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O. S. A. MESCH

2,348,558

WIRE CONNECTING DEVICE

Filed Oct. 20, 1942

FIG. 1

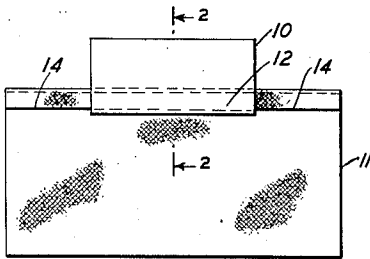


FIG. 2

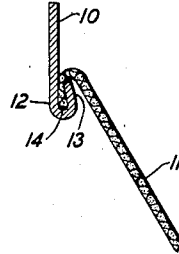


FIG. 3

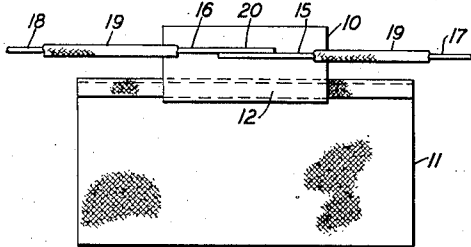


FIG. 4

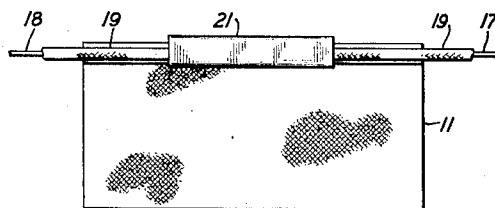


FIG. 5

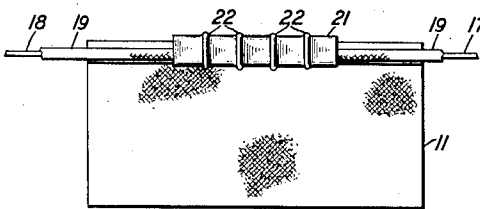


FIG. 6

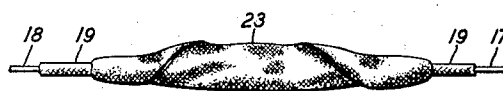


FIG. 7

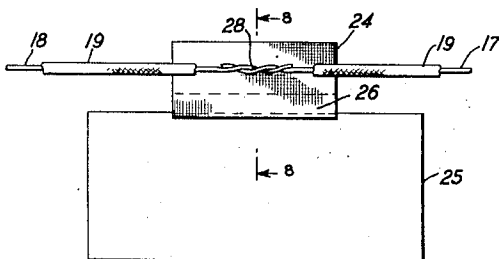
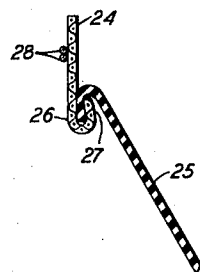


FIG. 8



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WIRE CONNECTING DEVICE

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6 Claims. (Cl. 174-84)

This invention relates to a wire connecting device suitable for use as a connecting means for wires.

The object of the invention is to provide means for quickly connecting a plurality of wires or repairing a break in a wire without requiring the use of a machine or specially designed tool in connecting the wire ends.

The device is constructed so that it may be readily wrapped by hand around the wire ends and comprises two connected parts one of which is made of electrical conducting material and the other of insulating material.

In the drawing,

Fig. 1 shows a plan view of the connecting device embodying the invention;

Fig. 2 is an enlarged cross-sectional view of the device taken on the line 2-2 of Fig. 1;

Fig. 3 corresponds to Fig. 1 and shows wires in position for application thereto of the device;

Fig. 4 shows the device with the conducting part wrapped around the wires;

Fig. 5 corresponds to Fig. 4 but with the conducting part of the device crimped against the wires;

Fig. 6 shows the device in its final form on the wires;

Fig. 7 shows a plan view of a modification of the device and with wires ready to receive the device; and

Fig. 8 is an enlarged cross-sectional view of the device shown in Fig. 7 and taken on the line 8-8.

