

A. C. GRUNWALD.
ELECTRICAL CONNECTION.
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1,383,718.

Patented July 5, 1921.

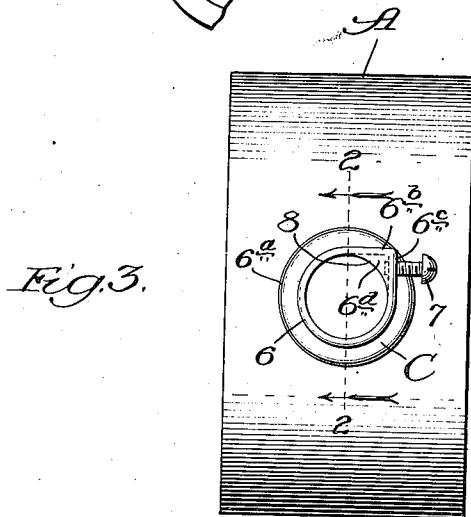
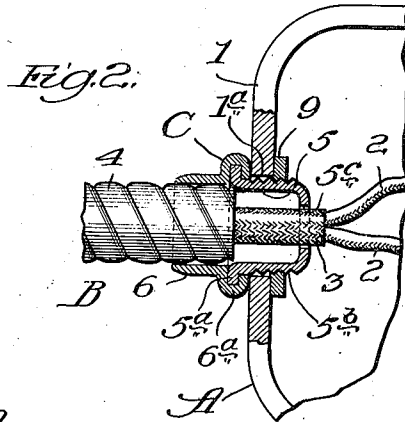
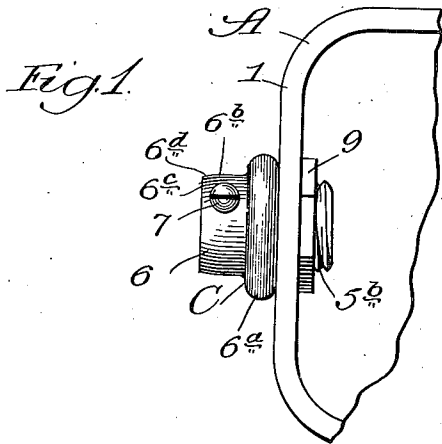
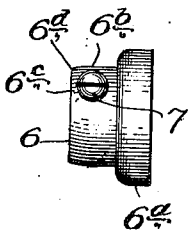


Fig. 6.



UNITED STATES PATENT OFFICE.

ALBERT C. GRUNWALD, OF CHICAGO, ILLINOIS, ASSIGNOR TO PRECISION METAL WORKERS, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ELECTRICAL CONNECTION.

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To all whom it may concern:

Be it known that I, ALBERT C. GRUNWALD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Electrical Connections, of which the following is a specification.

This invention relates particularly to means for connecting electric cables with electric outlets, or for analogous purposes; and the primary object is to provide a simple and inexpensive connecting or attaching device which is thoroughly suited for the purpose.

The invention is illustrated in its preferred embodiment in the accompanying drawing, in which—

Figure 1 represents a broken plan view of an outlet box equipped with the improved connecting device; Fig. 2, a broken view partly in section showing an electric cable connected with the outlet box by means of the improved connector, the section being taken as indicated at line 2—2 of Fig. 3; Fig. 3, an elevational view of the outlet box, showing the connection applied, the cable being removed, however; Fig. 4, an inner end view of one of the members employed in the construction of the connecting device; Fig. 5, an end view of the nipple portion of the device; Fig. 6, a side elevational view of the outer member of the connecting device; and Fig. 7, an elevational view of the threaded nipple of the connecting device.

In the construction illustrated, A represents an electric outlet box; B an armored electric cable; and C the improved connecting device.

As is well understood, electric outlets for use in wiring houses and other buildings usually are formed of sheet-metal. Such a box may have its wall provided with one or more perforations for receiving one or more electric cables. In the illustration given, the outlet box A is shown provided with a wall 1 having a perforation 1^a extending therethrough. The cable B is shown as comprising wires 2, and an insulating sheath 3, and a flexible armored sheath 4.

