Sept. 5, 1967 P. J. ZERWES 3,340,349

JUNCTION BOX CONSTRUCTION

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Fig. 1

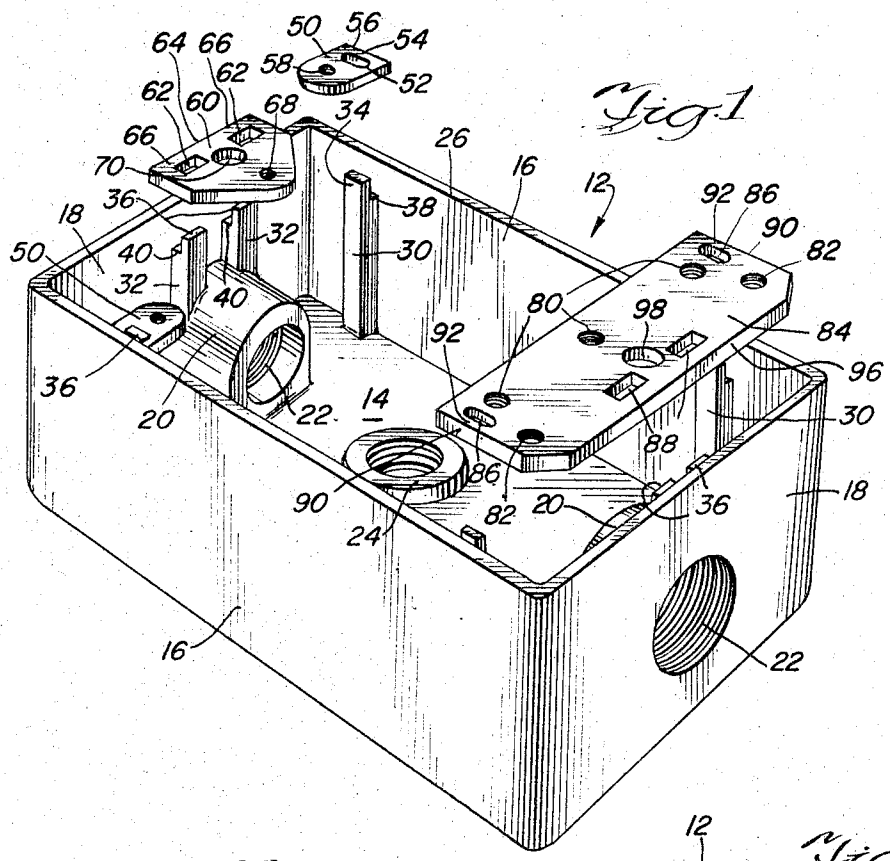


Fig. 2

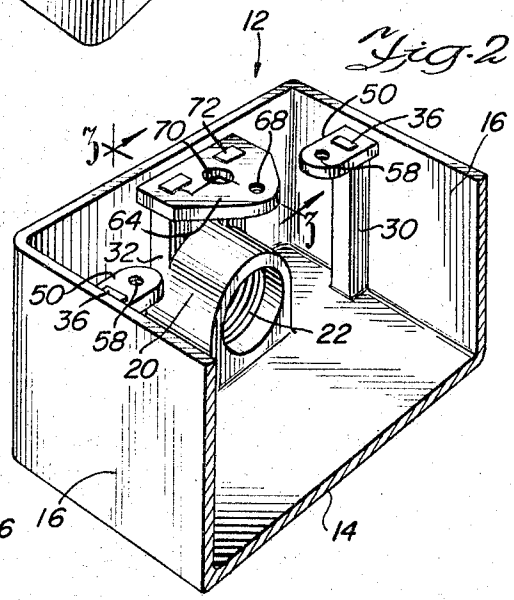
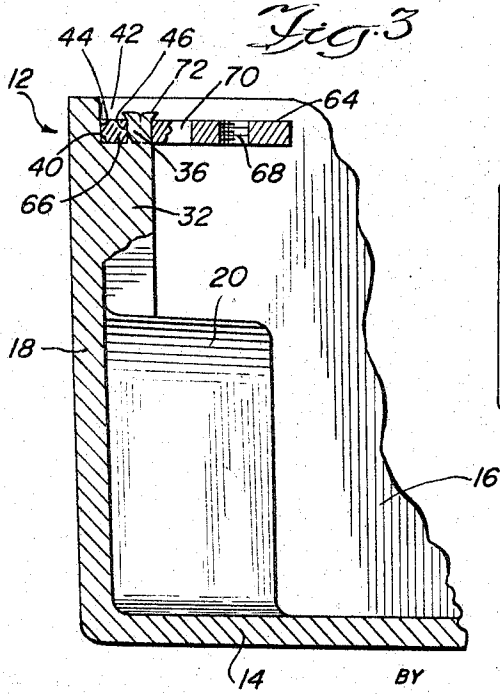


