Oct. 10, 1933. W. L. LADEMANN 1,930,242

BOX SUPPORT

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Fig. 1.

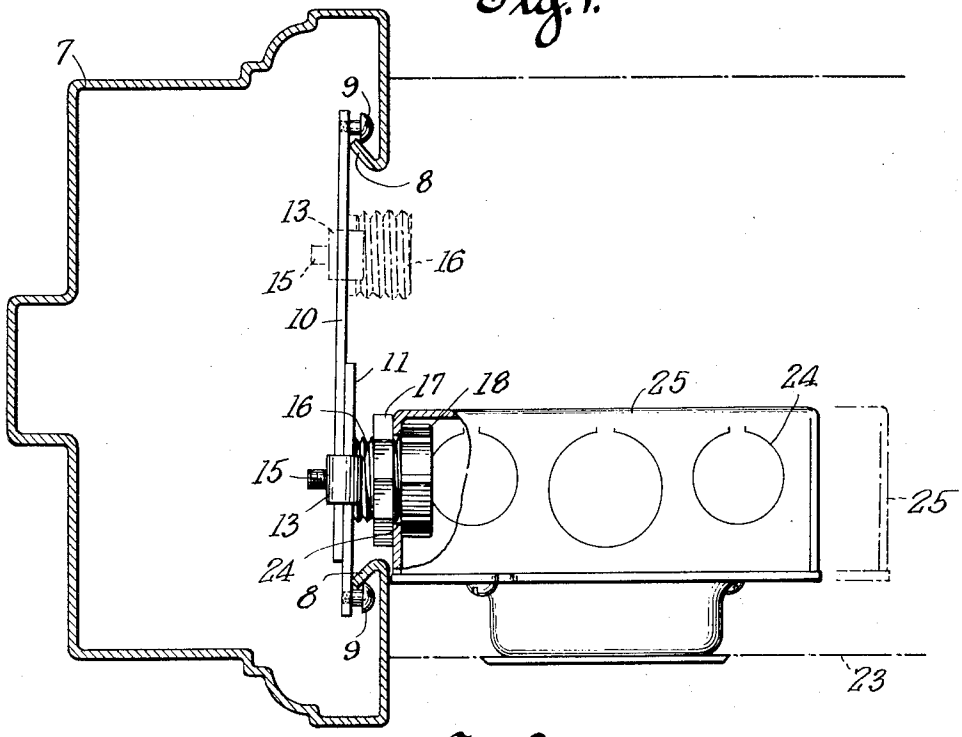
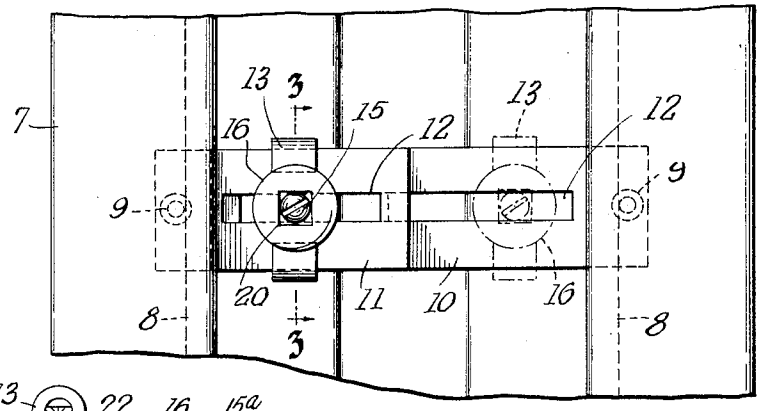


Fig. 2.



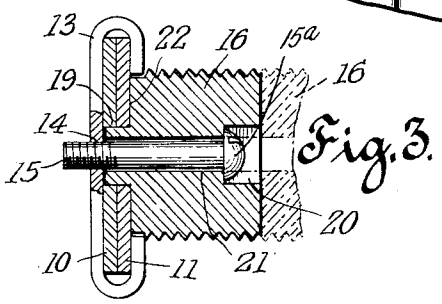


Fig. 3.

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Fig. 4.

