March 31, 1925. 1,531,423

W. S. SIMPSON

SUPPORT FOR ELECTRIC FIXTURES

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Fig. 1.

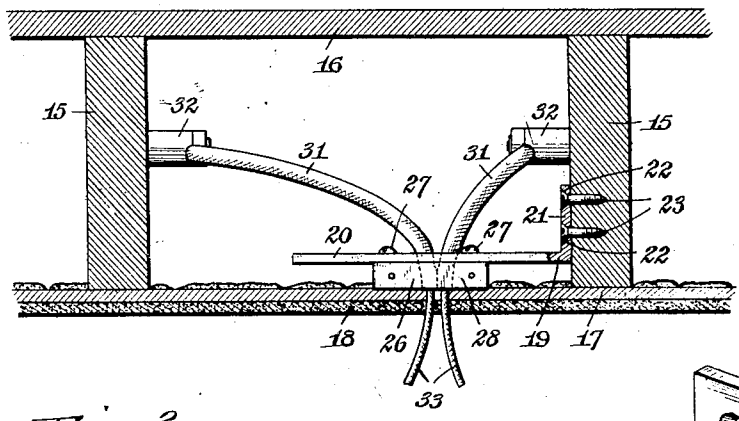


Fig. 2.

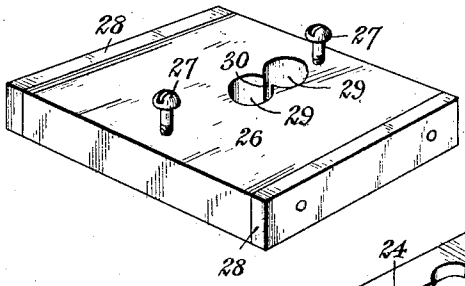


Fig. 3.

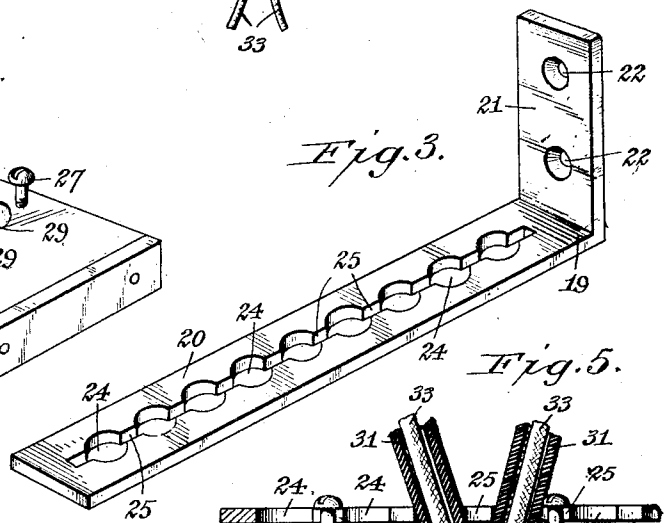


Fig. 5.

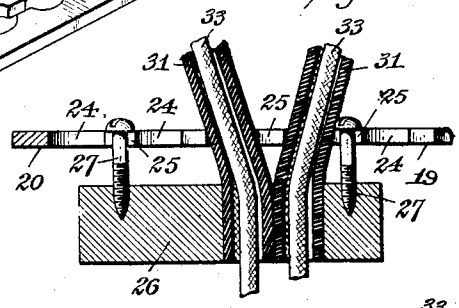


Fig. 4.

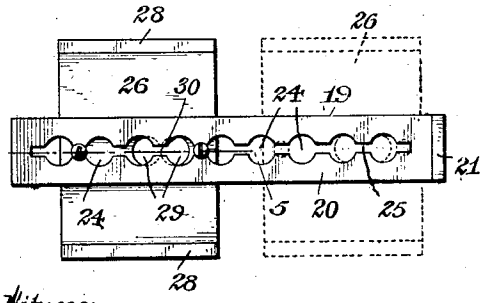
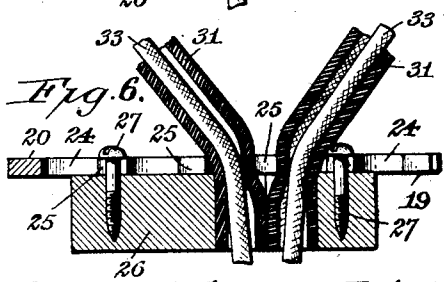


Fig. 6.