Fig. 3



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Fig. 4

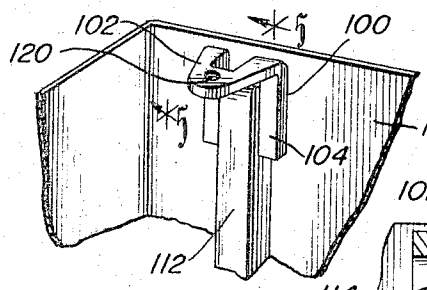


Fig. 5

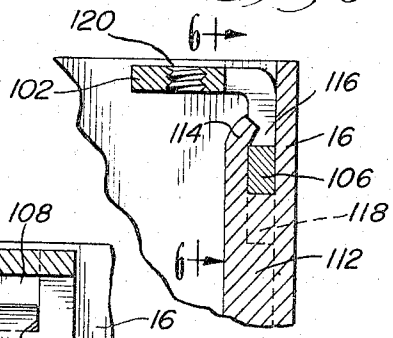


Fig. 6

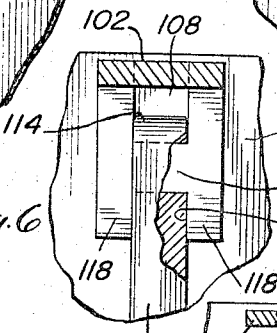


Fig. 7

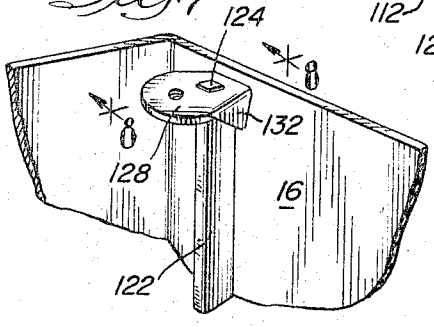


Fig. 8

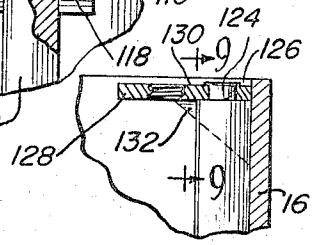


Fig. 9

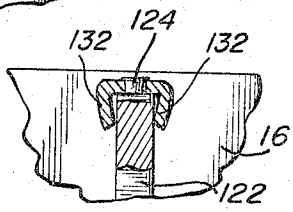


Fig. 10

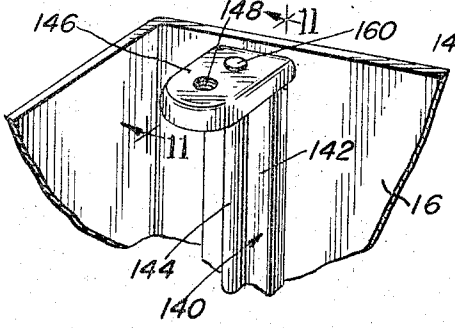


Fig. 12

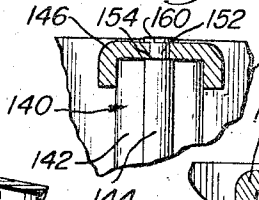
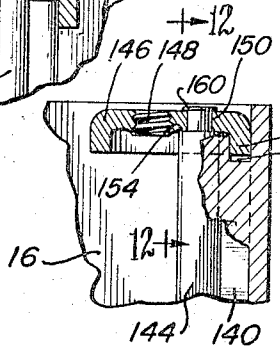


Fig. 11



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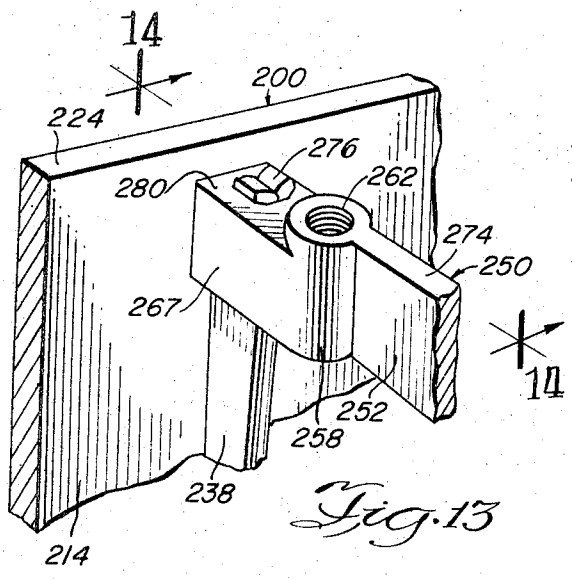


