

Sept. 17, 1963

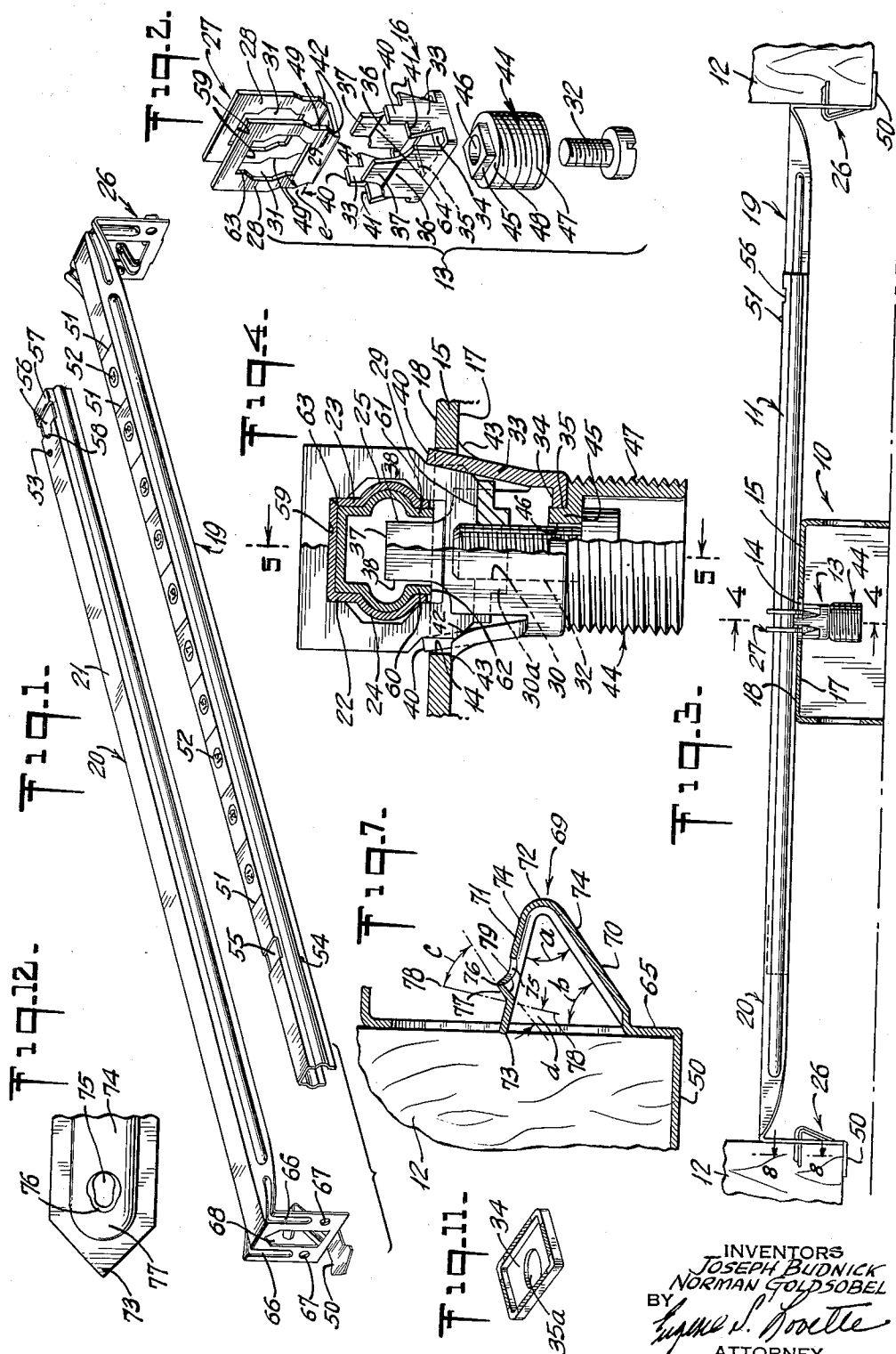
J. BUDNICK ET AL

3,104,087

MEANS FOR SUPPORTING ELECTRICAL FIXTURES

Filed March 21, 1961

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Fig. 5.

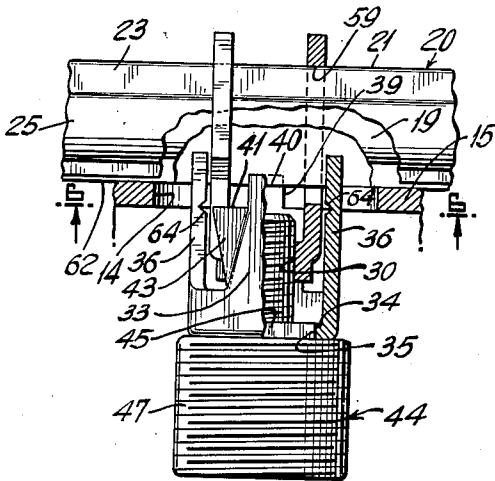


Fig. 10.

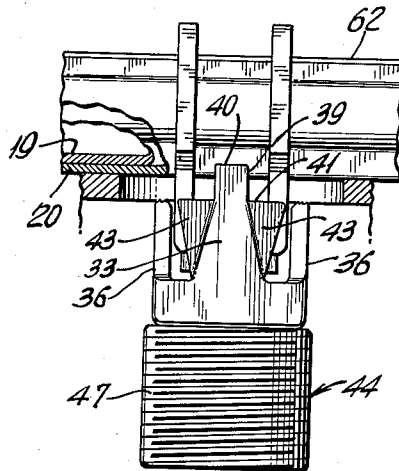


Fig. 6.

