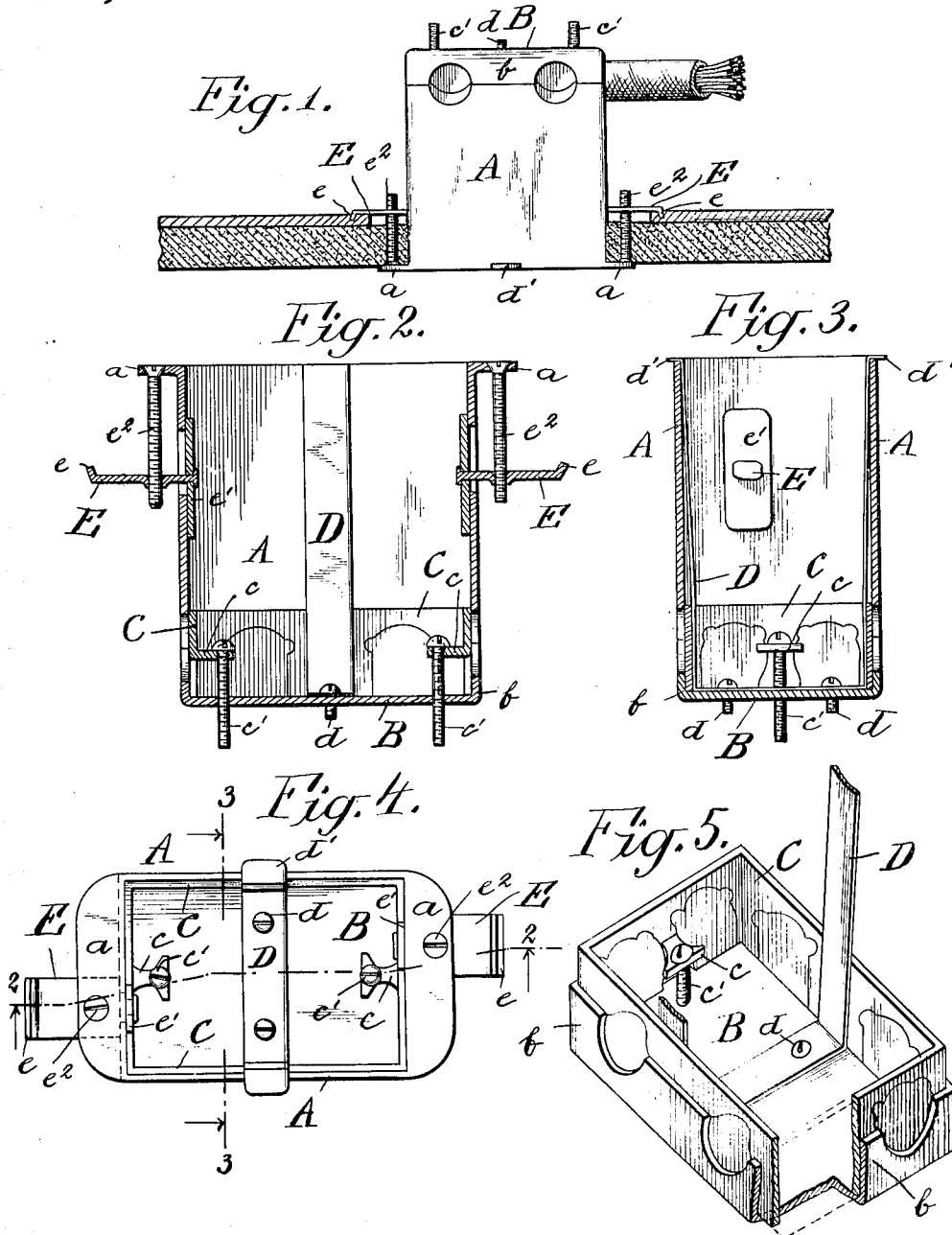


E. T. GREENFIELD.
JUNCTION BOX.
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916,436.

Patented Mar. 30, 1909.



