March 23, 1943. J. G. KNIGHT 2,314,408

OUTLET BOX INSTALLATION

Filed April 29, 1940

Fig. 1.

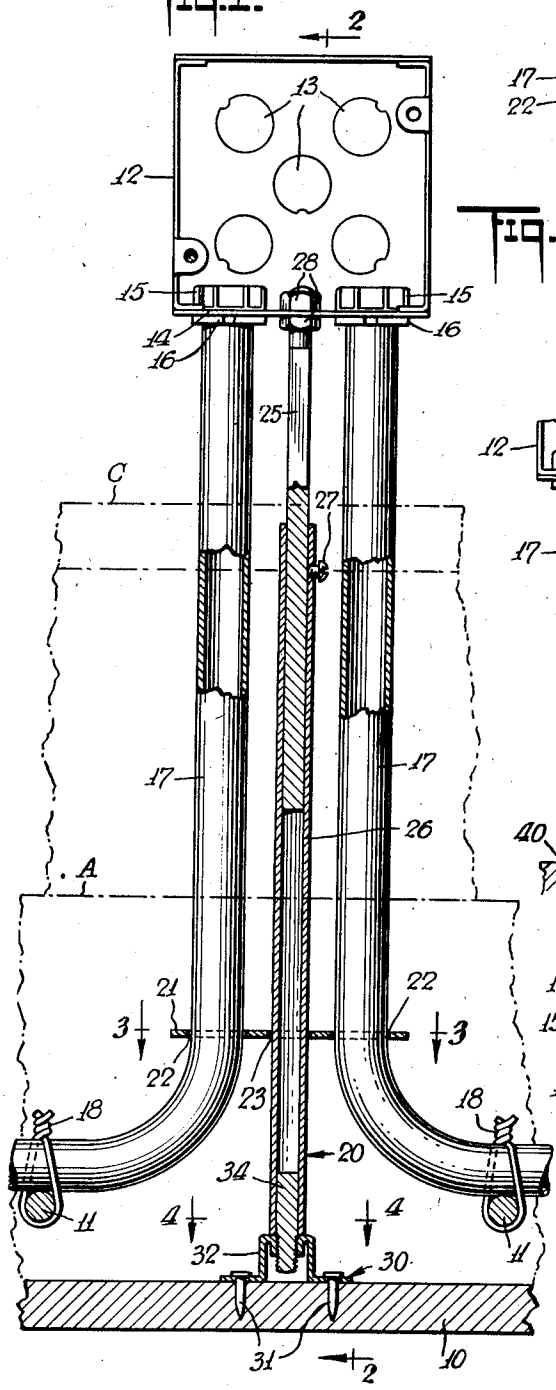


Fig. 3.

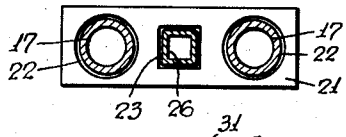


Fig. 4.

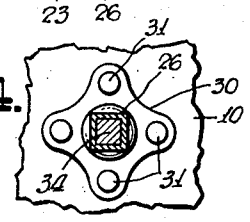


Fig. 6.

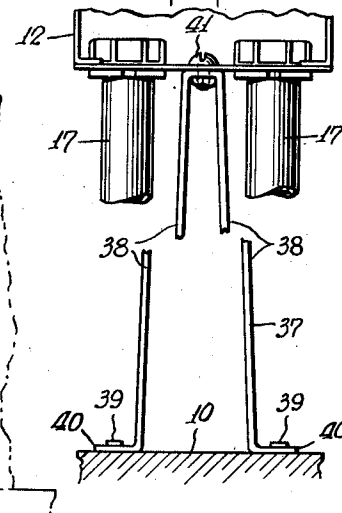


Fig. 5.

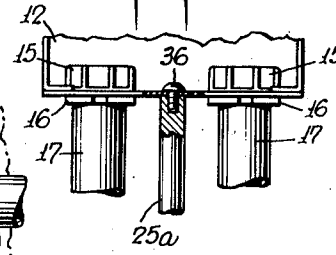
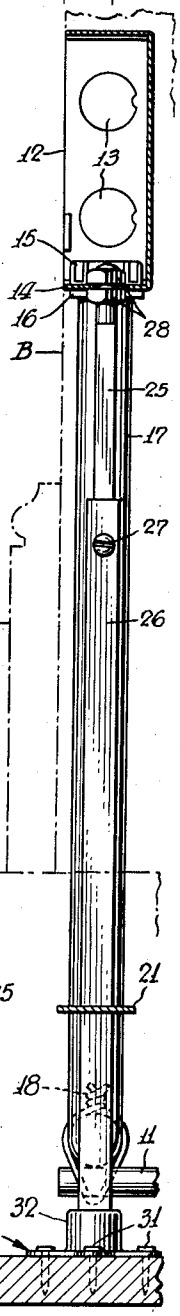


Fig. 2.



