

Dec. 11, 1934.

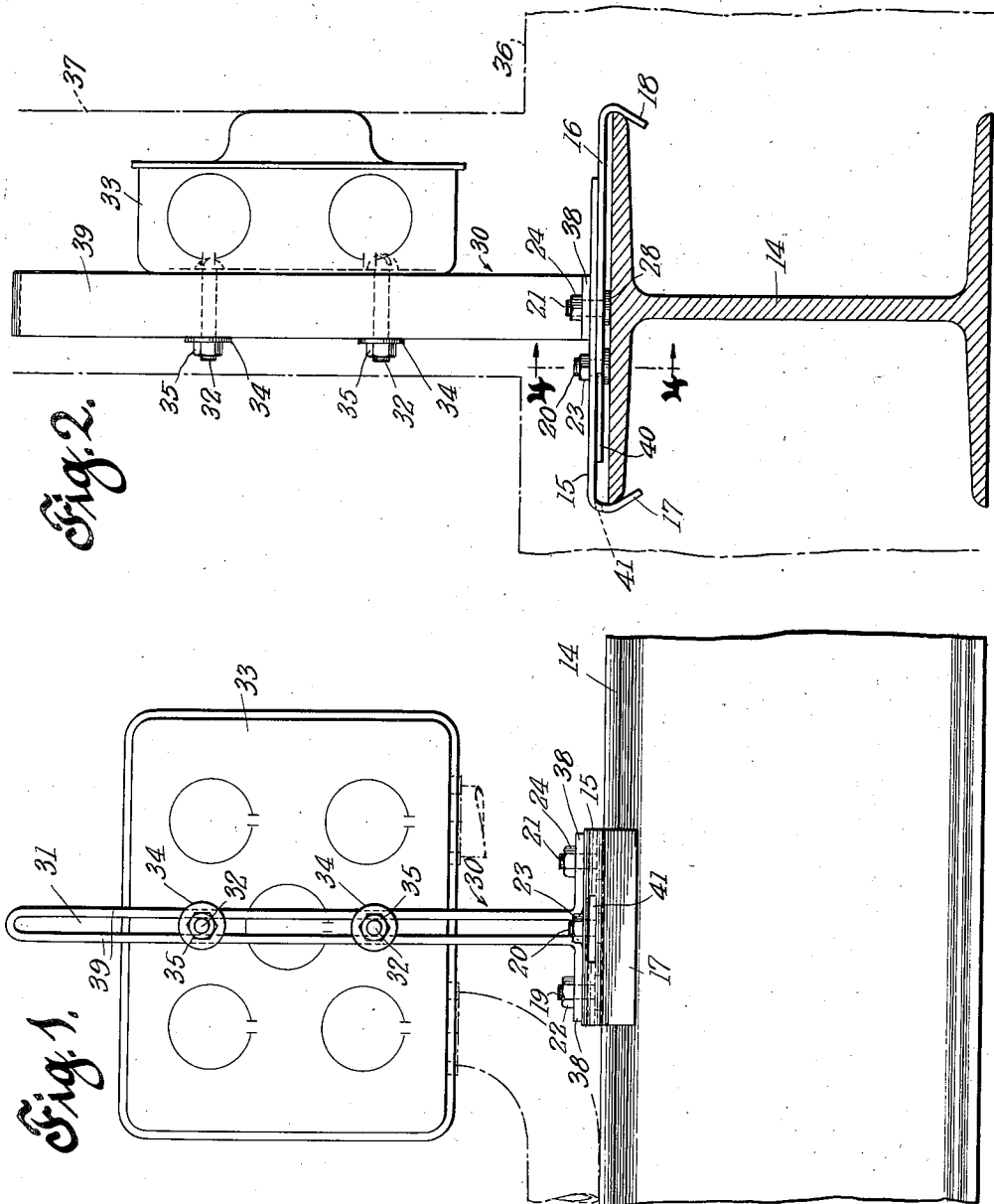
J. G. KNIGHT

1,983,670

OUTLET BOX SUPPORT

Filed Feb. 25, 1931

3 Sheets-Sheet 1



Dec. 11, 1934.