The connecting device C comprises a threaded nipple 5, which is provided with a flange 5^a; and a tubular shank 6 having an enlarged portion 6^a which receives the flanged portion 5^a of the member 5 and which is spun or pressed inwardly to tightly

embrace the flange 5^a. Thus, the enlarged portion 6^a of the member 6 ultimately is in the form of an enlarged bead, the annular recess of which contains a flange 5^a, which is securely gripped within the bead. The tubular shank 6 is of general cylindrical form, but has its cylindrical wall struck or pressed outwardly to form a V-shaped projection 6^b. This projection affords a substantially tangential wall 6^c, which is provided with a capped perforation which accommodates a screw 7. In striking the cylindrical wall of the tubular member 6 outwardly to form the hollow V-shaped projection 6^b, the metal at the extremity is not pressed outwardly, but retains its circular form, and in the forming operation the metal is so drawn as to form a web or wall 6^d which may slope slightly. The wall 6^d covers or houses the end on the recess or hollow which is formed by striking the metal outwardly in the formation of the V-shaped projection; and it will be noted from Fig. 3 that the wall 6^d terminates in an arc 8 which conforms to the inner surface of the cylindrical member 6. This enables the inner end of the screw to be sheathed beneath or back of the wall 6^d when the cable is to be inserted; and in the operation of inserting the cable, the outer end of the member 6 presents an outer cylindrical guide which facilitates the entry of the cable, and there is no danger of the cable catching against the screw. After the cable is inserted the screw is turned in so as to securely engage the inserted end portion of the armor 4.

The nipple 5 is equipped with a nut 9, the wall 1 of the outlet box being clamped between the nut 9 and the bead afforded by the flange 6^a.

The construction describes and enables the connecting device or attaching nipple to be formed of sheet metal. Thus, the member 5 may be stamped or drawn from a disk of steel; may have its bottom provided with the perforation 5^c, and may have the screw thread 5^b cut in its cylindrical wall; and a tubular shank 6 may likewise be stamped from a steel disk into the form illustrated in Fig. 6, after which the parts may be securely united together by a suitable stamping operation, it being understood that the flanged portion 5^a of the nipple 5 is inserted within the enlarged portion 6^a of the tubu-

lar shank 6 and the metal of the portion 6^a is spun or pressed over the flange 5^a. The thread may cut in the member 5 either before or after the two members are united.

5 The construction described renders it perfectly feasible to manufacture the improved connecting device from sheet metal by suitable stamping operations, and thus enables a thoroughly practical device to be produced at a very moderate cost. If the thread 10 5^b be cut in the nipple before the parts are secured together, it is easy to extend the thread close enough to the flange 5^a so that when the metal of an enlarged portion of 15 the member 6 is spun over the flange and the nipple inserted through the wall 1, it will be certain that the portion of the nipple which projects inside of the wall will be threaded, so that the nut 9 can be turned up 20 close against the wall. In some instances, the wall 1 is only one sixteenth of an inch thick, so that it is advantageous to have the nipple threaded up quite close to the flange 6^a, as shown in Fig. 2.

25 The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitation should be understood therefrom, but the appended claims should be construed as broadly as 30 permissible in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is—

1. A connecting device of the character set forth, comprising a hollow threaded 35 nipple having its extremity bent outwardly

and forming an annular flange, a seamless tubular shank having an enlarged end-portion forming an annular flange clenched over and inclosing said first-named flange, and a screw extending through a wall of 40 said tubular shank and adapted to engage a cable.

2. A device of the character set forth comprising a threaded nipple equipped with a flange, an integral tubular shank having an 45 enlarged portion receiving and clenched upon said flange, said tubular shank having an outwardly struck hollow V-shaped projection, and a screw extending through a wall of said V-shaped projection and adapted 50 to engage a cable extending into said tubular shank.

3. A device of the character set forth comprising a threaded nipple provided at one end with a flange, a nut on said nipple, a 55 tubular shank having an enlarged end portion receiving and clenched upon said flange, said tubular shank having its cylindrical wall struck outwardly at one side to provide a lateral hollow embossment, the metal at 60 the outer end of said tubular shank forming a web carrying the outer end of the recess within said embossment, and a screw extending through one wall of said embossment and adapted to engage a cable, the 65 inner end of said screw being adapted to be sheathed by said web when the screw is unturned to admit the cable.

ALBERT C. GRUNWALD.