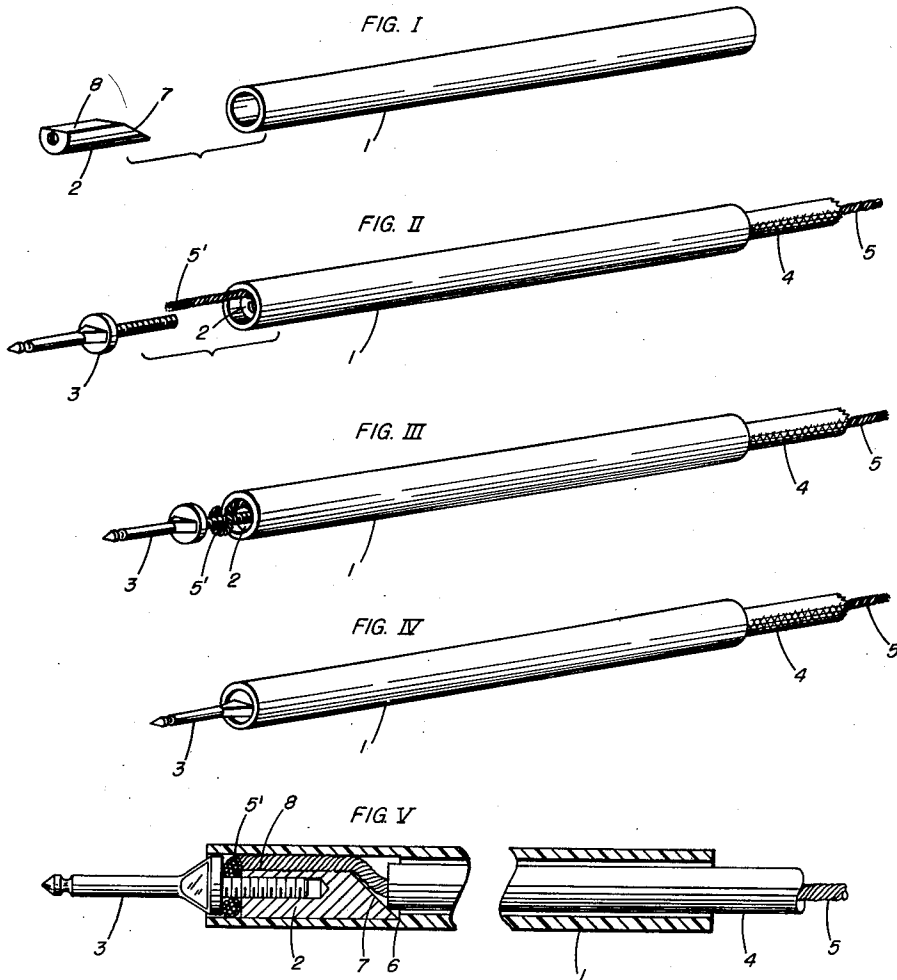


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ELECTRICAL TERMINATION
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ELECTRICAL TERMINATION

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1 Claim. (Cl. 339—108)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment of any royalty thereon.

This invention relates to new and useful terminations for flexible electric conductor wires, and has for its principal object the provision of a secure terminal device which will hold fast and establish a sure electrical contact between the end of the wire and cooperating connections when properly mated therewith, or between the end of the wire and exposed conductive points in a circuit under investigation when manually held in momentary contact thereto.

Furthermore, the invention aims to provide a termination which will be simple and inexpensive to manufacture, can be attached readily to the wire end, will anchor the wire end securely, and will assure a proper electrical connection to the wire end.

Furthermore, the invention lends itself to construction in a form which will provide a probe of convenient small diameter with a minimum of metal exposed outside the insulating sleeve, while including the feature of attachment to the wire by compression of the wire end between conductive metal surfaces, said surfaces being held in compression by machine screw threaded metal surfaces.

These and other objects of the invention will be more apparent from the following description and claim.

The invention will be more fully understood from the drawings in which Figure I is an exploded view of two of the three parts of the termination, namely the insulator 1 and the insert 2.

Figure II is a view of parts of the termination showing the insert 2 assembled to the insulator 1 with the wire end 4 passing through the assembly of 1 and 2. The tip 3 is shown separated from the assembly of 1 and 2.

