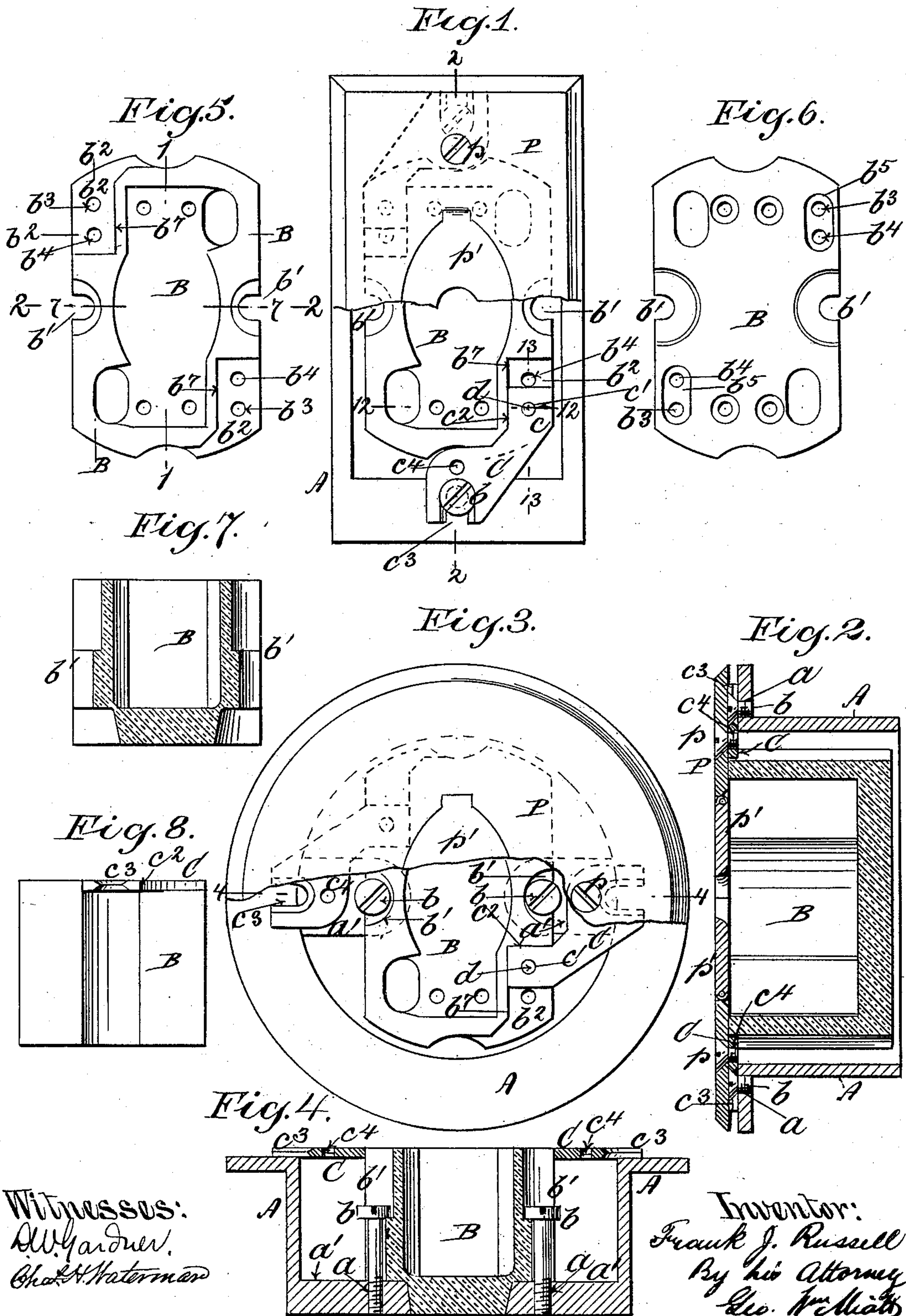


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ELECTRIC CONNECTION.  
APPLICATION FILED NOV. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 1.







