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3,212,207

WIRE IDENTIFICATION MARKER

Filed Oct. 17, 1962

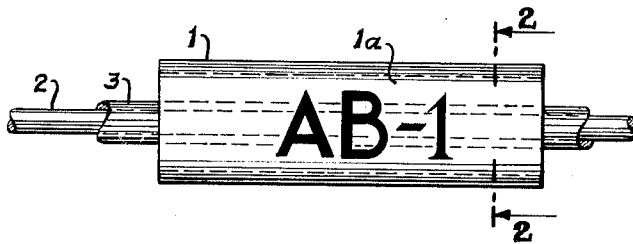


FIG. 1

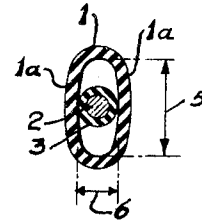


FIG. 2

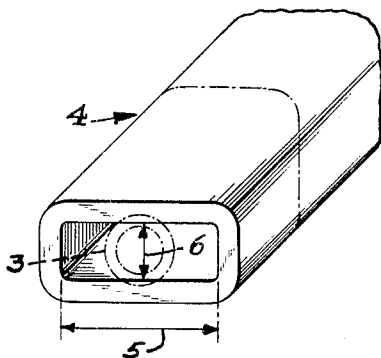


FIG. 3

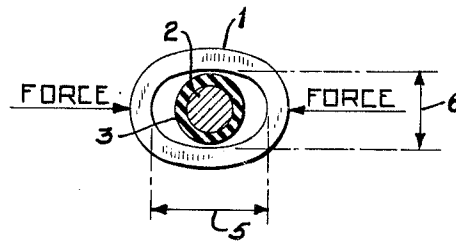


FIG. 4

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1

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WIRE IDENTIFICATION MARKER

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1 Claim. (Cl. 40—316)

This invention relates to wire identification markers, in particular to sleeve-type markers for identifying and tracing individual conductors or wires of complex electrical circuit assemblies, and to a method of preparing and affixing such markers to wires or conductors.

The use of marked labels, tags, etc. attached to individual circuit wires for tracing and/or identification of through-circuits, especially for assembly and testing, is old and well known practice. Such practice includes the use of cylindrical metal markers crimped on the wire insulation coating, marked adhesive strips or tags wrapped around the wire and other forms of marker blanks of various materials including metals, fabrics, plastics, etc., that require one or more time-consuming operations, generally for the purpose of permanently affixing them to the wire. In some of these examples, removal and replacement of the marker where the circuitry must subsequently be altered, could cause damage to a portion of the wire insulation. In other instances it has been proposed to draw by force a tube over a cylindrical conductor. This not only requires special tools but is time-consuming.

In cases where identification symbols must be more clearly and conspicuously shown, a marking surface or tag is sometimes formed apart from the actual wire securing means. In other instances where the symbols are stamped or marked directly on a cylindrical marker, it is often necessary to rotate the marked wire somewhat in order accurately to recognize the symbol.

In accordance with this invention, a resilient tube or sleeve having form retaining characteristics has a passage therethrough of substantially rectangular cross-section, wherein the transverse major axis of the cross-section is greater than the diameter of the wire to be marked and the minor axis is less than said diameter, and said sleeve is temporarily deformed by applying an external compression force on the tube along the major axis so as to elongate the minor axis and change the shape of the cross-section to a generally oval or elliptical form. The marker in this deformed condition is then slipped over the wire to the proper location and the compression force is removed so that the tube tends to assume its original rectangular cross-section. Since the minor transverse axis originally is somewhat less than the diameter of the wire, the tube passage cross-section now remains in generally elliptical form and the marker grips the wire in a resilient, firm engagement.

With the marker in position, a comparatively large and substantially flat surface is provided at each major side of the marker for clearer and conspicuous marking due to the elongated rectangular cross-section.

A principal object of this invention therefore is to provide an improved and unique wire identification marker that is compact, inexpensive and extremely simple in construction; that provides a practically flat and ample marking surface at its opposite side for conspicuous showing of the identifying symbols; that can be slipped over and affixed to the wire in a single, brief operation, that does not deform the wire insulation and that can be quickly replaced or shifted along the wire to a new position without damaging either the marker itself or the wire insulation.

