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2,451,267

LOCKING SPIDER FOR WALL SWITCHES AND THE LIKE

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FIG. 1.

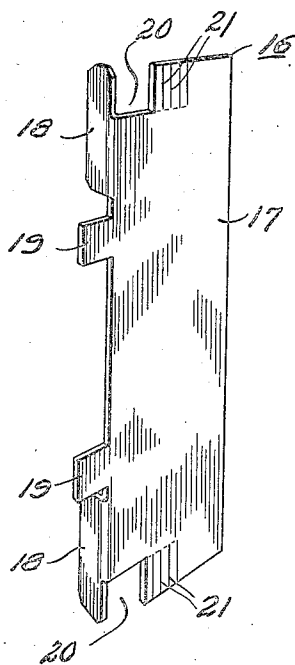


FIG. 2.

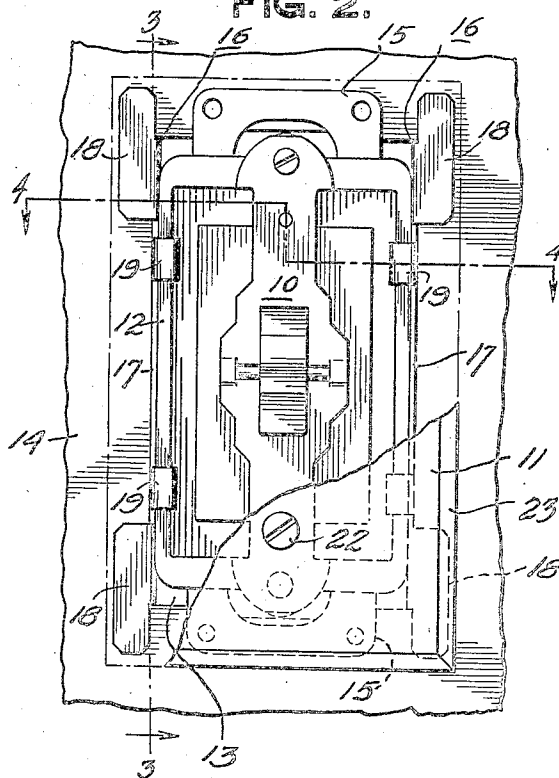


FIG. 3.

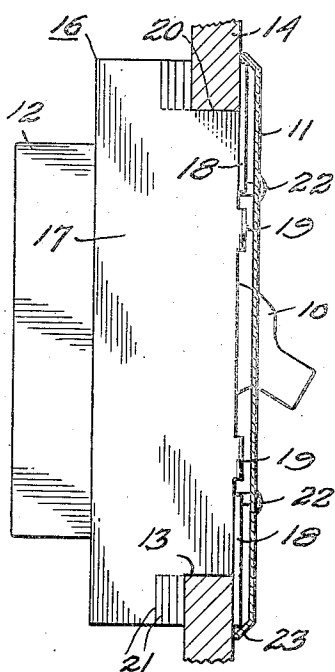
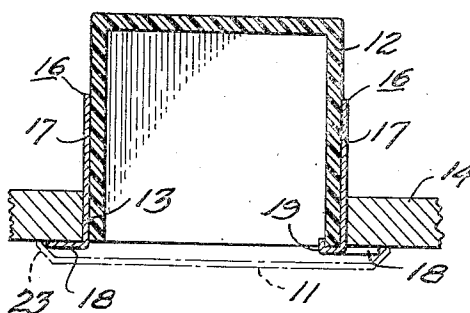


FIG. 4.



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3 Claims. (Cl. 174-48)

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This invention relates to improvements in the mounting of switch or other electrical outlet boxes, their covers and the like, and more particularly to a locking spider which holds the switch box in place in an opening cut thru a finished wall surface of lath and plaster or wallboard without the necessity of screws or other fastening elements engaging the wall surface or studding for securing the outlet box in place.

In finished interior walls of wallboard it has been difficult to anchor outlet boxes in place due to the lack of substantial supports for receiving screws or other like fastening elements. The primary object of the present invention is to provide locking spider elements which are engageable in openings cut not only in such wallboard walls but lath and plaster walls of varying thickness which spider elements have means engageable with the outer edges of the outlet box for preventing it from being moved outwardly from the opening in the wall when it has been secured in place between a pair of the spider elements positioned in the opening at opposite sides of the box.

Another object of the invention is to provide locking spider elements with notches in their ends having a width for snugly engaging wallboard of a minimum thickness or any desired thickness.

Another object of the invention is to provide such locking spider elements with notches for wallboard of a minimum thickness, with means whereby the width of the notches may be increased any desired amount so as to fit and snugly engage a wall of any thickness.

Another object of the invention is to provide the locking spider with lugs which are bendable over the outer edge of the outlet box after it has been positioned in the opening in the wall between a pair of such locking spider elements to prevent it from being withdrawn from the opening, the box being provided with wall engaging ears at its ends is thus prevented from moving either inwardly or outwardly with respect to the opening where it is securely locked in place with its outer edge substantially flush with the outer wall surface.

A further object is to provide the locking spider with wall engaging ears which lie against the outer surface of the wall and of such dimensions with respect to the opening that when a conventional type of cover plate having inturned marginal flanges presenting a cavity at the back of the cover plate is used with the assembly the ears may be disposed in the cavity in the cover plate with its flanges engaging the ears to hold

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the cover plate and parts secured thereto from assuming a diagonal or unsightly position on the wall.

Further objects and advantages of my invention will appear in the following specification describing in detail a highly satisfactory embodiment of my invention which is illustrated in the accompanying drawings.

