

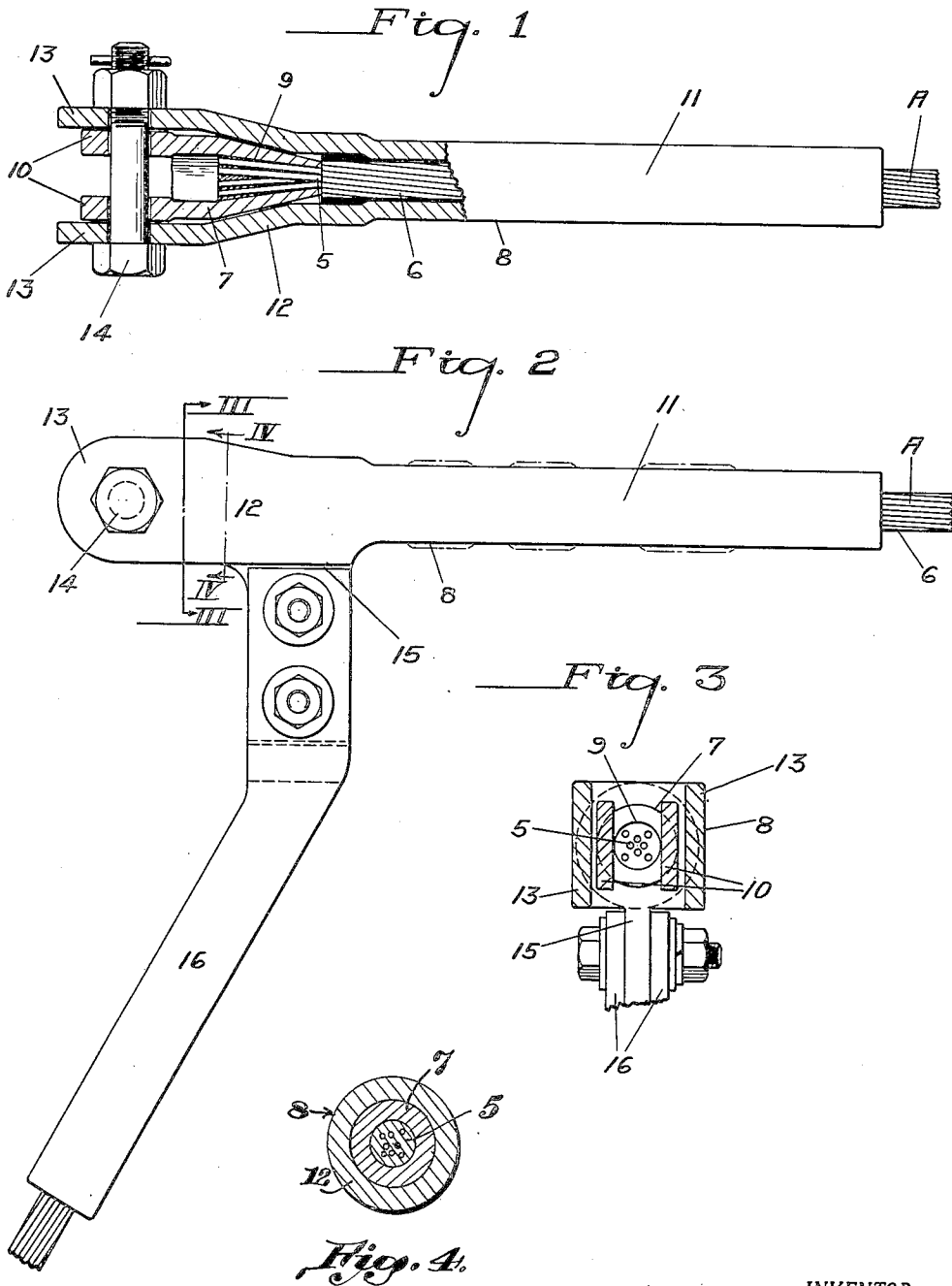
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DEAD END FIXTURE FOR CABLES

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DEAD-END FIXTURE FOR CABLES

Application filed May 21, 1925. Serial No. 31,779.

This invention is for an improvement in dead-end fixtures for composite cables, and particularly cables used in power transmission lines.

5 This invention is for a form of dead-end fixture generally similar to a dead-end fixture shown and described in my co-pending joint application with John P. King, Serial No. 31,233, filed May 18, 1925.

10 In high power transmission lines it is common practice to use as a conductor, a cable having a high tensile core and a relatively low tensile highly conductive envelope. The core is usually stranded steel cable, and the envelope is usually stranded copper or aluminum.

Various forms of dead-end clamps have been devised for use in connection with cables of this type, but these are generally of a heavy construction, having a high moment of inertia.

25 The present invention has for its principal objects to provide a dead-end fitting of a light construction which may be quickly and easily applied in the field, and which will positively hold the conducting envelope and core against relative movement, so that at no time can undue strain be put on the conducting envelope.

30 The invention may be readily understood by reference to the accompanying drawings, in which:

Fig. 1 is a top view, partly in section and partly in elevation of a fitting embodying a form of my invention to a cable.

Fig. 2 is a side elevation of the clamp and cable shown in Fig. 1.

Fig. 3 is a transverse cross-section on line III—III of Fig. 2.

Fig. 4 is a transverse cross-section on line IV—IV of Fig. 2.

In the drawings A designates a length of composite cable having a stranded high tensile core 5 of steel or other suitable material, and a stranded conducting envelope 6 of copper aluminum or other suitable material.

