Oct. 1, 1957 C. C. BUCKELS 2,808,172

OUTLET BOX

Filed July 2, 1954

Fig. 1.

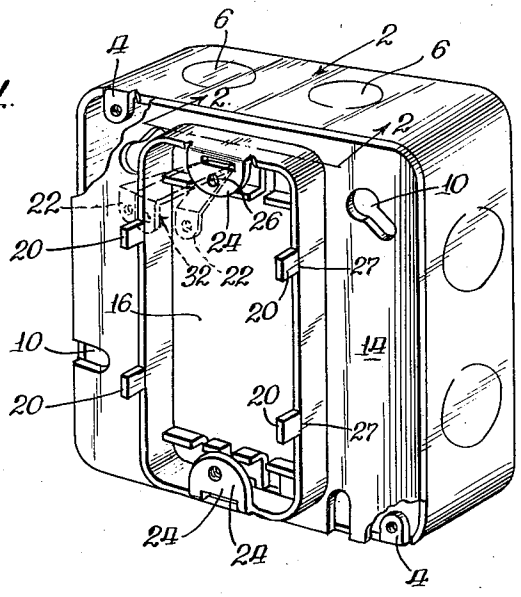


Fig. 2.

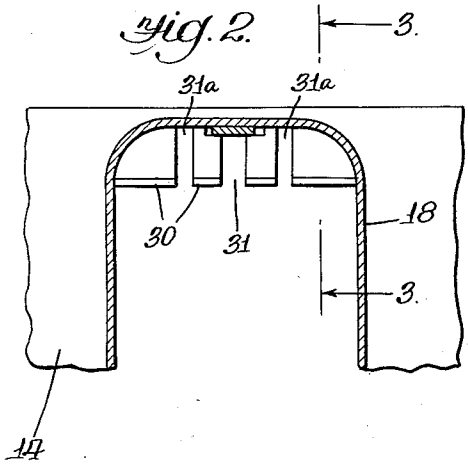
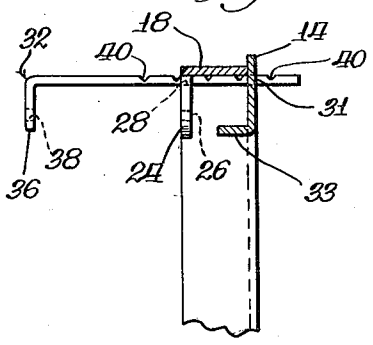


Fig. 3.



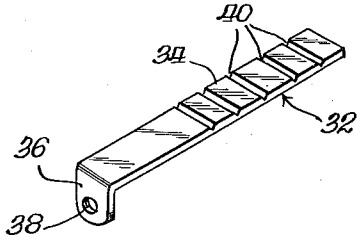


Fig. 4.

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2,808,172

Patented Oct. 1, 1957

2,808,172

OUTLET BOX

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Application July 2, 1954, Serial No. 441,134

7 Claims. (Cl. 220—3.4)

The invention relates to the electrical wiring art and more particularly to a new and novel outlet box arrangement.

As is well known to those skilled in the art and particularly to those familiar with the electrical wiring of new building construction, conduit, outlet boxes and other electrical service facilities are installed in the building immediately after masonry work and rough partitioning are completed. Subsequent to the rough electrical installation, construction is continued with the lathing and plastering operations. Electrical service is not completed until some point near the finish of the building when the wires are pulled through the conduit, the circuits completed, and connection made to the main. It has been found through long experience that this order of work progression is in the interest of economy from the standpoint of overall construction costs. However, this order of work progression results in considerable difficulty to the completing of the electrical wiring job. These difficulties can best be understood by a brief description of the practices of various building tradesmen.

