This invention relates to an improved electrical outlet box.

An object of this invention is to provide an outlet box which may be used for fixtures, the box being formed out of dielectric material.

Another object of this invention is to provide in an outlet box an improved connector block or body which is so constructed and arranged that the wires leading to and extending from the box may be electrically connected together without soldering and tapping the wire ends together.

A further object of this invention is to provide in an outlet box an improved connector block which is so constructed and arranged as to provide for the solderless connection of a number of wires up to the capacity of the box.

A further object of this invention is to provide in an outlet box an insulated connector block having holes therein for receiving the bare wire ends, and clamping screws threaded through connector strips embedded in the block, the screws binding the bare wire ends in inclined sockets formed in the insulated block.

The invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawings wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a detail plan view of an outlet box constructed according to this invention with the cover removed.

Figure 2 is a longitudinal section taken through the box.

Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Figure 4 is a bottom plan view of the cover plate for the connector block mounted in the box, and

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 1.

Referring to the drawing, the numeral 10 designates generally a box structure which, in the present instance, is formed out of insulating material and includes a bottom wall 11, a side wall structure 12 and a top wall 13. The top wall 13 may be secured to the edges of the side wall structure 12 in any suitable manner.

As shown in the drawing the side wall structure 12 is formed of obusely related side wall forming members 14, 15, 16, 17, 18, 19, 20 and 21. The side wall forming members 14, 16, 18 and 20 are substantially longer than the side wall forming members 15, 17, 19 and 21 and are adapted to have bushings 22 extended therethrough. The bushings 22 are of conventional construction and include a nipple 23 which is extended through an opening 24 formed in one of the side wall forming members, the nipple 23 having at its inner end a flange or collar 25. A nut 26 is adapted to be threaded onto the outer end of the nipple 23.

A wire connector block 27 is disposed within the box 10 and comprises an insulating body 28 which is formed with a central opening 29. The body 28 is detachably secured to the bottom wall 11 by means of a threaded nipple 30 having a nut 31 threaded onto the lower end thereof. A fixture connection 32 of conventional construction which includes a threaded collar 33 is threaded onto the inner end of the nipple 31 and bears against the adjacent side of the block body 28.

The body 28 is formed, as shown in Figure 5, with a plurality of circumferentially spaced apart upwardly and outwardly inclined openings 34 within which the bared end 35 of a wire 36 is adapted to be extended. The openings 35 constitute sockets and terminate at their inner ends in a horizontal chamber 37. The body 12 on its upper side is formed with a series of arcuate recesses 38, 39 and 40. Arcuate metallic contact strips 41, 42 and 43 are adapted to be seated in the recesses 38, 39 and 40, respectively, and a cover plate 44 is adapted to engage over the outer sides of the connector or contact strips and bear against the adjacent side of the body 28.

A plurality of screws or fastening members 45 are threaded through the contact strips 41, 42 and 43 and are also threaded into the body 28. The screws or wire clamping members 45 are adapted at their inner ends to contact with the inner end portion of the bared wire 35, as shown in Figure 5, so that when the screws 45 are in clamping position, the inner ends of the bared portions 35 will be bent or distorted, as shown at 46. As will be noted from Figure 5, the threaded openings 47 in the body 28 intersect the longitudinal axis of each socket 34 so that the clamp-bolts or screws 45 will tightly bear against each bared end of a wire to thereby tightly clamp or hold the wire end within the socket 34.

The several contact strips 41, 42 and 43 are provided for permitting extension of wires into and out of the outlet box, and preferably, the contact strip 43 is substantially shorter in length.
than the strips 41 and 42. The reason for this is that the contact strip 43 is designed for use with the fixture support 32 and with a switch connected to the fixture. In other words, one wire going to the fixture is extended through the support 32 from, as an example, the contact strip 41, and the other side of the electric circuit which may be formed by the contact strip 42 is extended out of the outlet box to one side of the switch and the opposite side is then connected to one clamping screw of the contact strip 43. The strip 43 has two clamping elements associated therewith and the second clamping element is adapted to clamp one end of a wire which is extended through the fixture support 32 to the fixture.

With an outlet box as hereinbefore described, it is possible to connect a series of wires to the connector block 21 without soldering the connecting ends of the wires leading into and out of the box. Furthermore, it is not necessary to insulate the twisted and soldered wire ends as is the usual procedure. There may be as many clamping bolts or screws 45 in the connector block 21 as may be desired, and it will be readily apparent that any desired wires may be disconnected from the connector block by loosening of the associated clamping screws.

This outlet box has been designed particularly for formation out of insulating material although if desired the box 18 may be formed out of metal, the connector block being in either case formed out of insulating material.

What I claim is:

In an electrical outlet box, an annular connector block of rectangular cross section, comprising an insulating body, a cover for said body, said body formed with segmental recesses on the upper side thereof, arcuate connector strips engaging in said recesses, said block formed with annularly spaced apart radially extending vertically inclined openings along the upper edge thereof, said body, said cover and said connector strips formed with aligned vertical openings, each of said latter openings communicating with the lower end of said former openings, screws threadably engaged in said latter openings and extending to the lower end thereof for clamping wires extending in said inclined openings, said screws electrically connecting said wires to said connector strips and securing said top to said body.

JAMES ROY HENDERSON.

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