April 26, 1960 R. H. EARLE 2,934,595

GUY WIRE INSULATING MEANS

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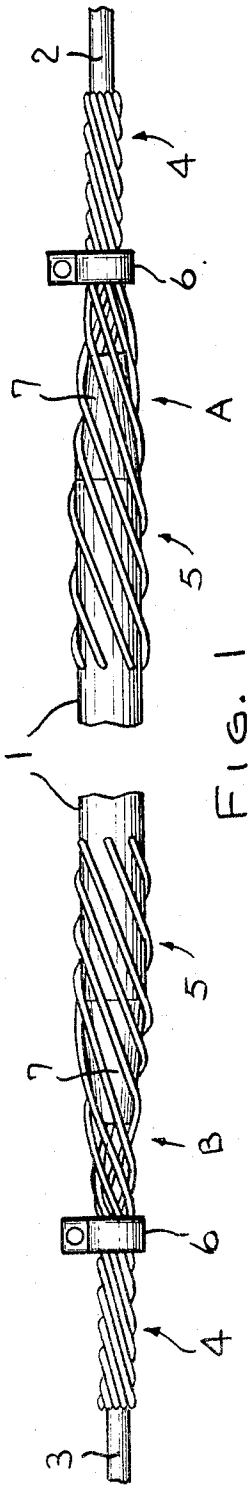


Fig. 1

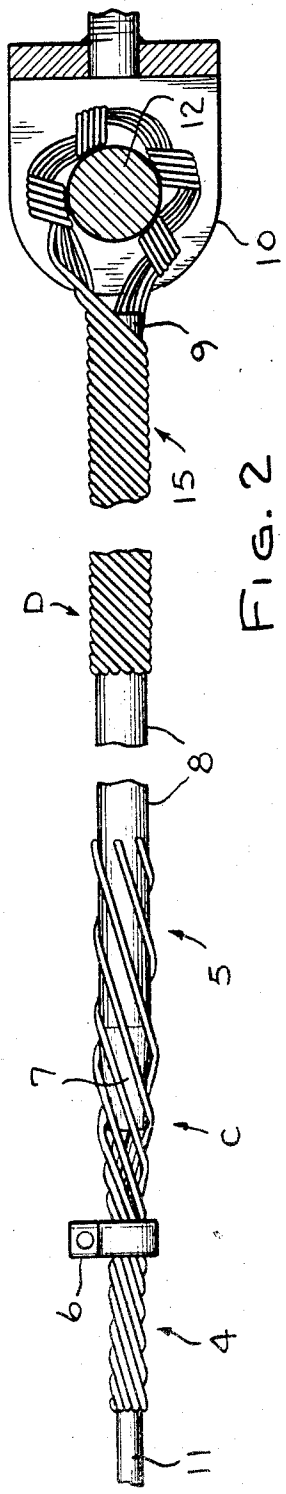


Fig. 2

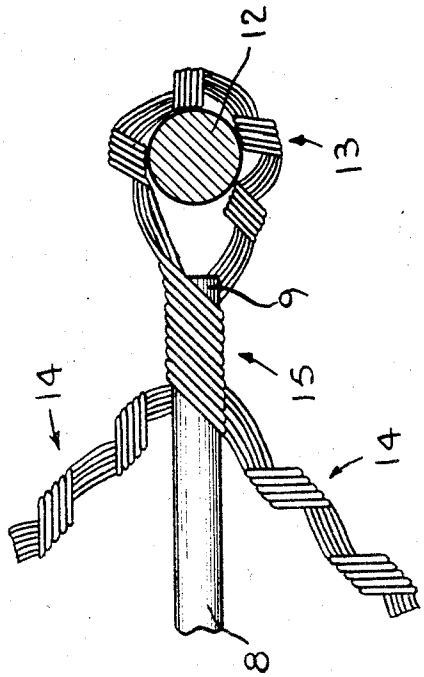


Fig. 3

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GUY WIRE INSULATING MEANS

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This invention relates to guy wire insulating means.