When the electrician is completing his rough layout he locates his outlet boxes (said boxes being commonly known as 1900 boxes) and secures same to the roughly partitioned wall. Thereafter, the lather covers the studs usually by nailing rock lath thereto. In placing the outlet boxes on the studs, the electrician, if he is competent, will secure the box to the studs so that the box, when equipped with a mounted plaster cover, will fall just below the plane surface of the finish plaster when it is installed. Often however, the electrician errs and installs the box in such a manner that it is too deeply recessed in the finished wall. Even when the box has been correctly installed in the first instance, it is the standard lathing practice to locate the lath on the wall in correct position on the wall and strike the lath a firm blow which drives the inwardly facing surface of the lath against the open edges of the outlet box and plaster cover. In this manner an impression is left on the surface of the lath which serves as a quick guide to the lather in removing a piece of the lath to provide an opening for the box. More often than not the opening cut in the lath does not entirely clear the edges of the plaster cover, so that when the lath is finally nailed into position part of the force of the hammer blows are transmitted to the plaster cover and thence to the outlet box. Thus, in the usual lathing operation, there is at least one occasion and possibly two when direct hammer blows are available to drive the mounted box inwardly of the wall. In point of fact it has been found that the above practices result in driving the box inwardly of the wall to such a degree that they will no longer be correctly positioned relative to the finished plastered surface.

After lathing, the plastering operation is completed. It will be readily appreciated by those who understand present day plastering practice and the speed with which it is accomplished, that the open end of the recessed box

becomes partially filled with plaster and the edges of the plaster cover are overlapped with plaster which covers the lugs and the tapped holes which serve as mounting means for the subsequently installed switch. In some cases where the box was deeply recessed in the wall, the entire box has been covered by plaster. It should be noted that this filling of the box with plaster and the covering of the lugs also frequently occurs in present practice even though the box is correctly positioned on the wall due to the speed and consequent carelessness with which the plaster is applied.

Considering the above set out practices, the difficulties relative to the subsequent wiring operation are thought to be obvious, but will nevertheless be briefly described.

The most important element from a cost standpoint is that the average electricians wage represents six cents per minute to the contractor and therefore to the home purchaser. With the outlet boxes filled or entirely hidden with plaster, the electrician must waste valuable time "digging plaster" before he is able to complete the job of pulling the wires and mounting the switches. Additionally, when the box is unreasonably recessed in the wall, the switch cannot be readily mounted in the correct position relative to the finished plaster surface. If the switch is mounted directly on the box the toggle thereof is too far recessed to be conveniently accessible to the user when the cover plate, which abuts the surface of the plaster, is installed. If an effort is made to mount the switch correctly, the electrician will be required to use screws longer than those normally associated with the switch in order to reach the recessed mounting holes. Furthermore, the box may be angled in any direction from the vertical plane of the wall due to the above set out practices, which renders proper switch mounting even more difficult. Obviously, valuable time is lost making these and other adjustments.

Accordingly, it is a primary object of the invention to provide a novel outlet box arrangement designed to accommodate current lathing practice and to avoid the difficulties stemming therefrom relative to the plastering operation.

It is a specific object of the invention to provide an electrical outlet box arrangement meeting all code requirements and having means thereon to prevent the edges and open end thereof from becoming covered with plaster.

It is an additional specific object of the invention to provide an arrangement as above described with extensible, fixable elements which will accommodate switch installation in the correct position relative to the finished plaster surface regardless of the relative position of the outlet box.

It is another specific object of the invention with a novel plaster cover arrangement which may be conveniently associated with the outlet box.

It is a further specific object of the invention to provide a unique box arrangement as above described wherein upstanding lugs are arranged to prevent plaster from being swept into the box.

It is still another specific object of the invention to provide a unique box arrangement as above described wherein the means thereon to accomplish the desired objects are so arranged as to avoid the possibility of wire insulation rupture or fraying during the final wiring operation whereby the possibility of short circuit is greatly reduced.

These and other objects of the invention will become apparent in the course of the following description and from an examination of the attached drawings, wherein:

Figure 1 is a perspective view of the novel arrangement,

Figure 2 is a fragmentary sectional view taken along line 2—2 of Figure 1,

Figure 3 is a fragmentary sectional view taken along line 3—3 of Figure 2, and

Figure 4 is a perspective view of the novel extensible element used in the invention.