Witness:
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Fig. 7.

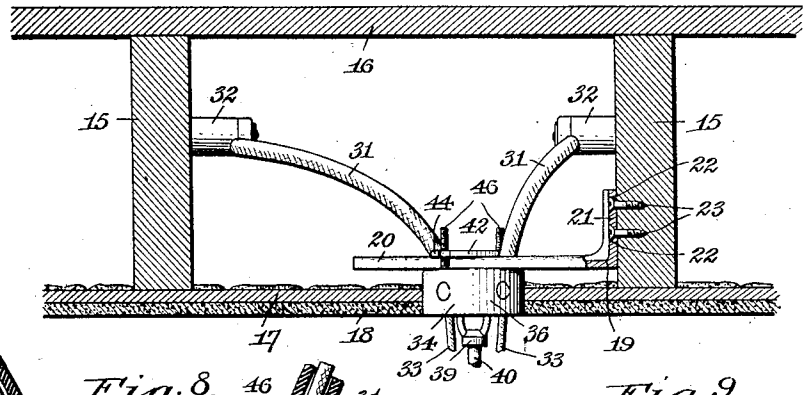


Fig. 8.

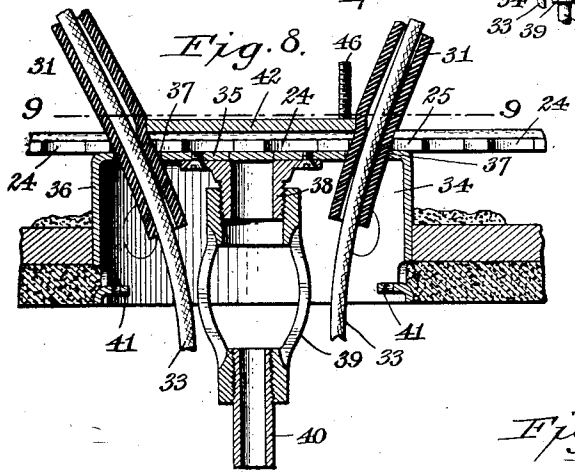


Fig. 9.

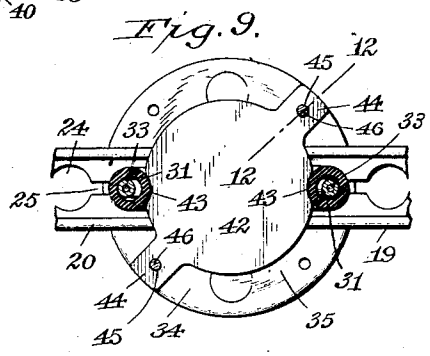


Fig. 10.

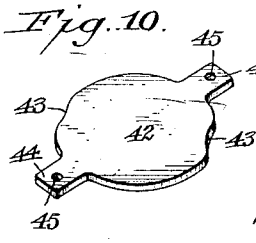


Fig. 13.

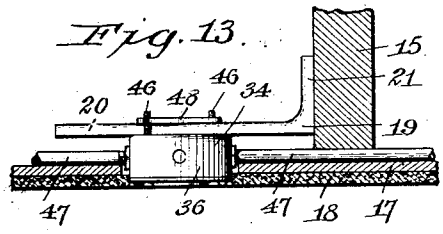


Fig. 14.

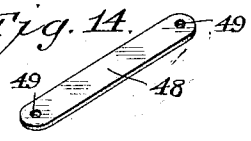


Fig. 11.

Fig. 12.

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Patented Mar. 31, 1925. 1,531,423

UNITED STATES PATENT OFFICE.

WILLIAM S. SIMPSON, OF NIAGARA FALLS, ONTARIO, CANADA.

SUPPORT FOR ELECTRIC FIXTURES.

Application filed October 26, 1921. Serial No. 510,604.

To all whom it may concern:

Be it known that I, WILLIAM S. SIMPSON, a subject of the King of England, residing at Niagara Falls, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Supports for Electric Fixtures, of which the following is a specification.

