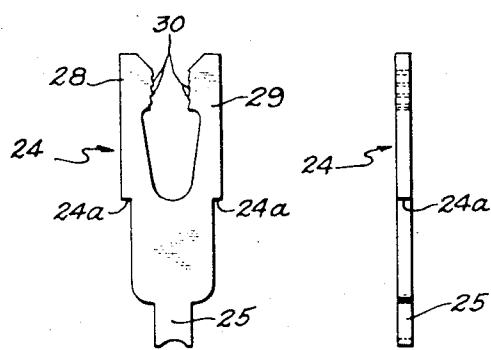
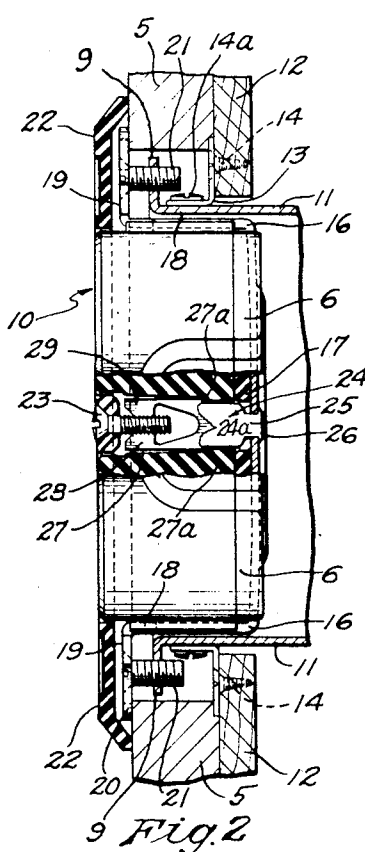
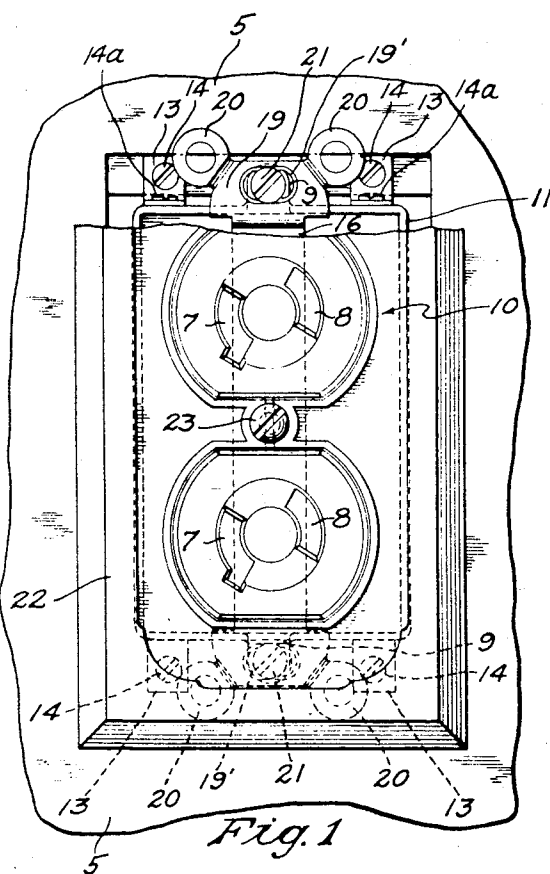


Fig. 3

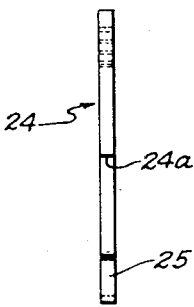


Fig. 4

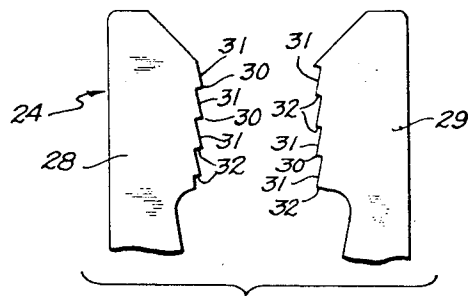


Fig. 5

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FACEPLATE MOUNTING FOR ELECTRICAL DEVICES

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3 Claims. (Cl. 173—330)

This invention relates to new and useful improvements in electrical devices of the type to be mounted in wall outlet boxes and has particular relation to the fastening or securing of plates to or over such devices after they have been mounted in a wall, baseboard or the like.

An object of the invention is to provide a means whereby a screw securing a face plate over an outlet receptacle or the like cannot be tightened to any such extent as to cause cracking of the plate when of frangible material or bending of it when of sheet metal or the like.

Another object is to provide a simple and inexpensive means whereby the face plates of outlet receptacles and the like may be easily and quickly secured in place.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the scope of the invention and of the appended claims.

In the drawing:

Fig. 1 is a front elevational view showing the manner of securing a face plate over a wall outlet receptacle, a portion of the face plate being broken away;

Fig. 2 is a central longitudinal sectional view through the installation of Fig. 1;

Fig. 3 is an enlarged side elevational view showing a face plate securing screw receiving element employed;

Fig. 4 is an edge elevational view of the element of Fig. 3; and

Fig. 5 is a side elevational view on a greatly enlarged scale and showing the head portion of the screw receiving element.

The usual way of mounting a face plate over these electrical devices is by means of a screw threaded into a tapped opening in a rivet or bolt in the body. This requires threading up the screw in mounting the plate and if the screw is threaded up too tight the plate is apt to be broken if it is of molded material or bent if of metal. It is an object of this invention to provide a construction which cannot be tightened enough to break or bend the plate and which can be applied much more quickly than the usual screw.