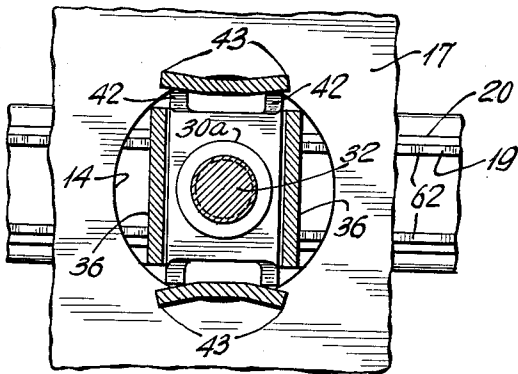


Fig. 8.

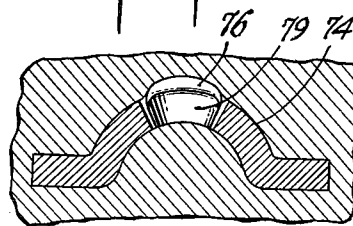
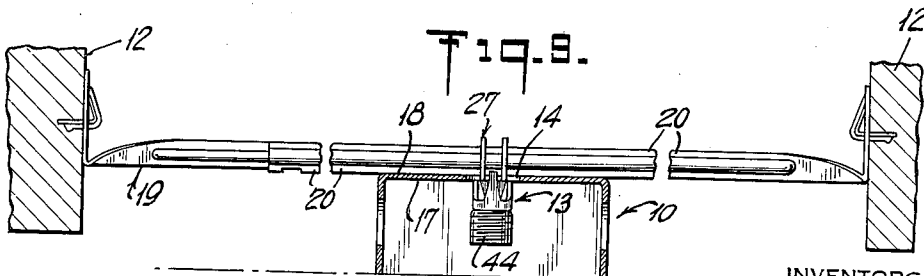


Fig. 9.



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3,104,087 MEANS FOR SUPPORTING ELECTRICAL FIXTURES

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This invention relates to an improved adjustable lengthwise bar hanger for installing electrical outlet boxes and fixtures or the like between a pair of joists, and more particularly, is concerned with improved telescopically mounted bar members and operatively associated clamping means for clamping the fixture or box to the bar hanger and also with improved mounting flanges for attaching such bar hanger to building joists.

It is a principal object of the invention to provide a bar hanger of the general type disclosed herein which is characterized as being light in weight, of high strength construction and readily adjustable by an electrician at the point of installation so that the installation of a supported device can be made quickly and with a minimum of effort. In addition, the improved bar hanger contemplates complete assembly of same at a factory, which factory assembly may include attachment of an outlet box thereto to reduce further time and effort demanded of an electrician at the point of installation. As an advantage, the improved bar hanger permits attaching the electrical fixture or box to the bar hanger before or after securing the bar hanger to the building joists.

As a further object, the improvements also contemplate novel clamping means for securing the electrical fixture or box to the bar hanger by camming means which positively locks the device to be attached to the bar hanger and which lock is foolproof against accidental detachment.

It is a further object of the invention to provide improved mounting flanges for the purpose of securing bar hangers or other like electrical fixtures to building joists or other mounting requirements which is fool-proof against accidental detachment of the secured device from the joists after same is nailed thereto.

Further objects and advantages will become apparent from the following description of the invention taken in conjunction with the figures, in which:

FIG. 1 is an exploded view in perspective of the inner and outer hanger slides which upon assembly define a telescopic expandable and contractible bar hanger pursuant to the invention;

FIG. 2 is an exploded view in perspective of the elements constituting the clamping means in accordance with the invention and for use with the aforesaid bar hanger for clamping a box or the like thereto;

FIG. 3 is a front elevational view partly in section illustrating said bar hanger installed between a pair of joists;

FIG. 4 is a fragmentary sectional view taken along line 4—4 of FIG. 3 and illustrates the operational features of the clamping means with the box clamped to the hanger;

FIG. 5 is a fragmentary section view, partly cut away, taken along line 5—5 of FIG. 4;

FIG. 6 is a fragmentary sectional view of the structure taken along line 6—6 of FIG. 5 and illustrates the clamping aspects of the clamp device after camming whereby the outlet box of the like is locked to the hanger;

FIG. 7 is a fragmentary elevational view in section of a mounting flange in accordance with the invention;

FIG. 8 is a fragmentary sectional view in section of

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the mounting nail in accordance with the invention and is taken along line 8—8 of FIG. 3;

FIG. 9 is a front elevational view partly in section illustrating the bar hanger in inverted position for supporting a box or the like;

FIG. 10 corresponds to FIG. 5 but illustrates the assembly for the inverted hanger of FIG. 9;

FIG. 11 illustrates a portion of a modified clamp saddle; and

FIG. 12 illustrates a top plan and fragmentary view of the end of a nail in accordance with the invention.

