No. 743,346. PATENTED NOV. 3, 1903.

J. G. SWAIN.

ELECTRICAL CONNECTOR.

APPLICATION FILED NOV. 20, 1902.

NO MODEL.

Fig. 1.

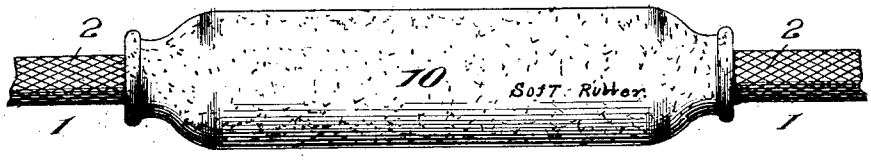
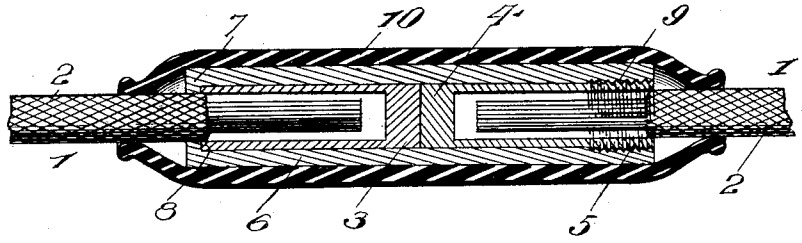


Fig. 2.



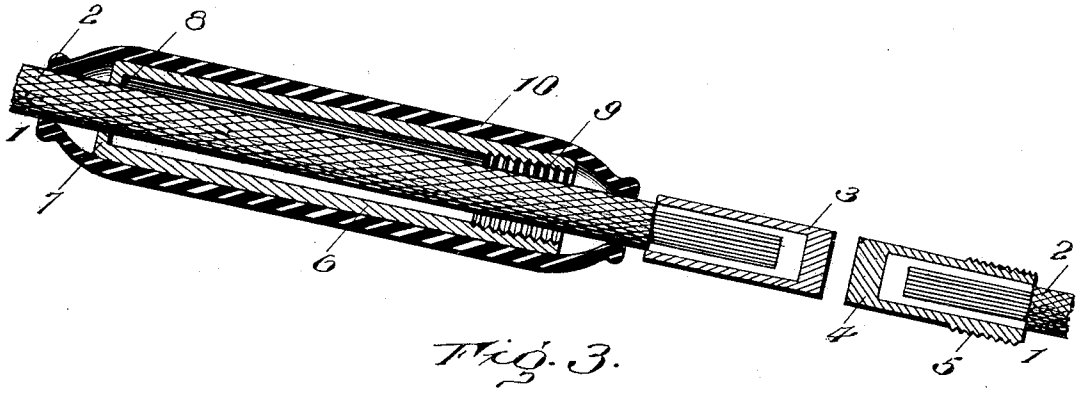


Fig. 3.

WITNESSES:

INVENTOR

Joseph G. Swain.

BY

Attorney

No. 743,346. Patented November 3, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH G. SWAIN, OF YOUNGSTOWN, OHIO.

ELECTRICAL CONNECTOR.

SPECIFICATION forming part of Letters Patent No. 743,346, dated November 3, 1903.

Application filed November 20, 1902. Serial No. 132,101. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. SWAIN, of Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Electrical Connectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of electrical connectors adapted to motor and overhead wires employing a sleeve designed to accommodate the contact-plugs containing the terminals to insure the requisite contact, yet provide for insulation at the joint.

The primary object of the invention is to construct the sleeve in such a manner that it will accommodate two contact-plugs in such position as to make and preserve by mechanical means a perfect electrical connection.

A further object is to provide improved means of insulating the whole connector and the adjacent portions of the wires or cables.

The invention will be hereinafter fully set forth, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a view in side elevation of an insulated electrical connector constructed in accordance with my invention, showing the connector or coupler closed and connecting two wire or cable conductors. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a similar view showing the sleeve pushed back from the contact-plugs and the latter out of contact.

Referring to the drawings, 1 designates the terminals of electric wires or cables, having an insulating-covering 2, of rubber or other insulating material.

3 and 4 are contact-plugs designed to accommodate the terminals. They are shown each in the form of a hollow cylindrical body of uniform bore closed at one end. The plugs are of corresponding shape and size, so that when placed end for end in position to form the contact their meeting engaging surfaces will insure a perfect electrical connection. For a portion of its length one of the plugs, as 4, is exteriorly threaded, as at 5.

6 designates a sleeve or coupling designed to entirely inclose the two plugs. It is open at one end, and at its other end is formed with a seat or stop 7, shown in the form of an internal annular flange 8. This sleeve is of length sufficient to accommodate the two contact-plugs, and its bore is of corresponding diameter to insure the snug fit of the latter.

At 9 is a thread formed on the inner surface of the sleeve, which thread is designed to engage the thread 5 of plug 4.

Extending longitudinally of the sleeve and beyond the ends of the latter is an insulating-jacket 10, consisting of a cylindrical body of soft rubber open at either end to admit the electrical wires. The jacket is preferably formed on the sleeve, so as to insure its protection of the latter at all times.

In assembling the parts to form a connection the wires are stripped of their insulation for a distance about equal to the depth of the bore of the respective plugs. As shown in Fig. 3, one of the wires is then passed through the sleeve until its uninsulated portion projects beyond the end thereof. Contact-plug 3 is heated and filled with molten metal, and the terminal wire is then inserted, being thereby securely sealed and held to the plug. The sleeve is slipped over plug 3 until engagement is had between the latter and stop 7. The terminal of the other wire is then similarly secured in plug 4, and the latter is screwed into the sleeve until its closed end is in contact with the closed end of plug 3. The thread 9, engaging thread 5, serves to retain both plugs within the sleeve. A highly efficient electrical connection is thus formed, and all danger of the sleeve being lost is avoided, since it cannot slip off the terminal wire while the latter is secured to the plug.

The advantages of my invention are apparent to those skilled in the art. It will be noted that the sleeve not only insures a perfect contact of the plugs containing the terminals, but fully protects them from injury, and also that the insulating-jacket, which is preferably formed on the sleeve, entirely incloses the latter by extending beyond the ends thereof.

Practice has demonstrated that my invention is well adapted to electric-railway systems for connecting the motor-leads to the conductors which are directly attached to the motors. As is well known, such connections

must be without fault as to conductivity and insulation and must permit of quick connecting and disconnecting.

I claim as my invention—

A connector for electric terminals comprising two cylindrical bodies closed at their inner contacting ends and open at their outer ends, one of said bodies being exteriorly threaded at one end, and both terminal wires being passed into said bodies and secured therein, an inclosing sleeve, entirely inclosing both bodies, open at each end and having at one end an internal stop and at its other end an internal thread for engagement with the threaded body, the outer open end of one of said bodies being forced into engagement with said stop when the other body is screwed into the sleeve, and an insulating-jacket formed on and inclosing said sleeve and extending beyond the ends thereof, as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH G. SWAIN.

Witnesses:

WM. W. ZIMMERMAN,

MARY R. ATTIG.