Fig. 13

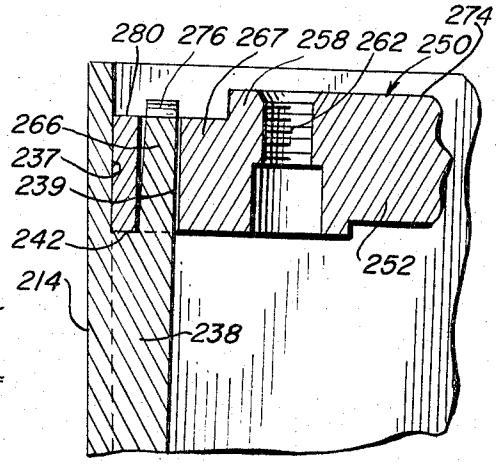


Fig. 14

Fig. 15

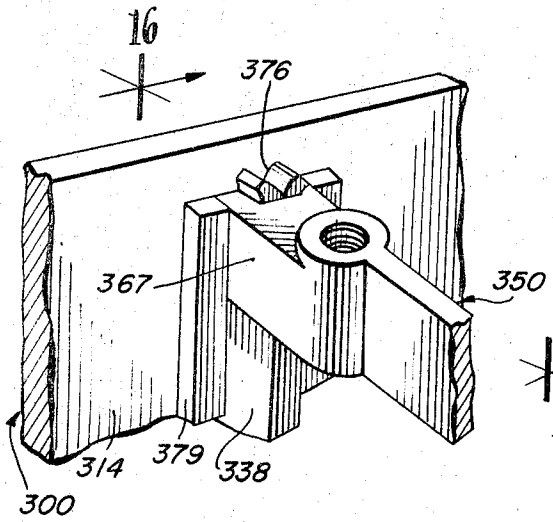
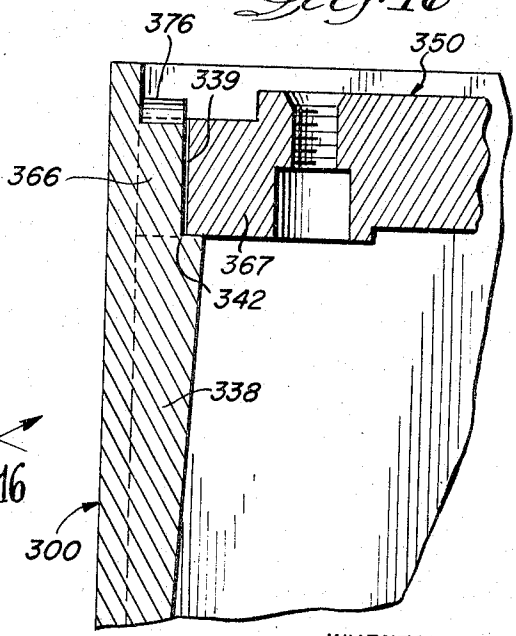


Fig. 16



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United States Patent Office 3,340,349 Patented Sept. 5, 1967

3,340,349

JUNCTION BOX CONSTRUCTION

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Filed Mar. 25, 1966, Ser. No. 537,953
16 Claims. (Cl. 174—53)

This invention is a continuation-in-part of application Ser. No. 383,713, filed July 20, 1964, now Patent No. 3,304,363, entitled, "Junction Box Construction and Method of Making Same," and further comprises an improvement upon the structure of U.S. Patent 2,991,327, issued July 4, 1961, to Frank G. Bellek, and entitled, "Junction Box."

This invention relates generally to junction box constructions and more particularly is concerned with a novel junction box construction in which the junction box may be made as a single die cast structure with integral posts formed therein to which lugs, straps or bars may be attached to enable securement of electrical appliances within the box.

In the copending application of which this application comprises a continuation-in-part there are disclosed several types of structures in which bars or straps are mounted within a junction box by means of key and recess means, there being posts formed integral with the box body in each case, said key and recess means being formed on the upper ends of the posts and the outer ends of the bars or straps. The bars or straps comprise means for enabling electrical appliances such as switches, electrical receptacles and the like to be mounted in the box body.

One form of the invention of the said copending application was characterized by the provision of the key means as the free ends of the bars which were arranged to present such key means for vertical sliding into the recess means. The recess means were formed in the upper ends of the posts, as slots or grooves each of which had a bottom shoulder or ledge for limiting the depth of engagement of the respective key means into its slot. After engagement, the upper ends of the post were peened or swaged over the top of the key means.

Another form of the invention of the said copending application was characterized by the provision of tongues formed on the upper ends of the posts as the key means, with the bars or straps having slots at their ends, each slot adapted to engage upon a tongue and thereafter to have the upper end of the tongues peened or swaged upon the tops of the respective bar or strap ends to secure the connection.

The invention herein relates specifically to this second form of the invention of the said copending application and has as objects thereof generally the objects of the said copending application.

Additionally other objects of the invention herein are to provide a more simplified and effective junction box construction which is economical to manufacture and assemble and which has great universality of use.

An important object of the invention is to provide a junction box construction in which there is an interior substantially unobstructed volume greater than prior structures, whereby to facilitate use of the box.