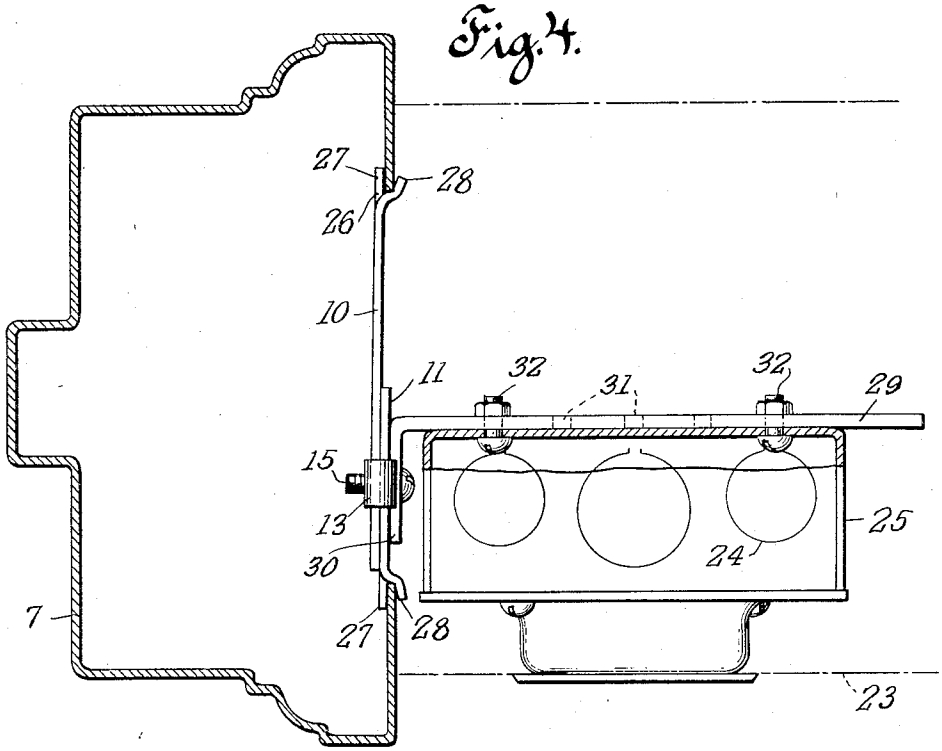
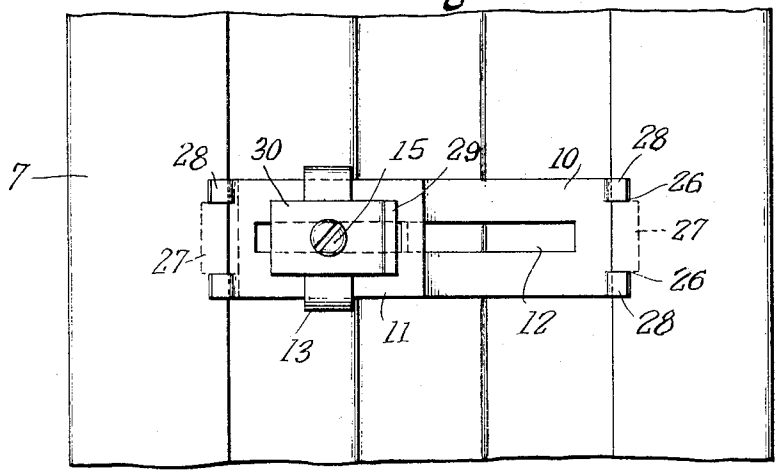


Fig. 5.



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Patented Oct. 10, 1933

1,930,242

UNITED STATES PATENT OFFICE

1,930,242

BOX SUPPORT

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Application December 13, 1928
Serial No. 325,685

15 Claims. (Cl. 247—21)

This invention relates to the mounting of outlet boxes, switch boxes and the like, relative to steel door bucks and the purposes of the invention are to provide a box support of simple, inexpensive and sturdy construction, which can be readily secured in proper position on the door buck.

These objects are attained by certain novel features of construction, combination and relations of parts, as will be clear from the following specification in conjunction with the drawings accompanying and forming part of the same.

In the drawings referred to, several practical embodiments of the invention are illustrated and it should be understood that the invention may be embodied in additional forms or be modified as regards these disclosures without departure from the true spirit and broad scope of the invention.