Reference is now made to FIGS. 1, 2, 3 and 4 for a preferred embodiment of the invention wherein an electrical outlet box 10 or other like fixture is supported by the improved bar hanger 11 between a pair of building joists 12. Box 10 is clamped to bar hanger 11 by an operatively associated clamping device 13. Clamping device 13 depends from bar hanger 11 and passes through a knock-out hole 14 in a box wall 15. A clamping saddle 16 of the clamping device 13 engages the inner face 17 of box wall 15 to clamp the outer wall face 18 "fast" against bar hanger 11. Essentially, clamping device 13 clamps a flat wall, such as 15, against bar hanger 11.

Bar hanger 11 is made up of longitudinal inner and outer slide members 19, 20 designed for telescopic sliding engagement. Each slide 19, 20 is formed by die stamping suitable material, such as galvanized steel, into a longitudinal channel substantially U-shaped in cross-section. Slides 19, 20 each have a flat lengthwise top wall 21 from which opposed side walls 22, 23 depend. Side walls 22, 23 have outwardly bowed or curved portions 24, 25 in cross-section the length of the slide channels, which bows 24, 25 also serve as lengthwise re-enforcing ribs. From the cross-sectional view of FIG. 4, it is seen that the top walls 21 and the side walls 22, 23 of slides 19, 20 are shaped to interfit smoothly for providing a desirable slidable telescopic register. One end of each slide 19, 20 has a mounting flange 26, and when slides 19, 20 are mated, mounting flanges 26, 26 are at the opposite ends of bar hanger 11 as illustrated in FIG. 3.

Clamping device 13 includes a loop or carrier element 27 defined by a pair of parallel spaced walls 28 joined at their lower edges by a horizontal web 29, which web has a threaded hole 30. Web 29 may be re-enforced by a collar 30a surrounding its tapped hole 30. Walls 26 have aligned openings 31 to accommodate slidable mounting over the outer one of the mated slides 19, 20. It will also be seen from FIGS. 2 and 3 that the top and bottom edges of openings 31 are straight and the opposed side edges of openings 31 include outwardly bowed sections with suitable clearance to fit over outer slide 20 for positioning carrier 27 along hanger 11.

A threaded screw 32 is carried by tapped hole 30, and screw 32 depends therefrom below box knock-out 14. Clamping saddle 16 is attached thereto by mounting same over screw 32. Saddle 16 has a first pair of diametrically opposite upstanding and parallel spaced walls 33. The individual walls 33 are adapted to extend upwardly through box knock-out 14 and alongside the parallel and juxtaposed edges of loop walls 28. Saddle 16 may be formed from a stamped steel blank wherein walls 33 are joined by a horizontal web 34, which web 34 includes a centralized relatively square shaped opening 35 through which screw 32 extends. Saddle 16 also has a second pair of diametrically opposite upstanding and parallel spaced walls 36. Walls 36 also extend upwardly through box knock-out 14. However, walls 36 are parallel with and are spaced dimensionally to extend snugly against the outer sides of individual ones of loop

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walls 28, as seen in FIGS. 5 and 6. Walls 36 have upper narrow portions 37 defined by opposed vertical edges 38 (FIG. 4) which are dimensioned to extend into the hollow space between the confronting inner faces of the lower vertical skirt portions 60, 61 of channel walls 22, 23 of inner slide 19, as seen in FIG. 4, upon assembly of clamp 13 to hanger 11. A small clearance is provided between wall edges 38 and the confronting faces of walls 22, 23. The presence of saddle wall portions 37 between the channel walls 22, 23 is desirable because upon tightening up on screw 32 to clamp box 10 or a fixture (not shown) to hanger 11, the torque load applied to clamp 13 about the axis of screw 32 is taken up by saddle 16 as the diagonally opposite edges 38 of its wall portions 37 bear hard against the stationary channel wall skirts 60, 61.

Walls 33 are undercut at opposite side edges 39 to define diametrically opposed narrow upper portions 40. Wall portions 40 extend upwardly through box knock-out 14 and between the surface planes of the pair of loop walls 28 as shown in FIG. 5. Walls 33 are perpendicular to walls 36. Each wall portion 40 has a pair of horizontal shoulders 41 extending laterally from the opposite edges 39 thereof. Wall portions 40 are dimensioned so that upon assembly of clamp 13 to hanger 11 and prior to the clamping camming action, the outside faces of wall portions 40, 40 confront diametrically opposite edge portions of box knock-out 14 and at the same time the shoulders 41 thereof lie in a horizontal plane below the inner box surface 17. This can be seen from a study of FIGS. 4 and 5.

Each loop wall 28 has a pair of outwardly inclined camming faces 42 at its lower sides thereby providing four camming faces 42 for the clamping action. Parallel ones of such camming faces 42, that is to say, the pair of camming faces 42 on the same side of carrier 27 confront respective ones of shoulders 41 of an individual wall 33 for the purpose of acting on same to spread such pair of shoulders 41 and wall portion 40 integrally therewith outwardly upon advancing screw 32 upwardly through threaded hole 30 during the camming action. The other pair of camming faces 42 on the other side of carrier 27 are designed to coact in similar fashion with the pair of shoulders 41 and the wall portion 40 integral therewith of the second wall 33.

The camming action takes place after saddle 16 is carried upwardly by tightening of screw 32, whereby the four shoulders 41 come into slidable register with the coacting ones of said camming faces 42. When further upward pressure is applied to saddle 16 upon further tightening of screw 32, the individual walls and, in particular, the outer corners 43 of the four shoulders 41 are forced to flare out as the inside surfaces of walls 33 and, in particular, the edges of shoulders 41 thereof are forced to continue to ride upward along the respective camming faces 42.