My invention relates to improvements in supports for outlet boxes, electric fixtures and the like, and has more particular reference to that class of supports adapted to be applied to joists or studs of buildings.

Heretofore, it has generally been the practice to construct a support for this purpose by building the same of pieces of wood fastened between joists or studs; each support so constructed invariably comprising a member arranged horizontally between joists and a second member fastened to one of the marginal portions of the horizontally-arranged member and also fastened to the joists. When arranged between studs, the support is also constructed of similar angularly-arranged wooden members fastened at opposite ends to two spaced studs. A support so constructed and fastened, however, presents a surface of considerable area which is to be covered with lath and plaster, and when the support is properly placed between joists or studs so as to provide a secure fastening for an electric fixture, a considerable area of plaster will be found to have an insecure fastening to the lath, due to the fact that the lath lies against the support the full width of the same and from joist to joist or stud to stud, as the case may be, and when plaster is applied over this area it cannot properly become keyed to the lath. Moreover, structures so formed and utilized as supports have many other disadvantages, among which may be stated that considerable expensive labor is required to construct and secure the same in place and that owing to the manner of securing structures of this kind to the joists or studs, exact placement is almost impossible. Oftentimes when applying lath to the joists or studs the support will be found to extend outwardly beyond the joists or studs and prevent proper securing of the lath, with the result that in fastening the lath, the support will be forced out of position and become loosened.

One of the objects of my invention is the production of a simple, cheap, and effective support which can be easily and conveniently secured to a joist or stud, and which has an adjustable part to which an outlet box or other electrical fixture may be attached, the whole being so arranged that an outlet box or other fixture can be conveniently positioned in the center of a room or at any predetermined point, although the support will be attached to only a single joist or stud, as the case may be.

A further object of my invention is the provision of a support for the purposes stated, which has improved means for securely locking the loom through which the electric current-conducting wires leading to a fixture are passed, thus fully protecting the insulation covering of the wire and guarding against spontaneous combustion.

A further object of the invention is to provide a metallic support adapted to be secured to a single joist or stud and to adjustably attach to said metallic support a block of wood of comparatively small superficial area beneath or outside of which lath and plaster are to be applied, the wooden block on account of its small size preventing the keying of the plaster to the lath over such a small area as not to materially interfere with the holding or retaining qualities of the plaster to the lath.

A further object of my invention is to provide a support of this kind in which the supporting member is secured at one end to a joist or stud and extends toward one of the adjoining joists or studs, and to adjustably retain a fixture-securing member to said supporting member so that a fixture can be secured to any point along the length of the supporting member.

With the above and other objects in view, the invention consists in the novel features of construction and in the arrangement and combination of parts to be hereinafter described and more particularly pointed out in the subjoined claims.

In the drawings:—

Fig. 1 is a section through a portion of a building showing my improved fixture support arranged between two joists and fastened to one of them.

Fig. 2 is a detached perspective view of the adjustable carrier or securing member.

Fig. 3 is a perspective view of the metallic supporting member.

Fig. 4 is a plan view of the complete support.

Fig. 5 is an enlarged vertical section taken

on line 5—5, Fig. 4, the carrier or securing member being shown loosely suspended from the supporting member of the support.

Fig. 6 is a similar view showing the carrier or securing member fastened firmly to the supporting member and the wire loom through which the current-conducting wires are passed locked securely in the support.

Fig. 7 is a section similar to Fig. 1, showing a modified form of my invention, the same being designed to support an outlet box.

Fig. 8 is an enlarged central vertical section through the outlet box and adjacent parts.

Fig. 9 is a horizontal section on a reduced scale taken on line 9—9, Fig. 8.

Fig. 10 is a detached perspective view of the loom lock-plate employed in said modified form of my invention.

Fig. 11 is a detached perspective view of the supporting member shown in said modification.

Fig. 12 is a vertical section taken on line 12—12, Fig. 9.

Fig. 13 is a sectional elevation of a still further modified form of my invention.

Fig. 14 is a detached perspective view of the clamping bar for clamping the outlet box shown in Fig. 13, against the wire loom.

Reference being had to the drawings in detail, the reference numeral 15 designates two joists of a building construction, 16 the flooring secured thereto, 17 lath applied to the under side of the joists, and 18 the plaster applied to the lath and keyed therebetween in the usual manner.