Where guy wires are employed for bracing poles for electric distribution lines or for other electric lines, it is customary to place insulating spacers in the guy wires between the pole and the ground anchor means.

Heretofore it was the usual practice to use fittings of various kinds attached to the insulating spacer by means of bolts or other attaching means, which required holes to be drilled in the insulating spacer to receive them. In using fittings of the customary types, a considerable amount of the insulating spacer material was wasted by drilling or otherwise machining or working the insulating spacer.

The insulating spacer may be of any suitable material. Frequently it is made of a plastic which has added thereto fiber glass to improve its characteristics. This insulating material, as well as most materials used for the insulating spacer, is quite expensive. It is highly desirable, therefore, to waste as little as possible of this relatively expensive insulating material.

An object of this invention is to provide guy wire insulating means in which very little or practically no insulating spacer material is wasted, and in which the insulating spacer need not be worked at all, except for very minor things, perhaps for a slight taper at the ends, but in which there is no substantial working and in which a great saving in material is thus effected.

It is therefore a primary object of this invention to provide a construction which conserves as much as possible of the expensive plastic insulating spacer rod and yet provide a substantial mechanical and strain resisting fastening means at one or both ends of the spacing rod or member.

A further object is to provide a construction in which preformed wires are used, such for example as those found on the market at the present time which are usually so constructed that they have an initial set to which they tend to return when in use, and to so construct this insulating spacer assembly that the preformed wires tend to grip the insulating spacer without the necessity of using any additional fastening means whatsoever but depending wholly upon the initial set or shaping of the preformed wires, and in which the gripping increases as the tension increases.

A further object of this invention is to provide an insulating guy wire spacer means which may be used to directly join the end of the guy wire to the insulating spacer rod or member or which may be used with a clevis or other fitting customarily used in power line transmission and to so construct the insulating spacer means for guy wires that the operation of joining the guy wire to the insulating spacer becomes a relatively simple and easily performed operation.

A further object is to provide a construction in which a spacer means of a given diameter may be joined to a guy wire of a different diameter with the utmost ease and without requiring any extra work in making the connection.

Embodiments of the invention are shown in the accompanying drawings in which:

Figure 1 is a view of one form of the invention showing an insulating spacer interposed between the ends of a pair of guy wires.

Figure 2 is a view of a further form of the invention in which the insulator is interposed between a clevis, or other fitting, and the end of a guy wire.

Figure 3 is a view showing the manner in which the construction shown in Figure 2 is formed.

Referring to the drawings, particularly Figure 1, it will be seen that an insulator **1** is interposed between the guy wires **2** and **3**. The insulator is connected to the ends of the two guy wires by means of preformed wires which are formed as tubes in a well known manner.

An end of each of the guy wires is placed in the correspondingly formed tubular portion **4** of the preformed wires and is firmly gripped by these wires for, as the guy wire is pulled in a direction outwardly from the preformed wires, these preformed wires tend to grip the guy wire tighter and tighter.

The outer end of the preformed wires that is to say the end farthest from the guy wire is expanded as indicated by the reference character **5**. Preferably a clamp **6** is placed around the original tubular portion of the preformed wires so that when the wires are expanded or more widely separated as shown for the portion **5**, this expansion or separation of the wires will not extend into the portion **4** as the clamp **6** limits the distance that the expansion occupies in the preformed wire assembly indicated generally at A in Figure 1. The preformed wire assembly for the other guy wire **3** is indicated generally by the reference character B and is used in identically the same way as that described for the portion A. The same reference characters are used for the two sections A and B.