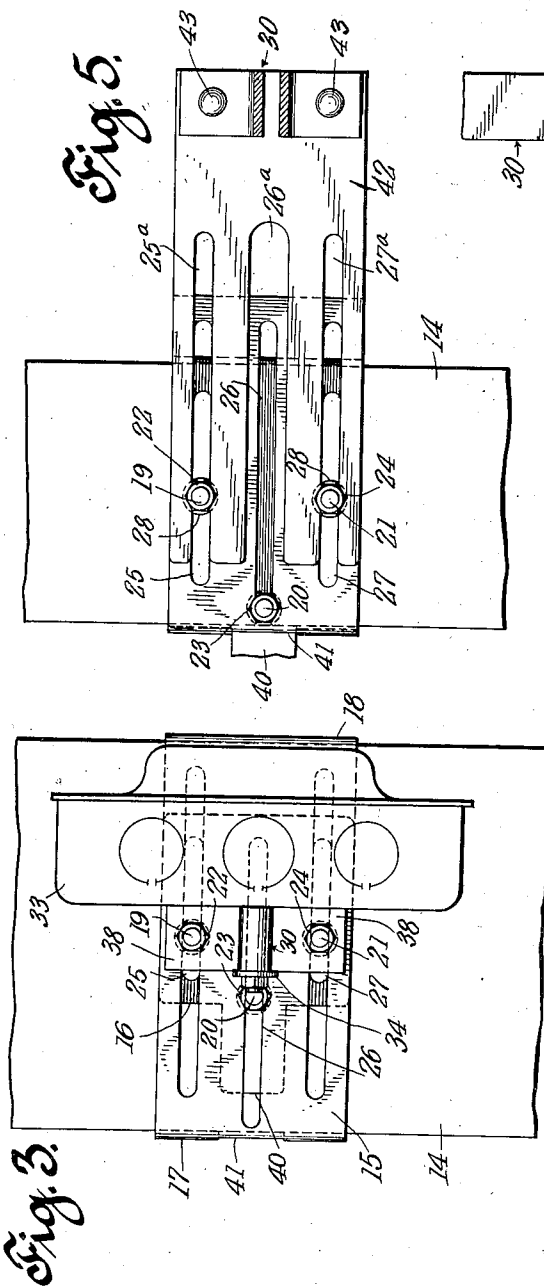
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OUTLET BOX SUPPORT

Filed Feb. 5, 1931

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OUTLET BOX SUPPORT

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Fig. 9.

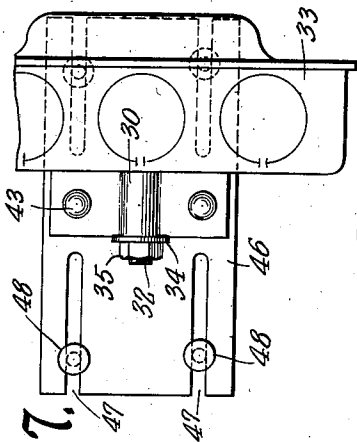
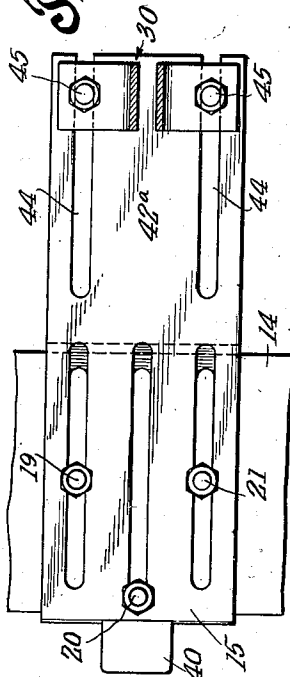


Fig. 7.

Fig. 13.

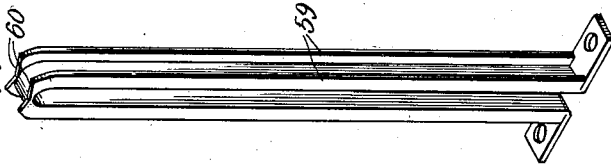


Fig. 12.

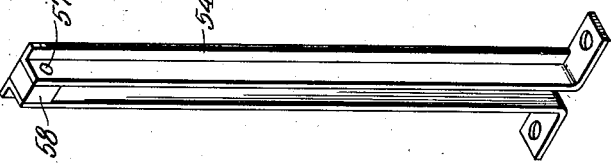


Fig. 11.