Secured to one of the joists is what I term a supporting member 19 having a long arm 20 and a short arm 21, the latter being provided with holes 22 through which screws 23, or if desired nails, may be passed to fasten the supporting member 19 to the joists. The short arm 21 is thus vertically-disposed while the long arm is horizontally-disposed and extends from the joist to which it is secured toward one of the adjacent joists spaced therefrom, said long arm being somewhat longer than one-half the distance between the joists so that when the fixture is to be placed closer to the left hand joist in Fig. 1, the supporting member may be reversed. In this manner it will be possible to secure the fixture at any point between two joists.

The supporting member 19 is provided with a series of spaced loom-receiving openings 24, which are connected by slots 25.

26 designates what I term a carrier or supporting member in the form of a rectangular block constructed of wood or other suitable material, said block having two alined securing elements in the form of screws 27 projecting upwardly therefrom and when said block is constructed of wood, end pieces 28 are secured to opposite ends to prevent splitting of the block. This block is provided with two almost circular openings 29, one opening into the other, as at 30. These openings are of a size conforming to the size of the openings 24 in the supporting members but have their axes closer together than adjacent openings 24 in said supporting member. After the supporting member 19 is secured to a joist, it is simply necessary to pass the screws or similar elements 27 upwardly through two of the openings 24 in the supporting member and then move the entire block along the supporting member to bring the openings 29 therein to the point at which the fixture is to be secured to the ceiling; it, however, being necessary that the screws 27 be positioned in two of the slots 25 with the heads of the screws resting against the upper face of the supporting member at opposite sides of said narrow slot portions to support the block. With the parts so arranged, the carrier or securing member has its upper face spaced from the under side of the supporting member, as shown in Fig. 3.

The loom 31 is secured to insulators 32 fastened to the joists 15, and the electric current-conducting wires 33 are passed through said loom, the loom being passed through two adjacent openings 24 in the supporting member and into the two openings 29 in the carrier or securing member 26, with the terminals of the wire extending downwardly a suitable distance beneath said carrier or securing member for connection to a fixture, the ends of the loom being preferably flush with the under side of the carrier or securing member, as clearly shown in Fig. 5. With the parts thus arranged, it is simply necessary to tighten the screws 27, whereupon the carrier or securing member will be drawn upwardly against the under side of the supporting member, as clearly shown in Fig. 6, and since the openings in the supporting member through which the loom is passed, are out of line with the openings in the carrier or securing member, the loom 31 is collapsed and locked within the supporting member so that withdrawal of the loom cannot take place.

In Fig. 4 I have shown the carrier or securing member 26 almost at the extreme left of the supporting member, and in dotted lines the extreme position at the opposite end of the supporting member is shown. With the carrier or securing member spaced from the supporting member, as shown in Fig. 5, the loom can be conveniently passed through the desired openings 24 in said supporting member and inserted into the openings 29 of the carrier or securing member, the locking of the loom taking place upon the upward movement of said carrier or secur-

ing member toward and against the supporting member.

With the parts fastened in place, as shown in Figs. 1 and 6, the supporting member is so positioned that when the carrier or securing member is placed thereagainst, the under side of said carrier or securing member will be in line with the lower edge of the joists 15, thus the lath 17 can be easily fastened in place, allowing the ends of the current-conducting wires 33 to extend downwardly through the space between two adjacent laths. The ends of the wires 33 will also extend through the plaster applied to the lath, sufficient extension being allowed for connection to wires or parts arranged within or applied to an electric chandelier or other fixture which can be fastened in place by means of screws passed through the plaster and lath and threaded into the carrier or securing member 26 of the support. In this manner a secure fastening is provided for the chandelier or other fixture.

In Fig. 7 I have shown a modified form of my invention and in lieu of the carrier or securing member shown in the preceding figures, an outlet box 34 is secured to the under side of the supporting member 19. This outlet box has an inner wall 35 adapted to lie against the under side of the supporting member 19 and a depending flange 36 serving as the cylindrical side wall of said box. The inner wall 35 is provided with two loom openings 37 offset slightly with respect to two of the openings 24 in said supporting member. The loom 31 is passed through two of the openings 24 in said supporting member and through the two openings 37 in the inner wall of said outlet box, terminating within said box, the electric current-conducting wire 33 being passed through the loom and extending downwardly through the box for connection to a chandelier or other electrical fixture. The lath 17 and plaster 18 surrounds the cylindrical wall 36 of said outlet box.