# UNITED STATES PATENT OFFICE.

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## ELECTRIC CONNECTION.

SPECIFICATION forming part of Letters Patent No. 755,393, dated March 22, 1904.

Application filed November 6, 1903. Serial No. 180,016. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK J. RUSSELL, a citizen of the United States, residing in the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Electric Connections, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My improvements relate to means for supporting terminal-boxes and covers in and on conduit-outlets for circuit-wires, such terminal-boxes being known as "flush" receptacles; and the invention consists, primarily, in the use of reversible bracket angle-plates upon the terminal-box, whereby variations in the distance between the diametrically-opposed screw-bolt holes in the conduit-outlet may be compensated for and whereby a rectangular adjustment of the parts may be effected, as fully disclosed hereinafter; and, secondarily, my invention includes the construction and arrangement of parts described and claimed specifically.

In the accompanying drawings, Figure 1 is a front elevation of an elongated outlet and cover, the latter partly broken away to show one-half of the terminal-box. Fig. 2 is a section upon plane of line 2 2, Fig. 1, with the cover in place. Fig. 3 is a front elevation of a circular conduit-outlet with the cover partly broken away. Fig. 4 is a section upon plane of line 4 4, Fig. 3. Fig. 5 is a view of the face of the terminal-box; Fig. 6, a rear elevation of the same; Fig. 7, a transverse section upon plane of line 7 7, Fig. 5. Fig. 8 is an end elevation of the terminal-box, showing a bracket angle-plate in position. Fig. 9 is a view similar to Fig. 3, showing the terminal-box supported upon the face of the conduit-outlet in a horizontal position; Fig. 10, a similar view showing the terminal-box supported upon the face of the conduit-outlet in a vertical position. Fig. 11 is a face view of the terminal-box, the angle-plates extending laterally. Fig. 12 is a section upon plane of line 12 12, Fig. 1. Fig. 13 is a section upon plane of line 13 13, Fig. 1. Fig. 14 is an end view of one of the reversible angle-plates;

Fig. 15, a side view of the same; Fig. 16, a section upon plane of line 16 16, Fig. 15; and Fig. 17, an edge view looking in the direction of the arrow, Fig. 15.

A is a flush receptacle or conduit-outlet of any configuration. These outlets A are embedded in the wall or any other support afforded by the conditions of use. They are of various manufactures and shapes and vary somewhat in size; but all are formed with two diametrically-opposed female screw-threads *a* for the reception of the screw-bolts *b*, which secure the terminal-boxes B in position. These female screw-threads *a* are sometimes formed in lugs *a'*, projecting internally from opposite side walls of the outlet, as shown in Figs. 3 and 4; but they are more frequently formed upon the face or front edge of the conduit-outlet A, and when thus arranged the commercial standard of distance apart is from two and three-quarters to three and one-quarter inches.

B is the terminal-box, made of insulating material and similar in general construction to that shown in my concurrent application, Serial No. 169,339, filed August 13, 1903, and shown herein by way of illustration only, since I do not confine myself to any particular form or construction of terminal-box, although they are generally of the elongated rectangular outline indicated. These terminal-boxes B receive the ends of the circuit-wires and are each provided with an extension-circuit plug-seat, contacts, &c., similar to the manner set forth in my concurrent application above named, or they may contain switch, cut-out, or other similar mechanism.

