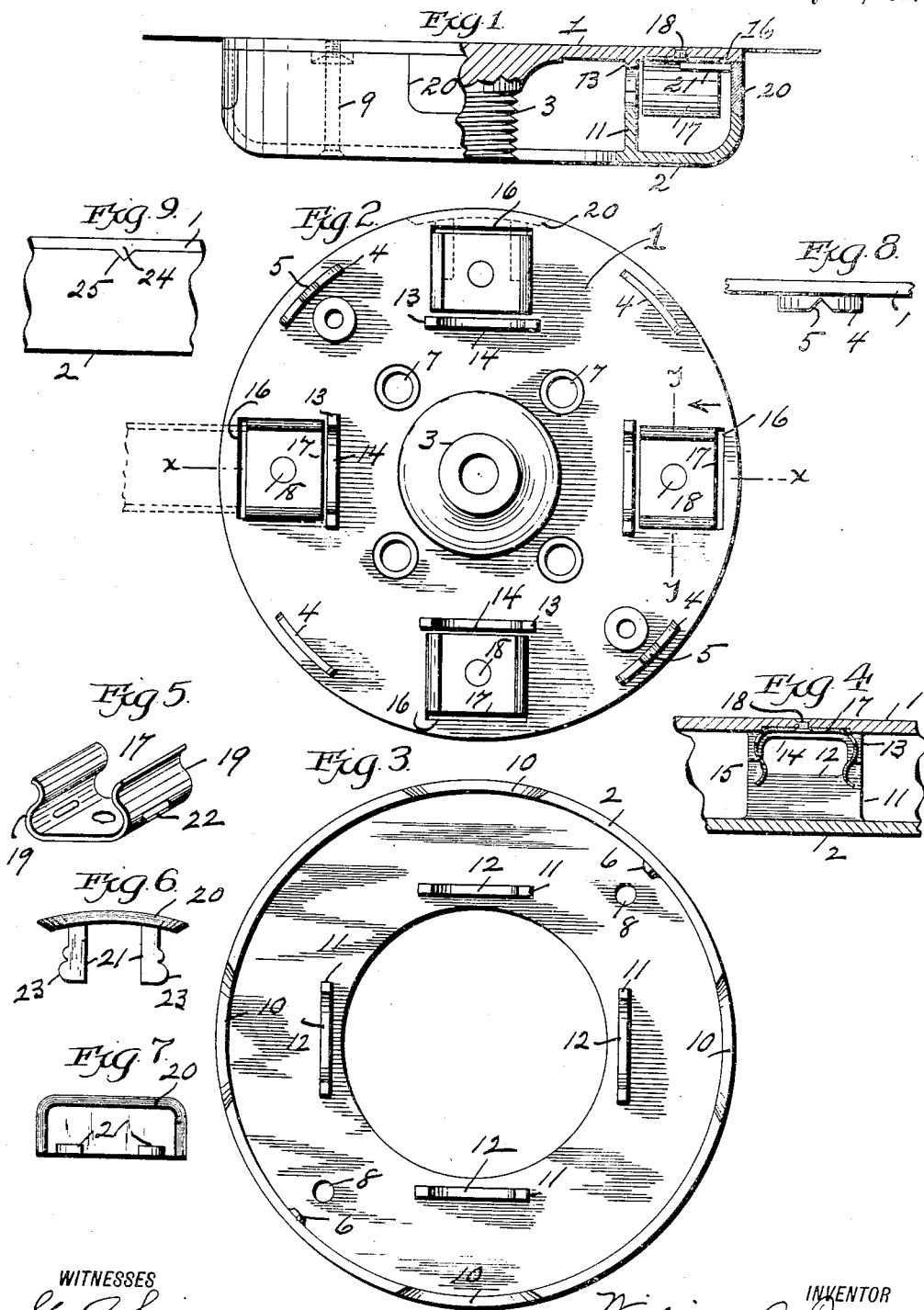


W. A. BONNELL.
OUTLET BOX FOR ELECTRIC CONDUITS.
APPLICATION FILED JULY 8, 1915.

1,234,271.

Patented July 24, 1917.



WITNESSES
Geo. A. Senior
Ed. A. Allerton

INVENTOR
William A. Bonnell
BY
Frank C. Fischer
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM A. BONNELL, OF BROOKLYN, NEW YORK.

OUTLET-BOX FOR ELECTRIC CONDUITS.

1,234,271.

Specification of Letters Patent.

Patented July 24, 1917.

Application filed July 8, 1915. Serial No. 38,716.