In the preferred embodiment of the invention as illustrated in the drawings, a standard outlet box commonly known as a 1900 box is indicated generally at **2**. It will be noted that the box is of rectangular form and has one end thereof open, the closed sides of the box being provided with a plurality of circular knockouts **6** which accommodate installation of conduit as is well understood by those skilled in the art. Additionally, the box is provided with lugs **4**, said lugs being bent into a plane defined by the edges of the open end of the box and provided with tapped holes (not shown) which receive screws **9** which in turn are received in the apertures **10** of a plaster cover **12**, whereby the cover is securely mounted to the box **2**.

The plaster cover **12** comprises a substantially planer base plate **14**, said plate **14** having the mentioned apertures **10** formed therein. Preferably centrally of the plate **14** a hole **16** is provided, said hole offering access to the inside of the box **2**. It will be noted that the hole **16** is illustrated in the preferred embodiment to be of rectangular form but this is by way of illustration only and it will be understood that any geometric form may reasonably fall within the purview of the invention. The cover **12** is also provided with an upstanding ledge **18**, said ledge being preferably disposed around the perimeter of the hole **16**.

It should be noted that conventional plaster covers are provided with an upstanding ledge. However, as noted above, this ledge is covered in the plastering operation and the plaster deposited in the box. To avoid this I have provided a plurality of upstanding plaster guard lugs **20** on the outer edge of the ledge **18**. Thus in the plastering operation the plasterer's trowel will strike the guard lugs preventing the depositing of plaster in the box. Additionally, these guard lugs act as knife edges to mark the rock lath when the lather strikes it thus preventing the full force of the blow from being transmitted to the box and aiding in the prevention of box recessing. Additionally, extensible elements **32** may be positioned in the receiving slots, as hereinafter described, to serve as additional plaster guard lugs. After the plastering operation the elements **32** may be repositioned to serve their original intended function.

It should be noted that the mounting lugs **24** are attached to the edge of the ledge **18** and are disposed inwardly to fall substantially in the plane defined by the upper edge of the ledge **18**. The lugs **24** present tapped holes **26**, said holes serving as securing means for the subsequently mounted switch (not shown). The guard lugs **20** are preferably scored at the base thereof, as at **27**, in alignment with the edge of the ledge **18**, whereby the guard lugs may be grasped with pliers and easily broken from the ledge should they interfere with switch installation after the plastering is completed.

Directing attention to Figures 1 and 3 it will be seen that the lugs **24** have a horizontal slot **28** formed therein adjacent the area of connection to the ledge **18**. As is best shown in Figures 2 and 3, the plate **14** also comprises a plurality of spaced segments **30** which extend into the hole **16** and have the ends thereof bent outwardly, as at **33**, toward the edge of the ledge **18**. The two central segments **30** are separated and have apertures formed in their bases so that when viewed together (Figure 2) they form a T-slot **31**, the upper or horizontal segment of the T-slot being aligned with the slot **28** formed in the adjacent mounting lug **24** (Figure 3). Slots **31***a* separate the outer segments **30** from the center segments **30**, said slots **31***a* being designed to accommodate the insertion of a bending tool such as a screw driver for the purpose hereinafter explained.

It should also be noted that an additional reason for bending the segments **33** outwardly is to present smooth rounded edges adjacent the hole **16**, thereby avoiding the possibility of cutting the wire insulation when the wire is subsequently pulled through the box and attached conduit.

Directing attention to Figure 4 it will be seen that the extensible element **32** comprises a base portion **34** having an end or mounting portion **36** angularly related thereto. The end portion **36** has a drilled and tapped hole **38** formed therein whereby it may serve as a switch mounting as hereinafter described. The base portion **34** presents a plurality of transverse score marks **40** whereby said base portion may be grasped with pliers and broken off to any desired length and thus avoid interference between the element and any wires in the box **2**.