Each terminal-box B is preferably formed with the screw-head seats *b' b'*, one on either of its longitudinal sides and in line with the center for engagement with the heads of the bolting-screws *b b* when the latter are made to engage the female screw-threads *a a*, formed in the integral lugs *a' a'*, as shown in Figs. 3 and 4, or with female screws formed in the bottom of a conduit-outlet so provided, as shown in my prior application herein named. At diametrically-opposed corners are formed seats *b<sup>2</sup> b<sup>2</sup>*, preferably countersunk in the face of the terminal-box B, for the reception of



the shanks  $c$  of the bracket angle-plates C C. Each shank  $c$  is formed with a female screw-thread  $c'$ , adapted to engage with the end of an anchor screw-bolt  $d$ , passed up through one of the holes  $b^3$  or  $b^4$  in the body of the terminal-box B. These screw-bolt holes  $b^3$  and  $b^4$  open at the rear into a common recess  $b^5$ , the terminal wall of which,  $b^6$ , constitutes a bearing for the head of the anchor-screw  $d$ , as will be seen by reference to Figs. 6, 12, and 13.

It is to be noted that the shank  $c$  of each bracket angle-plate C is rectangular in shape and that the nut-hole  $c'$  is situated in the center of the square of the rectangle. Each sheet  $b^2$  is of corresponding rectangular form, adjoining the screw-hole  $b^4$ ; but the inner side wall  $b^7$  is extended in a straight line beyond the screw-hole  $b^3$  to afford lateral support to the edge  $c^2$  of the shank  $c$  when the bracket angle-plate C is adjusted lengthwise upon and with relation to the terminal-box B, as in Figs. 1 and 10. Parallel to the said straight edge  $c^2$  and in a plane distant from the same equal to one-half the width of the terminal-box B each bracket angle-plate C is bifurcated to form a seat-slot  $c^3$  for the reception of the beveled head of a securing-screw  $b$ , and just back of this slotted seat  $c^3$  and in the same plane parallel with the straight edge  $c^2$  each bracket angle-plate is formed with a female screw-thread or nut-hole  $c^4$  for the reception of the end of one of the screws  $p$ , by which the cover-plate P is secured in position.

The screw-bolt holes  $b^3$   $b^4$  are in a plane parallel to the central longitudinal plane 1 1, Fig. 5, of the terminal-box B, and the screw-bolt holes  $b^4$  are distant from the transverse central plane 2 2, Fig. 5, of the said box a distance equal to the distance of the holes  $b^3$  from the said central longitudinal plane 1 1 of the box. Thus when the bracket angle-plates are arranged in one position, as shown in Figs. 3 and 11 of the drawings, the slotted seats  $c^3$  and nut-holes  $c^4$  will be in a line with the central transverse axis 2 2 of the terminal-box B, while when arranged in the other position they will be in line with the central longitudinal axis 1 1 of said terminal-box.

While, however, this arrangement is symmetrical and desirable, it is not absolutely essential, since it is obvious that it may be modified or deviated from without departing from the spirit and intent of my invention in this respect, which contemplates the presentation of the seat-slots  $c^3$  and nut-holes  $c^4$  in radial lines from the center of the terminal-box, the radial line of presentation in one position of the bracket angle-plate being at right angles to the radial line of presentation when the bracket-plate is arranged in the other position. In other words, the radial lines of adjustment are ninety degrees apart, and the seats for the shanks of the bracket angle-plates, provided they are equidistant, may

obviously be varied in position around the center of the terminal-box, if desired, with like result—namely, the affording of diametrically-opposed means for securing the terminal-box B to the outlet A and for attaching the cover P to the terminal-box B.

It will be noted that the change in position of the bracket angle-plates C involves their reversal. For this reason the edges of each seat-slot  $c^3$  is preferably V-shaped in cross-section, so as to afford a seat on each side of the plate for the conical head of one of the binding-screws  $b$ .

The cover P is provided with the usual slides or doors  $p'$   $p'$  for admitting of access to the interior of the terminal-box B for the insertion of an extension-circuit plug or for any other purpose, according to the use to which the device is to be applied.