A specific object of the invention herein is to provide a junction box having posts or pillars formed integrally with the box body, each post having a decreased cross-sectional part adjacent its upper end whereby to form a shoulder spaced below the upper end, the part providing a tongue or key means and being spaced from the wall of the box body to which the post is secured; there being a lug, strap or bar provided with a suitable slot or recess means engaged upon the tongue and having said upper end of the tongue protruding slightly from the slot or recess means

and being swaged over upon the top of the lug, strap or bar permanently to secure the same within the junction box.

Another object of the invention is to provide a die-cast junction box in which there are a plurality of posts or pillars integral with the walls of the box body on the interior of the same, each post having a tongue formed at its upper end, each post also having notch means formed between the tongue and another part of said wall, the box having lugs, straps or bars secured to the tongues, and the lugs, straps or bars having slots to engage the tongues with portions of the metal adjacent each slot engaging within the notch means firmly to secure the lug, strap or bar within said box body.

A further object of the invention is to provide a structure such as described in the paragraph above in which each tongue is spaced from the box wall, and the notch means is formed between said tongue and the wall.

Many other objects of the invention and advantages will become obvious to those skilled in the art as a description herein proceeds in connection with which the drawings illustrate preferred embodiments.

In the said drawings:

FIG. 1 is a perspective exploded view showing a junction box constructed in accordance with the invention and having a strap at one end and lugs at the other end thereby illustrating in one view two forms of the invention.

FIG. 2 is a fragmentary perspective view of the box of FIG. 1 showing the lugs attached thereto.

FIG. 3 is a fragmentary sectional view with portions shown in elevation taken generally along the line **3—3** of FIG. 2 and in the direction indicated.

FIG. 4 is a fragmentary perspective view of a modified form of the invention utilizing a different form of lug.

FIG. 5 is a fragmentary sectional view taken generally along the line **5—5** of FIG. 4 and in the direction indicated.

FIG. 6 is a fragmentary sectional view taken generally along the line **6—6** of FIG. 5 and in the direction indicated in FIG. 3.

FIG. 7 is a fragmentary perspective view of another modified form of the invention utilizing a different form of lug.

FIG. 8 is a fragmentary sectional view taken generally along the line **8—8** of FIG. 7 and in the direction indicated.

FIG. 9 is a sectional view taken generally along the line **9—9** of FIG. 8 and in the direction indicated.

FIG. 10 is a fragmentary perspective view of a further form of the invention.

FIG. 11 is a fragmentary sectional view taken generally along the line **11—11** of FIG. 10 and in the direction indicated.

FIG. 12 is a fragmentary sectional view taken generally along the line **12—12** of FIG. 11 and in the direction indicated.

FIG. 13 is a fragmentary perspective view of the connection of a mounting bar and box body illustrating still another modified form of the invention.

FIG. 14 is a fragmentary sectional view taken generally along the line **14—14** of FIG. 13 and in the direction indicated.

FIG. 15 is a view similar to that of FIG. 13 but illustrating still another modified form of the invention.

FIG. 16 is a fragmentary sectional view taken generally along the line **16—16** of FIG. 15 and in the direction indicated.

The invention is characterized by a provision of a unitary metal box preferably die cast, having threaded openings to receive electrical fittings, such as for example, the threaded ends of thin wall tubing, such openings serving to lead electrical conductors into the interior of the box.

The walls of the box are provided with integral posts or pillars, each pillar having at its upper end a reduced diameter tongue whereby to form a shoulder, and the shoulder being disposed between the said tongues and respective walls or ridges formed on the walls. The shoulders are each at the bottom of notches thereby formed. The boxes are intended to mount appliances such as for example, switches, switch plates, receptacles and the like and for this purpose the box is provided with bars, straps or lugs secured to the said tongues resting upon the said shoulders. (Hereafter the word "straps" will be used to include "bars.") The straps or lugs are provided with conforming openings to receive the tongues after which the upper ends of the tongues are peened or swaged to spread the ends onto the tops of the lug or strap whereby to form means for permanently securing the straps or lugs within the box.

Several forms of lugs and straps are described in the specification which follows.

Looking now at FIGS. 1, 2 and 3, the reference character **12** designates generally a rectangular junction box of die cast construction and having a bottom wall **14**, sidewalls **16** and end walls **18**. Each of the end walls is provided with a reinforcing interior boss **20** which is integrally cast with the bottom wall **14** and an end wall **18**, the said bosses having threaded passageways **22** to enable electrical fittings to be secured to the said box **12** in order to convey electrical conductors to the interior of the box. For example, threaded thinwall tubing may be engaged in the said openings **22**. Various forms of a junction box will have 1, 2 or even 4 such openings **22**. The bottom wall may have a threaded plug shown at **24** to enable connection to be made to the box from the bottom wall.