Fig. 1 is a horizontal sectional view of a steel door buck of the latest type, having overturned flanges at the edges thereof and showing an embodiment of the invention applied thereto and serving the purpose of supporting a switch box; Fig. 2 is a broken face view looking at the support as it is applied to the door buck; Fig. 3 is a broken sectional detail of the clamp and supporting stud portions of the apparatus; Fig. 4 is a horizontal sectional view of one of the older forms of steel bucks with plain edge flanges and illustrating a modified form of the support applied thereto; Fig. 5 is a face view of the latter form of support in its position on the door buck.

The door buck indicated at 7 in Figs. 1 and 2 is shown as of the latest type having narrow flanges 8 turned inwardly and back at its marginal edges to stiffen and reinforce the structure. The outlet box support is made to grip these inturned flanges or edges. In the illustration, the gripping means include shouldered and headed screws 9 set in the ends of oversliding members or strips 10, 11, correspondingly longitudinally slotted at 12 and held together at their overlapping portions by an encircling C-clip 13. This so-called "C-clip" as shown particularly in Fig. 3 extends across the back of the inner strip 10 and over the upper and lower edges of the forward strip 11. In the back of the clip in line with the slots in the overlying strips, a screw seat 14 is provided for a screw 15 which clamps the parts together, maintaining the members in engagement with the flanges, and also secures the supporting member for the box. Screw 15 has a head 15*a* for purposes hereinafter described.

The box supporting member is shown in Figs. 1 to 3 as an annular screw stud 16 on the order of a "fixture stud", at least to the extent of being externally screw-threaded to take a lock nut 17 and screw bushing 18 such as ordinarily used with outlet and switch boxes. This supporting stud has a squared shank 19 at the inner end of the same slidingly fitting in the slots 12 of the relatively adjustable strips and a slightly larger corresponding square socket 20 in the outer end of the same, with a bore 21 for the screw 15 extending entirely through, from socket to shank.

The socket 20 is large enough to take the head of the supporting and clamping screw and being shaped to receive the shank on another stud, enables the building of one stud on another, in sectional fashion, as indicated in the broken lines at Fig. 3, where it is desired to lengthen out the support, so as to mount the box at a greater distance from the buck, as indicated by the dotted lines in Fig. 1. A screw 15 may be used long enough to pass through two or more of the supporting studs or different lengths of screws may be employed as desired. In any event, and where one or a number of studs are used, it will be observed that upon tightening the screw the strips will be found together between the back of the clamp and the overstanding portion 22 of the stud, all parts of the bracket being then rigidly fastened together by this single screw. Before setting up this screw, the clamp carrying the stud or studs is positioned relative to the buck to support the box in proper relation to the wall line 23 and the strips are brought together so as to cause the screws which are hooked over the edge flanges to firmly grip the latter. Hence, with the parts so related, when this single clamp screw is secured fast, the bracket will be properly supported on the buck and the support for the box will be in proper position to hang the box to properly match up with the wall surface.

The supporting stud 16 is of a size to pass through the knock-out openings at 24 in the sides of the box, so the box which is indicated at 25 may be mounted by simply opening up one of these knock-outs and then gripping it in place on the stud between two clamping members, such as the lock nut 17 at the outside and the screw bushing 18 at the inside of the box as in Fig. 1.

If it is desired to support the box further away from the buck, one or more additional supporting studs will be used to extend the stud away from the bracket as indicated in Fig. 3, the screw extending through all these studs into the clip at the back. By adjustment of the clip in the slotted portions of the strips, the box may be sup-

ported at the proper distance from the wall line, at either side of the wall. If the same bracket is to be used for supporting boxes at both sides of the wall, then an additional clip and stud may be mounted on the opposite end of the bracket substantially as indicated in dotted lines at the right in Fig. 2, in which case, if the clip engages over only one strip 10, a washer may be located over the shank 19 of the stud to make up for the thickness of metal of the other strip 11, so that the screw 15 then will be able to hold the supporting stud 16 firmly clamped to the single strip 10.

In securing the bracket in contracted relation on the inturned flanges of the buck, the sharp edges on the heads of the screws 9 are made to firmly "bite" the inclined inner faces of the flanges 8 assuring a firm grip of the bracket on the buck. The collar portions of these screws 9 as plainly shown in Fig. 1 space the heads of the screws away from the strip sufficiently to enable them to operate as hooks for gripping over the flaring edge flanges of the buck. Because of the squared shanks, the screw studs 16 are held against rotating or turning, enabling the nut members 17, 18 being tightened thereon to secure the box and enabling the box being shifted rotatively on the stud one way or the other to level it up parallel with the wall line.