As hereinbefore stated, the female screw-threads  $a$  when formed upon the face of the conduit-outlet A for the reception of the screws by which the terminal-box B is secured to the said conduit-outlet vary in the different conduit-outlets encountered commercially, the difference in distance between the diametrically-opposed threads  $a$  sometimes approximating one-half an inch as compared with a given size or make of conduit-outlet. Furthermore, the conduit-outlets A are of rectangular, oblong, round, and other form and may be set in the wall or other support in various positions with relation to the plane in which the opposed female screw-threads  $a$  occur. Hence it is not only desirable to compensate for any variations in distance between the said screw-holes  $a$ , but also to provide for the application of the cover P in such manner as to suit convenience or appearance. My object is, hence, to attain as nearly universal adjustment and adaptability of parts as is possible under the circumstances, and this I accomplish by the use of my reversible bracket angle-plates C, since the difference in length of radial projection of the seats  $c^3$  of the bracket angle-plates C according to their position upon the terminal-box B, in conjunction with the fact that they are in the form of elongated slots, affords a scope of adjustment for the securing-screws  $b$  equivalent to about one-half an inch. As a result the terminal-box B is equally adaptable, for instance, as shown in the drawings, to an elongated or a round conduit-terminal A and when applied to the latter may be arranged in either of two positions at right angles to each other, as will be seen by a comparison of Figs. 9 and 10.

Again, even where the terminal-box B is supported upon internal lugs  $a'$ , as shown in Figs. 3 and 4, it may be desirable to apply the cover P in one of the two positions rendered available by the reversible angle-plates C, since the positions of the nut-holes  $c^4$  for the reception of the screws  $p$ , which secure the cover P in place, may obviously be ar-



ranged either transversely or longitudinally with relation to the terminal-box.

It is obvious that by the use of my reversible bracket angle-plates C, I render the terminal-box to which they are applied available in situations and upon conduit-outlets that would otherwise require a different special construction and arrangement of parts—an advantage of great practical importance in a commercial sense and a saving of much delay and inconvenience in installation work generally.

It is to be understood that by the use of the term "conduit-outlet" herein applied I designate any wall box, pocket, or receptacle adapted to receive and afford an outlet for electric conduits and that by the term "terminal-box" I do not limit myself to an extension-circuit plug-holder, but include switches, cut-outs, and other electrical appliances.

It is to be understood that while I have herein shown and described female screw-holes in the circuit-outlet for engagement with securing-screws any other mechanical expedient may be resorted to—such as the substitution of bolts, pins, or studs in lieu of the screws—without deviating from my invention.

While the general outline of my bracket-plates C is unimportant, except in so far as it relates to the straight edges hereinbefore described, it is apparent that they are essentially and practically rectangular in so far as function is concerned in that they provide for the support of the terminal-box in two positions at right angles to each other.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a conduit-outlet of a terminal-box formed with a plurality of reversible bracket angle-plates together with means for securing said bracket angle-plates to the conduit-outlet in different positions, whereby the terminal-box may be secured to the conduit-outlet at different distances from the center of the terminal-box.

2. The combination of a terminal-box, two bracket angle-plates reversible thereon, a conduit-outlet, and means for securing the said bracket angle-plates thereto in different positions, whereby the terminal-box may be secured to the conduit-outlet at different distances from the center of the terminal-box.

3. The combination of a terminal-box formed with two bracket-seats each provided with two bolt-holes, two bracket angle-plates the shanks of which are adapted to fit the said seats, each shank being formed with a bolt-hole, and the outer end of each bracket-plate being formed with a bolt-head seat and screw-nut hole, together with a conduit-outlet formed with two diametrically-opposed bolt-holes, for the purpose described.

4. The combination of an elongated terminal-box formed with diagonally-opposed seats for reversible bracket-plates, detachable

means for securing said reversible angle-plates in position, said reversible angle-plates each formed with a bolt-head seat and a screw-nut hole, extending radially from the center of the terminal-box in either position of the plate, a conduit-outlet formed with diametrically-opposed plates for the purpose described.

5. The combination of a terminal-box, reversible angle-plates thereon, each formed with a nut-hole for engagement with one of the screws by which the cover-plate is secured in position, said cover-plate and securing-screws and detachable means for securing the reversible angle-plates to the terminal-box for the purpose described.

