DEVELOPMENT OF INSULATING WIRE TERMINALS OF ELECTRICAL CONDUCTORS

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DEVICE FOR JOINING INSULATING WIRE TERMINALS OF ELECTRICAL CONDUCTORS

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The invention relates to a process and to means for joining electrical conductors, particularly at their ends, and is illustrated, by way of example, in the accompanying drawing, in which:—

Fig. 1 is a longitudinal sectional view of a joint constructed according to the invention.

Fig. 2 shows the helically wound wire sleeve in elevation and on an enlarged scale. Fig. 2a is a view similar to Fig. 2 showing a modified form of wire sleeve.

Fig. 3 is a view similar to Fig. 1 showing a helical wire sleeve of triangular cross-section.

This application is a division of my application Serial Number 479,949, filed June 23, 1921, issued February 5, 1929, as Patent No. 1,700,985.

In carrying out my invention the bare ends of conductors are twisted together into a terminal of uniform cross-section to which solder may be applied if desired.

According to the form of the invention illustrated in Figs. 1 and 3, a helical wound wire sleeve 2 is inserted in a cap 5 of hard rubber or of any other suitable insulating material, said cap having its open end portion formed with a conical interior surface. The ends 3 and 4 of the wire sleeve 2 may be bent over upon the sleeve to extend parallel to its axis, as illustrated in Figure 2, or may extend at right angles to the axis of the sleeve, as illustrated in Figure 2a. In either case, when the sleeve is inserted in said cap, the ends 3 and 4 slide in a groove 7 as illustrated in Figs. 1 and 3, or in grooves, arranged opposite each other in the insulating cap 5, if the ends of the wire sleeve extend on both sides of the wire sleeve, as illustrated in Fig. 2a. The ends 3 and 4 of the sleeve cooperate with the walls of said groove or grooves to prevent the sleeve from turning in the cap.

The cap with the wire sleeve inserted therein, is now screwed on to the twisted terminal 1 in the same manner as a nut is screwed on to the threaded end of a bolt. The material of which the wire sleeve is made should be harder than that of the conductor wires so as to enable the wire sleeve to cut a thread in the twisted terminal 1 when the cap is screwed thereon. It will be evident, that for this purpose, the individual turns of the wire sleeve form screw threads.

It will be noted that in screwing the cap on the terminal 1, the insulation 8 of the conductors will be drawn against the conical surface of the cap. In order to ensure a tight joint, however, a ring 6 of rubber or any other elastic material may be interposed between the ends of the insulation 8 and the conical surface, this ring being also conical to fit the conical surface of the cap. If before screwing the cap on the terminal, liquid shellac is poured into it, the shellac will be forced into the interstices of the metal parts and, upon hardening, will cooperate with the rubber ring 6 and insulation 8 to form an air tight and waterproof joint and will also prevent corrosion of the metal.

When dealing with conductors of large cross-section, the wire of which the sleeve 2' is made may have a triangular cross-section, as indicated in Figure 3, so that the inwardly directed edges of the wire form cutting threads for cutting threads in the terminal 1 as the cap is screwed thereon.

I claim:

1. An insulating cap for covering the ends of electrical conductors, comprising an outer rigid sleeve of insulating material, and a metal sleeve fitted into the bore of said outer sleeve, said metal sleeve being formed of a helically coiled wire, said outer sleeve constituting a holding device which holds the coiled wire against expansion, the wire forming threads upon said conductors when connecting them together.

2. An insulating cap for covering the ends of electrical conductors, comprising an outer rigid sleeve of insulating material and a metal sleeve fitted into the bore of said outer sleeve, said metal sleeve being formed of a helically coiled wire of triangular cross section.

3. An insulating cap for covering the ends of electrical conductors comprising an outer rigid sleeve of insulating material with a coiled metal wire on the interior thereof, said outer sleeve constituting a holding device which holds the coiled wire against expansion, the coiled wire forming threads upon said conductors and connecting them together.

4. An insulating cap for covering the ends of electrical conductors comprising an outer rigid sleeve of insulating material closed at one end with a coiled wire located therein and tightly
fitting the bore of the sleeve, said outer sleeve constituting a holding device which holds the coiled wire against expansion, the coiled wire forming threads upon said conductors and connecting them together.

5. A joining and insulating electrical connection comprising a plurality of conductor ends, a rigid joining and insulating device provided with an opening into which said conductor ends are received, and a coiled wire carried by said device within said opening, the coils of which form depressions on said conductor ends when applied thereto and tightly press said conductor ends together to form an electrical connection between them.  

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