

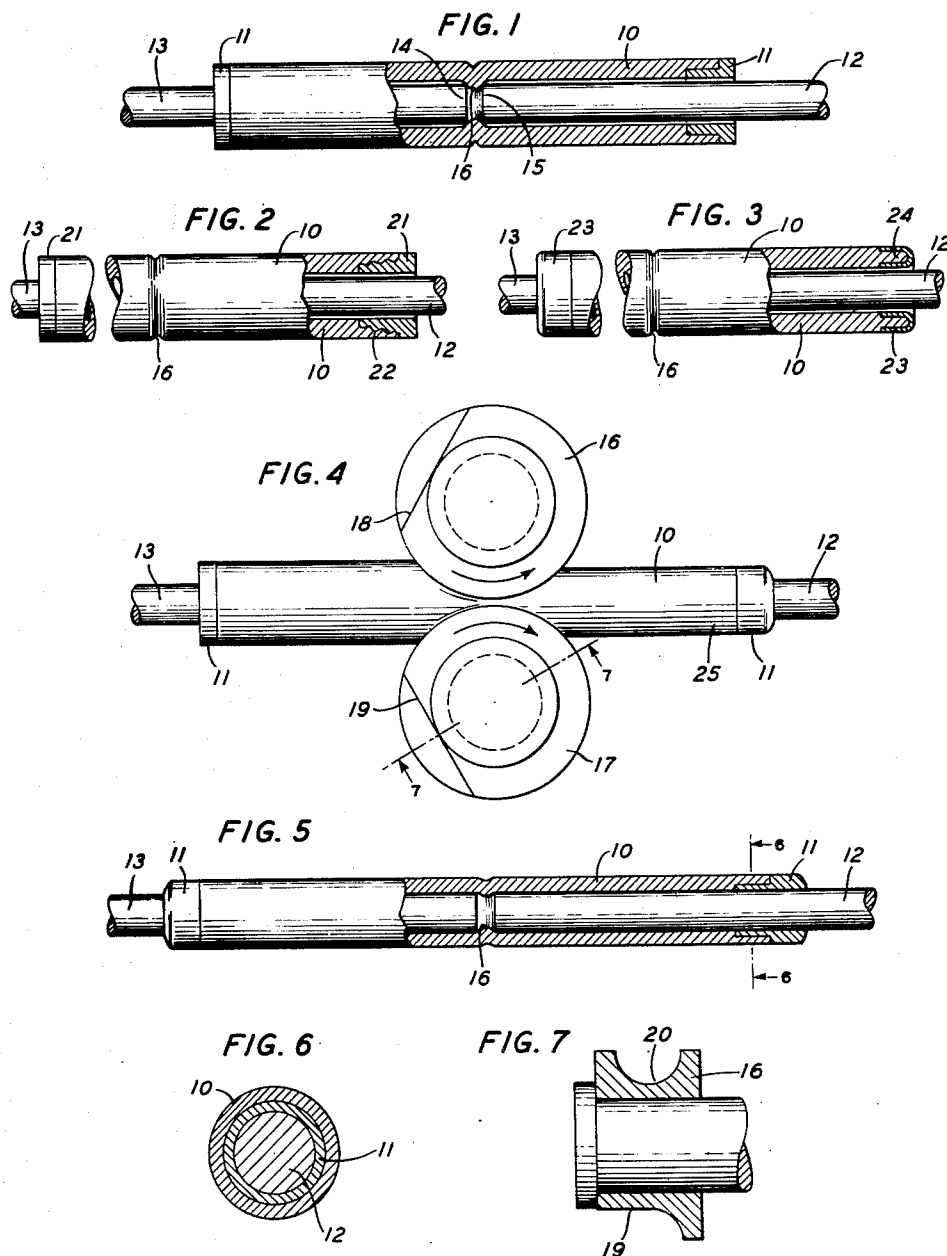
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JOINT IN LINE WIRES

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JOINT IN LINE WIRES

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2 Claims. (Cl. 287—75)

This invention relates to a method of making joints in ferrous wires.

One of the objects of the invention is to produce a joint which may be readily made and which will be equally as strong as the wire itself.

Another object of the invention is to produce a joint which will be impervious to moisture and will not corrode or rust.

A further object of the invention is to provide a joint which will maintain a constant resistance throughout the life of the wire.

A still further object of the invention is to provide a joint of such a construction and material that the portion of the wires to be joined will not be affected by the weather. A still further object of the invention is to provide a sleeve, for galvanized wire, which has at its end portion an excess of zinc so that any tendency to deplete the zinc from the steel wire adjacent the ends of the sleeve, by the well known action resulting from electro-potential differences between zinc and steel will be prevented and the coating of zinc on the line wire will be maintained.

In the joining of iron wires used on exposed lines by means of sleeves, it is necessary to prevent the entrance of moisture into the sleeve ends to prevent corrosion or rust and consequently increase the resistance of the joint.

In accordance with the present invention a joint between two ferrous wires is made by means of a sleeve composed of ferrous material, the sleeve being provided at its extremities with inserts or bushings of a non-ferrous material, for example, zinc.