In the form of the invention shown in Figs. 4 and 5, the oversliding strips 10, 11 are modified to the extent of being split at the ends at 26 and shaped to form cooperating tongues 27, 28, respectively spaced to engage over the inside and outside edges of the steel buck, which in this illustration is shown as plain or flangeless. In such case, the oversliding members are expanded instead of contracted to interlock with what may be considered the "flanges" or opposing edge portions of the buck.

Also in the latter form of the invention, instead of a screw stud for the box support, there is shown an outstanding arm 29 having an angled base 30 caught beneath the head of the securing screw 15, which arm has one or a series of openings 31 to receive the screws 32 for fastening the box in place.

The second form of the invention has the same advantages as the first in that because of the telescopic or extensible and contractible form of the bracket, the same can be quickly adjusted to grip the edges of the buck. As the engagement is made with only the extreme edge portions of the buck, the attachment can be made if the buck is partly filled with material. The latter is an important advantage as it frequently happens that the buck may become partly filled with building material, which would interfere with a solid bar being located inside the buck overlapping the inner faces of the buck flanges. The bracket, it will be noted, can be made quite cheaply and can be quickly set up in proper position and securely fastened in place.

It will be seen in Fig. 3 that the ends of the C-clamp leave space enough between them for the base of the box supporting element to seat flat against the face of the outer strip 11. This condition is utilized in the second form of the invention to hold the bracket arm 29 against turning, where as clearly shown in Figs. 4 and 5, the base portion 30 of the bracket arm fits between the terminals of the C-clamp, so that the latter holds such base portion against turning movements.

Various changes in the structure may be made to suit particular requirements. Thus for example, the over-sliding strips 10, 11 may be offset inwardly so as to bring the C-clamp and box supporting member further into the hollow of the steel buck, for supporting the body of the box within the outlines of the buck to thus bring the switch plate close up against the external edge or jamb of the buck. Also these strips may be bowed somewhat, so that in the tightening of the screw they will be bent or stressed so as to grip the flanges the more tightly. The lugs 27, 28 in Fig. 4 may be such that they may be bent "on the job" backwardly of themselves, so as to hook over the inturned flanges of a buck like that shown in Fig. 1. The special screw support shown in Fig. 3 may be used with wood bucks by securing the same with nails or a screw driven in through the bore 21 of the member and in this case one or more of these plugs may be combined as before described to gain the proper distance from the buck.

What is claimed is:

1. A steel buck support for switch and outlet boxes, comprising extensibly related oversliding members having at their opposite ends gripping means for the flanges at the open side of a steel buck, a C-clamp engaged about said oversliding members, said oversliding members being slotted and the C-clamp having a screw passage in the back of the same in line with the slots in said members, a screw extending through said slots and passage and a switch or outlet box supporting member secured by said screw to the clamp with overlapping portions of the members gripped between said supporting member and clamp.

2. A steel buck support for switch and outlet boxes, comprising extensibly related oversliding members having at their opposite ends gripping means for the flanges at the open side of a steel buck, a C-clamp engaged about said oversliding members, said oversliding members being slotted and the C-clamp having a screw passage in the back of the same in line with the slots in said members, a screw extending through said slots and passage, a switch or outlet box supporting member secured by said screw to the clamp with overlapping portions of the members gripped between said supporting member and clamp and said supporting member having a shank portion slidingly and non-rotatably held in the slots of the oversliding members.

3. A steel buck support for switch and outlet boxes, comprising extensibly related members having means at their opposite ends for gripping over the edges of the flanges at the open side of a steel buck, a clamp element at the back of said oversliding members, a box supporting element at the front of said oversliding members, a screw clamping the overlapping portions of the members together between said box supporting element and the clamp element, the overlapping portions of the members having registering slots therein and the supporting element having an angular shank portion engaged in said slots.

