

T. J. DONOVAN & E. G. ALDERSON.
JUNCTION SLEEVE FOR ELECTRICAL CONDUCTORS.

(Application filed Dec. 31, 1901.)

(No Model.)

2 Sheets—Sheet 1.

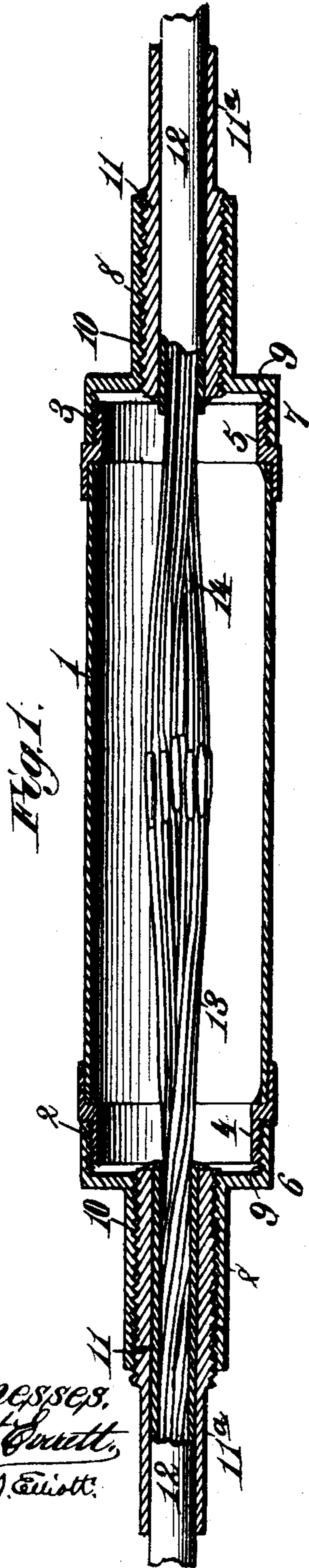


Fig. 1.

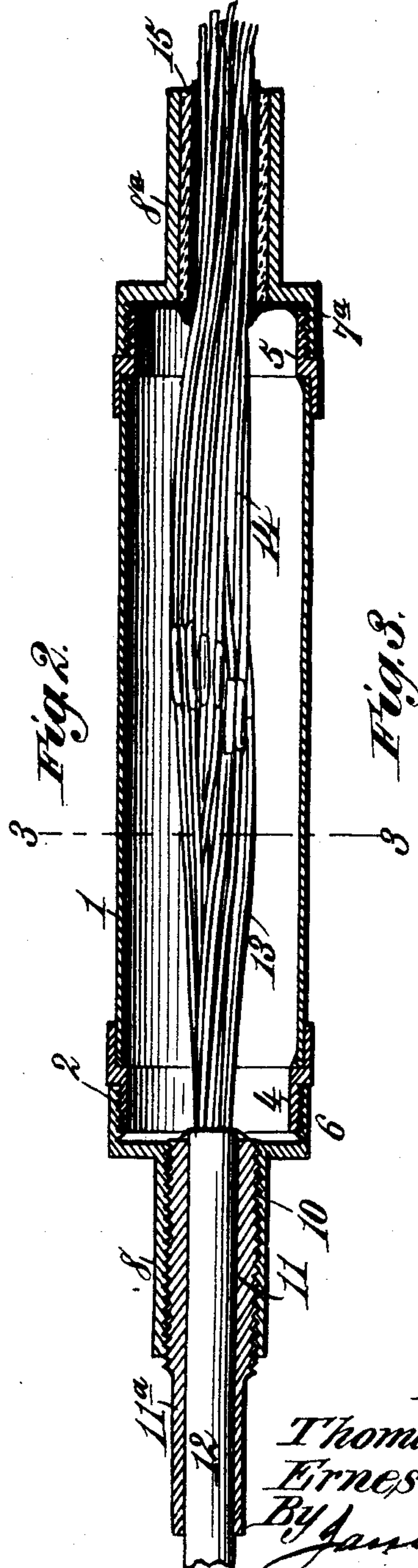


Fig. 2.

