Nov. 1, 1927. 1,647,505

W. J. CORMAY

OUTLET BOX AND FIXTURE SUPPORT

Filed July 2, 1926

Fig. 1.

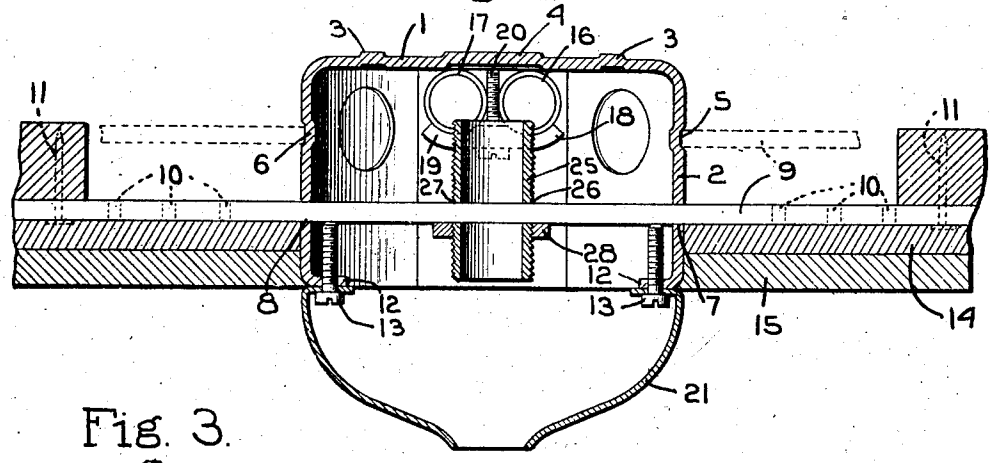


Fig. 3.

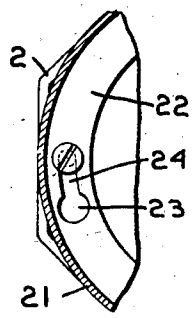


Fig. 2.

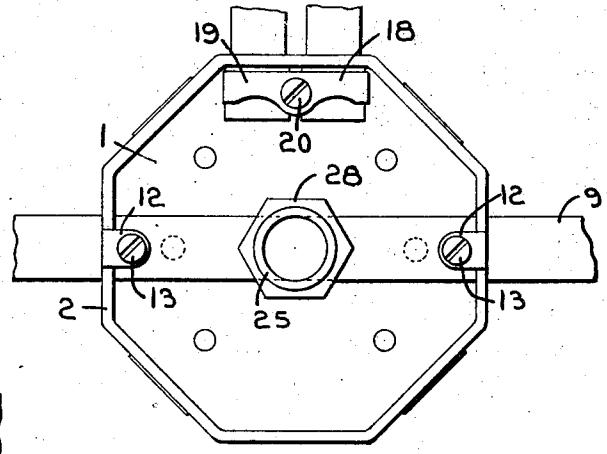
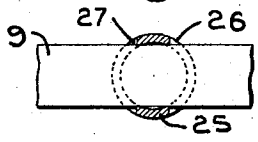


Fig. 4.



Inventor.
Walter J. Cormay
by Hurd Smith & Tennant
Attys.

Patented Nov. 1, 1927. 1,647,505

UNITED STATES PATENT OFFICE.

WALTER J. CORMAY, OF AUBURNDALE, MASSACHUSETTS.

OUTLET BOX AND FIXTURE SUPPORT.

Application filed July 2, 1926. Serial No. 120,011.

This invention relates to improvements in supports for electric fixtures and the like and also to outlet boxes and novel means for supporting the same separately or in conjunction with fixture supports.

One of the objects of the invention is to provide novel means for adjustably mounting an outlet box upon a supporting bar.

A further object of the invention is to provide means for adjustably mounting a nipple, or other fixture-supporting means, within the outlet box upon the supporting bar.