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OUTLET BOX INSTALLATION

Julian Gordon Knight, Brooklyn, N. Y.

Application April 29, 1940, Serial No. 332,166

1 Claim. (Cl. 72—16)

A common practice in connection with concrete floor constructions is to mount the electric outlet boxes with attached interior electric conduits in the proper positions in respect to the base boards of the walls before the concrete is poured for the floor. It is therefore important that these outlet boxes be adequately and firmly supported and be properly and accurately positioned with respect to the future floor level and wall facing.

Among the objects of the present invention is to provide a comparatively simple, strong, rigid outlet box support means, inexpensive to manufacture, easily set up in position, and serving to effectively hold the box firmly in required accurate position during the pouring of the concrete and against the tilting action of the electric conduits connected thereto.

Another object is to provide a simplified installation for holding the electric conduits leading to the outlet box firmly in proper spaced relationship near the floor level, and in proper position with respect to the outlet box and the concrete floor.

Another object is to provide a wall outlet box installation, in which the number of bends in the conduits connected to said box is reduced to a minimum.

Various other objects of the invention will be apparent from the following particular description and from an inspection of the accompanying drawing, in which:

Fig. 1 is a front elevation partly in section of an outlet box installation in accordance with one embodiment of the present invention, said installation being shown prior to the pouring of the floor concrete or the plastering of the wall, the floor level, wall facing and base board being shown in dot and dash lines.

Figs. 2, 3 and 4 are sections taken on lines 2—2, 3—3 and 4—4 of Fig. 1 respectively,

Fig. 5 is a fragmentary front elevation of an installation showing another form of box support means embodying the present invention, and

Fig. 6 is a fragmentary front elevation partly in section of an installation having still another form of box support means embodying the present invention.

The invention is shown applied to that type of building construction, in which there is a form 10 of wood, steel or other material on which the floor concrete is to be poured, and above which are the usual series of reinforcing rods 11, only two of which are shown. A standard wall outlet box 12 having conventional knockout holes 13 for receiving the electric conduits is supported above the concrete floor level A, and flush with the wall plaster line or facing B. Two of the knockout holes in the lower box wall 14 have respectively connected thereto by any suitable means such as lock nuts 15 and 16 two electric conduits 17, extending substantially parallel from said box down below the floor level A, and then branching out laterally in opposite directions a short distance above the bottom of said form. The laterally extending sections of the electric conduits 17 are shown resting on the reinforcing rods 11, and secured thereto by wires 18.

As an important feature of the present invention, the outlet box 12 is accurately and rigidly supported in desired predetermined position with respect to the prospective floor level A and prospective wall facing B by an upright support in the form of a stanchion 20, secured at its upper end to the lower side 14 of the outlet box between the two conduits 17, and at its lower end to the bottom wall 10 of the floor form.

As a further feature, a spacer in the form of a plate 21 is provided for holding the depending parallel sections of the conduits 17 in spaced relationship substantially parallel to the longitudinal axis of the stanchion 20. For that purpose, the plate 21 has a pair of holes 22 for receiving the conduits 17, and a central hole 23 for receiving the stanchion 20, and is supported on the bends of said conduits below the floor level A, so that it will eventually be firmly embedded in the concrete floor.

As far as the broad aspects of the present invention are concerned, the details of the box support stanchion may take various forms. For instance, as shown in Figs. 1 to 4, the stanchion is adjustable to vary the height of the outlet box 12, and for that purpose comprises a rod 25 secured at its upper end to the lower side of said box, and telescoped in a vertical tubular rod 26 rigid at its lower end with the form wall 10. A set screw 27 threaded in this tubular rod 26 and bearing against the inner rod 25 serves to hold the two rods in relative adjusted telescopic position in accordance with the desired elevation of the box 12.

At the upper end, the inner support rod 25 is shown connected to the outlet box by means of a pair of lock nuts 28, threaded on said rod and bearing against opposite sides of the lower box wall 14. As another alternative form, the hole in the box wall 14 for receiving the rod 25 may

be punched out in such a way as to form a burr or sleeve, which may be threaded to receive the rod, an ordinary lock nut on said rod being employed to prevent said rod from becoming loose in said sleeve.