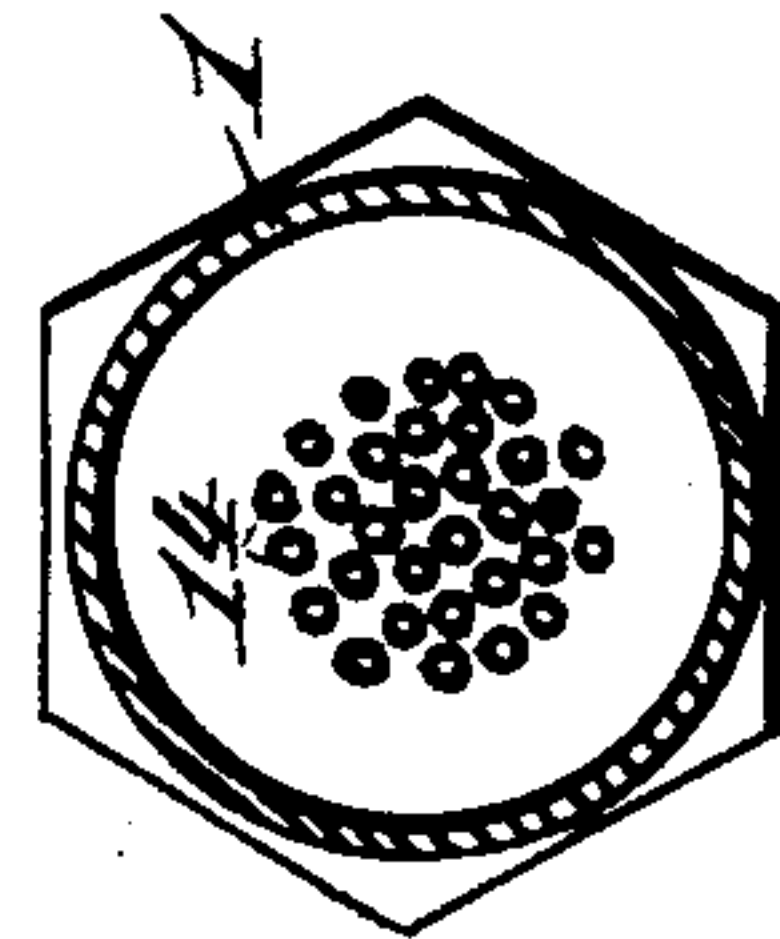


Fig. 3.

Witnesses,
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2 Sheets—Sheet 2.

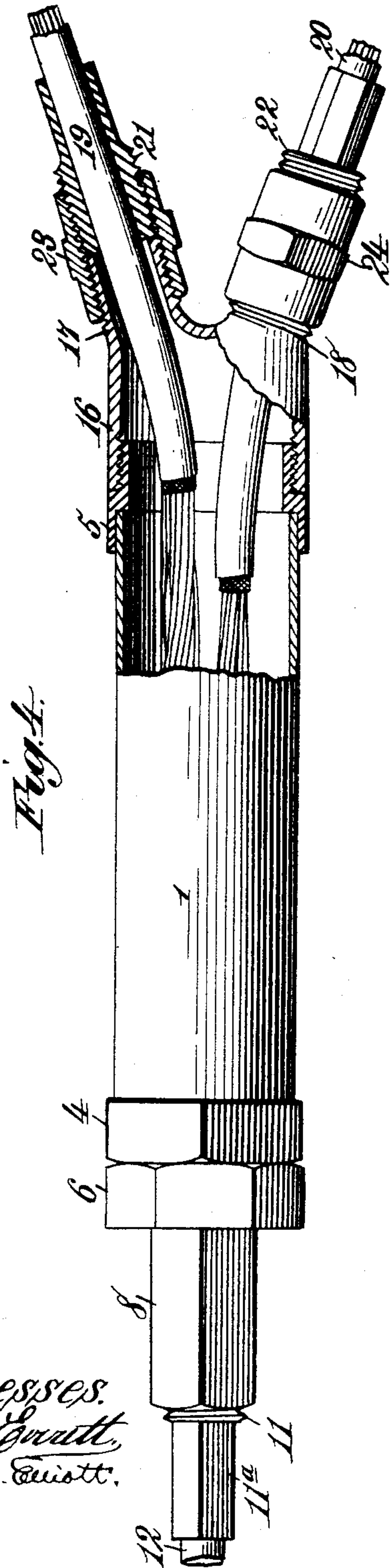


Fig. 4.