4. A bracket for supporting outlet boxes on steel bucks, comprising oversliding extensibly related members, having means at their ends to engage over the flanges at the open side of a steel buck, a C-clamp embracing the overlapping portions of said members, said overlapping portions having slots therein, a box supporting element overlying the face of one of said members and bearing thereon between the ends of the C-clamp and screw means extending through

said box supporting element and through the slots to the back of the C-clamp.

5. A steel buck support for outlet boxes, comprising extensibly related members having jaw elements at their opposite ends to grippingly engage over the edge flanges at the open side of a steel buck, a C-clamp extending across the back and over the edges to the front of said overlapping members, a box supporting element having a base portion seated on the front of said extensibly related members between the ends of said C-clamp and screw means extending through said thus-seated supporting element to the back of the C-clamp.

6. A box support for steel bucks, comprising relatively extensible overlapping members having means at their ends for gripping engagement over the edges of the flanges at the open side of a steel buck, and means for clamping said members in gripping engagement with the buck including a plurality of box supporting elements engageable in extension of each other to support a box at different distances from the clamped members.

7. A box support for steel bucks, comprising a bridging structure for supportingly engaging the opposed edge flanges at the open side of a steel buck and a box supporting screw stud having a shank non-rotatably engaged with said bridging structure, a screw for so securing said screw stud, said shank being of angular cross-section and the screw stud having a correspondingly shaped socket in the opposite end of the same with a screw passage extending from said socket through said shank.

8. In combination with a steel buck, having inturned edges on the flanges at the open side of the same, contractibly related members having hook elements on the ends of the same to engage over said inturned edges, means for holding said members relatively contracted to supportingly grip said inturned edges and outlet box supporting means carried by said contractibly related members, said hook elements comprising headed screws arranged to have their heads hook over the inturned edges of the buck flanges.

9. As a new article of manufacture, a switch or outlet box support comprising an externally screw-threaded plug adapted to be entered through the knock-out opening in a switch or outlet box and to receive nuts thereon inside and outside the box to hold the box in supported relation on the plug, said plug having an opening therethrough to receive a screw, nail or other fastening, said plug having a projecting stud portion at one end and a correspondingly shaped socket in the opposite end, whereby one plug may be mounted in extension one on the other and a single fastening be passed through the series.

10. As a new article of manufacture, a switch or outlet box support comprising an externally screw-threaded plug adapted to be entered through the knock-out opening in a switch or outlet box and to receive nuts thereon inside and outside the box to hold the box in supported relation on the plug, said plug having an opening therethrough to receive a screw, nail or other fastening, said plug having a projecting stud portion at one end and a correspondingly shaped socket in the opposite end, whereby one plug may be mounted in extension one on the other and a single fastening be passed through the series, said projecting stud and socket being of angular cross-section to thereby interlock one plug in non-rotatable relation on an adjoining plug.

11. A device of the character described, for securing an outlet box to the flanges of a metal buck, including extensible slotted members having at their far ends means to engage the flanges, respectively, a headed screw passing through said slots, box supporting means carried by said screw between its head and said members, and means on the other side of said members for cooperation with said screw, whereby the screw is capable of maintaining the members in engagement with the flanges and of securing the box supporting means.

12. A device of the character described, for securing an outlet box to the flanges of a metal buck, including extensible slotted members having at their far ends means to engage the flanges, respectively, a headed screw passing through said slots, box supporting means carried by said screw between its head and said members, means for holding the supporting means against rotating when the parts are assembled and means on the other side of said members for cooperation with said screw, whereby the screw is capable of maintaining the members in engagement with the flanges and of securing the box supporting means.

13. The combination as claimed in claim 11, wherein the box supporting means comprises an annular stud through which the screw passes.

14. A device of the character described, for securing an outlet box to the flanges of a metal buck, including extensible slotted members having at their far ends means to engage the flanges, respectively, a headed screw passing through said slots, box supporting means carried by said screw between its head and said members, said means including a stud mounted on the screw and means on the stud for adjustably securing the box with respect thereto, and means on the other side of said members for cooperation with said screw, whereby the screw is capable of maintaining the members in engagement with the flanges and of securing said supporting means.

15. A box support for steel bucks comprising extensible members for engaging opposed edge flanges at the open side of a steel buck, a sectional screw stud for supporting a box at variable distances from said members and single screw means for securing the sections of said supporting screw stud together, and said members in place.

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