The specific means shown in Figs. 1 to 4 for affixing the lower end of the tubular rod 26 to the form wall 10 comprises a base member 30, secured to said form wall by nails or screws 31, and having a hollow boss 32 in the form of a sleeve. Firmly secured to the lower end of the tubular member 26 as for instance by press fitting is a pin 34, threaded into the boss. The lower end of the tubular rod 26 bearing against the boss 32 serves as a limiting stop in this position of the tubular rod.

As another alternative manner in which the stanchion can be secured to the form, the base may be in the form of a flat plate, and the lower end of the stanchion screwed or threaded in said plate.

In order to prevent the rotation of the two conduits about the support 20, and the consequent twisting or tilting of said conduits with respect to the outlet box, the hole 23 of the spacer 21 and the section of the support 20 passing through said hole may be of interlocking conformation. The spacer 21 will be thereby held against rotation with respect to the support 20, and the two conduits 17 will consequently be held against twisting or turning with respect to said support.

As shown in Figs. 2 and 3, the tubular rod 26 is rectangular in cross-section, and the spacer hole 23 is also of the same shape, so that the spacer cannot rotate on the rod.

Fig. 5 shows an alternative manner in which the rod 25*a* may be secured to the lower side 14 of the outlet box. In this construction, the top of the rod 25*a* bears against the underside of the box wall 14, and is secured to said wall by a screw 36 passing therethrough and threaded axially into said rod.

In many constructions it is not necessary to make the box support adjustable, and in that case the stanchion may consist of a single round rod or flat bar extending the full distance between the box 12 and the base on the form wall 10.

In Fig. 6 is illustrated another form of stanchion, comprising a flat strip of metal 37, reversely bent to form a pair of opposed legs 38, and having its ends 40 bent outwardly to form a base. This base is secured to the form wall 10 by means of nails or screws 39, while the middle portion is shown secured to the lower side of the box by means of a screw bolt 41, although a rivet may also be used for that purpose.

As another alternative form, the stanchion may comprise two half round bars, juxtaposed to receive at their upper ends lock nuts on opposite sides of the box wall 14, while their lower ends are spread apart to form a base. As another form, the two half round bars may have their upper ends welded together to receive a screw for attachment to the lower box wall 14 as shown in Fig. 5.

As another example, the stanchion may take the form of a pair of juxtaposed half round bars or flat strips, having their upper ends spread outwardly and secured to the box wall 14 by screws or rivets, and their lower ends spread outwardly to form a base.

The setting up of the outlet box as described can be done quickly and conveniently, and the proper positioning of the outlet box 12 is assured, regardless of any tendencies of the conduits 17 to swing the box forwardly or sidewise from the position shown in Figs. 1 and 2. In set-up position shown, the outlet box 12 will extend a predetermined distance above the prospective floor level A, and will have its open side flush with the prospective plaster wall facing or line B. After the box 12 has been installed as shown and described, the concrete is poured over the form and later the floor finishing layer is added up to the level A. When the concrete hardens, the lateral sections of the conduit 17, the lower section of the box support 20 and the spacer 21 will be firmly embedded in this concrete and thus held against movement. The wall can then be plastered up to the level B, and the usual base board C installed around the margin of the room.

When the form 10 is removed from the concrete flooring, the lower ends of the nails or screws 31 projecting downwardly may be cut off or bent over before plastering or otherwise finishing the lower surface of the floor in case no partition wall is present directly below the one having the outlet box.

As many changes could be made in the above construction, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claim, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

An electrical installation comprising an outlet box having an open face, a back wall and a peripheral wall having spaced openings on one side thereof, and a longitudinal stanchion secured at one end thereof to said side between the spaced openings and disposed entirely within the planar projections of said open face, said back wall, and of the ends of the outlet box; the cross-sectional dimensions and shape of the stanchion being such as not to interfere with the securement of electrical conduits to the box at said spaced openings, whereby said stanchion may be supported on and secured at its other end to the upper surface of a floor form and vertically upturned ends of electrical floor conduits may be secured to the box at said spaced openings and braced by tying same to the stanchion for greater support and rigidity during subsequent floor and wall pouring operations embedding said installation and conduits with the open face of the outlet box substantially flush with one face of a wall.

JULIAN GORDON KNIGHT.