WITNESSES:

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EDWIN T. GREENFIELD, OF KIAMESHA, NEW YORK.

JUNCTION-BOX.

No. 916,436.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed October 19, 1907. Serial No. 398,164.

To all whom it may concern:

Be it known that I, EDWIN T. GREENFIELD, a citizen of the United States, residing at Kiamesha, in the county of Sullivan and State of New York, have invented a certain new and useful Improvement in Junction-Boxes, of which the following is a specification.

This invention relates to junction-boxes for use in installing electric apparatus in buildings, and its object is to effect certain improvements in the construction of such boxes whereby the ends of the conductors may be more conveniently secured in position relatively to the box and the box may be readily mounted rigidly in its opening in the wall or other support.

One feature of the invention lies in the provision of a box having a bottom portion separable from the side walls of the box and to which the ends of the conductors entering the box may be readily secured while the bottom portion is separated from the side walls, so that the hands of the operator are not obstructed by the side walls of the box. When the ends of the conductors have been secured to this bottom portion, the latter may be quickly fastened to the side walls and the complete box mounted in the opening in the wall.

Another feature of the invention resides in the provision of improved means for securing the box to the wall. Heretofore it has been the practice to provide such junction-boxes with lateral flanges or brackets having openings therethrough and to pass screws or nails through these openings and drive them into the plaster and laths of the wall. Often a box so mounted is not rigidly held, as the plastering crumbles away and the screws or nails are quite apt to split the ends of the laths. In accordance with the invention, clamping members are provided extending outwardly from opposite sides of the box and adjustable relatively to the depth of the box, in order to clamp the ends of the laths between them and outwardly extending flanges formed on the sides of the box at the mouth thereof. I have found in practice that by clamping the box to the wall in this manner, rather than by using screws or nails as has been done heretofore, a much more rigid mounting of the box is obtained.

The preferred embodiment of the inven-

tion is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the box; Figs. 2 and 3 are transverse sections thereof on lines 2—2 and 3—3, respectively, of Fig. 4; Fig. 4 is a top view of the box; and Fig. 5 is a perspective view of the separable bottom portion broken away in part.

Referring to these drawings, the box consists of side walls A, which may be formed from a blank of sheet-metal bent to form the four walls of the box and bring the edges of the blank together, these edges being secured together in any suitable manner. At the mouth of the box, flanges *a* are provided, extending outwardly from opposite sides of the box and provided with openings therethrough. The bottom portion B of the box is a rectangular sheet-metal plate having an upwardly extending flange *b* around the four sides thereof. The bottom portion B is of such size that, when it and the side walls are assembled, the upper edge of this flange abuts the lower edge of the side walls A. A number of circular openings are cut in the side walls of the box near the bottom thereof, one-half of each of these openings being in the portion A and the other half being in the flange *b*. Within the base portion B is a rectangular piece C consisting of a strip of sheet-metal bent to rectangular form to bring the ends of the strip together. This piece C is of such size that it fits snugly within the flange *b* on the bottom portion B. At opposite sides of the member C, ears *c* are punched out and turned inwardly at a right angle to the walls of the member C, and each of these ears has an opening therethrough to receive a screw *c'*. The ends of these screws extend through openings in the base portion B to secure the member C thereto. The metal of the member C directly back of each of the openings in the side walls of the box is partially punched out or entirely punched out and a plug reinserted in the opening, so that the metal may be readily displaced, as by a blow of a hammer, in order to provide an opening for a conductor through one of the side walls of the box.

In order to secure the bottom portion of the box to the side walls thereof, a spring D, consisting of a U-shaped spring-metal strip, is secured to the bottom B of the box

by screws d . The side members of this spring are of such length that outwardly bent ears d' at the upper ends thereof will take over the upper edge of the side walls of the part A, in order to secure the side walls to the bottom portion B with their edges abutting, as shown in Fig. 2.