It is intended that the junction box will mount electrical appliances such as for example, receptacles, switches and the like, including conventional plates concealing the box and giving access to the appliance. For example, such a box could be set into the wall of the building and secured in any suitable manner such as by lugs or screws attaching the bottom wall **14** to the joists. The various appliances are mounted to the open side of the box whose upper edge **26** will normally be flush with the outer surface of the wall into which the box is set. By the use of either lugs or straps as will be described, the appliances are attached to the box by screws engaging the lugs or straps. Suitable threaded openings in the appliances receive the screws from the ornamental covering wall plate, the said screws freely passing through the straps or lugs.

The box of FIG. 1 has four posts or colums **30** and **32**, integrally cast into each end thereof. The columns **30**, only one of which can be seen fully in FIGS. 1 and 2, are integral with the sidewalls **16** and are rectangular in configuration. The columns **32** are integral with the end walls **18** and likewise are rectangular in configuration, and in addition are connected with the respective bosses **20**.

Each column has an upper reduced diameter portion forming a tongue shown at **34** and **36**. The tongue in each case is spaced from the wall to which its column is secured thereby providing shoulders spaced below the upper ends of the tongues. The shoulder **38** is formed on the column **30**, and the shoulders **40** are formed on the respective columns **42**.

An important aspect of the invention is concerned with the fact that in each case the shoulder which has been described is the bottom end of a groove or notch **42**, one side of which is defined by a wall surface and the other side of which is formed by the inner surface of a tongue. As best shown in FIG. 3 the notch **42** is formed between the inner surface **44** of the wall **18** and the inner surface **46** of the tongue **36**. The bottom of the notch is the shoulder **40**.

Two types of lugs may be used to produce a junction box which does not require straps for the securement of appliances. These lugs are shown in FIGS. 1 and 2, and modified forms are shown in FIGS. 4 to 11. One lug **50** has a rectangular slot **52** thereby providing a strip of metal **54** between the slot and what will be termed the rear edge **56** of the lug, the front edge of the lug being rounded and having a threaded opening at **58**. The second kind of lug is shown at **60** and it has two rectangular slots **62** each of which is spaced from the rear edge **64** by means of a metal strip **66**, the front end of this lug being generally triangular also having a threaded opening at **68** but additionally having a hole **70** in the center thereof.

The strips **66** and **54** are all the same width, and this width is exactly the width of the notches formed by each of the tongues and its adjacent wall. Thus, as shown in FIG. 3 the strip **66** tightly engages within the notch **42** while a tongue **36** passes through the slot **62** and is peened over as shown at **72** to effect a permanent connection. All of the lugs are shown secured in place in FIG. 2. Since each lug has its strip either **54** or **66** tightly engaged in a notch such as **42**, the bottom surface of the strip against the shoulder **38** or **40** and likewise its rear wall **56** or **64** tightly engaged against one of the walls of the box, it can be appreciated that these lugs are quite secure and not readily moved or broken loose. Although the upper end of each tongue is peened or swaged to spread the same over and upon the surface of the respective lugs, by proper dimensioning each lug is firmly engaged in position even without the deformation of the tongue.

One form of junction box used only two of the lugs **60** one at each end to mount an appliance which connected by means of screws engaging the threaded openings **68**. Other forms of the box had three lugs at each end, two of the structure and one of **60**.

As seen in FIG. 1 where it is necessary to have a strap for example to provide two sets of threaded holes, one set of three as shown at **80** and additional holes as shown at **82**, the strap **84** has end slots **86** and center slots **88**, the dimensions of the slots **86** and their respective location with respect to the ends **90** of the strap **84** bearing the same relationship as the slots **52** bear with respect to the rear edges **66** of the lugs **50**. In this manner strips **92** are provided at the ends of the strap **84** which will closely engage within the notches formed at the upper ends of the side posts **30**. Likewise the dimensions of the slots **88** and their location with respect to one another and with respect to the edge **96** of the strap **84** are identical with the respective dimensions and relative locations of the slots **62** with respect to one another and the rear edge **64** so that the slot **88** will engage upon the tongues **36** and the end posts **32**. Obviously when a strap **84** is installed in the end of a box such as **12** all of the tongues located adjacent the end of the box will enter and pass through all of the respective slots of the strap firmly and accurately seating the strap. Thereafter the upper ends of the tongues may all be peened or swaged in one blow of a suitable swaging tool. The opening **98** in the strap **84** is the equivalent of the opening **70** in the lug **60**.

A box having straps will normally have two straps one at each end.

In FIGS. 4–11 there are illustrated three different modifications of the lug structure described in connection with FIGS. 1–3.

In FIG. 4 the lug **100** has an upper horizontal portion **102** and a right angle depending portion **104** that is provided with an integral cross bar **106**. Extending upward from the cross bar **106** and extending partway into the horizontal portion **102** there is provided a slot **108**. Likewise there is a lower slot **110**. Post **112** is integral with the sidewall **16** and is constructed very similar to the post **30**. It has a tongue **114** spaced from the wall **16** whereby to provide the notch **116** into which the cross

bar **106** will engage, as shown best in FIG. 5. The tongue and notch are spaced below the top of the box more than in FIGS. 1 to 3. After being so engaged with the legs **118** straddling sides of the post **112**, the tongue **114** is deformed toward the wall **16** onto the cross bar **106** thereby locking the lug in place. The lug is suitably perforated and threaded as shown at **120**.