In connecting one wire to another, it is common practice to twist one wire into electrical connection with the other and then wrap insulating tape around the connected portions of the wires. The same procedure is followed in repairing a break in a wire line. In some cases a sleeve of conducting material is applied to the connected portions of the wires before the insulating tape is applied. The insulating tape is usually carried in roll form by a lineman and is of such narrow width that several turns of the tape must be helically wrapped around the connected portions of the wires to cover the connected portions. The process is rather slow and tedious and somewhat difficult to perform particularly under storm or other conditions hazardous to the lineman. In the case requiring use of the metal sleeve, the sleeve is carried in tubular form of slightly greater internal diameter than the outside diameter of the wires and it is often found necessary to employ a rolling device or other specially designed tool to make the sleeve closely engage the wire ends.

My invention may be conveniently carried by a lineman and contains within itself a conducting part he may form by hand into a conducting sleeve to electrically connect and hold the wire

ends in electrical connection and a strip of insulating material that may be hand-formed by the lineman into an insulating covering for the conducting sleeve.

As shown in Figs. 1 and 2, the device forming this invention comprises a conducting part 10 and an insulating part 11 both of which are made of sheet material suitable for the purpose and sufficiently soft or pliable for hand working. The materials used for the parts 10 and 11 are a matter of choice but for the purpose of simplifying the description it will be assumed that the part 10 is made of rather soft sheet metal and the part 11 is made of woven fabric impregnated with some self-adhering insulating substance. In some cases I have used, for instance, soft sheet copper for the part 10 and woven fabric impregnated with paraffin for the part 11. The parts 10 and 11 are connected at 12 so that one part may not be readily separated from the other. To illustrate a simple and effective manner in which the parts 10 and 11 may be connected, the lower edge 13 of part 10 as shown in Fig. 2 is folded up and pressed into clamping engagement with a downwardly folded upper edge 14 of the part 11.

The device may be used as shown in Figs. 3, 4 and 5 to electrically connect and hold in electrical connection the bared ends 15 and 16 of two wires 17 and 18 each of which is provided with an insulating covering 19. The wires 17 and 18 may be simply laid on the conducting part 10 after portions of the wires have been bared of the insulating covering 19 and so that the bared end portions of the wires are in slightly overlapping relation at 20. The conducting part 10 is wrapped around the bared portions of the wires 17 and 18 as shown in Fig. 4 to form a conducting tube 21 which serves to electrically connect and hold the wires 17 and 18. To ensure good electrical connection of the wires 17 and 18 and to prevent withdrawal of the wires 17 and 18 from the conducting tube 21, several crimps 22 as shown in Fig. 5 are made in the conducting tube 21. The crimps 22 may be made by squeezing the tube 21 in a pair of hand pliers or by simply bending the tube 21 by hand at the desired points. The tube 21 forms a good electrical connection for the wire ends and is better from a conducting standpoint than simply twisting the wire ends together. After the wires 17 and 18 are electrically connected in the manner above described, the insulating part 11 is wrapped around the conducting tube 21 to form the insulating covering 23 shown in Fig. 6. The ends of the covering 23 may be pressed into close engagement with the insulating covering 19 on the wires 17 and 18. A slight twist may be manually imparted to the insulating covering 23 and particularly at the ends thereof to ensure close

engagement with the insulating covering 19 on the wires 17 and 18. When the part 11 is made of moisture-proof insulating material or is impregnated with such material, the wire connection may be satisfactorily used in storm or other severe atmospheric disturbances.

It will be appreciated that a lineman carrying a supply of wire connecting devices of this invention may quickly connect line wires or repair breaks in line wires simply by hand wrapping the connecting device around the wires at the required points.