When the camming action takes place, the four pointed shoulder corners 43 spread out to overlap beyond the area of knock-out 14, see FIG. 6, whereby these sharp corners bite into the underside face 17 of box wall 15 at four points adjacent the edge of knock-out 14 simultaneously with spreading of the upright wall portions 40. As the spreading wall portions 40 flare outwardly, they engage or at least the edges 39 thereof bear hard and "fast" against opposite edge portions of knock-out 14, see FIGS. 4 and 6, with the result that as shoulders 41 bite into underface 17, box wall 15 is clamped "fast" against bar hanger 11. The aforesaid simultaneous action of spreading out upright portions 40 against the edges of knock-out 14 as the shoulder corners 43 spread to bite into box wall 15, assures a positive shoulder bite into the box wall face 17 to provide a positive clamp. FIGS. 4 and 6 depict the structure in clamped condition. The clamp action causes saddle 16 to draw up against carrier 27. This action operates mutually on carrier 27

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to cause same to be drawn down against hanger 11. Aligned apertures 31 of carrier walls 28 have straight horizontal upper edges 59. Edges 59 are brought into clamped relationship against outer slide top wall 21 when the clamping action is completed. Apertures 31 also have upper vertical side edges 63 depending from edges 59, which edges 63 are contiguous with the similar shaped portions of channel walls 22, 23. Since carrier 27 has two longitudinally spaced edges 59 in clamp relationship against the top of hanger 11, this factor in combination with the fact that flat box wall 15 is in clamped relationship against the lower edges of the hanger, prevents rocking and twisting of the clamped structure. In the preferred design, the lower vertical skirt portions 60, 61 of inner slide 19 overlaps slightly below the corresponding portions of outer slide walls 22, 23, whereby box wall 15 is actually in clamped relationship against the parallel lower edges 62 of inner slide walls 22, 23.

When a light fixture or the like (not shown) is to be supported by hanger 11, clamping device 13 also includes a hollow cylindrical nipple 44. Nipple 44 has an enlarged hollow body which is threaded along its outer surface at 47. Nipple 44 narrows at its upper end to provide a constricted neck defined by four upright and straight walls forming a substantially square shaped key 45. Key 45 has a through passage 46, which passage 46 communicates with the hollow interior bore of nipple body. Nipple 44 is mounted over screw 32. The shank of screw 32 passes freely through nipple passage 46. Outer threaded surface 47 is provided for connection to the light fixture or the like to support same from hanger 11. The four walls defining key 45 are dimensioned to fit snugly in the similarly shaped keyway 35 in saddle web 34. The area of the head of screw 32 is larger than the constricted neck portion of nipple 44. Consequently, when clamp 13 is assembled and screw 32 is tightened with a light fixture supported by nipple 44, the outer flat and horizontal nipple surface 48 is drawn hard against the bottom face of saddle web 34, thereby pushing saddle 16 up camming faces 42. The upward movement transmitted to saddle 16 ultimately causes its shoulders 41 into camming engagement as described hereinbefore to effect the clamp camming action. Since nipple key 45 is in register with keyway 35, any turning force or torque developed during tightening of screw 32 is taken up by the lower skirts 60, 61 of the hanger channel walls 22, 23 as the diametrically opposite edges 38 of wall portions 37 engage the inner slide skirts 60, 61. This prevents rotation of nipple 44 and thus prevents rotation of the fixture from a set and desired spacial position during clamping of same to bar hanger 11.

It will be understood that prior to clamping box 10 and a fixture to hanger 11, that saddle walls 33, 36 stand substantially vertically upright without any appreciable outward flare to permit the passage of box knock-out 14 over the upper portions 40, 37 thereof and, in particular, to permit the passage of saddle shoulders 41 through box knock-out 14 upon mounting a box 10 to hanger 11 after clamp 13 has been attached thereto.

Clamping device 13 is normally attached to hanger 11 as follows. A carrier 27 is mounted over an outer slide 20 by passing the straight end thereof through aligned carrier openings 31. Inner slide 19 is then telescopically mated with outer slide 20. The remainder of the clamping device, if not previously attached, now is attached to carrier 27 by assembling saddle 16 on nipple 44 by fitting key 45 into keyway 35 and then passing screw 32 through the centralized openings through these bodies and threading same into threaded hole 30 in carrier 27. Screw 32 is tightened merely to hold clamp 13 attached to carrier 27. It will be understood that screw 32 is not tightened sufficiently to cause any camming action to avoid outward flaring of walls 33, particularly, before a box 10 has been mounted over same. Box 10 may

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be mounted over clamping device 13 by an electrician at the place of installation without any disassembly of clamping device 13. The latter operation is normally required in prior art type of hangers. To do this, the electrician merely opens knock-out hole 14 along the wall 15 and mounts box 10 with its wall 15 flat against the parallel edges 62 of slide 19. During such action, the depending parts of clamping device 13 extending below the plane of slide edges 62 pass through knock-out 14 and into the interior area of box 10. When box 10 is first mounted as described, the top edges of saddle wall portions 40, preferably extend above the plane of wall surface 18 to insure freedom to move saddle 16 upward without any impediment during tightening of screw 32 at the time box 10 is being locked to bar hanger 11. Carrier 27 also includes four vertical edge sections 49 just above cam faces 42, which sections 49 are spaced and suitably dimensioned to clear the standard knock-out 14. The clearance is just enough so that upon mounting box 10 to hanger 11, the action of the four edges 49 against the edges of knock-out 14 centralizes and otherwise horizontally levels box 10 against hanger 11.