In FIG. 7 the post **122** is integral with the wall **16** and has an upper tongue **124** in its center spaced from the rear wall to provide notch **126**. The lug **128** in this case has a suitable square perforation **130** engaged upon the tongue **124** with its back end engaged in the notch **126**. Side ears **132** are thereafter bent down and into engagement with the sides of the post **122** as best shown in FIG. 9 in order to secure the lug in place. The upper end of the tongue **124** is also peened over.

In FIGS. 10, 11 and 12, the post **140** has a rear rectangular section **142** and a front rounded portion **144**. The lug **146** is a shallow dished stamping having a forward threaded opening **148** for an obvious purpose and having a rear circular perforation **150**. The post **140** has a reduced diameter portion **152** as an extension of the round portion **144** which provides shoulder **154** to support lug **146**. The rear edge **156** fits in a notch **158** provided in the rear portion **142** of post **140**. The upper end **160** of the reduced diameter portion **152** is peened over to lock the lug in place.

In FIGS. 13 through 16 the are illustrated two additional forms of the invention in which, instead of the straps or lugs heretofore used to mount the appliances, there are shown bars **250** and **350**, these being arranged with their widest dimensions vertically. It should be appreciated that the ends of said bars may be formed as lugs, or the constructions illustrated may be formed on straps having their widest dimensions horizontally.

In FIGS. 13 and 14 the box body is designated generally **200**, and the vertical post cast integrally with the box body and disposed on an interior wall **214** is designater **238**. The connection between the bar **250** and the box body **200** may be called a pin and hole connection, or perhaps more generically a key and recess connection. The post **238** has a reduced diameter portion **266** adjacent the upper end which is shown peened or swaged over at **276**. The reduced diameter portion forms the tongue or key thereby providing the notch **237** between itself and the side wall **214**. There is a shoulder **242** formed at the bottom of the notch **237**. The bar **250** which is intended to provide a suitable number of threaded holes such as shown at **262** for a standard junction box has each end **267** somewhat thicker than the main strip portion **252**, this being to enable a vertical slot or key-way **239** to be formed therein, such as for example, during casting. The threaded hole is provided in a boss or thickened portion **258**. Obviously, the strip portion **252** may be formed in a plane normal to that of the presently illustrated one, and likewise, a lug may be produced similar to those already described, by eliminating the portion of the bar beyond the thickened boss **258**.

In order to assemble the bar **250** to the box body **200**, the key-way or slot **239** is aligned with the key or tongue **266** and the bar pushed down upon the shoulder **242** which spaces the bar above the bottom wall (not shown) of the junction box **200** and properly spaces the upper edge **274** of the bar **250** relative to the top edge **224** of the junction box. The strip of metal **280** between the tongue **266** and the end of the bar engages in the notch **237** and secures the bar in place. The upper end of the tongue is peened or swaged over upon the top of the portion **276** as shown at **276**. As here shown this swaging operation splits the upper end of the tongue or key and bent portions over on opposite edges of the slot **239**. Any form of deformation is sufficient to spread this upper end and lock the bar **250** in place permanently.

In FIGS. 15 and 16 there is illustrated a form of invention using still another type of connection between

the side wall and the mounting bar. The junction box **300** has its side wall **314** provided with a vertical post or pillar **337** that has a tongue **366** and a lower shoulder or ledge **342** formed thereon. This is achieved by reducing the diameter of the post adjacent the top end **376**. The bar **350** has a thickened end portion **367** with a vertically arranged slot **339** therein opening to the end of the bar. The bar **350** is assembled to the box by engaging the slot **339** upon the tongue **366** and pushing the bar **350** downward until it rests upon the shoulders **342** which will be provided at opposite sides of the box. Thereafter the upper free ends of each tongue **366** will be peened, swaged or staked to enlarge this end and lock the bar **350** in place. In FIG. 15, the free end has been staked by splitting the same, as shown at **376**. Vertical ridges are cast integral with the side wall **314** as shown at **379**. These will guide the movement of the bar upon the tongue **366** during assembly, provide additional support for the same, and prevent possible deformation of the end **376** during the staking operation. It will be appreciated that there is a notch formed between the central tongue **366** and each of the ridges **379**, and that a portion of the shoulder **342** supporting the end **367** of the bar **350** is in effect provided at the bottom of each notch as shown by the broken line in FIG. 16.

The structure of FIGS. 15 and 16 is preferably used only with bars or straps because the slot **339** is open to the ends of the bar. If used with lugs, although there will be considerable frictional engagement after the staking operation, there is no positive opposition to pulling the lug out of the connection.

