

Sept. 19, 1933.

E. L. ANDREW

1,927,382

ELECTRIC CONNECTER

Filed Sept. 10, 1930

2 Sheets-Sheet 1

Fig. 1.

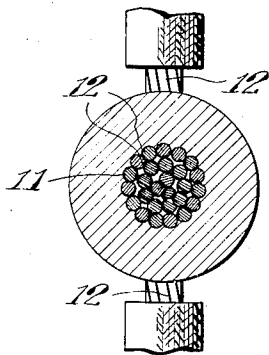


Fig. 2.

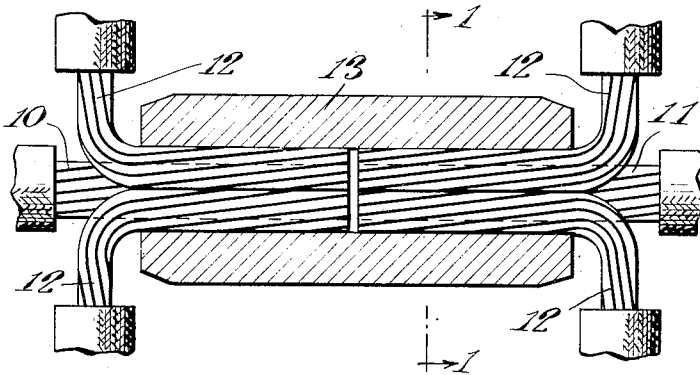


Fig. 3.

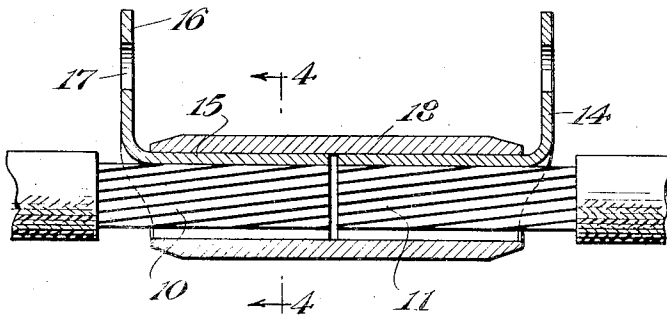
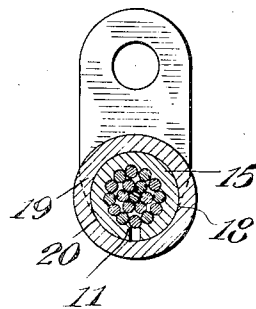


Fig. 4.



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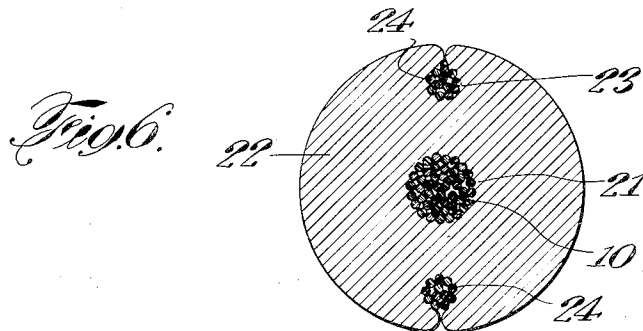
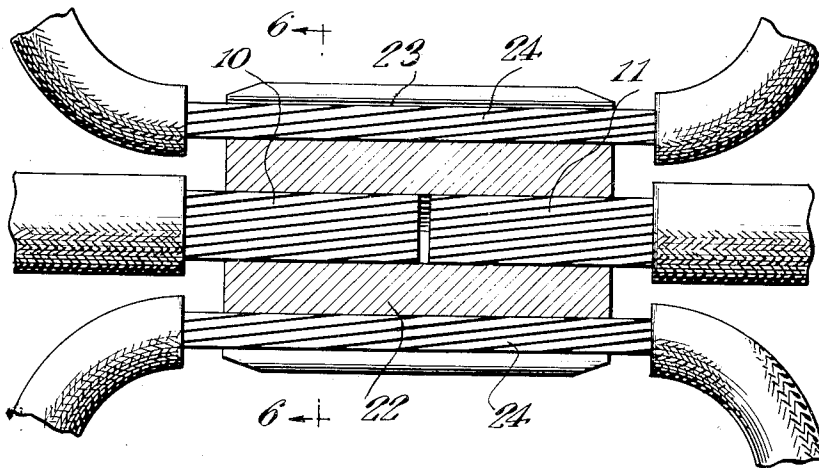
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Fig. 5.



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UNITED STATES PATENT OFFICE

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ELECTRIC CONNECTER

Edwin L. Andrew, Rome, N. Y., assignor to General Cable Corporation, New York, N. Y., a corporation of New Jersey

Application September 10, 1930
Serial No. 480,827

2 Claims. (Cl. 173—263)

This invention relates to electrical connections or joints such, for example, as are employed in connecting separate conductors, or separate parts of the same conductor, together to make an efficient current conducting joint.