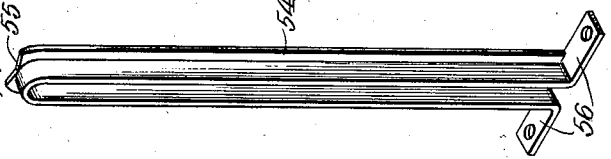


Fig. 10.

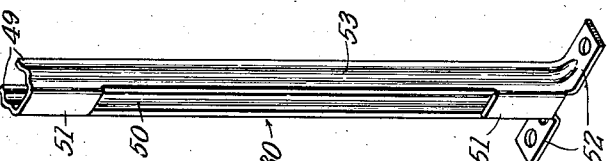
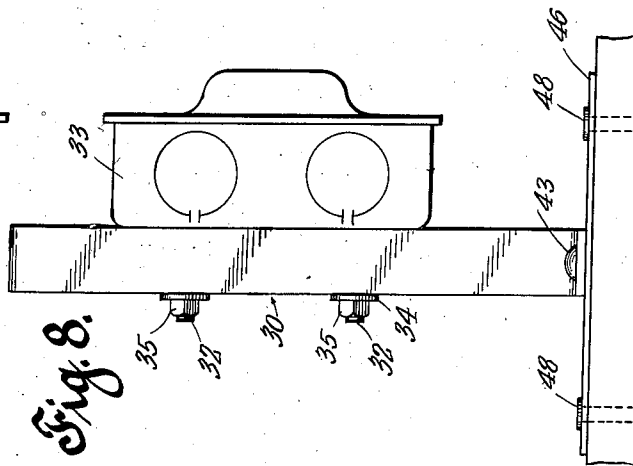


Fig. 8.



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OUTLET BOX SUPPORT

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2 Claims. (Cl. 247—21)

The objects of this invention are to provide a simple, practical and inexpensive device for adjustably supporting outlet boxes on beams, floors, or floor forms, which can be quickly set up to position and support the outlet box in any desired relation relative to floor level, plaster line of the wall, etc., which will be rigid and strong, so as to hold the box firmly in the required relation and small and compact, so as to take up but little space in the wall and not interfere with the full usefulness of the box.

The foregoing and other desirable objects are attained in the present invention by the novel features of construction, combinations and relations of parts hereinafter disclosed.

The drawings accompanying and forming part of the specification illustrate a number of the many possibly commercial embodiments of the invention, but the invention is not limited to these particular disclosures, as will be apparent from the broad scope of the claims.

Figs. 1 and 2 are rear and side views respectively of one commercial form of the device shown as mounted on an I-beam, the latter appearing broken away in the first view and in section in the second view; Fig. 3 is a plan view of the device mounted on the beam; Fig. 4 is a cross-sectional detail through the over-sliding clamp members as on substantially the plane of line 4—4 of Fig. 2. Figs. 5 and 6 are broken plan and broken cross-sectional views respectively, showing the clamp contracted to grip a smaller sized beam and an extension member applied to the clamp to locate the box support off to one side of the beam; Figs. 7 and 8 are broken plan and side views respectively illustrating particularly the base structure as modified for nailing directly on a wooden concrete form; Fig. 9 is a broken plan and part sectional view illustrating a modification in which the box support is adjustably mounted off to one side of the beam by extending the upper clamp plate and securing the upstanding box support in adjustable relation thereon.

Figs. 10, 11, 12 and 13 are detail perspective views illustrating different forms of upstanding "slotted" box supports.

When the device is used in conjunction with an I-beam or similar structure, such as indicated at 14 in Figs. 1, 2, 3, 5, 6 and 9, the base of the same is preferably constructed as an adjustable clamp made up of two over-sliding plates or clamp members 15, 16, having downturned claws or jaws 17, 18 to grip over the flanges of the beam. These clamp members are shown as adjustably secured together by the bolts 19, 20, 21 and nuts 22, 23, 24.

These bolts, as shown particularly in Figs. 3, 4, 5 and 9, are received in the slotted portions 25, 26, 27 of the two clamp plates and are shown as having flat, thin heads 28, at the underside of the inner clamp plate and squared shank portions 29 slidably but non-rotatably held in the slots of the inner clamp plate. The flat heads of the bolts enable the clamp to be engaged down close over the top of the beam and the square shanks hold the bolts against turning as the nuts are set up to fix the clamp in adjusted engagement on the beam.

