United States Patent

[11] 3,603,911

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[54] CABLE CONNECTOR
7 Claims, 4 Drawing Figs.

[52] U.S. Cl. ..... 339/267, 287/20.3, 287/124, 339/270 R, 339/273 R
[51] Int. Cl. H01r 7/08
[50] Field of Search 339/267, 270, 273; 287/20.3, 124; 52/654, 664, 665, 667, 726

[56] References Cited

UNITED STATES PATENTS

2,859,425 11/1958 Felton 339/270

FOREIGN PATENTS

565,811 11/1944 Great Britain 339/267

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ABSTRACT: A connector for joining one or more distribution cables to a supply cable. A radially expandable sleeve fitting within ringlike cable terminal lugs surrounds a threaded rod having a conical head and fitted with an axially extended terminal nut. Each subsequent unit is threaded into the preceding terminal nut.

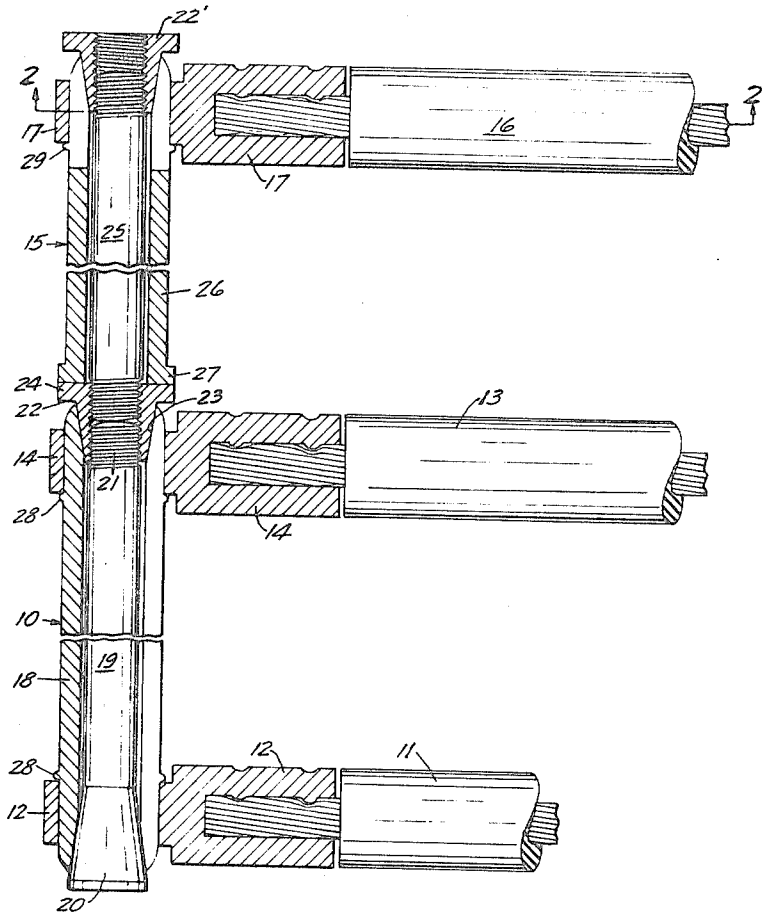

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FIG. 1

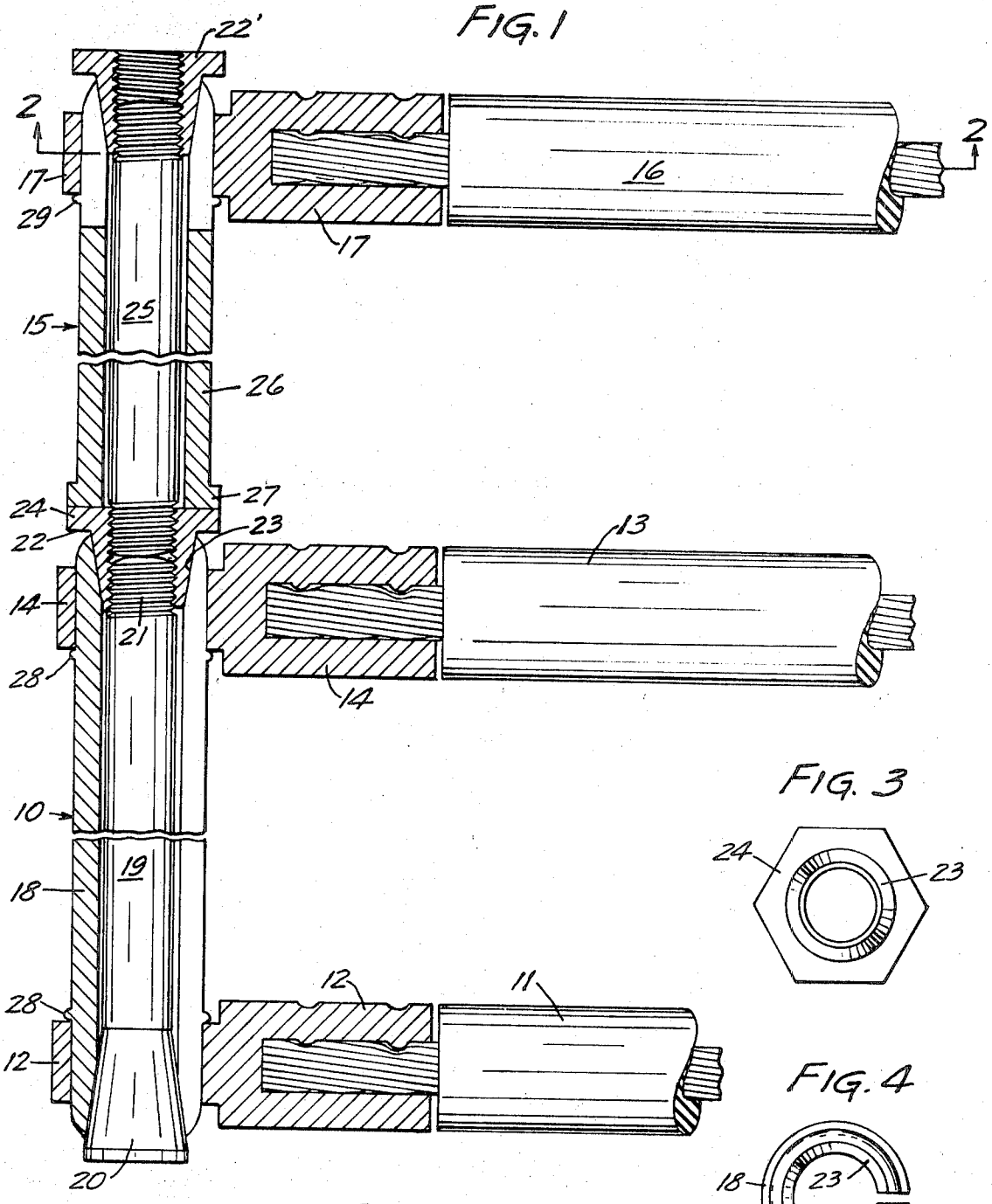
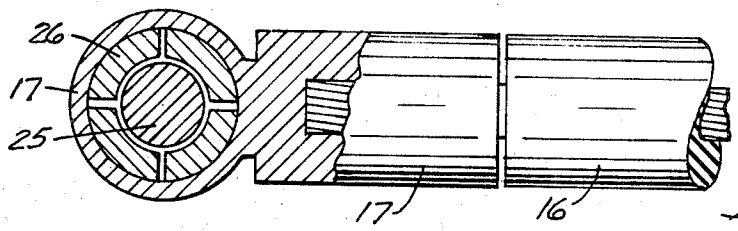


FIG. 3

FIG. 4

FIG. 2



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CABLE CONNECTOR

This invention relates to connectors for electrical cables. More particularly, the invention relates to modular connectors useful in joining additional distribution lines to an initial junction of supply and distribution lines, for example in an underground residential distribution system.