To all whom it may concern:

Be it known that I, WILLIAM A. BONNELL, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Outlet-Boxes for Electric Conduits, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it pertains to make, construct, and use the same, reference being had to the accompanying drawings, and to numerals of reference marked thereon, forming a part of this specification.

My invention relates to improvements in outlet boxes for electric conduits, and more particularly to a type thereof provided with conduit openings normally closed by means of removable plates known as "knock-outs," and has for its object the provision of simple and effective means for holding the conduits, preferably a metal molding, in position in the box in such a manner that the greatest economy and the greatest clamping effect of the metal molding may be secured.

A further object is to provide means for holding so-called "knock-outs" in position in the conduit-receiving sockets or apertures in the boxes when the same are not in use.

With these and other objects in view, the invention consists in the construction and arrangements of parts illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of an outlet box embodying my invention, said box being shown partly in vertical section, taken on line *x—x* of Fig. 2.

Fig. 2 represents a bottom plan view of the back plate.

Fig. 3 represents an inside plan view of the cap section of the box.

Fig. 4 represents a fragmentary, sectional elevation taken on line *y—y* of Fig. 2, and looking in the direction indicated by the arrow.

Fig. 5 represents a perspective view of the spring conduit clamp.

Figs. 6 and 7 represent respectively, a plan view and a side elevation of one of the closure plates or knock-outs.

Fig. 8 represents a fragmentary view of the back plate, illustrating one of the positioning lugs to be engaged with a positioning lug secured on the cap section of the box; and

Fig. 9 represents a modified form of a positioning lug secured to the back plate to engage with a recess formed in the wall of the cap section of the box.

Similar numerals of reference refer to like parts throughout the specification and drawings.

In the embodiment of my invention shown in the drawings, the box body is shown as composed of two separable sections, a wall or back plate 1 and a cap section 2. The plate 1 is provided with an exteriorly screw-threaded nipple 3 adapted to have an electrical or other fixture mounted thereon. Formed integrally with the plate 1, are a plurality of segmental beads 4, set in slightly from the peripheral edge of the plate. These beads are for the purpose of insuring the proper positioning of the cap section with relation to said plate, two of which are provided with a groove 5, to be engaged by the integral tongues 6 formed on the inside peripheral surface of the cap section 2, for insuring accuracy in the positioning of the plate 1 and cap section, and preventing a rotative movement of one relative to the other when the parts have been brought together.

The wall plate 1 is provided with a plurality of screw-holes 7 to facilitate its attachment to the wall or ceiling of a room. The cap section 2 is preferably a cuplike casing having an enlarged opening in the bottom thereof. This opening is concentric with the nipple 3, and is of a diameter sufficiently great to permit the convenient handling of the terminal wires leading from the conduits. The opening in the bottom of the cap 2 also affords means for convenient access to the central portion of the plate 1 for the purpose of attaching the box, by means of said plate, to the wall or ceiling of a room. The bottom of said cap is provided with screw-openings 8, through which screws pass, which serve to connect the two separable sections, namely, the back plate 1 and the cap section 2.

The upper part of the cap section 2 is recessed to form a plurality of inwardly-beveled conduit openings 10 in the side wall thereof. In the form of the invention shown, four such openings are provided, the centers of said openings being arranged 90° apart, so as to permit the running of a straight line of conduit, or the running of a line having a right-angular bend therein. The

top edge of the cap 2 is finished off flat, so as to abut squarely against the face of the wall plate 1, thus closing said recesses at the top thereof when the cap is removed in relation to the said wall plate.

Extending upwardly on the inside and from the bottom of the cap, are a plurality of integral beads 11, corresponding in number to the conduit openings 10 with which they are in alinement, said beads being each provided with a groove or channel 12. A similar number of corresponding, integral beads 13 are formed on the inner side of the wall plate 1. Grooves or channels 14, similar to the grooves 12 are provided in the beads 13, so that when the wall plate and cap section are secured together, and the beads 13 of the wall plate 1 abut against the beads 11 of the cap section 2, a divided bushing 15 is provided with rounded corners, as clearly indicated in Fig. 4 of the drawings, which will prevent the abrasion of the insulation of a wire being drawn thereover, from or to the conduit. Adjacent to the beads 13 of the wall plate 1, are recesses or depressions 16, for the reception of the spring clamps 17 to be hereinafter described, said spring clamps being secured in said recesses or depressions 16 in any convenient or well-known manner, as for instance, by means of rivets 18.