In the drawings wherein like characters of reference designate the same parts thruout the several views,

Fig. 1 is a perspective view of a locking spider for electrical switch or outlet boxes in accordance with my invention.

Fig. 2 is an interior elevation view of an assembled switch outlet box mounted by means of a pair of such spiders in accordance with my invention, a portion of a cover plate being shown to illustrate its relationship to the spiders.

Fig. 3 is a side elevation of the assembly shown in Fig. 2 being a vertical sectional view taken on the line 3-3 of Fig. 2, and

Fig. 4 is a sectional view taken on the line 4-4 of Fig. 2 the switch and other parts being omitted and the cover plate being indicated with broken lines.

Referring to the drawings in general, as best shown in Figs. 2 and 3, I have indicated a conventional type of switch unit 10 of the toggle type and a corresponding cover plate 11 therefor. The invention is not however, limited to use with such a toggle switch, nor to other forms of electrical units, such as connectors and the like, but primarily to the mounting of an outlet box 12, its cover plate and assembly of outlet box members in an opening 13 in a wall 14 of wall or plasterboard, plywood, lath and plaster or the like. Outlet box 12 as illustrated has conventional angle pieces with outwardly extending ears 15 at each end and is of the molded plastic type, in the example shown, and altho a single unit outlet box is illustrated, the invention is equally applicable to a double or multiple unit box as will appear in the following description of my improved outlet box mounting elements.

The mounting elements for mounting an outlet box assembly in a wall 14 comprises a pair of locking spiders 16. As shown in Fig. 1, each spider 16 comprises a main body portion or side plate 17 having at its front edge a pair of laterally extending ears 18, one at each end and an intermediate pair of forwardly extending lugs 19. The upper and lower ends of side plates 17, immediately adjacent to ears 18 are provided with notches 20 having a width so as to just fit over a

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wallboard 14 of a minimum thickness and inwardly of the notches, plate 17, may be provided with a plurality of parallel scores 21 providing removable portions whereby the notches may be increased in width so as to fit the wall material of greater thickness.

In mounting an outlet box assembly in accordance with my invention a rectangular opening 13 is cut in the wall material 14 having a height equal to the distance between the innermost ends of the notches, and a width that of the outlet box 12 plus the thickness of two of the locking spider side plates 17 so that when in position the parts will fit snugly in the opening 13. The locking spiders are first inserted diagonally in the opening 13 and swung so that the side plates 17 will be in engagement with the side walls of the opening and the notches 20 in secure engagement with the wallboard at the upper and lower positions of the opening 13, with ears 18 lying flat against the outer surface of the wallboard adjacent to the opening. The outlet box 12 is then inserted in the opening 13 between the two locking spiders 16 until the ears 15 of the angle pieces, secured to the ends of the outlet box, are in engagement with the outer surface of the wallboard adjacent to opening 13. In this position the outer edges of box 12 are substantially flush with the outer surface of wall 14 and lugs 19 of locking spiders 16 are bent inwardly into engagement with outer side edges of box 12 and thereby the box is locked in position. Lugs 19 prevent the outlet box from being pulled outwardly and ears 15 prevent it from being pushed inwardly of the wall.

With the outlet box so mounted and the electrical device such as the switch 10, mounted therein, the cover plate 11 may be secured in place by means of a pair of screws 22. When a conventional cover plate 11 having an inner cavity provided by inturned marginal flanges 23 as shown in Figs. 1, 2 and 3, is employed it will be noted that the four outwardly extending ears 18 define a rectangular formation which just fits within the inner cavity of the cover plate 11 engaging the flanges 23 of the latter and thereby the entire assembly is held in an upright position and the parts are prevented from assuming a diagonal or unsightly position on the wall.

I claim:

1. A locking spider for wall switch or outlet boxes and the like comprising a flat plate engageable with a side of the outlet box, said plate having end notches engageable with the wall material beyond the ends of the box and the opening provided therefor in the wall; lateral ears extending from the front edge at the ends of the flat plate engageable with the front surface of the wall material and for holding the back edge of the notch in engagement with the inner surface of

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the wall material; and an outwardly extending lug on the front edge of the plate bendable inwardly over the outer edge of the outlet box.

2. A locking spider for wall switch or outlet boxes and the like comprising a flat plate engageable with a side of the outlet box, said plate having end notches engageable with the wall material beyond the ends of the box and the opening provided therefor in the wall, said notches being of a width so as to snugly engage the wall material, the plate having a plurality of parallel scores to the rear of the notches to facilitate cutting material of the plate away to render the notches wider for thicker wall material; lateral ears at the front ends of the flat plate engageable with the front surface of the wall material; and an outwardly extending lug on the front edge of the plate bendable inwardly over the outer edge of the outlet box.

3. The combination with an outlet box, switch or other outlet unit in said box and a cover plate secured over the box and unit, of means for securing said assembly in a wall opening in a plastered or wallboard wall, comprising a pair of locking spiders engageable with the sides of the outlet box and the front and rear surfaces of the wall material adjacent to the side edges of the opening, said outlet box having outwardly extending ears at its ends adjacent to the front end of the box engageable with the front surface of the wall to hold the box and prevent it from being pushed further inwardly of the wall opening, and lugs extending outwardly from the locking spiders adapted to be bent over the front side edges of the outlet box to prevent the box from being pulled outwardly from the wall opening, said locking spiders having lateral extensions engageable with the outer wall surface beyond the wall opening, said lateral extensions defining a rectangular area slightly smaller than the cover plate and said cover plate having inturned marginal flanges presenting a cavity at the back of the cover plate with the flanges engaging the edges of said lateral extension on the locking spiders thereby holding the cover plate and other parts of the assembly secured thereto from assuming a diagonal or unsightly position on the wall.

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