The support for the box is shown as a rigid member 30 secured in upstanding relation on the clamp base and having an elongated slot 31 receiving the bolts 32, which secure the outlet box 33 in place. These bolts are shown as passed through the back of the outlet box and as extending entirely through the elongated slot in the upright support, with washers 34 engaged on them, bridging the slot and held so by the nuts 35. The loosening of these nuts permits the box to be slid up and down to any desired position relative to the floor level 36, Fig. 2, and the use of two bolts engaged with the box at spaced points holds the box firmly and prevents it from being twisted or displaced angularly. If, it be desired however to set the box at an angle or incline, such an adjustment is possible if only one securing bolt 32 be used, or if both openings be located in the box, so that this angular relation is possible. Also, in case of necessity, the upstanding support may be bent to displace the box one way or the other, it being rigid in the bent relation to hold the box in the desired position.

To enable adjustment of the box support crosswise of the beam, so as to bring the box in the desired relation to the plaster line 37, Fig. 2, the support may be adjustably secured on the clamp, as by means of the side bolts 19, 21 and nuts 22, 24. This will be clear, particularly from the detail view Fig. 4, where the upstanding support is shown as disposed in straddling relation over the center slots 26 and as having angularly outstanding feet portions 38 resting flat on the upper clamp plate and secured by the bolts and nuts 19, 22 and 21, 24.

In Figs. 1 to 9, the box support is shown as formed from a single length of flat strip metal doubled and bent back upon itself to provide the substantially parallel side portions 39, defining the continuous elongated slot and the ends bent out to form the feet or base portions 38. This construction is easily made up, it is in-

expensive and while relatively light, it is sufficiently rigid and strong for the purposes intended. Also the parallel side portions are readily bendable if need be to meet special requirements in the setting of different boxes. In addition to adjustably securing the support on the clamp base, the bolts 19, 21, prevent spreading of the sides of this support. The support may be secured in laterally adjusted relation on the clamp plates and then the box be secured in the proper vertical relation on the support, or if desired, the box may first be secured at the proper point vertically and then the support be fastened in the proper laterally adjusted relation.

The lateral expansibility and contractability of the clamp plates adapts the device to different sizes of beams or other supports. This adaptability will be particularly clear from comparison of Figs. 3, 5 and 6, where in the first of these views, the clamp is expanded to grip a relatively wide beam and where in the latter two views the clamp is contracted to grip a smaller width beam. In this contracted state, a tongue 40 on the end of the inner or under clamp plate 16 is shown as projecting through a guide opening 41, provided for the same in the down-turned claw portion of the outer plate 15. This tongue serves as a guide and stiffening member for the two parts of the clamp, but need not be so long as to remain engaged in the slot in the fully expanded relation to the clamp, as will be clear, for example, in Figs. 2 and 3. This guide tongue also enables the center slot 26 in the lower clamp plate to be made as long as desirable for adjustment purposes, providing metal into which the slot may be extended.

If, it is desired to "offset" the box some considerable distance to one side or the other of the beam, the box supporting member 30 may be mounted on an extension plate or bar, such as shown at 42 in Figs. 5 and 6, having the support 30 riveted or otherwise secured on one end of the same as at 43 and having slots 25a, 26a, 27a, extended in from the opposite end of the same to accommodate the fastening bolts 19, 20, 21. In this particular illustration, the extension plate is shown as secured only by the side bolts 19, 21, the center slot 26a being wide enough to pass freely about the nut 23 of the center bolt 20, but it will be obvious, if desired, all three bolts and their nuts may be employed for securing the extension plate on the clamp.

Another method of securing a desired extent of "offset" is illustrated in Fig. 9, where, instead of providing a separate extension plate, the upper or outer clamp member 15 is made with a continuation or extension 42a, slotted in its projecting portion at 44 to accommodate the bolts 45, securing the upstanding box support on this integral lateral projection of the clamp.