The spring clamps 17 illustrated in Fig. 5 of the drawings, in its preferred form, is made from a single piece of suitable spring material, and is of such dimension that the base of the spring clamp will fit the recess or depression 16, so that a conduit, preferably in the shape of a metal moulding of a channel shape, such as illustrated in dotted lines in Fig. 2 of the drawings, is frictionally held between the spring side walls 19 of said clamp, thereby keeping the under side of the molding in contact with the wall plate, thus insuring a perfect ground between the box and conduit, thereby preventing electrical arcs from heating or otherwise injuring the box. The inner edge of the metal molding preferably abuts against the divided bushing 15, to limit the inward movement of the same.

The said conduit openings 10 are preferably closed by means of knock-out plates 20, preferably of cast metal. The inner edge of each of these plates is provided at all points thereof, excepting the top, with a beveled surface, adapted to engage with the beveled surface of the beveled conduit openings 10. The knock-out plates are further provided with a pair of outwardly-extending legs 21, designed to have frictional engagement with the walls 19 of the spring clamps 17, and to be held frictionally in position thereby, as indicated in dotted lines in Fig. 2 of the drawings.

Openings 22 are provided in the side walls

19 of the clamp, designed to receive the enlargement 23 formed on the legs 21 of the knock-out, to prevent accidental separation of the plate from the spring clamp.

In Fig. 9 of the drawings, I have shown the wall plate 1 provided with an integral lug 24, designed to be received into a recess or cut-away portion 25, formed in the edge of the cap section 2, for the purpose of insuring the proper positioning of the cap section with relation to said plate, thereby preventing a rotative movement of one relative to the other when the parts have been brought together.

When running a line of conduits, the box is prepared by removing the desired closure plates 20. This is usually done by merely pulling the legs 21 thereof out of frictional engagement with the spring clamp. When installing the conduit, the end thereof is merely thrust through the desired openings 10, from which the knock-out has been removed, the end of the conduit being thrust into the spring clamp 17 between the side walls 19, whereby it is frictionally held, the end of the conduit abutting against the divided bushing 15.

It will be observed that an outlet box made in accordance with my construction may have any closure plate or knock-out readily removed without separating the two box sections, and that the said plates or knock-outs are carried in their entirety by the wall plate section, being merely held in place by frictional engagement with the spring clamp 17, the flat edge of the knock-out bearing against the flat inner surface of the wall plate 1 thus greatly facilitating the assembling of the device during the manufacture or when in use.

It is not my intention to limit the invention to the precise details of construction shown in the accompanying drawings, it being apparent that such may be varied without departing from the spirit and scope of my invention.

I claim:

1. An outlet box embodying therein a body comprising a wall plate and a cap section inclosing one face thereof, said wall plate provided with means adapted to engage with corresponding means on the cap section for the proper positioning of the cap section with relation to said plate, registering beads formed on the inside of the wall plate and cap section forming divided bushings, a plurality of removable spring conduit clamps provided with openings in the sides thereof secured in depressions formed in said wall plate, a plurality of conduit openings formed in the side wall of said cap, said openings being provided with beveled faces and a closure plate or knock-out provided with a beveled edge adapted to normally close each of said openings and

further provided with holding means adapted to engage with the openings in the sides of said spring clamp.

2. An outlet box embodying therein a body comprising a wall plate and a cap section inclosing one face thereof, registering beads formed on the inside of the wall plate and cap section forming divided bushings with rounded corners, a plurality of removable spring conduit clamps designed to frictionally hold a metal molding, secured in depressions formed in said wall plate, a plurality of conduit openings formed in the side wall of said cap, said openings being provided with beveled faces and a closure plate or knock-out provided with a correspondingly-beveled edge adapted to engage with the beveled faces of said openings to normally close each of said openings.

3. An outlet box embodying therein a body comprising a wall plate and a cap section inclosing one face thereof, registering beads formed on the inside of the wall plate and cap section forming divided bushings

with rounded corners, a plurality of removable spring conduit clamps designed to frictionally hold a metal molding, secured in depressions formed in said wall plate, said depressions being located adjacent to the divided bushings, a plurality of conduit openings formed in the side wall of said cap, said openings being provided with beveled faces and a closure plate or knock-out provided with a correspondingly beveled edge adapted to engage with the beveled faces of said openings to normally close each of said openings, the said closure plates being further provided with holding means adapted to have holding engagement with said spring conduit clamps, thereby removably securing said closure plates to the outlet box.

This specification signed and witnessed this 2nd day of July, 1915.

WILLIAM A. BONNELL.

Witnesses:

FRED'K C. FISCHER,
CLIFFORD A. ALLISTON.