In the side walls of the box, rectangular openings are formed through each of which passes a clamping member E having one or more tangs e at its outer end. Each of these clamping members is secured at its inner end to a small metal plate e' of such size that in any position of the clamping member E the plate e' closes the opening in the side wall of the box through which the member E extends. Screws e^2 passing through the openings in the flanges a at the mouth of the box enter threaded openings in the clamping members E, so that by turning these screws the clamping members are adjusted relatively to the depth of the box.

In using the box, the bottom portion B is separated from the side walls A by pressing the arms of the spring D inwardly until the ears d' release the side walls A. Such of the plugs in the rectangular portion C as may be necessary are removed and the conductors are passed through the openings formed by the removal of these plugs. The screws e' are then tightened to draw the rectangular member C down into the bottom portion B of the box until the conductors are securely clamped between the walls of the member C and the flange b which form the opening through which the conductor extends. The side members of the spring D are then passed upwardly within the side walls A of the box until the ears d' thereof snap over the upper edge of the side walls and thus hold the bottom portion of the box to the side walls with the edges thereof abutting. The box is then ready to be installed in the opening in the wall. This is done by loosening the screws e^2 until they release the clamping members E and withdrawing those members through their respective openings in the side walls of the box. When the box has been placed in its opening in the wall, these clamping members are again passed through the openings in the side walls until the plates e' lie against the side walls of the box, and the ends of the screws e^2 are then threaded into the openings in the clamping members E. Then by tightening up the screws e^2 , the clamping members will be drawn upwardly toward the flanges a until they grip the laths and plastering of the wall between them and the flanges a . This being done, the box is finally held in position and there is little danger of it becoming loose due to crumbling of the plastering or splitting of the laths.

Having described my invention, what I

claim as new therein and desire to secure by Letters Patent of the United States is as follows:

1. A junction box consisting of side walls and a bottom portion formed separately and the depth of the bottom portion being small relatively to the depth of the side walls, said bottom portion being formed to provide openings in the walls thereof for conductors, clamping means on the bottom portion for gripping the conductors to the bottom portion independently of the side walls, and means for securing the bottom portion and the side walls together, substantially as set forth.

2. A junction box consisting of side walls and a bottom portion formed separately and the depth of the bottom portion being small relatively to the depth of the side walls, said bottom portion being formed to provide openings in the walls thereof for conductors, clamping means on the bottom portion for gripping the conductors to the bottom portion independently of the side walls, and a spring for securing the bottom portion and the side walls together, substantially as set forth.

3. A junction box having a shallow rectangular bottom portion, the walls of which are formed to provide openings for conductors, a rectangular clamping member fitting within the side walls of the bottom portion, means for positioning the clamping member within the bottom portion to cause it to grip the conductors, side walls for the box formed separate from the bottom portion, and a flat spring secured to the bottom portion and engaging the side walls to secure the bottom portion and side walls together, substantially as set forth.

4. A junction box having side walls, a bottom portion separate therefrom, said bottom portion being formed to provide openings through which conductors may extend, a flat spring secured to the bottom portion and engaging the side walls to secure the bottom portion and the side walls together, and means for clamping the conductors to the box, substantially as set forth.

5. A junction box having a shallow rectangular bottom portion, the walls of which are formed to provide openings for conductors, a rectangular clamping member fitting within the side walls of the bottom portion, means for positioning the clamping member within the bottom portion to grip the conductors, side walls for the box formed separate from the bottom portion, and means for securing said side walls and the bottom portion together, substantially as set forth.

6. The combination of a support having an opening therein, a junction box in said opening, outwardly extending flanges on opposite sides of the box at the mouth thereof,

clamping members adjustably mounted upon the sides of the box, and means for drawing said members toward said flanges to grip the support and hold the box in position, substantially as set forth.

7. A junction box having outwardly extending flanges on opposite sides thereof and openings in the side walls adjacent to said flanges, clamping members extending through said openings, plates on the inner

ends of said members closing said openings, and means for adjusting the clamping members toward and away from said flanges, substantially as set forth.

This specification signed and witnessed 15 this 18th day of October, 1907.

EDWIN T. GREENFIELD.

Witnesses:

WILLIAM T. RUETE,
CHAS. E. WILSON.