A further object of the invention is to provide selective means for mounting the outlet box upon a supporting bar so that it may be properly arranged for different conditions, including those in which the outlet box may be wholly exposed as in basement work, or in which it is required to be partially or substantially concealed within the surface of the wall, and in which the box may be properly supported either upon strap studding or ceiling timbers, or upon drop metal ceiling work without requiring the bending of the supports for the outlet box. In short, an object of the invention is to provide novel means for supporting an outlet box which may be readily adapted to substantially all conditions.

A further object of the invention is to provide a fixture-supporting device comprising a nipple adjustably mounted upon a supporting bar independently of the outlet box, but which may be properly associated therewith.

A further object of the invention is to provide a nipple construction by means of which the nipple may be employed as a means for connecting the outlet box to the supporting bar.

A further object of the invention is to provide a novel means for securing a canopy or a cover upon the outlet box.

Other objects and features of the invention will more fully appear from the following description and the accompanying drawings and will be particularly pointed out in the claims.

In the drawings:

Fig. 1 is a vertical sectional view of a preferred form of chambered outlet box mounted upon a supporting bar which is secured to ceiling beams of studding, illustrating also the lathing and plaster of the wall in which the outlet box is mounted;

Fig. 2 is a plan view of the outlet box shown in Fig. 1, illustrating the manner in which the armored cables or conduits enter into and are secured to the box;

Fig. 3 is a detail view illustrating the manner in which the canopy or cover is secured to the outlet box;

Fig. 4 is a detail sectional view through the nipple showing the manner in which it is slotted to receive the supporting bar which is also illustrated.

The installation of usual types of outlet boxes presents many problems owing to different structural conditions of the buildings in which they are installed. Chambered outlet boxes are usually required to be embedded in the walls in such a manner that the mouth or face of the box is flush with the surface of the wall. As outlet boxes are of uniform diameter and are ordinarily installed by screwing the bases to a suitable support, various expedients have to be employed to obtain proper installation upon different types of structure, such as usual lath and plastered walls, constructions in which the lath and plaster is supported upon furring, constructions in which metal lathing is employed, and particularly drop ceiling constructions in which metal lathing is carried by channel bars which are supported from hangers depending from the floor above. Furthermore, desirable locations for outlet boxes vary so that at times boxes may be mounted upon the studding or beams, and at other times must necessarily be mounted between them. Difficulty is also frequently experienced in obtaining proper alinement of fixtures which depend from the outlet boxes.

The present invention contemplates the production of an outlet box construction having selective means for mounting the same which will overcome the various difficulties heretofore experienced, some of which have been enumerated. This is accomplished in the present invention by providing an outlet box adapted to be adjustably mounted upon a supporting bar which may be provided at suitable distances from each end with holes to receive screws or nails by means of which it may be secured to the structure of the building. The outlet box embodying the invention is provided with selective means which enable it to be supported either upon its base at a short distance from its base, or relatively remote

therefrom, so that it can be readily and quickly installed in the various types of construction above mentioned without the necessity of employing special supporting devices.

The outlet box is provided with means for securing it in adjusted positions along the supporting bar, thus enabling the outlet box to be properly located and alined with other boxes. I have also provided means separate from, but adapted to be associated with, the outlet box for supporting fixtures, such as, hangers or chandeliers for overhead lights which likewise may be adjustably mounted upon the supporting bar. This device in its preferred form comprises a nipple which may be internally, but preferably is externally, screw threaded as illustrated, and is provided with oppositely disposed apertures or slots to receive the supporting bar and with a nut adapted, when set up against the bar or against some other suitable abutment, to clamp the nipple firmly to the bar. As the nipple is thus slidably mounted upon the bar it can be clamped in any desired adjusted position thereupon.

A preferred embodiment of the invention, which is illustrated herein, comprises a chambered outlet box having a base 1 and a peripheral wall 2, which, as illustrated herein, is of octagonal form, but may, of course, be made in any desired shape. The bottom of the box desirably has a plurality of knock-outs 3 suitably arranged to provide screw holes for attaching the base of the box to a suitable support. It also desirably is provided with a central knock-out 4 of circular form and of sufficiently large diameter to permit a usual nipple, such as a one-half inch pipe, to project therethrough for purposes which will hereinafter more fully appear.