Secured to the inner wall of said box is a nipple 38 onto which a fitting 39 may be threaded, and into said fitting 39 the upper end of a chandelier or other fixture 40 is threaded.

It is to be noted that the lower edge of the cylindrical wall 36 of said outlet box is flush with the plaster, and that two ears 41 extend inwardly from said wall, to which may be secured a cover (not shown), such as commonly used with outlet boxes.

As the material from which the outlet box is formed is comparatively thin, it is necessary to resort to the use of a securing member in the form of a locking plate 42, which is approximately of cylindrical outline with slight curved depressions 43 formed in its edge at diametrically opposite points. Said securing member or lock plate is provided with projecting ears 44 having tapped openings 45 therein, said openings receiving securing screws 46 passed upwardly through openings in the inner wall of the outlet box, said screws lying at opposite sides of the supporting member 19.

When fastening the loom in place, the outlet box is lowered so as to be spaced from the supporting member and thus permit the ready insertion of loom through two of the openings 24 in said supporting member and through the openings 37 in the inner wall 35 of the outlet box. The securing member or lock plate 24 is then placed in position above the supporting member with the two separate lengths of loom positioned against the curved depressions 43 of said lock plate, and with the securing scews 46 entered in the tapped openings 45 formed in the ears 44 of said lock plate. Upon tightening the securing screws 46, the outlet box is moved upwardly against the under side of the supporting member and the lock plate 42 drawn firmly against the upper side of said supporting member, at the same time compressing the loom and locking the same in place. While the loom will be locked by the upward movement of the outlet box against the supporting member, due to the openings in said box and member being out of exact alinement, I nevertheless consider it advisable in many instances to utilize the lock plate 42 as an additional safeguard against the withdrawal of the loom.

In Fig. 13 I have shown conduits 47 entering the outlet box 34 at the sides, and in cases of this kind the electric current-conducting wires are passed through said conduits and enter said outlet box, being passed through said box or arranged to terminate within said box, depending on the particular fixture or purpose for which the support is to be used. In cases of this kind a flat retainer plate 48 is utilized in connection with the securing screws 46, said screws being passed upwardly through the inner wall of the outlet box and along opposite sides of the supporting member 19, said screws being threaded through tapped openings 49 in said retainer plate 48.

Having thus described my invention, what I claim is:—

1. A support for electric fixtures comprising a member having means for securing the same to a portion of a building and having a member to which the fixture is to be secured, said members having openings out of complete registration to receive loom and co-acting to lock the loom against withdrawal when securing one member to the other.

2. In a support for electric fixtures the combination of a supporting member having means to secure the same to a portion of a building and a securing member adjust-

able along said supporting member and movable toward and from said supporting member, said members having openings through which loom is passed and said openings being out of complete registration to lock the loom when fastening said securing member to said supporting member.

3. A support for electric fixtures, comprising a supporting member having spaced loom openings therein, a securing member having spaced loom openings therein, and means for fastening said securing member to said supporting member, the loom openings in said members being offset to lock the loom against movement when tightening said securing member against said supporting member.

4. A support of the kind described, comprising a supporting member having a series of spaced loom openings through any two of which loom is to be passed, a securing member having a pair of loom openings whose axes are out of alinement with the selected openings of said supporting member and into which the ends of the loom are inserted, and means for drawing said securing member toward or against said supporting member.

5. A support of the kind described, comprising a supporting member having two arms arranged at right-angles to each other, one of said arms being adapted to lie against and be fastened to an element of a building structure and the other having a series of spaced loom openings and narrow slots connecting said loom openings, a securing member having a loom opening therein, and a pair of screws extending from said securing member and passing through two of said narrow slots with the heads of said screws bearing against said supporting member at opposite sides of said slots, said securing member being drawn upwardly against the under side of said supporting member upon tightening said screws, thereby locking the loom within the openings of said members.

In testimony whereof I affix my signature.

WILLIAM S. SIMPSON.