Figs. 7 and 8 show a modified form of the invention which may be used for the same purpose as the one above described. In this form, however, the conducting part 24, corresponding to the part 10 in the other figures, is a strip of woven wire commonly called screen wire. The insulating part 25 is provided with an upwardly extending tab portion 26 which is folded downwardly into an upwardly folded lower edge 27 of the conducting part 24, the edge 27 being pressed into clamping engagement with the tab portion 26. The part 25 may be a strip of uncured rubber or may be made of other material suitable for the purpose. The wires 17 and 18, as shown in Figs. 7 and 8 are initially connected so that bared end portions of the wires 17 and 18 are twisted together at 28 and are arranged in such position that the conducting part 24 of the device may be readily wrapped around the connected end portions of the wires in the same manner as the part 10 in the other figures is wrapped around the wires to form the sleeve 21 shown in Fig. 4. It will be understood that the tube formed from the conducting part 24 may be crimped at spaced points in the same manner as the tube 21 shown in Fig. 5. The insulating part 25 may be then wrapped around the conducting portions of the wire connection and around portions of the insulating covering 19 on the wires 17 and 18 in the same manner as the part 11 shown in the other figures is wrapped around the parts to form the insulating covering 23 shown in Fig. 6.

A wide selection of materials is available for making the conducting and insulating parts of the device, the choice depending somewhat, however, on the temperatures encountered where the device is used. A relatively low melting point wax or adhesive might be used, for instance in the insulating part of the device when the device is to be used in a cold climate. The wax or adhesive might be such that it will soften and become tacky at a human body temperature. In this case when the insulating covering 23 is being formed, the temperature imparted to the material by the hand of the lineman would be sufficient to soften the material. In the event that the material could not be sufficiently softened in this manner, a lighted match or other convenient heating means could be applied to the covering to soften the material as required.

What is claimed is:

1. A device to be wrapped around wires to electrically connect and hold the wires in electrical connection, said device being manually operable to form the electrical connection without the aid of a mechanical tool and comprising, in

combination, a manually flexible strip of conducting material and a larger strip of manually flexible electrical insulating material having self-adhering qualities and in which only a single edge portion of said larger strip is secured to a single edge portion of said strip of conducting material and the point of securement of said strips is in the central portion of the connected edge portion of said larger strip.

2. A device to be wrapped around wires to electrically connect the wires, said device being capable of being manually formed to electrically connect the wires without the aid of a mechanical tool and comprising, in combination, a strip of soft sheet metal and a larger strip of woven insulating material impregnated with an adhesive electrical insulating substance, said strips being fold connected together at only a single edge of each strip and the point of fold connection of said strips being in the central portion of the connected edge of said larger strip.

3. A device to be wrapped around wires to electrically connect the wires, said device being capable of being manually formed to electrically connect the wires without the aid of a mechanical tool and comprising a strip of soft sheet copper and a larger strip of woven sheet insulating material impregnated with wax and interfold connected along only a single edge portion to a single edge portion of said strip of sheet copper.

4. A device to be wrapped around wires to electrically connect the wires, said device being capable of being manually formed to electrically connect the wires without the aid of a mechanical tool and comprising, in combination, a strip of wire screen and a larger strip of uncured rubber interlock secured along only a single edge portion to a single edge portion of said strip of wire screen.

5. A device to be wrapped around wires to electrically connect and hold the wires in electrical connection comprising in combination, a manually flexible strip of metal and a larger strip of manually flexible insulating material containing an adhesive substance and said strips being interlock connected to each other at only a single edge of each strip and arranged relative to each other in such manner that when said strip of metal is wrapped around said wires, said strip of insulating material will be in required position for wrapping around the electrical connection formed from said strip of metal.

6. A wire connection comprising in combination, two wires coated with insulating material and having bared end portions, a tube formed of sheet metal wrapped around the bared end portions of said wires, crimps formed in said tube to hold said wires against withdrawal from said tube, a sheet of insulating material securely fastened to said tube and wrapped around said tube and extending beyond said tube into close engagement with the insulating material on said wires and an adhesive substance in said sheet of insulating material to maintain said sheet of insulating material in wrapped condition about said tube of sheet metal and about said wires.

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