The base structure of the device may vary to suit different requirements. Thus, as shown in Figs. 7 and 8, where the box support is to be secured in upstanding relation directly on a floor, or for example, on the wooden form of a concrete floor, the base may be a simple, flat plate 46, on which the upstanding support may be secured as by rivets 43 and this plate may be slotted in its edges as indicated at 47, to allow for possible desired adjustments after the nails or other fastenings 48 have been driven down into the floor or form.

A number of different ways in which the long slotted box support may be made up are shown in Figs. 10 to 13 inclusive. In the first of these, the

support is made of a flat strip of sheet metal doubled back transversely on itself to provide substantially parallel side portions 49 and having a cut out portion 50 between these folded side portions to provide the desired slot length, with integral bridge portions 51 connecting the sides at the ends of the slot. The sides are shown as turned out at one end to provide the feet portions 52 and ribs 53 are shown embossed in the sides and extended down into the outstanding base flanges or feet to stiffen the sides and to brace the sides in respect to the feet. Thus constructed, a support can be made of relatively light stock sheet metal and with a slot of any desired practical length.

Fig. 11 illustrates a box support generally similar to the support first disclosed, except that instead of being made of flat strap metal, it is made of angle stock, with the angle flanges 54 bracing and stiffening the structure and cut away at the top at 55, where the stock is bent upon itself. At the bottom, the ends of the angle flanges are shown as over-standing the projecting feet portions 56, so as to brace the structure vertically.

The construction shown in Fig. 12 is substantially the same as that shown in Fig. 11, except that the angle stock instead of being integrally connected by a bend in the web of the stock, is connected by a rivet or through fastening 57 with an interposed spacer block 58.

The construction illustrated in Fig. 13 is generally similar to that of Fig. 11, except that channel stock is used having parallel outstanding flanges 59 both cut away at 60, where the web of the stock is bent to bring the side portions into the parallel relation necessary to provide the long slot for the box supporting bolt or bolts. These last described constructions are somewhat more rigid and enable a somewhat lighter stock to be employed than the flat strap stock first illustrated, for an equal degree of strength.

While several different forms of the invention and some of the many possible uses of the same have been illustrated, it should be understood that the structure may be further modified and the invention be used for adjustably supporting outlet boxes in other situations and combinations with other kinds of beams or other supporting members. In all the forms of the box support illustrated, the slot extends continuously substantially the full length of the support, thereby enabling adjustment of the box practically to any position the full length of the support. The metal of the support is disposed edgewise to the back of the box and consequently, the nuts of the box supporting bolts may be set up as tight as necessary without any possibility of bending or deforming the support. This edgewise disposition of the support to the box also provides a reinforcement to the back of the box preventing deformation of the latter and giving both the box and the support a degree of stiffness desirable for holding the parts against dislodgment from blows that might be received during building construction. This edgewise disposition of the support also provides a deep slot confining the bolts full length and facilitating the setting up of the box on the support. Another advantage of this form of support is that it is relatively narrow, as shown in Fig. 1, so as not to cover any but the center knock-out on the back of the box, leaving ample space around the other knock-outs for connecting in the conduit or cable.

What is claimed is:

1. A beam clamp for supporting an outlet box or the like, comprising flat clamp plates disposed

in flatwise engaged over-sliding relation and having inturned ends to grip the flanges of an I-beam or the like, said clamp plates having parallel, intermediate and side slots, a clamping bolt engaged
5 in the intermediate slots for securing the clamp plates in gripping engagement on a beam, a projecting longitudinally slotted support for an outlet box or the like mounted on the clamp plate in position straddling said intermediate slots and
10 having feet portions overstanding said side slots in the oversliding clamp plates and bolts extending through said side slots and through said feet portions of the support for securing said support in adjusted position on the clamp plates without
15 disturbing the gripping engagement of said clamp plates on the beam.

2. A device of the character disclosed, comprising

ing over-sliding plates having inturned jaws at opposite ends of the same, engageable over the flanges of an I-beam or the like, said clamp plates each having parallel slots therein and the parallel
5 slots in the two plates being in alignment to provide parallel passages through the two plates, bolts received in said parallel passages, whereby the plates may be slid together in parallelism into
10 tight engagement with the beam and be rigidly secured in such relation by the tightening of said bolts and an outlet box support mounted in up-
standing relation on said clamp structure, and
15 comprising a member having outstanding feet over-reaching parallel slots in the clamp structure and secured by bolts in said slots.

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