The peripheral wall of the box desirably is provided with suitable knock-outs through which armored cables or conduits for cables may be inserted. The peripheral wall of the box also is provided with preferably oppositely disposed rectangular knock-outs 5 and 6 to provide apertures to receive a supporting bar. In Fig. 1 the knock-outs 5 and 6 nearest the base are illustrated, while apertures 7 and 8, formed from like knock-outs, are shown with the supporting bar 9 extending through them. The supporting bar 9 is provided with a series of holes 10 at suitable distances respectively from the ends of the bar to receive nails or screws 11 by which the bar may be secured to convenient members of the wall construction. The peripheral wall of the outlet box is provided, preferably adjacent its mouth, with inwardly extending ears 12 in which set screws 13 are mounted which engage the supporting bar 9 and when set up serve to clamp the box firmly upon it.

It will be noted that the apertures 7 and 8 are located at a distance from the mouth of the outlet box equal to the thickness of the lathing 14 and plaster 15 of the wall so that the mouth of the box lies flush with the face of the wall. By providing the knock-outs 5 and 6 for similar bar-supporting apertures the box may be employed where furring is used, thus enabling the bars to be attached directly to the studding or ceiling beams. Where an open box construction is permitted the base of the box may be secured directly to a suitable support by removing the knock-outs 3 and driving screws through the apertures formed thereby into the support. Thus it will be observed the box is adapted practical universal use. By thus supporting the box in proximity to its mouth, the outlet box can be readily installed in drop metal ceilings without the necessity of bending the channel bars which support the outlet box which has heretofore been required in the installation of usual types of outlet boxes.

A further feature of the invention consists in providing a novel means for securing the ends of the armored portion of a conductor or an electric conduit in the outlet box. In the preferred construction illustrated herein one or more of the sides of the outlet box is provided preferably near its base with knock-outs to provide apertures 16 and 17 of sufficient size to receive armored conductors or cables. If conductors are used the ends of the installation and armor desirably are provided with usual ferrules and the ends of the armored conductors or cables are clamped within the box by a yoke having arms 18 and 19 adapted to engage the respective conductors and a screw 20 extending through the central portion of the yoke and threaded into the base of the outlet box. By setting up the screw 20 the ends of the conductors or cables, which project into the box, are clamped by the yoke against the diametrically opposite wall of the aperture or against the bottom of the box and held firmly in place. This construction avoids the use of the usual connector sleeve and nut which has been employed to secure the end of the cable to the box, thereby saving expense of such parts and the time necessary for their installation.

Another feature of the invention consists in providing a novel means for securing the canopy or cover to the outlet box. In the present embodiment of the invention the set screws 13, which serve to clamp the outlet box to the supporting bar, are made of such length that a narrow space equal to or slightly wider than the thickness of the canopy of cover, intervenes between the ears 12 and the head of the screw. The canopy 21, which may be of any desired configuration, is provided with an inwardly extending basal

flange 22, (see Fig. 3) which is provided with bayonet slots, the enlarged portions 23 of which are of sufficient size to pass over the heads of the screws 13 and the narrow portion 24 of which is but slightly larger than the stem of the screw so that the canopy or cover may be applied by merely presenting the flange in such a manner that the screw heads will pass through the enlarged portion 23 of the bayonet slot, whereupon a slight rotary movement will bring the enlarged portion from beneath the heads of the screw so that the heads will engage the flange and prevent the canopy or cover from dropping.

A further and most important object of the invention is to provide a fixture-supporting nipple which may be slidably mounted upon a supporting bar or other anchoring device and which may be readily clamped thereupon in any adjusted position. Such a fixture-supporting nipple may be employed with an outlet box of the character above described as illustrated in Fig. 1 of the drawings.