6. The combination of a terminal-box reversible angle-plates thereon, each formed with an elongated bolt-head seat extending radially from the center of the terminal-box in either position of the angle-plate, detachable means for securing the said angle-plates upon the terminal-box, a conduit-outlet formed with diametrically-opposed bolt-holes, and screw-bolts for securing the conduit-outlet to the said angle-plates, for the purpose described.

7. The combination of an elongated terminal-box formed with diagonally-opposed seats for the shanks of two reversible angle-plates, each seat being formed with two bolt-holes parallel to the central longitudinal plane of the terminal-box, said reversible angle-plates the shanks of each being formed with a screw-nut hole, and the outer end of each being formed with an elongated bolt-head seat and screw-nut hole extending radially from the center of the terminal-box in either position of the angle-plate, bolts for securing the angle-plates to their seats on the terminal-box, a conduit-outlet formed with diametrically-opposed bolt-holes, bolts for securing said conduit-outlet to the angle-plates, a cover-plate formed with bolt-holes and screw-bolts for securing the cover to the angle-plates, for the purpose described.

8. The combination of an elongated terminal-box, reversible angle-plates secured thereon by means which are detachable, each of said reversible angle-plates being formed with an elongated seat for the head of a screw-bolt and with a screw-nut hole, said elongated seat and screw-nut hole being so formed upon the angle-plate that when the latter is in one position on the terminal-box they will be in alignment with the central longitudinal plane of the terminal-box and when in the other position in line with the transverse central plane of the terminal-box, a conduit-outlet formed with diametrically-opposed bolt-holes, screw-bolts for securing the conduit-outlet to the said angle-plates, a cover-plate and screw-bolts for securing said cover to the said angle-plates for the purpose described.

9. The combination of the conduit-outlet A formed with the internal lugs  $a'$ ,  $a'$ , having



screw-nut threads therein, the terminal-box B, formed with the screw-bolt seats  $b'$ , the screw-bolts  $b$ , the reversible angle-plates C, detachable means for securing the said angle-plates to the terminal-box, the cover P, and means for securing it to the said angle-plates for the purpose described.

10. The combination of the conduit-outlet A, formed with diametrically-opposed screw-bolt holes  $a$ , the terminal-box B, formed with the seats  $b^2$ , and bolt-holes  $b^3, b^4$ , the reversible angle-plates C, formed with the screw-nut holes  $c'$ , elongated seats  $c^3$ , and nut-screw holes  $c^4$ , the anchor-bolts  $d$ , the screw-bolts  $b$ , for securing the conduit-outlet to the angle-plates C, the cover-plate P and the screw-bolts  $p$ , for securing the cover-plate to said angle-plates C, for the purpose set forth.

11. The combination of the conduit-outlet A, formed with the diametrically-opposed screw-bolt holes  $a$ , the terminal-box B, formed with the seats  $b^2$ , screw-bolt holes  $b^3, b^4$  and straight edge  $b^7$ , the reversible angle-plates C,

formed with the screw-nut holes  $c^4$ , straight edge  $c^2$ , elongated seat  $c^3$ , and screw-nut holes  $c^4$ , the anchor-bolts  $d$ , the screw-bolts  $b$ , for securing the conduit-outlet A, to the angle-plates C, the cover P, and the screw-bolts  $p$ , for securing the cover to the said angle-plates for the purpose described.

12. The combination with the terminal-box B and conduit-outlet A, formed with the diametrically-opposed screw-holes  $a$ , of the reversible bracket angle-plates C, formed with the elongated screw-head seats  $c^3$ , the edges of which are made V-shaped in cross-section for the purpose described, detachable means for securing the said angle-plates to the terminal-box, and bevel-headed screws  $b$ , for securing the said angle-plates to the conduit-outlet, substantially as and for the purpose set forth.

FRANK J. RUSSELL.

Witnesses:

D. W. GARDNER,  
GEO. WM. MIATT.