Referring in detail to the drawing at 10 is shown by way of example a wall outlet receptacle

mounted in a wall box 11 secured as to the lathe 12 by means of clips 13 and screws 14 and 14a. This body has the usual recesses not shown in which the receptacle contacts are mounted and the front wall has the openings or slots 7 and 8 leading to these recesses for insertion of the contact blades of connector caps in the usual manner. The invention, however, is not limited to use with outlet receptacles but may be used also with other electrical devices such as switches and the like. Secured to the insulating body 15 of the receptacle 10 by a yoke 16 is an insulating cover plate 6 closing the rear side of the recesses for the receptacle contacts. The yoke includes a part 17 extending across the inner or rear side of the body 15 and having arms 18 arranged at the ends of the body. Each of the arms 18 carries a flange 19 and such flanges may be provided with the detachable ears 20 as desired. Screws 21 passing through an elongated opening 19' in the flanges 19 and threaded into ears 9 on the wall box serve to secure the yoke 16 and thus the entire receptacle 10 in the box 11.

Over the receptacle 10 is arranged any or the usual face plate 22 which may be of moulded material, such for example as "Bakelite" or the like, or which may be of metal if desired. Plate 22 is secured in place in engagement with the face of the wall or plaster 5 by means of a screw 23 cooperating with a receiving element 24 located in the body of the receptacle. Element 24 is formed of a piece of flat metal stock and at its inner end includes a portion 25 the extreme inner end of which is passed through the connecting portion 17 of the yoke 16 and then clinched or spun over as at 26 whereby the element is secured to the yoke. This element secures the yoke 16 and cover plate 6 to the body it being provided with shoulders 24a seating on shoulders 27a in the recess 27 in the body in which member 24 is located.

Element 24 extends forwardly in the body 15 of the receptacle and is located in the recess 27 in the body which is oblong or slot-like whereby the element is held against any turning movement relative to the body. The forward portion of element 24 comprises a head-like part which is bifurcated whereby to provide portions 28 and 29 spaced apart, and on their opposing edges are notched or toothed as at 30. Inwardly of their teeth the portions 28 and 29 are integral but such portions may yield relatively with a spring action as will appear.

When a face plate is to be mounted over the electrical device, such for example as an outlet

receptacle provided with the element 25 the securing screw may be threaded into the element, the threads of the screw cooperating with the teeth 30 of the element. Since the portions 28 and 29 of the element are resilient they may yield relatively and thus the securing screw 23 cannot be tightened beyond a predetermined amount. That is, the screw may be tightened to a given tightness and if any attempt is made to tighten this screw excessively or beyond this point the portions 28 and 29 of the element will yield outwardly or away from one another under camming action of the screw threads and teeth and the screw will simply rotate without becoming any tighter. Thus it is impossible to tighten the screw to any such extent as to result in breaking of the face plate where the latter is of frangible material or to bend the face plate where it is of metal.

To remove the face plate, as when the receptacle is to be renewed it is but necessary to rotate the screw 23 in a direction to unscrew it from the element 24. As shown at 31 in Fig. 5 the outer or upper surfaces of the teeth 30 are beveled or inclined while their inner or lower surfaces are at a much steeper angle or approach being substantially straight across as at 32. Therefore when the face plate is being secured in place the operator may simply push the screw 23 into the element 24, the beveled surfaces 31 permitting the threads on the screw to slide over the teeth 30. Thus the screw may be quickly applied as it is not necessary to rotate it in doing so as in the usual construction. However, owing to the steeper angle of the inner surfaces 32 of the teeth 30 the securing screw may not be removed from the element 24 except by rotation in a direction to unscrew it from the teeth 30 of the element.

From the above it will be seen that when the receptacle is equipped with the face plate securing screw receiving means or element 24 the securing screw may not be unduly tightened. Also the element provides means whereby face plates may be very easily and quickly applied to a receptacle or the like and yet are firmly held and can be removed only in the usual manner.

Having thus set forth the nature of my invention, what I claim is:

1. An electrical device comprising a body of insulating material, a mounting yoke including a portion extending across the inner side of said body, a face plate securing screw receiving ele-

ment in said body and anchored at its inner end to said portion of the yoke and bifurcated at its outer end for the reception of a screw, teeth on the opposed edges of said bifurcated portion for engagement with the threads of a screw, the opposite edges of the teeth being inclined in opposite directions with the angle of inclination on the inner side steeper than that on the outer side, and said portion being resilient with the sides thereof free to move laterally so that they may yield outwardly under camming action of the screw threads on each of the sides of the teeth.

2. An electrical device including a body of insulating material, a face plate securing screw receiving element carried by said body, said element comprising a pair of spaced portions having teeth on their opposing edges for cooperation with the threads of a screw, said portions being outwardly yieldable relatively to each other, each of said teeth being inclined on its outer side at an angle to have a camming action on the threads to separate the portions to permit the screw to be inserted by being pushed in with longitudinal movement only and without turning, and each tooth being inclined at a much steeper angle on its inner side whereby the screw shank must be rotated to thread it outwardly from between such portions but the teeth may have a camming action on the threads to separate the said portions so the threads may pass over the teeth from one to another to prevent the screw being tightened beyond a predetermined limit.

3. An electrical device including a body of insulating material, a face plate securing screw receiving element carried by said body, said element comprising a pair of spaced portions having teeth on their opposing edges for cooperation with the threads of a rotatable screw to hold the screw in place, said portions being resilient and laterally yieldable, said teeth being inclined on their outer faces at such an angle as to have a camming action on the screw threads to separate said portion by longitudinal sliding movement of the screw whereby a screw may be pushed into position between said portions by sliding over the said inclined sides of the teeth, and said teeth being inclined at a steeper angle on their inner faces to engage the threads such as to require turning of the screw to remove it from the member.

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