The preferred form of nipple illustrated comprises an externally screw threaded section of pipe 25 provided with oppositely disposed apertures 26 and 27 to receive the supporting bar 9. The apertures 26 and 27 desirably are in the form of slots produced by milling across diametrically opposite portions of the pipe as shown in Fig. 4 in which the slotted section of the nipple is shown with the supporting bar passing therethrough. A nut 28 upon the nipple serves when set up to clamp the nipple firmly upon the adjusting bar. Obviously the nipple is slidably mounted upon the bar and can be fixedly clamped thereupon by the nut in any desired adjusted position.

The nipple may be made of different sizes of threaded pipe. The slots in the nipple may be made of different lengths and widths to accommodate bars of different width and thickness.

Desirably the nipple is made of such length that it will be wholly enclosed within the box and the end of the nipple will lie substantially flush with the outer plane of the box. By removing the knock-out in the center of the bottom of the box the nipple may be permitted to extend through the bottom of the box. Desirably the bar-receiving slots in the nipple are located at a greater distance from one end of the nipple than from the other, thus enabling the nipple to be used in reverse positions and adapting it to be employed when the supporting bar is located in either of the pairs of bar-receiving apertures in the peripheral wall of the outlet box.

The preferred form of chambered outlet box with which the nipple aforesaid is employed is adapted to be supported by its base or at different distances from its base upon a supporting bar, thus accommodating the box to various building conditions.

By reason of the present invention outlet boxes can be readily installed with a great saving of time over usual constructions; greater accuracy of installation is insured, and the invention is particularly adapted greatly to save labor as will be obvious to those skilled in the art.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A chambered outlet box having a continuous peripheral wall provided with oppositely disposed bar-receiving apertures, and having inwardly extending ears in proximity to said apertures, a supporting bar slidably mounted in said apertures and set screws mounted in said ears operable to clamp said box upon said bar in different positions of adjustment.

2. A chambered outlet box having a continuous peripheral wall provided with oppositely disposed bar-receiving apertures, and having inwardly extending ears in proximity to said apertures, a supporting bar slidably mounted in said apertures, set screws mounted in said ears operable to clamp said box upon said bar in different positions of adjustment and a cover having its margin provided with bayonet slots to engage said clamping screws.

3. A chambered outlet box having a continuous peripheral wall provided with oppositely disposed bar-receiving apertures, a supporting bar slidably mounted in said apertures, means for adjustably securing said box to said bar, a nipple slidably mounted on said bar within said box and means for adjustably securing said nipple to said bar.

4. A chambered outlet box having a continuous peripheral wall provided with oppositely disposed bar-receiving apertures, a supporting bar slidably mounted in said apertures, means for adjustably securing said box to said bar, an externally screw threaded nipple within said box having oppositely disposed slots to receive said bar and a nut on said nipple operable to clamp said nipple to said bar.

5. A chambered outlet box provided with a base and a peripheral wall having knock-outs to provide openings for electric conductors and also having a plurality of pairs of oppositely disposed knock-outs in different planes to receive a supporting bar and means for clamping said outlet box to said bar.

6. A chambered outlet box provided with a base having a central knock-out to provide an aperture for a nipple and a peripheral wall having knock-outs to provide apertures for electric conductors and also having a plurality of pairs of oppositely disposed knock-outs in different planes to receive a supporting bar and means for clamping said outlet box to said bar.

7. A chambered outlet box provided with a base and a peripheral wall having knock-outs to provide openings for an electric conductor and also having oppositely disposed knock-outs to receive a supporting bar, inwardly extending ears in proximity to said knock-out openings and set screws mounted in said ears adapted to engage the supporting bar.

8. A chambered outlet box having a base and a peripheral wall provided with a plurality of pairs of oppositely disposed bar-receiving apertures located respectively at different distances from said base, a supporting bar slidably mounted in one pair of said apertures and means for securing said box to said bar.

9. A chambered outlet box having a base provided with a central knock-out, adapted to form a nipple-receiving opening, and a peripheral wall provided with oppositely disposed bar-receiving apertures, means for clamping said box upon said bar and a nipple having oppositely disposed bar-receiving apertures slidably mounted upon said bar and means for clamping said nipple upon said bar.

In testimony whereof, I have signed my name to this specification.

WALTER J. CORMAY.