The invention will be more fully set forth in the following description referring to the accompanying draw-

2

ing, and the features of novelty will be pointed out with particularity in the claims annexed to and forming a part of this specification.

Referring to the drawing, FIG. 1 is a plan view showing the marker (with symbol) attached to a portion of insulated wire; FIG. 2 is a cross-section view taken along the line 2—2 of FIG. 1; FIG. 3 shows a form of plastic tubing that may be segmented as indicated for producing the markers; and FIG. 4 illustrates the simple operation required to affix the marker on the wire.

In FIGS. 1 and 2 the marker 1 is shown attached to a conventional insulated circuit conductor wire 2 of circular cross-section having an insulating coating 3. One or both of the large comparatively flat sides 1a is marked by a symbol or code number as indicated, or wire identification.

The marker stock, referring to FIG. 3, comprises a tube 4 of suitable resilient material such as plastic, and markers of desired length as indicated, are cut from the stock. The cross-section of the tube is generally in the shape of an elongated rectangle. The major transverse axis 5 of the rectangle is greater than the diameter of the insulated wire (indicated in dotted line) and the minor transverse axis 6 is less than said diameter.

Thus, when the marker is compressed along its major axis 5 as indicated in FIG. 4, the rectangle tends to assume a generally elliptical shape wherein the major axis is shortened somewhat and the minor axis 6 is lengthened so that it is now greater than the aforesaid diameter. The marker may be readily compressed or squeezed manually between the fingers of the operative or wireman. The marker is held compressed in this position and then slipped over the wire to the desired location and the pressure is then released. Due to the resiliency of the marker walls the marker now contracts along its minor axis as it tends to assume its original rectangular shape. Since the minor axis cannot return to its original length, the wire is now gripped firmly along the minor axis by the marker sidewalls 1a as shown in FIGS. 1 and 2.

The pressure between the marker and insulated wire is such that the marker is held firmly in position and is restrained from sliding along the wire notwithstanding application of material pressure that may be applied to displace it. If it is desired to move the marker along the wire, either for relocation or actual removal from an end of the wire, the marker is simply compressed along its major axis as above described to remove the minor axis pressure. It will be noted that the major axis during contraction of the minor axis elongates so that it is of greater length than the diameter of the wire. Thus, the marker may subsequently be freely moved along the wire for removal or relocation without difficulty and without any abrasion of or damage to the insulating wire.

The present invention accordingly contributes materially to economical and efficient fabrication of electrical subassemblies, control and distribution panels, etc. involving large numbers of wire and terminals, by providing inexpensive, simple and conspicuous circuit identification that can be easily and quickly applied and if necessary, as readily replaced.

It should be understood that variations can be made within the spirit of this invention; for example, the marker tube can be made of any extrudable material having desired characteristics, including resiliency and mechanical strength, and the cross-section thereof may vary somewhat from a geometrical rectangle to achieve the same purpose.

What I claim is:

In combination, an electrical conductor of circular cross-section and a readily affixed and removable identi-

fication marker therefor comprising a preformed sleeve of resilient insulating material tending to return to its original shape upon deformation thereof, said preformed sleeve in its original shape having a longitudinal passage therethrough of generally rectangular cross-sectional area and identification marking on an exterior surface thereof, the transverse major axis of said area being greater than the diameter of said conductor and the transverse minor axis being less than said diameter so that squeezing of the sleeve between the fingers of an operative along said major axis causes sufficient elongation of the minor axis for easy sliding of the sleeve onto and over the conductor to a desired fixed location thereon, the tendency of the sleeve to return to its preformed shape upon release of squeezing pressure causing contraction of the sleeve along the minor axis for holding by frictional gripping the sleeve firmly in place on the conductor, coin-

cident with expansion of the major axis, and subsequent squeezing of the sleeve along said major axis causing removal of said frictional gripping for easy sliding of the marker sleeve on and from said conductor.

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