Figure III is a view of the termination showing the assembly of the insulator 1 and the insert 2 with the tip 3 partially assembled to 1 and 2, and with the conductor 5' of the stripped wire end 4 wrapped around 3 in a single turn.

Figure IV is a view of the termination fully assembled and attached to a wire end.

Figure V is a cutaway view on a larger scale than the previous figures, showing the arrangement of parts in the assembled termination when attached to a wire end.

An insulator 1 is in the form of a tube of electrical insulating material such as nylon of suitable length to form a convenient handle, of suitable inside diameter to allow free clearance for insertion of the insulated wire end 4, of suitable wall thickness to provide adequate strength and having the inside diameter enlarged at one end to receive the electrically conductive metal insert 2. The metal insert 2 is shown in a form of such dimensions as to enable its being press fitted inside the insulator 1 stopping against the shoulder 6 inside the insulator 1. The length of insert 2 is somewhat less than that of the enlarged inside diameter portion of insulator 1 to insure that the enlarged disc shaped portion of tip 3 will be recessed in insulator 1 when the termination is fully assembled and attached to wire end 4. One end of insert 2 has a beveled flat surface 7 so inclined as to provide free passage of the conductor of stripped wire end 5' across its surface when said wire end is inserted through the termination. A second flat surface 8 of insert 2 parallel to the axis of said insert, is so

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located as to permit free passage of the conductor of stripped wire end 5' between its surface and the adjacent portion of the inside wall of insulator 1. The other end of insert 2 takes the form of a flat surface perpendicular to the axis of insert 2. Insert 2 is drilled and tapped axially at this end with a machine screw thread of suitable size and depth to hold securely tip 3 when assembled and attached to wire end 4. Tip 3 is in the form of an electrically conductive metal part having one end terminate in a machine screw to mate properly into the tapped end of insert 2. An enlarged portion of tip 3 adjacent to the threaded end is shown as having a flat face, said face serving to come up against and secure stripped wire end 5' between said face and the mating face of insert 2. The remaining part of tip 3 is so formed as to provide a convenient probing contact as well as a plug connector.

The wire 4, consists of the usual flexible insulation surrounding the conductor 5 usually stranded for flexibility. Such a wire has a short portion of the end stripped leaving the bare conductor 5'.

It will be seen that in the form illustrated in Figures I, II, III, IV and V the stripped wire end slides through the insulator, over the beveled face of the insert, thence over the longitudinally flat face of the insert and on through the opening to extend free outside the insulator as illustrated in Figure II.

Then the tip can be threaded partially into the insert and a single turn of the stripped wire end made about the threaded shank of the tip. Then the threaded shank of the tip can be engaged fully into the tapped insert to compress the stripped wire end between the tip and the insert to provide a perfect contact between the wire conductor and the tip.

In the form illustrated it will be seen that the invention will function as a plug connector to mate with properly formed cooperating electrical connections, and will function as a convenient probe which can be held manually in momentary contact with exposed conductive points in electrical circuits which are under investigation.

Such terminations are suitable for attachment to the ends of the flexible wire leads commonly employed as parts of electrical measuring instruments such as vacuum tube voltmeters, multimeters, etc.

Such terminations provide simple and inexpensive parts for manufacture, provide economy in assembling the terminations to the wire ends, provide certainty of proper anchorage, and provide a perfect electrical connection between the wire conductor and the conducting surface of the termination. Such terminations lend themselves to durable and rugged construction and have the ability to be assembled and disassembled an extremely great number of times without appreciable wear or damage.

While many variations in size or in arrangement and details may be made, without departing from the spirit of this invention, what is claimed and desired to secure by Letters Patent is:

An electric wire termination which consists of an insulating tube having securely fitted to its inside a metal insert one end of which has an inclined surface leading to a longitudinal flat, the remaining end radially flat and having a centrally located hole tapped longitudinally, the space remaining between said tube and said insert being sufficient to permit free passage of a stripped wire end, and a conductive metal tip with one end threaded to mate with said insert, said threaded portion abutting a shoulder for securing said stripped wire end between said shoulder and the mating surface of said insert, and the other end of said tip rod shaped and tapering to a point.

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