In FIGS. 15 and 16, the strips of metal between the slot and the side edges of the portion **367** or generally the equivalent of the strips **92** since they engage with the notch means formed between the tongue **366** and the ridges **379**.

It will be seen from a study of the specification and drawings that the invention teaches junction box construction in which the interior of the box has a minimum of obstructions. The supporting posts are, in every case integral with the walls and yet, the structure provided for connecting the appliance securing members, such as lugs or straps, is positive and efficient. Such structure does not depend entirely upon deforming portions of the box to attach the securing members, as in the case of prior junction boxes. Accordingly, the junction box of the invention is capable of being made stronger. Specifically, the structure of the invention makes feasible the use of lugs alone for supporting appliance, such lugs being secured only at their rear edges thereby providing a large working space within the box.

Variations are capable of being made without departing from the spirit or scope of the invention as defined in the appended claims.

What it is desired to secure by Letters Patent of the United States is:

1. An electrical junction box comprising a casting having side, end and bottom walls, to define a housing for receiving an electrical appliance therein, at least one wall being provided with a tapped boss on the interior of said wall but opening through the said wall to accommodate passage of electrical conductors, said box being open at its top providing a top edge, said box having means for mounting said electrical appliance therein comprising a plurality of vertically extending posts, each post having an upper reduced diameter portion forming a tongue thereon extending upward from a shoulder, at least the remainder of the post being integral with one wall along a lateral edge of said post, said tongue being spaced from a portion of said one wall whereby to form notch means between said tongue and wall portion, the free end of said tongue being at most slightly spaced below the plane of said top edge, an appliance securing member mounted in said box in engagement with at least one of said tongues and having a passageway therein extending normal to the plane of said bottom wall accommodating

said one tongue, a portion of said securing member adjacent said passageway being disposed within the notch means associated with said one tongue and the securing member engaging on said shoulder of said one tongue, an edge of said securing member being in engagement with the wall associated with said one tongue at said notch means, said securing member having at least a threaded socket therein, the said free end engaging through said passageway and terminating in a peened portion thereof overlying a portion of the securing member permanently locking said securing member to said tongue against both lateral and vertical components of movement.

2. The structure as claimed in claim 1 in which said securing member is a lug, the passageway in said securing member is a slot, the portion of the lug adjacent the passageway is a strip defined by said slot and said lug edge engaging the said wall, and in which the tongue is spaced from the said wall with said notch means formed between said tongue and wall.

3. The structure as claimed in claim 2 in which there are at least two of such lugs, one each on opposite walls of said box, and each of said opposite walls has a post, tongue, notch means and shoulder cooperating with the respective lugs.

4. The structure as claimed in claim 2 in which each of a pair of opposite walls has a pair of such posts, the tongue of each post is spaced from its wall so that the notch means comprise a notch between each tongue and wall with the said shoulder associated with said tongue being the bottom of the notch, in which the securing member is a lug and there are two such passageways in each lug, each comprising a slot, the slots of said lug being aligned with a pair of tongues, the portions adjacent the passageways being strips defined by the edge of said lug and the respective slots thereof, there being two such lugs, one being engaged with each pair of said tongues, each lug having at least one of said threaded sockets therein.

5. The structure as claimed in claim 4 in which said opposite walls are end walls, at least one of said end walls having said tapped boss and the pair of posts associated with said end wall being connected with said boss.

6. The structure as claimed in claim 1 in which said securing member is a strap having a plurality of said threaded sockets therein, there is a plurality of such passageways in said strap and each being in the form of a slot, there being one of said portions between each slot and an edge of said strap, the strap adapted to extend across the end portion of said box from side wall to side wall and adjacent the end wall with its upper surface at most slightly below the plane of the top edge, there being as many posts as slots each post being integral with one of said respective walls at the end portion of said box and each tongue being spaced from its wall to form said notch means and shoulder, the strap being secured to all of said tongues at the end portion of said box, and there being one of said straps with cooperating tongues and related structure at each end portion of said box.

7. The structure as claimed in claim 1 in which said securing member is a lug and the edge thereof is a straight edge, in which said passageway comprises an enclosed slot through said lug having a side parallel with said straight edge and spaced therefrom, said portion of said securing member comprises the strip between slot and straight edge and in which said tongue has a configuration conforming to that of said slot and is spaced from said wall whereby said notch means comprise a single notch between the tongue and wall.

8. The structure as claimed in claim 7 in which said lug has side ears bent at an angle relative thereto and each ear engaging an opposite vertical edge of said post.

9. The structure as claimed in claim 1 in which said securing member is a lug and the edge thereof is a straight edge, in which there are two of said passageways

and each comprises an elongate enclosed slot through the lug, both slots having their longer sides parallel with said straight edge and equally spaced therefrom and aligned with one another, said portion of said securing member comprising the strip between each slot and said straight edge, and in which there are two tongues and each has a configuration conforming to the respective configurations of said slots and being spaced from said wall whereby said notch means comprise a single notch between each tongue and said wall.