When it has been found that the box is too far recessed into the wall to accommodate convenient switch installation the base portion **34** of the elements **32** may be positioned in the upper and lower pairs of slots **28** and **31**. The depth of this positioning may be regulated by the electrician so that the end portion **36** is correctly located relative to the finished plaster surface to properly accommodate switch mounting. When the elements are properly located, the electrician merely inserts his screwdriver in the slots **31***a* and, by twisting the screwdriver, bends the central segments **30** toward each other whereby the element is wedged or locked between the upper edges of the T-slot **31** and the inner periphery of the ledge **18**. Thus a new or auxiliary switch mounting means is afforded correctly located relative to the finished plaster surface. It should also be noted that the arrangement readily accommodates further adjustment, if necessary. That is, a screwdriver may be inserted in the central slot **31** and twisted urging the central segments **30** to disengage the element **32**, whereby the element may be repositioned and again locked in the above described manner.

It will also be understood that the element receiving slots **28** and **31** may be made somewhat larger than the width of the element **32**, whereby the element may be limitedly pivotal about a vertical axis as is shown in phantom in the upper portion of Figure 1 (see pivoted element at **22, 22**). Additionally, it will be readily apparent that the extended element may be bent vertically to any desired position. These features make possible easy switch installation even though the box is angled from the vertical plane of the wall about a vertical axis. If, on the other hand, the box is angled from the vertical plane of the wall about a horizontal axis, merely varying the length of the elements **32** and bending same if necessary, will provide easy switch installation. It will also be readily appreciated that virtually any odd angling of the box from the vertical plane of the wall can be accommodated by combining the utility of the above mentioned features and easy switch installation will result.

From the foregoing it will be understood that I have provided a new and novel electrical outlet box arrangement which reduces installation time and resulting costs, solves the heretofore mentioned difficulties and problems of the art, and answers needs long felt in the art.

It will also be understood that the above described preferred embodiment is by way of illustration and not limitation and that many and varied modifications of the hereindisclosed invention may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In an arrangement of the type described, a box, a cover securable thereto, an aperture in the cover affording access to the box, a ledge extending outwardly from the cover and approximately surrounding the aperture, mounting lugs attached to the ledge having threaded holes therein whereby a switch may be mounted in the box, extensible elements, said elements having auxiliary mounting lugs thereon, slots in said first-mentioned mounting

lugs, openings in said cover aligned with said first-mentioned slots, said extensible elements being receivable in said slots and openings, and bendable means on the cover engageable with said elements to fixedly lock said elements in selectable positions relative to said cover.

2. An arrangement according to claim 1, wherein said openings and slots are somewhat larger than the elements received therein.

3. An arrangement according to claim 1, wherein said last mentioned means comprises segments on the cover defining the openings aligned with said slots, said segments being bendable to engage said elements and wedge the elements against the ledge.

4. In an electrical outlet box arrangement for mounting in association with a wall to be plastered to a determined depth, a box, a cover fixedly positioned relative to the box, an opening in the cover affording access to the box, a plaster guard ledge extending outwardly from the cover and surrounding the opening, a plurality of plaster guard lugs extending from the outward edge of the ledge whereby the combined depth of said ledge and lugs is greater than said determined depth, mounting lugs having threaded holes therein whereby a unit may be mounted in the box adjacent the opening, extensible elements associated with the cover having auxiliary mounting lugs thereon with threaded holes therein, and means to fixedly secure the elements to the cover in any of plurality of selectible positions comprising slots in the first mentioned mounting lugs, segments on the cover adjacent the edge of said opening and defining other slots aligned with the first mentioned slots, said slots receiving said elements,

and means on the cover engageable with the elements to fixedly secure the elements relative to the cover.

5. An electrical outlet box arrangement according to claim 4, wherein said last mentioned means comprises bendable portions on the segments operative to engage the elements and wedge same against the ledge.

6. An electrical outlet box arrangement according to claim 5, and including abutment means adjacent said bendable portions and defining therewith apertures to conveniently receive a bending tool.

7. In an arrangement of the type described, a box, a cover securable to the box, an opening in the cover affording access to the box, mounting lugs on opposite sides of the opening and having slots defined therein, bendable segments in spaced relation to the mounting lugs and defining other slots in determined alignment to the first-mentioned slots, abutments in spaced relation to the segments and defining therewith apertures arranged to conveniently receive a bending tool therebetween, said segments being bendable to engage and wedge said elements in a determined relation to the cover.

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