The invention also contemplates assembly of bar hanger 11 at the factory wherein an assembled clamping device 13 may be mounted over outer slide 20 and then inner slide 19 is mated therewith. Screw 32 may be tightened until a slight pressure is felt which should not produce any camming action on walls 33, but hard tightening is avoided to prevent premature extensive camming of the upright walls 33. Moreover, box 10 also may be assembled to hanger 11 at the factory by mounting same over clamping device 13. The box knock-out 14 is snapped over the four saddle shoulders 41, and then box 10 may be clamped tight to hanger 11 by screw 32. This provides the user or electrician with a box already assembled to the hanger and thus saves the time to effect such assembly. The user can easily loosen the clamp by screw 32 to permit readjustment of the box position along hanger 11 and then retighten, if necessary.

The assembled hanger 11 provides a rugged dual channel support and which in cross-section is enclosed on three sides as seen in FIG. 4. The edges of aligned openings 31 generally conform to the shape of the contiguous wall portions of outer slide 20, whereas clearances are provided along side walls and at the bottom of openings 31 to accommodate sliding the clamping assembly 13 to a desired position along hanger 11. Assuming a box 10 was assembled to hanger 11 at the factory, at the point of installation the electrician will extend slides 19, 20 so that the vertical flat faces of mounting flanges 26 bear against respective ones of a pair of joists 12 for nailing thereto. Mounting flanges 26 have outstanding tabs 50 which are adapted to bear against the undersides of joists 12. If tabs 50 are not desired, they may be broken off by the electrician. The use of tabs 50 will depend upon the required depth setting for the outlet box used by the electrician. Some boxes are deeper than others. If the electrician desires to expand hanger 11 to proper size prior to nailing same to joists 12, he may do so by measuring the distance between joists 12 and then expand hanger 11 to expose scaled marking lines 51 stamped along top wall 21 of inner bar member 19. The scale consists of a series of lines 51 spaced one inch apart with marks 52 stamped in between, such that when the first line 51 is exposed by the straight end of slide 20, mounting flanges 26 are set for a twelve inch space; and when the second line 51 is exposed, flanges 26 are set for a thirteen inch space, and so on. Accordingly, marks 52, i.e., the numbers 12, 13 . . . 19 are stamped between successive pairs of marking lines 51. After expanding hanger 11 to a suitable length, the electrician tightens screw 32 sufficiently to restrict further movement of bar hanger 11 without actually rendering it "locked fast." After flanges 26 are nailed in place, box 10 is suitably

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positioned therealong and screw 32 is then finally tightened hard to effect solid clamping of box 10 to hanger 11.

Outer slide 20 is provided with a dimple 53 near its straight end. When carrier 27 is positioned near the straight end portion of outer slide 20, dimple 53 acts as a stop to prevent disengagement or travel of carrier 27 from slide 20 when hanger 11 is under an extreme load. Inner slide 19 has a dimple 54 along a side wall 23 to increase the frictional drag whereby sliding action between slides 19, 20 is not too loose or fast.

To prevent slides 19, 20 separating to accommodate joists 12 spaced very far apart particularly when hanger 11 is carrying an extremely heavy load, inner slide 19 is provided with a cut-out slot 55 near its straight end. Outer slide 20 is provided with a cut-out slot 56 very close to its straight end which forms a bridge 57 between slot 56 and such end. As bar hanger 11 is being separated to a condition where slots 55, 56 coextend and then by-pass each other, bridge 57 will snap into slot 55. When the load on bar hanger 11 is extremely heavy the center of the bar hanger 11 will tend to bow downwardly to permit bridge 57 to snap into slot 55. This assures locking of bar hanger 11 to prevent further separation and to prevent complete detachment of same while supporting a heavy load in extreme extended condition. In FIG. 1, it is seen that the left edge of slot 56 is curved at 58. When the straight end of outer slide 20 is aligned with a line 51, curved edge 58 is aligned with the underneath portion of the circle stamped around the mark number 52 just to the left of such line 51. Hence, edge 58 serves as a sight line to indicate the distance between mounting flanges 26, 26.

Nipple 44 is normally used for supporting a fixture, such as a light chandelier. If the installation does not involve a fixture, nipple 44 may be discarded wherein the head of screw 32 is now advanced to bear directly against the underside surface of saddle web 34. For this type of installation, the embodiment of saddle 16 may be altered from that shown in FIG. 2 only by the fact that passage 35a (see FIG. 11) is a round hole merely to pass the screw shank since it no longer serves as a keyway. The area of hole 35a is smaller than the head of screw 32. The diameter of screw 32 is small enough to permit entry of its top between the side walls 22, 23 of inner slide 19 upon tightening of screw 32. When screw 32 is finally tightened, the upper operative edges 59 of loop walls 28 are clamped hard against the outer member top wall 21 as box surface 18 is clamped hard to the bottom channel edges 62 of hanger slide 19, whereby further relative movement of the assembled parts is prevented. Although clamping device 13 has been shown for the purpose of attaching a box 10 to a bar hanger 11, it will be seen that the principles of this clamping device 13 may be used for attaching and clamping outlet boxes or other like structures and fixtures to other types of supports.