Witnesses:
Robert G. Smith,
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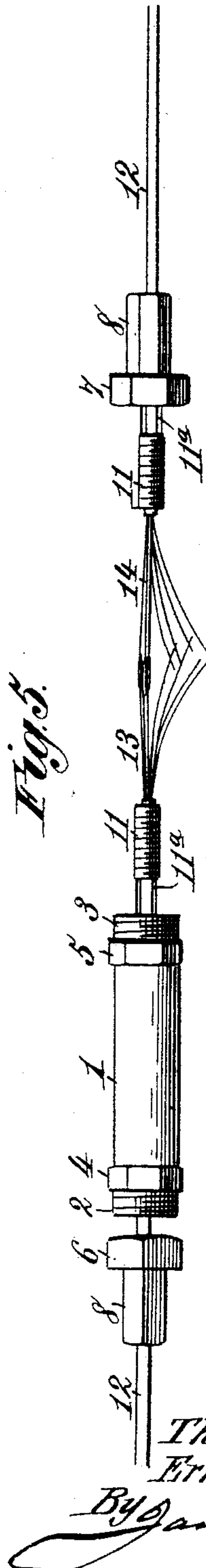


Fig. 5.

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UNITED STATES PATENT OFFICE.

THOMAS J. DONOVAN AND ERNEST G. ALDERSON, OF NASHVILLE,
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JUNCTION-SLEEVE FOR ELECTRICAL CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 695,863, dated March 18, 1902.

Application filed December 31, 1901. Serial No. 87,914. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. DONOVAN and ERNEST G. ALDERSON, citizens of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented new and useful Improvements in Junction-Sleeves for Electrical Conductors, of which the following is a specification.

Our invention relates to junction-sleeves for electrical conductors, the same being particularly adapted for use upon underground cables at the manholes, where the various conductors in said cables are to be connected one with the other. It is also adapted, however, for use upon overhead and other cables.

The object of the invention is to provide a novel form of junction-sleeve which will serve to completely house and protect the wires or conductors at their points of connection with each other and which may be readily applied and removed.

Other objects of the invention will hereinafter appear, and the novel features thereof will be set forth in the claims.

In the drawings forming a part of this specification, Figure 1 is a longitudinal section of a junction-sleeve constructed according to our invention. Fig. 2 is a similar view showing a slightly-modified construction. Fig. 3 is a cross-section on the line 3 3 of Fig. 2. Fig. 4 is a sectional elevation showing another modification, and Fig. 5 is an elevation of the device in the act of connecting up the terminals of the conductors.

Like reference-numerals indicate like parts in the different views.

The body 1 of our improved junction-sleeve is preferably cylindrical in form and of greater diameter than the cable-terminals which are inserted therein, and the same is provided at its ends with external screw-threads 2 3. These threads may be and preferably are formed upon separate sleeves 4 5, which are provided with angular faces for the application of a wrench and are welded, soldered, or otherwise secured to the body 1. Adapted to fit upon the ends of the body 1 are the caps 6 7, each of the same being provided with a contracted stem 8 and with two sets of internal screw-threads 9 10. The screw-threads 9 in the enlarged portion of

each of said caps are adapted to mesh with the screw-threads 2 3 on the body 1, and the screw-threads 10, which extend through the stem 8, are adapted to receive the externally-screw-threaded collars 11, which are welded, soldered, or otherwise secured to the lead sheathing 12 of the cable-terminals 13 14. The collars 11 are provided with extensions 11^a, having polygonal faces, and are secured to the ends of the sheathing 12; but the conductors of the cable project beyond the collars, so as to extend into the body 1 of the junction-sleeve when the parts of the device are in place. In order to effect this, the sheathing 12 is removed from the ends of the insulated conductors, so as to enable the same to be electrically connected with the conductors in the other cable.