The invention relates primarily to the electrically conductive components of the electrical connection assembly, and which are particularly useful for incorporation into the modular insulating devices described in Hervig et al. application Ser. No. 860,898 filed of even date herewith.

The invention will now be further described and illustrated in connection with the accompanying drawing, wherein:

FIG. 1 is a plan view, largely in section, of an assembled connector joining a supply line and two distribution lines,

FIG. 2 is a section taken approximately at line 2—2 of FIG. 1,

FIG. 3 is an end elevation of a sleeve-expanding nut as used in the device of FIG. 1, and

FIG. 4 is an end elevation of a sleeve member of FIG. 1.

The connector of FIG. 1 will be seen to consist of a first module 10 joining a supply cable end 11 and terminal lug 12 with a first distribution cable end 13 and lug 14, and a second module 15 joining a second distribution cable end 16 and lug 17 to module 10.

The module 10 consists of an elongate split sleeve 18, a bolt 19 having a conical head 20 and a threaded end 21, and an elongate nut 22 having a conical outer surface 23 and a hexagonal head 24. The sleeve 18 fits within the ring-shaped or annular endpieces of the terminal lugs 12, 14 and is caused to expand radially into tight electrically conductive contact with said lugs by forcefully threading the nut 24 onto the threaded end 21 of the bolt 19.

Further connections to additional distribution cables are accomplished with modules 15. These consist of an inner rod or bolt 25 threaded at both ends, a tubular sleeve 26 radially expandable at least at one end and upset at the other end to form a shoulder 27, and an elongate conical nut 22'. The expandable end of the sleeve 26 is shown in FIG. 2 as longitudinally slotted to form four slots, the remainder of the sleeve being unslotted; but other equivalent structure may be used. The rod 25 is threaded tightly into the open end of the nut 22, the sleeve 26 is placed over the rod with its shoulder 27 against

the head 24 of the nut 22, the lug 17 with cable end 16 attached thereto is slipped over the expandable end of the sleeve, and the nut 22' is forcibly threaded onto the rod 25 to provide tight contact between the lug and sleeve.

It will be appreciated that the lugs 12, 14, 17 may be fastened to the cable ends in any suitable manner, a crimped connection being illustrated. The sleeves may be provided with annular ridges 28, 29 or other raised elements to establish the desired positions for the terminal lugs thereon. In place of a bolt 19 having a conical head 20 there may be substituted a threaded rod carrying an exteriorly conical nut 22. The length of each unit may be varied as desire. The terminal lugs may be placed at any desired angle with each other. Other modifications and combinations will become apparent from a consideration of the preceding disclosure.

What is claimed is as follows:

1. A connector module for joining electrical cables fitted with terminal lugs having an annular endpiece, said connector comprising a radially expandable sleeve, a terminally threaded rod retained within said sleeve, and a conically surfaced opened nut extending axially past the end of said rod for mating with the threaded rod of a next adjacent module.

2. Connector module of claim 1 wherein said sleeve is longitudinally slotted at one end and is provided at the other end with an integral continuous collar.

3. A modular connector comprising a plurality of the modules of claim 1 in end-to-end alignment.

4. Method of connecting cable ends each fitted with a terminal lug having an annular endpiece, comprising placing each said endpiece over a connector module as defined in claim 1 and rotating said nut to expand said sleeve forcefully into tight contact with said endpiece, threading a next said module into end-to-end interconnective alignment with the previous module, placing a next said endpiece over the module, and tight ending said next module into tight contact with said next end piece.

5. Connector module of claim 1 wherein said sleeve is expandable at both ends.

6. Connector module of claim 5 wherein said rod is threaded at one end and is provided at the other end with a conical head.

7 Connector module of claim 5 wherein said rod is threaded at both ends and having a said nut at each of said ends.

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,603,911 Dated September 7, 1971

Inventor(s) Roy D. Erickson

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 21, delete "opened" and insert --open-ended--

Column 2, line 35, after "and" delete "tight ending" and insert --tightening--

Signed and sealed this 7th day of March 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

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