The foregoing describes box 10 attached to hanger 11 wherein the channel of hanger 11 is oriented as an inverted U. FIGS. 9 and 10 illustrate box 10 attached to hanger 11, wherein the hanger channel is oriented so that its slide walls 21 face downwardly, that is to say, box wall 15 is now adapted to be clamped against outer slide wall 21. In other words, hanger 11 is inverted with respect to its position shown in FIG. 3. To effect this, tabs 50 are removed or straightened out as shown in FIG. 10. Furthermore, each wall 36 is provided with a transverse groove 64 extending from one edge 38 to the other edge 38 along the inner face of wall 36. Grooves 64 serve as break lines. Upon bending wall portions 37 back and forth above break lines 64, these wall portions easily snap off as shown by the ragged edges of FIG. 10; otherwise, wall portions 37 may extend upward too far to prevent proper mounting of clamping device 13 on the inverted hanger 11. With wall portions 37 broken off, clamping device 13 is now

mounted on hanger 11 as shown in FIG. 10. Carrier edges 59 now rest on channel edges 62. Box 10 is then mounted over the depending clamp 13 as described hereinbefore and screw 32 is tightened until saddle shoulders 41 bite positively into box surface 17 to effect the lock.

Mounting flanges 26 illustrated herein encompass improved V-shaped nailing means for attaching hanger 11 to joists 12. Each mounting flange 26 is substantially a plane flat plate 65 which is a bent extension of the hanger slide. Plate 65 has vertical re-enforcing ribs 66 and a pair of holes 67. Holes 67 permit screw, bolt or ordinary nail attachment of mounting flange 26 to joist 12 in addition to supporting same by the V-shaped nail means. Tabs 50 extend outwardly from the bottom edge of plate 65. Plate 65 has a vertical slot 68 and V-shaped nail 69 aligned with slot 68. Nail 69 is made of two legs 70, 71 bent at an angle less than 90° with respect to each other. In the illustrated and preferred embodiment, the angle between the planes of legs 70 and 71, angle *a*, is 50°, and the angle between the vertical and the plane of leg 70, angle *b*, is 55°. These dimensions apply prior to nailing. First leg 70 has an end which is an integral extension of the bottom edge of slot 68. The other end of leg 70 connects to one end of second leg 71 at a rounded apex 72 of the V. Leg 71 has an outer end 73 pointed and oriented to pass through slot 68 to enter joist 12 upon hammering upon apex 63. V nail 69 is relatively rectangular in cross-section, see FIG. 8, and has a lengthwise re-enforcing rib 74 off-set with respect to the longitudinal axis of nail 69. Rib 74 extends the length of first leg 70 and terminates close to the outer end 73 of leg 71.

Leg 71 is provided with a hole 75 near its point 73. The axis of hole 75 is perpendicular to the plane of leg 71. Hole 75 is then barbed and bent at its front edge 76 by any convenient tool to create a protrusion or flat edge (FIG. 8) oblique to the lengthwise axis of nail leg 71 so as to resist pull out of nail 69 after it is hammered into joist 12. The barbing and bending operation elongates hole 75 with a smaller diameter portion as seen in the fragmentary FIG. 12; FIG. 12 is a top elevational view of the pointed end of nail leg 71. The barbing and bending operation also deforms the front surface 77 of rib 74, whereby surface 77 as seen in FIG. 7 extends along a line angularly displaced about 40°, angle *c*, from a reference line 78 normal to the plane of leg 71. The barbing and bending operation also turns inner surface 79 of rib 74 to define a line which is at an angle of 30°, angle *d*, with respect to the reference line 78.

Prior to nailing, nail 69 is fabricated in the withdrawn position within plate 65 so that point 73 coextends with slot 68 for entering a joist 12 with the very tip of point 73 protruding just slightly to the left of plate 65, see FIG. 7. The slight protrusion provides a slight bite into the wood to facilitate attachment of hanger 11 to the joists prior to hammering. Upon hammering on apex 72, nail 69 embeds into the joist as shown. When this action takes place, the wood material flows into the barbed and bent hole 75, which action locks nail 69 into the wood to prevent its accidental withdrawal. The foregoing mounting flanges 26 are illustrated for attaching a bar hanger 11 to wooden joists. However, it would be understood that such type of mounting means may be used with similar effect to attach other types of electrical fixtures to joists. Although not mentioned hereinbefore, it will be understood that carrier 27 and nipple 44 may be made of suitable metallic material stamped or otherwise turned or formed to provide the desired structural characteristics. In the illustrated embodiment, camming faces 42 are inclined at an angle of about 45°, angle *e*, with respect to the horizontal.

It is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. An adjustable bar hanger for supporting an outlet box or the like comprising, inner and outer longitudinal slide means equipped for mated telescopic sliding relationship, said assembled slides having mounting flanges at the opposite ends thereof for register with supporting means for suspending said bar hanger therebetween, clamping means for holding the outlet box against said bar hanger, the outlet box having a wall provided with a knock-out hole of selected size and wherein the outside surface of said box wall is to be clamped against said bar hanger, said clamping means including a carrier having a pair of parallel spaced loop walls mounted over said mated members wherein said carrier may be supported at selected positions along the longitudinal axis of said bar hanger, the lower portion of said carrier extending through said box knock-out hole and below the inside surface of said box wall, adjustable means depending vertically from the lower portion of said carrier, a clamping saddle mounted over said adjustable means and having a pair of opposed upstanding wall portions extending through said knock-out and above said box wall outside surface, said portions extending between said parallel loop walls of said carrier, said wall portions extending through said knock-out hole in a relatively free relationship prior to clamping said box to said hanger, a lateral shoulder on the opposite sides of each wall portion and integral therewith, and camming means on said carrier and confronting said shoulders to spread same and the adjacent portions therewith further apart upon forcing said saddle upwardly along the vertical, actuation of said adjustable means forces said saddle upward along said vertical and against said camming means wherein said loop walls are drawn in clamped relationship against one of said slide means and said portions spread out to register against opposite edge portions of said knock-out hole as said shoulders bite into the inside surface of said box wall surrounding said knock-out, whereby said box is clamped against the other of said slide means.