The fitting includes a suitable element 7 for attachment to the steel core of the cable, and a second element 8 for attachment to the conducting envelope. As shown, the ele-

ment 7 is in the form of a cone of steel or other suitable material, having a conical cavity 9 therein, tapering toward the cable engaging end of the cone. Projecting longitudinally from the larger end of the conical body are 55 parallel spaced apart lugs 10, so that the entire element 7 is in the form of a clevis.

The member 8 is preferably formed of aluminum or other light material that is a good electrical conductor. It has a main 60 sleeve portion 11 which is expanded at 12 to receive the conical element 7, and extending beyond the expanded portion are lugs 13 that overlie lugs 10. The element 8 is therefore, also, of a clevis like formation. Passing 65 through registering holes in lugs 10 and 13 is a pin or bolt 14 to which the eye of an insulator string or other supporting element, not shown, may be attached.

Depending from the body 8 is an integral 70 lug 15, which is carefully machined to which a connector 16 may be fitted and attached. This provides a simple and efficient manner of connecting "jumpers" in a transmission 75 line, or lead-in wires at terminals of the line.

In applying a fitting to the cable, part of the envelope 6 is cut away to expose the end portion of the steel core 5. The element 8 is then slipped over the cable and moved back out of the way. The end of the stranded 80 steel core is then inserted into the conical cavity of element 7 and the strands spread apart. Zinc or other metal is then flowed into the cavity around the strands, thereby firmly connecting the steel core with the ele- 85 ment 7.

After this has been done, element 8 is moved forward into position, where it embraces the element 7 and the pin 14 is passed through the registering holes in the exten- 90 sions 10 and 13 of the respective members. This effectively holds the two elements against relative movement. The sleeve portion 11 of the outer element 8 is then pressed tightly onto the stranded conducting envelope. To 95 facilitate this operation, and render it more effective, the sleeve portion is of such a shape that it can be compressed. For instance, it may have integral bosses thereon, as shown in the dotted lines of Fig. 2, showing the 100

original form of the metal. This is similar to a practice now followed in joining the ends of cables, and the portable hydraulic press used in the field in making cable joints can be used in pressing the sleeve portion 11 as will be readily appreciated by those skilled in the art.

The fitting as thus produced is light, easily handled, easily manufactured, and can be readily and conveniently applied in the field. Furthermore, it absolutely prevents relative slippage between the steel core and the conducting envelope in such manner that the strain is never put on the conducting envelope rather than the steel core.

An important advantage of its reduced mass is its low moment of inertia, whereby it does not have as great a tendency as heavier fittings to reflect mechanical vibrations of the span back into the span, thereby ensuring a longer life of the cable by reducing the tendency of the metal to become fatigued at or adjacent the fitting.

While I have illustrated one specific form of the invention for the purpose of illustration, it will be understood that various changes may be made within the spirit of the invention, and such changes are contemplated under the appended claims.

I claim as my invention:

1. A dead-end fitting for composite cables, including an inner member for attachment to the core of a composite cable, an outer member embracing the inner one for attachment to the conducting envelope of a composite cable, and means for attachment of a supporting element thereto, said means positively connecting the inner and outer members against relative longitudinal movement.

2. A dead-end fitting for composite cables including an inner member for attachment to the core of a composite member, an outer member in which the inner member is slidably received for attachment to the outer envelope of a composite cable, and means for attachment of a supporting element thereto, said means engaging each of the two members for holding them against relatively longitudinal movement.

3. A dead-end fitting including an inner clevis member having an extension thereon adapted to receive the end of the core of a composite cable, a second clevis like member embracing the first and having an extension projecting beyond the extension of the first for engagement with the exterior of a composite cable, and a common pin passed through the two clevis members.

4. A dead-end fitting for composite cables including an inner steel member for engagement with a cable, an outer sleeve-like member embracing the inner one, and formed of a good electrical conductor, said sleeve being extended beyond the inner member to engage the exterior of a composite cable, a connect-

ing lug projecting from the outer member, and means for attachment of a supporting element thereto, said means positively connecting the two members against relative longitudinal movement.

5. The combination with a composite cable having a core and a conducting envelope, the end of the core projecting beyond the end of the envelope, of a dead-end fitting including an inner member having a socket in which the end of the core is secured and a forward extension, an outer member having a sleeve portion engaging the end portion of the composite cable and embracing the inner member, said outer member having a forward extension embracing the forward extension of the inner member, and a bolt passed through the extensions of the two members.

6. The combination with a composite cable having a high tensile core and a conducting envelope, the end of the core projecting beyond the end of the envelope, of a socket member of high strength into which the said projecting end of the core extends and is secured, said socket member having a clevis-like extension thereon, a conducting sleeve member surrounding the said socket member, and secured to the exterior of the composite cable, said sleeve member having a clevis-like extension overlying the similar extension of the socket member, and a common pin passing through the extension of both members.

7. The combination with a composite cable having a high tensile core and a conducting envelope, the end of the core projecting beyond the end of the envelope, of a socket member of high strength into which the said projecting end of the core extends and is secured, said socket member having a clevis-like extension thereon, a conducting sleeve member surrounding the said socket member, and secured to the exterior of the composite cable, said sleeve member having a clevis-like extension overlying the similar extension of the socket member, a common pin passing through the extensions of both members, said conducting sleeve member having an integral connecting lug depending therefrom.

In testimony whereof I affix my signature.
THEODORE VARNEY.