

UNITED STATES PATENT OFFICE

1,973,322

CONNECTER FOR HOLLOW CABLES

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Application March 28, 1932, Serial No. 601,487

6 Claims. (Cl. 173—263)

My invention relates to connectors for hollow cables and more particularly to the form known as the screw coupling type, and has for its object to provide a connector that will have the uniformity in electrical conductivity and the mechanical strength of the cable itself.

Connecters of this type heretofore have been deficient in mechanical strength because the entire tensile stress was taken by the external sleeve, and for the reason that the cable and external sleeve were not compressed into an intimate mechanical bond, due to the lack of adequate interior support for the cable during the process of compression.

In my invention I provide an interior filler or core rod of special design with an enlarged end so arranged as to bear on the end of the external sleeve, thereby providing adequate internal support, and resisting tensile stress by the filler rod as well as by the external sleeve. When this assembly is compressed into intimate connection of the various component parts a joint is provided with the mechanical strength of the cable.

In the previous screw coupling joints the lack of uniformity of electrical conductivity was due to the fact that intimate electrical contact is entirely dependent on the accuracy of the threaded ends, the slightest inaccuracy thereof resulting in point contact of the ends of the cable, with the result that the path of the current is largely through the coupling nut. As this is ordinarily made of an alloy to permit the nut being of small outside dimensions to avoid undesirable electrical effects, the conductivity of the joint is impaired.

In my invention, electrical connection is made through the ends of the filler rods, these being so designed, as described hereafter, that a positive electrical contact is assured.

The foregoing and other features of my invention will now be described in connection with the accompanying drawings forming part of this specification in which I have represented my connector in its preferred form, after which I shall point out more particularly in the claims those features which I believe to be new and of my own invention.

In the drawings:—

Figure 1 is a longitudinal view, in part section, of my connector mounted on a hollow cable.

Figure 2 is a longitudinal section through my sleeve.

Figure 3 is a section on line 3—3, Figure 2.

Figure 4 is a longitudinal sectional section through my coupling nut.

Figure 5 is a section on line 5—5, Figure 4.

Figure 6 is a longitudinal view of my core rod.

Figure 7 is a view of my core rod at right angles to that shown in Figure 6 looking from the left.

Figure 8 is an enlarged view of the ends of the filler rods before assembly.

Figure 9 is an enlarged view of the ends of the filler rods after assembly.

Figure 10 is an enlarged view of an alternate construction of the ends of the filler rods.

Figure 11 is a section through the assembly while being compressed or swaged to form the bond uniting the component parts.

In carrying out my invention I employ a core rod 10, which is provided with enlarged end 11 and stem 12.

In my preferred construction I provide the ends of the filler rods either with a projection 15 or a recess 16 so that when assembled they form a male and female joint; or I may provide the ends of both filler rods with projections 15, and form the joint by a sleeve 17 fitting over the projections 15. The stem 12 may be of required shape so that it can be inserted and fit in the core of the cable 50 to form an inside supporting plug. Over the outside of the end of the cable I provide a tubular sleeve 20 having a screw threaded end 21 and an end 22 especially formed to be compressed around the cable 50.

A coupling nut 30 provided with internal threaded ends 31—32 is employed to join the two cable ends, thus described or secure one cable end to any type of connector or fastening desirable.

After the sleeve 20 is put over the end of the cable, the core rod is inserted in the hollow core, the assembly is compressed between jaws of a press as shown in Figure 11 or otherwise drawn or swaged so that the component parts have a tight and intimate contact.

It will be observed that my core rod is shown with sections of alternately large and small diameters so that when the joint is completed, the sleeve, cable and plug will be keyed together against longitudinal slipping. However, if the stress to which the cable is subjected in service is low, this keying may not be necessary in which case I may employ a core rod with a stem of uniform diameter throughout.

The hole 23 of the sleeve is preferably somewhat larger than the core rod diameter, to allow the ends of the core rod to accommodate themselves to each other when brought together by the coupling nut, thereby assuring intimate electrical contact when the joint is screwed together.

In couplings for dead end connections I shall dispense with the projections 15 and recess 16

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