10. The structure as claimed in claim 1 in which said securing member is a lug and the edge thereof is a straight edge, the straight edge having a depending flange, in which said passageway comprises a perforation through the lug spaced from said straight edge, said portion comprises said depending flange, and the tongue has the same configuration as said perforation.

11. An electrical junction box comprising a casting having side, end and bottom walls, to define a housing for receiving an electrical appliance therein, at least one wall being provided with a tapped boss on the interior of said wall but opening through the said wall to accommodate passage of electrical conductors, said box being open at its top providing a top edge, said box having means for mounting said electrical appliance therein comprising a plurality of vertically extending posts, each post having an upper reduced diameter portion forming a tongue thereon extending upward from a shoulder, at least the remainder of the post being integral with one wall along a lateral edge of said post, said tongue being spaced from a portion of said one wall whereby to form notch means between said tongue and wall portion, the free end of said tongue being at most slightly spaced below the plane of said top edge, an appliance securing member mounted in said box in engagement with at least one of said tongues and having a passageway therein extending normal to the plane of said bottom wall accommodating said one tongue, a portion of said securing member adjacent said passageway being disposed within the notch means associated with said one tongue and the securing member engaging on said shoulder of said one tongue, an edge of said securing member being in engagement with the wall associated with said one tongue at said notch means, said securing member having at least a threaded socket therein, the free end engaging through said passageway and having a peened portion locking said securing members to said tongue, and said securing member is a lug of generally L-shaped configuration and the edge thereof is the straight edge juncture between the arms of the L, in which said passageway comprises a part of a slot which is open to said straight edge and has portions on each arm of said L, one arm being parallel to the plane of said wall and one being parallel with said top edge of said box, the portion of the slot in said vertical arm terminating in a cross member, the vertical arm having portions extending downward beyond the cross member, said downwardly extending portions straddling said post, the tongue being peened upon the cross member through the slot above the cross member.

12. The structure as claimed in claim 11 in which said slot is elongate with the longer side parallel to the wall.

13. An electrical junction box comprising a casting having side, end and bottom walls, to define a housing for receiving an electrical appliance therein, at least one wall provided with a tapped boss on the interior of said wall but opening through the said wall to accommodate passage of electrical conductors, said box being open at its top to provide a top edge, said box having lugs mounted therein adjacent the top edge to enable mounting of the said appliance and the lugs having suitable sockets therein for cooperation with fastening means of said appliances, certain of said lugs being short flat members arranged generally in a plane parallel to that of the top edge, each lug having a rear straight edge engaged

against the inner surface of a side or end wall of the box, there being at least one pair of such lugs on opposite walls, each lug having a rectangular enclosed slot spaced from its straight edge and providing a strip of material between said slot and straight edge, the wall to which each lug is engaged having a vertical integral post provided with tongue at its upper end, the tongue being of the same configuration as the slot of said lug and spaced from the wall by the same distance as the width of said strip of material whereby to form a notch, the lug being engaged upon the tongue with the tongue within the slot, the strip within the notch, the free end of the tongue peened to a split configuration permanently to lock the lug onto the tongue against both lateral and vertical components of movement, and the post and lug having cooperating means to limit the extent of movement of the tongue through the slot during engagement of the lug thereupon.

14. The structure as claimed in claim **13** in which said cooperating means comprises a shoulder at the bottom of the notch.

15. The structure as claimed in claim **13** in which each lug has a plurality of said slots and the slots are spaced apart, and there are as many posts and tongues as slots, positioned in alignment with the slots so that when mounted the lug will be engaged upon said tongues and held in place thereby.

16. An electrical junction box comprising a casting having side, end and bottom walls, to define a housing for receiving an electrical appliance therein, at least one wall provided with a tapped boss opening through the said wall to accommodate passage of electrical conductors,

said box being open at its top to provide a top edge, the box having a pair of metal straps engaged within the box at opposite ends thereof adjacent the top edge and having their top surfaces lying in a plane at most slightly spaced from and parallel with the plane of the top edge, the walls at each end of the box having interior integral vertical posts, each post having a tongue formed at the upper end thereof spaced from the individual wall with which the respective post is integral whereby to form a notch between said tongue and individual wall, a shoulder provided at the bottom of said notch, a plurality of slots in each strap disposed in alignment with the locations of the tongues at each end of the box and of the same respective configuration, each slot having a strip formed between it and an edge of the strap, the strap being engaged on all of the tongues at one end with all of the strips in the respective notches, the tongues extending through the slots, the strap against the shoulders, and the ends of the tongues peened to a split configuration over the surface of the strap to lock same permanently in position against both lateral and vertical components of movement, the strap having sockets therein for accommodating fastening means to mount said appliance to said strap.

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