It is a well known fact that zinc or some such similar material, when exposed to the elements and when in the proximity of another material, such as iron or steel, will act as a protective agent to that material and will prevent it from deteriorating due to its own disintegration. The dissimilar metals, together with a small amount of moisture, containing salts, etc., derived from the atmosphere will form a galvanic cell, set up a current and start corrosion. The metal that corrodes is oxidized in the sense that there is a loss of electrons. The metal which is electronegative to the other will be the one to be oxidized, while the electropositive metal will remain uncorroded. The electropositive or electronegative characteristic of a particular metal with respect to another may be ascertained by consulting the potential or electromotive series of elements, as for example the table given in the Bureau of Standards Bulletin No. 80, Protective Metal Coatings, Second Edition, 1922.

The applicant has taken advantage of this fact and has constructed a sleeve for making joints in ferrous wires comprising a sleeve portion out of ferrous material and having inserts or bushings at each end constructed out of non-ferrous material, for example, zinc. When the ends of the wires to be joined are inserted in the sleeve and firmly secured therein by forcing the sleeve and the inserts into intimate contact with the wires, the zinc inserts act as a protecting agent at the most vulnerable place of the joint, that is, where the ends of the sleeve come into contact with the wire, and at which point it is very necessary to protect. Due to the zinc inserts diverting the action of the elements to itself and as long as there is any of the zinc left, there will not be any deterioration of the wire or sleeve at this point.

Referring now to the drawing:

Fig. 1 is a view partly in section of one form of sleeve made in accordance with my invention, with the wires to be joined inserted therein;

Figs. 2 and 3 are modified forms of the invention;

Fig. 4 illustrates a suitable means for forcing the sleeve into contact with the wires to be joined;

Fig. 5 is a view partly in section illustrating a joint made in accordance with my invention;

Fig. 6 is a cross-sectional view taken on the line 6—6 of Fig. 5 and illustrates a section of the sleeve after it has been forced into contact with the wire; and

Fig. 7 is a cross-sectional view of one of the rollers taken on line 7—7 of Fig. 4.

Referring now to Fig. 1, a metallic sleeve 10 of ferrous material is provided at each end with a bushing or insert 11, said bushing being constructed of a non-ferrous material, for example, zinc. The wires 12 and 13, which are also of ferrous material, and which are to be joined together, are inserted into the sleeve 10 the proper distance; that is, until the ends 14 and 15 come in contact with the ridge 16 which has been previously formed on the interior of the sleeve. This ridge or obstruction is located midway between the ends of the sleeve 10 and prevents the wires 12 and 13 from being incorrectly placed in the sleeve 10.

After the wires 12 and 13 are positioned in the sleeve 10, the joint is now ready to be made by forcing the sleeve 10 into intimate contact with the wires 12 and 13. This may be done in any suitable manner, for example, a pair of rollers 18 and 19 such as illustrated in Fig. 4. These rollers are provided with flats 18 and 19 in order that the sleeve with the ends of the wires therein may

be inserted in the groove 20 of the rollers at the beginning of the operation and removed at the finish. This obviates the necessity of shifting the rolling tool over the full length of the wire in applying or removing the tool.

Figs. 2 and 3 illustrate alternate ways in which the bushings may be secured in the sleeve, for example, in Fig. 2 the bushings 21 are tapered and are provided with a series of corrugations 22. The interior of the sleeve 10 is also provided with corrugations which coincide with the corrugations on the bushings. These corrugations prevent the bushings from being displaced during the insertion of the wires 12 and 13 and the joining operation which follows.

In Fig. 3, I have shown another method of securing the bushings to the sleeve 10. The bushings 23 are in the form of a collar which fits over the reduced portion 24 of the sleeve 10.

As shown in Fig. 4, the rollers 16 and 17 have travelled approximately one-third the distance of the sleeve and have already forced the bushing 11 and a portion of the sleeve 10 into intimate contact with the wire 12, as shown by the reduced diameter of the sleeve 10 at the end 25. When the rollers 16 and 17 have travelled the entire length of the sleeve 10, they will have rolled the sleeve and the bushings 11 into intimate contact with the wires 13 and 14 as shown in Fig. 5.

I do not limit myself to any specific tool for forcing the sleeve into contact with the wire, as it is obvious that many modifications may be

made by those skilled in the art, for example, the tool shown in the pending application of W. S. Hayford, Serial No. 371,254, filed June 15, 1929, and that I am not restricted to the example shown and only by the scope of the appended claims.

What is claimed is:

1. A connection for preventing oxidation of the plating of metal plated wires comprising a metal sleeve for receiving the ends of said wires, metal inserts in the ends of said sleeve in intimate contact with the plating on said wires, the metal of said plating being electronegative with respect to that of the sleeve and neutral or electropositive with respect to that of the inserts, whereby any galvanic action that occurs will result in the oxidation of the insert rather than the plating on the wires.

2. A connection for preventing oxidation of the plating of metal plated wires comprising a metal sleeve for receiving the ends of said wires, metal inserts in the ends of said sleeve in intimate contact with the plating on said wires, the metal of said plating being electronegative with respect to that of the sleeve and neutral or electropositive with respect to that of the inserts, said wires and sleeve being made from ferrous material and said inserts being formed from zinc, whereby any galvanic action that occurs will result in the oxidation of the insert rather than the plating on the wires.

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