Heretofore, conductors such as cables and the like have been formed generally of copper and it has been a comparatively simple matter to connect the different copper wires or cables together to obtain a satisfactory electrical joint. Recently, however, cables and other types of conductors which were formed of some metal other than copper such, for example, as aluminum, have been introduced into use. The different characteristics of the new metals, as contrasted with copper, have produced certain difficulties in making satisfactory electrical connections and this is especially true when cables of the new material are connected to conductors such as branch lines or service taps formed of copper.

An object of this invention is to provide an improved form of electrical connection constructed and arranged to produce an efficient current conducting joint between conductors of the same or different materials.

One of the difficulties experienced in connection with aluminum conductors, for example, is due to the fact that such a metal as aluminum cannot be satisfactorily soldered under conditions encountered by workmen in the field.

A further object of the invention is to provide a device of the type set forth constructed and arranged to connect separate conductors without requiring the soldering of any aluminum or other difficultly solderable material.

These and other objects which will be apparent to those skilled in this particular art are accomplished by means of the invention illustrated in the accompanying drawings in which—

Fig. 1 is a transverse sectional view through a connection made in accordance with one embodiment of this invention, and taken on the line 1—1 of Fig. 2.

Fig. 2 is a longitudinal sectional view of the connection shown in Fig. 1.

Fig. 3 is a view similar to Fig. 2 of a modified arrangement.

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a view similar to Fig. 2 of another modified arrangement, and

Fig. 6 is a transverse sectional view on the line 6—6 of Fig. 5.

In making electrical connections between such a conductor as a main supply line which may,

for example, be formed of aluminum, and branch or service lines which are frequently of copper, advantage is taken in the present invention of the malleability of such metals as copper, aluminum or the like, to provide a connecting sleeve-like member which is so arranged as to receive the bare uninsulated ends of the associated conductors and to be compressed thereon in such a way as to provide an efficient electrical connection between them.

For example, in Figs. 1 and 2, conductors 10 and 11 constitute a main line which may be formed of any desired material and which it is desired to connect together and also to various branch or service lines 12. As illustrated in Fig. 1, the main conductor is provided with an exposed portion and the ends of the associated branch conductors 12 are also provided with exposed portions, the strands of which are laid along the exposed portion of the main and spread around substantially one half the circumference of the associated main. The assembly is positioned within a sleeve-like connecting member 13 which is formed of some suitable, malleable current conducting material and the sleeve is compressed around the associated conductors with sufficient force to provide an efficient electrical union between the main and the various branches.

In the arrangements shown in Figs. 3 and 4, branch connecting members 14 of suitable sheet material are so formed as to have sleeve-like portions 15 surrounding the uninsulated section of the mains 10 and 11, and are formed with outwardly extending branch line connecting lugs 16 which may be provided with means such as perforations 17 to facilitate the connection of the various branch or service conductors. A connecting sleeve 18 surrounds the sleeve-like portions 15 and is compressed thereon so as to force the sleeve-like portions of the connecting members into a gripping engagement with the strands of the main conductor in which the metal of the sleeves flows into and permeates the strands to provide an efficient electrical contact therebetween.

It will be apparent that the sleeves 13 and 18 may each be formed of half-C sections if it is not desired to cut the main conductor into separate parts 10 and 11, as is necessary with a one piece sleeve.

In the arrangement shown in Figs. 5 and 6, the main conductor includes the separate sections 10 and 11 located in the central bore 21 of the connecting sleeve-like member 22. The sleeve is

provided with longitudinally extending grooves 23 in its outer face and branch conductors 24 are provided with uninsulated sections which are positioned within the grooves 23. The sleeve is then compressed into gripping engagement with the various conductors and the metal of its surface closed over the grooves 23 to grip the conductors therein, as illustrated in Fig. 6, to produce an efficient connection between the main conductor and the various branches. Obviously, each branch conductor 24 illustrated may be in the form of separate branches entering each end of the sleeve.

It will be apparent that the present invention provides an electrical connection which can be used between conductors of different characteristics such, for example, as aluminum mains and copper branches, without the necessity of subjecting such a metal as aluminum or the like to any soldering or similar operation. Obviously, the connector may also be used with copper mains if desired.

What I claim as new and desire to secure by Letters Patent is:

1. An electrical connector for mechanically and electrically connecting separate electrical conductors, comprising a sleeve-like current-conducting body member formed of malleable metal and provided with a longitudinally extending bore adapted to be compressed upon a conductor for mechanical and electrical connection thereto and having a plurality of open grooves in the outer face thereof adapted to be compressed upon other conductors to mechanically and electrically connect the same together and to said first conductor.

2. An electrical connector for mechanically and electrically connecting separate electrical conductors, comprising a sleeve-like current-conducting body member formed of malleable metal and provided with a longitudinally extending bore adapted to be compressed upon a conductor for mechanical and electrical connection thereto and having an open groove in the outer face thereof adapted to be compressed upon another conductor to mechanically and electrically connect the same to said first conductor.

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25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150