The collars 11 being connected to the sheathings 12 of the terminals of two cables, our improved junction-sleeve is applied as follows: One or the other or both of the caps 6 7 are screwed upon the collars 11, so that the same are located behind or back of said collars upon the sheathing 12. The same are then free to be moved in one direction or the other. The body 1 of the junction-sleeve is then placed loosely over that end of the cable which contains the cap 6 or 7 and moved far enough rearwardly to expose the terminals of the conductors in said cable. These conductors may then be electrically connected with the proper conductors of the adjoining cable in the ordinary manner. The body 1 is then moved outwardly and screwed up into the cap on said adjoining cable until it reaches the limit of its movement. The cap on the terminal of the first cable is then screwed onto the open end of the body 1, which action at the same time screws the collar 11 outwardly into the stem 8. When the latter cap has been screwed up to the proper point to the body 1, the connected ends of the various conductors are completely housed and protected within said body and cut off from access of water or other disintegrating agent thereto.

From the foregoing it will have been observed that it is only necessary that one cable end or terminal be provided with a collar 11, which screws into the stem of the cap on

the end of the body 1. With one of said cable-terminals provided with said collar the other may be secured in the cap at the opposite end of the body 1 in any suitable manner. For example, it may be merely passed through the opening in the stem 8^a of the cap 7^a and cemented in place, as clearly shown in Fig. 2 of the drawings. When this is done, of course the screw-threads in the stem 8^a are dispensed with; but a sleeve 15, of insulating material, should be interposed between the cable and the stem of the cap through which it passes.

If it be desired to use our improved device at the point of connection of a series of cables, we may substitute for one of the caps 6 7 at the end of the body 1 the cap 16, which is provided with a plurality of nipples 17 18, leading outwardly therefrom, communicating with the interior thereof and provided with external screw-threads. Through these nipples the branch cables 19 20 may pass to the interior of the body 1, each of said branch cables being provided with externally-screw-threaded collars 21 22, similar in all respects to the collars 11, heretofore referred to. The screw-threads on the collars 21 22 are cut in the opposite direction to those on the nipples 17 and 18, and the same are connected with said nipples by means of the coupling-sleeves 23 24, which are provided with internal screw-threads meshing with the screw-threads on said collars and on said nipples and also provided with external angular faces for the application of a wrench. By turning the couplings 23 24 in one direction or the other the cables 19 20 may be locked to or unlocked from the cap 16.

We have shown in the drawings but two nipples 17 18 on the cap 16; but it is obvious that this number may be increased, if desired.

The polygonal faces on the extensions 11^a of the collars 11 are provided for the application of a wrench or similar device to prevent the turning of said collars and the stripping of the same from the cable-sheathing when the caps are screwed up thereon.

Having now described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. The combination with the terminals of two electrical conductors and an externally-screw-threaded collar on one of said conductors, of a junction-sleeve comprising a body having screw-threaded ends, and caps screwing upon said ends, one of said conductors being secured to and passing through one of said caps and the other of said caps being provided with an internally-screw-threaded stem into which said collar screws.

2. The combination with the terminals of two electric cables, one of which is provided with a covering or sheathing, and an externally-screw-threaded collar secured to said sheathing, of a junction-sleeve comprising a cylindrical body having screw-threaded ends, and caps adapted to screw upon said ends, one of said cables being secured to and passing through one of said caps to the inside of said body and the other of said caps being provided with an internally-screw-threaded stem into which said collar screws.

3. The combination with a series of electric cables, each of which is provided with a lead covering or sheathing and with an externally-screw-threaded collar, of a junction-sleeve comprising a cylindrical body provided with screw-threaded ends, a cap screwing upon one end of said body and provided with an internally-screw-threaded stem into which the collar on one of said cables screws, a cap screwing upon the other end of said body provided with a plurality of externally-screw-threaded nipples through which the other of said cables pass to the interior of said body, and coupling-sleeves having internal right and left hand screw-threads, for connecting said nipples with the collars on the cables which pass there-through.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

THOMAS J. DONOVAN.
ERNEST G. ALDERSON.

Witnesses:

GUY C. BRITTEN,
J. F. CLENDENING.