2. Apparatus as defined in claim 1 wherein, said carrier having a web connecting its loop walls and said web having a threaded hole, said saddle having a web connecting its walls and said web having a through opening, said adjustable means including a threaded member passing freely through said saddle opening and engaging said carrier threaded hole for axial adjustment, said adjustable means being equipped for urging said saddle against said carrier in order that said saddle shoulders are cammed against the inside surface of said box wall for clamping said box.

3. Apparatus as defined in claim 2 further including, a nipple mounted over said threaded member and below said saddle, said nipple having means for carrying a fixture or the like, said threaded member being equipped for forcing said nipple against said saddle, keyway means on said saddle, and key means on said nipple for engaging said keyway to prevent turning of said nipple about the vertical axis relative to said saddle.

4. Apparatus as defined in claim 1 wherein, said saddle also has a second pair of opposed and upstanding walls extending through said knock-out and above said box wall outer surface, each slide having opposed side walls and a flat interconnecting wall forming a U-shaped channel in the sectional plane normal to the longitudinal axis thereof thereby defining a telescopic channel assembly closed along three sides and opened along one side, said hanger being supported with the open channel side confronting said saddle, said second pair of saddle walls extending into the space between said opposed channel side walls for engaging said opposed channel side walls to prevent substantial turning of said saddle about the vertical axis upon tightening of said screw.

5. Apparatus as defined in claim 4 wherein, said second pair of walls having break lines for breaking the portions thereof off to permit mounting of said clamp means

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to said hanger channel assembly when said hanger channel is oriented so that the flat interconnecting wall of the outer slide confronts said saddle.

6. Apparatus as defined in claim 1 wherein, the mounting flange of a slide has a substantially planar surface having a slot, a nail member made up of two longitudinal legs defining an angle of less than 90° with respect to each other and joined at the apex of the angle, one end of a first nail leg being integral with an edge of said slot and the outer end of the second nail leg pointing towards said supporting means for entering same, said second nail leg having a hole near its outer end, said hole being barbed and bent with respect to the longitudinal axis of said second nail leg, the material constituting the supporting means fills said hole upon driving said nail into said supporting material to resist pull out, whereby said nail is locked in said supporting means against withdrawal.

7. In a hanger for supporting an outlet box or the like wherein the outlet box has a wall provided with a knock-out hole, clamping means for holding the outlet box to said hanger wherein the outside surface of said wall is clamped fast against said hanger comprising, a clamping member having an upper portion mounted for clamping against said hanger and having a lower portion extending through said box knock-out hole and below the inside surface of said box, means depending vertically from the lower portion of said member, a clamping saddle mounted over said means and having a pair of parallel spaced upstanding portions extending through said knock-out and above said box wall outside surface, the passage of said knock-out hole over said portions being relatively free prior to clamping said box hard to said hanger, a lateral shoulder on the opposite sides of each portion and integral therewith, and camming means on said member and confronting said shoulders to spread same and the adjacent portions therewith outwardly upon forcing said saddle upward along said means axis and against said camming means wherein said portions spread out to engage hard against opposite edge portions of said knock-out hole as said shoulders bite hard into the inside surface of said box wall surrounding said knock-out.

8. Apparatus as defined in claim 7 wherein, said clamping member has a threaded hole, said saddle has a wall connecting its portions and said wall has a through opening, said means being a threaded member passing freely through said saddle opening and engaging said threaded hole for axial adjustment, said means acting upon said saddle for urging the shoulders thereof to ride along said camming means for clamping said box.

9. Apparatus as defined in claim 8 further including, a nipple mounted over said means and below said saddle, the outer surface of said nipple being threaded for carrying a fixture or the like, said means overlapping said nipple for forcing same against said saddle.

10. Clamping means for supporting an outlet box or the like from support means wherein said outlet box has a wall provided with a knock-out and which wall has an outer surface confronting the support means and an interior surface, the combination comprising, a member having an upper end mounted over the support means and a lower end extending axially through the knock-out and into the interior of said box below the interior surface of said wall, a clamp saddle mounted over the lower end of said member and having a pair of opposed upstanding walls having portions thereof equipped to extend into said box knock-out, said upstanding walls being spaced from and straddling individual sides of said support means, said upstanding walls having lateral projection means confronting said interior surface of said box wall adjacent the knock-out, camming means on said member for engaging said upstanding walls for spreading same apart upon axial movement of said saddle against said member in the direction towards said support means, and holding means for causing saddle movement against said member in the direction towards said support means thereby result-

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ing in said camming means to spread said upstanding walls apart so as to cause said upstanding walls to engage fast against the edge of said knock-out as said lateral projections thereof enter into a biting register against the interior surface of said box wall adjacent the knock-out, said upstanding walls at all times being free of frontal contact against said support means, whereby said box is forced into clamped relationship against said support means.