The insulator **1** may have its ends tapered as indicated by the reference character **7**, so as to more easily fit into the expanded portions **5** of the preformed wire assemblies. This insulator may be of any suitable material such as wood, Bakelite, compreg, plastic reinforced by fiber glass, or other types of insulating material. It is to be noted that the tapered end **7** of the insulator **1** assists in the assembling and formation of the units shown in Figure 1. It is to be distinctly understood that the ends of the insulator **1** may be abrupt, that is to say the insulating spacer may be cut across a uniformly shaped rod of the desired insulating material. In this case the expanded portion of the preformed wires is suitably bent or shaped so as to take or conform to the abrupt ends of the insulator rod either initially or when in place.

Obviously these insulating spacers can be placed between any suitable devices desired. For example, in the form shown in Figure 2 the preformed wire assembly for the left hand end as viewed in Figure 2 is formed in exactly the same manner as that illustrated in the portions A and B of Figure 1. In fact, to minimize the length of the description, the same reference characters are used in Figure 2 for the left hand portion of Figure 2 as were used for Figure 1. The left hand preformed wire assembly shown in Figure 2 is indicated generally by the reference character C.

The insulator is indicated in Figure 2 by the reference character **8**. It differs from the insulator shown in Figure 1 in that only one end, namely the left hand end of Figure 2, indicated by the reference character **7**, is tapered. The other end of the insulator indicated by the reference character **9** is blunt or abruptly cut directly across the rod from which the several insulators are cut.

Figure 2 also shows the manner in which a clevis or other metal fitting **10** is connected to the guy wire **11**.

Referring to Figure 2 again, and to Figure 3, it will be seen how the preformed wire assembly shown at the right hand end of Figure 2, and indicated at D, is secured in clamping relation to the end 9 of the spacer 8. The pin 12 of the clevis 10 has looped around it a portion indicated by the reference character 13 of the tubular preformed wire assembly.

This preformed wire assembly has its ends indicated by the reference character 14 spread apart and stretched so as to open the spiral of each one of them. These open portions of the spirals of the portions 14 are fitted one into the other so as to form the portion 15 of the insulating spacer assembly. The completely finished construction is shown in Figure 2, and the partially formed construction is shown in Figure 3.

It will be seen therefore that this same type of preformed wire assembly can be used to join the ends of an insulating spacer to the ends of guy wires or can be used to join the end of a guy wire and any fitting whatsoever, such as the clevis shown in Figure 2, to the ends of an insulating spacer.

While the invention has been described with particular attention to guy wire insulating means it is to be understood that where the expression "guy wire" is used, it is to be interpreted as meaning the customary guy wire or any other wire or similar member in which this insulating spacer construction is desired.

Further it is to be understood that wherever an insulating spacer rod is mentioned that this term "rod" is to be interpreted broadly as covering a round rod, a rectangular rod or a rod of any other shape. It is to be understood further that only a few of the many ways are shown in which the ends of the insulating spacer member are joined to the guy wire or other member.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A guy wire construction comprising a pair of guy wires having spaced ends in direct alignment with each other, and an insulating spacer assembly joining the spaced ends of the guy wires, said spacer assembly including an insulator of larger diameter than the guy wires, tubular gripping members each formed of preformed helically twisted tubular shaped wire assemblies having two tubular gripping portions of different diameters, the portion of larger diameter having an expanded end gripping an end of the insulator and the portion of smaller diameter gripping an end of a guy wire.

2. A guy wire construction comprising a first member and a second member, an elongated insulator positioned between said members and having a first end located adjacent the first member and having a second end located adjacent said second member, a first connecting unit joining said first end of said insulator to said first member, at least the second member being a guy wire of smaller diameter than said elongated insulator, a second connecting unit joining said second end of said insulator to said guy wire, said second connecting unit having one end expanded and having the wires wrapped around said second end of said insulator and having wires of the other end wrapped around the guy wire, and a clamp extending around the said other end of said second connecting unit and said end of the guy wire and arresting the expansion of the wires of said second connecting unit, said clamp being located between said expanded portion and the adjacent portion of said second connecting unit which surrounds the guy wire.

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