11. Apparatus as defined in claim 10 wherein, said holding means also serving to hold said clamp saddle assembled to said member, said box being mountable on said clamping means for attachment to said support means without requiring disassembly of said clamp saddle from said member.

12. Apparatus as defined in claim 10, wherein, said member having a pair of parallel spaced apart loop walls mounted over said support means wherein the lower ends of said loop walls correspond to the lower end of said member extending through said box knock-out and being located in the interior of said box, said camming means including inclined surfaces at the lower ends of said loop walls, said upstanding wall portions also extending between said parallel loop walls of said member, whereas the lateral projections of said upstanding walls confront said inclined camming surfaces.

13. Apparatus as defined in claim 12, wherein, the lower ends of said loop walls also having surface portions for engaging the edge of said box knock-out for centralizing said box upon mounting same thereon for attaching said box to said support means.

14. Apparatus as defined in claim 10 wherein, said support means being formed of telescopically mated U-shaped and longitudinal channel members, said mated channel members having opposed side walls and an interconnecting closed wall defining a support means assembly closed along three longitudinal sides and opened along one longitudinal side, the open channel side of said support means assembly confronting said saddle, said saddle having a second pair of opposed and upstanding walls having outer reaches extending through said knock-out and into said open channel side of said support means, said outer reaches of said second pair of saddle walls extending into the interior channel space between said opposed channel side walls, and said outer reaches being equipped for engaging said opposed channel side walls to prevent substantial turning of said saddle about the axis of said knock-out upon clamping said box to said support means.

15. Apparatus as defined in claim 14 wherein, said second pair of upstanding walls having break lines for removing the portions thereof from said break line to said outer reaches thereof to permit mounting of said member and saddle to said support means channel assembly when said channel assembly is oriented so that the closed interconnecting wall thereof confronts said saddle, whereby said second pair of upstanding walls are free of frontal contact against said support means.

16. Apparatus as defined in claim 10, wherein said support means being formed of telescopically mated U-shaped and longitudinal channel members, said mated channel members forming an assembly having opposed side walls and an interconnecting wall defining three closed longitudinal side walls and one open longitudinal side, the open channel side of said support means confronting said saddle, said saddle having a second pair of opposed and upstanding walls, said second pair of upstanding walls having outer reaches extending through said knock-out and into said open channel side of said support means, said outer reaches being equipped for engaging said opposed closed side walls of said channel assembly to prevent substantial turning of said saddle about the axis of said knock-out upon clamping said box to said support means, the frontal edges of said second pair of upstanding walls being free of frontal contact against said support means upon said box being clamped thereto.

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17. Clamping means for supporting an outlet box or the like from support means wherein said outlet box has a wall provided with a knock-out and which wall has an outer surface confronting said support means and an interior surface, the combination comprising, a member mounted over the support means for clamping against same, said member having a portion thereof equipped to extend axially through said knock-out and into the interior of said box, a saddle mounted over said member and having wall means equipped to extend into said box knock-out, said wall means including lateral means confronting said interior surface of said box wall adjacent the knock-out, camming means on said member for engaging said wall means for spreading same outwardly upon axial movement of said saddle against said member in the direction of said support means, and holding means for causing axial movement of said saddle against said member in the direction towards said support means thereby causing said camming means to spread said wall means outwardly to cam said wall means in register against the edge of said knock-out and said lateral means into a clamping register against the interior surface of said box wall, whereby said box is clamped to said support means, said wall means being free of frontal contact against said support means upon said box being clamped thereto, said box being mountable on said clamping means for attachment to said support means without requiring disassembly of said clamp saddle from said member.

18. Clamping means for supporting an outlet box or the like from support means wherein said outlet box has a wall provided with a knock-out and which wall has an outer surface confronting said support means and an interior surface, the combination comprising, a member mounted over the support means for clamping against same, said member having a portion thereof equipped to extend axially through said knock-out and into the interior of said box, a saddle mounted over said member and having wall means equipped to extend into said box knock-out, said wall means including lateral means confronting said interior surface of said box wall adjacent the knock-out, camming means on said member for engaging said wall means for spreading same outwardly upon axial movement of said saddle against said member in the direction of said support means, and holding

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means for causing axial movement of said saddle against said member in the direction towards said support means thereby causing said camming means to spread said wall means outwardly to cam said wall means in register against the edge of said knock-out and said lateral means into a clamping register against the interior surface of said box wall, whereby said box is clamped to said support means, said support means being formed of telescopically mated U-shaped and longitudinal channel members, said mated channel members forming an assembly having three closed longitudinal side walls and one open longitudinal side, the open channel side of said support means confronting said saddle, said saddle having second wall means, said second wall means having outer reaches extending through said knock-out and into said open channel side of said support means, said outer reaches being equipped for engaging certain ones of said closed walls of said channel assembly to prevent substantial turning of said saddle about the axis of said knock-out upon clamping said box to said support means, said first wall means and the forward edges of the outer reaches of said second wall means being free of frontal contact against said support means upon said box being clamped thereto.

19. Apparatus as defined in claim 18 wherein, said member having a surface clamped fast against one of said channel members while the outer surface of said box wall being clamped fast against the other of said channel members, said channel members being in clamped relation with respect to each other when said box is clamped to said support means.

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