

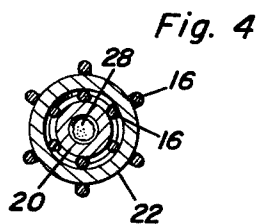
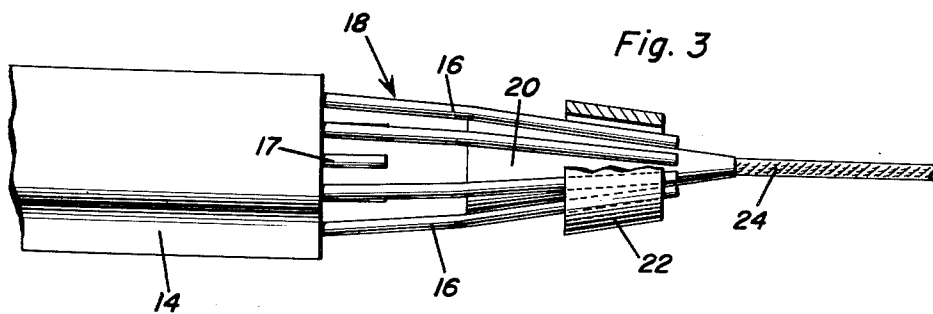
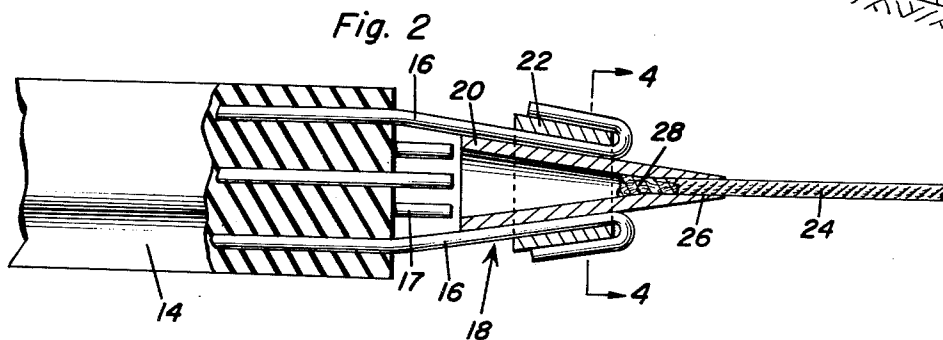
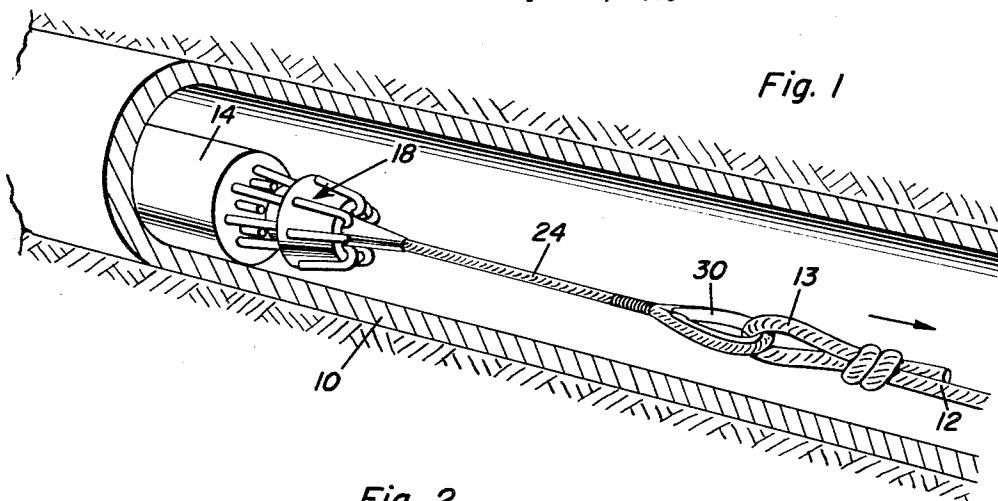
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ELECTRIC WIRE GRIP

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ELECTRIC WIRE GRIP

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This invention relates to connectors and more particularly to electrical conductor connectors.

The principal object of the invention is to provide a connector between a pulling rope or cable and a multi-conductor (or single conductor) separately insulated electrical control cable which must be pulled through an electrical conduit as used in electrical power generating plants or similar installations from pieces of equipment to electrical control boxes, panels, boards, etc. Although this is the principal object of the invention, it is to be clearly understood that the invention may be practiced in connection with pulling other types of electrical conductors through conduits, this being a difficult task in a number of instances and in a number of trades and professions. For example, an electrician wiring a house or a building having the necessity or desire for using conduit often finds it difficult to pull the electrical conductor therethrough, especially in those cases where there is very little room in the conduit for the electric conductor.

One of the principal features of the invention is that the grip will not become lost intermediate the length of conduit as is sometimes the case when clamps pull off or apart. The basketweave type of clamp is subject to this failure even though it is quite commonly used.

These, together with other objects and advantages which will become subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the electric wire grip showing it in use.

FIGURE 2 is a cross-sectional view of the grip.

FIGURE 3 is a side elevational view of the grip.

FIGURE 4 is a sectional view taken on the line 4-4 of FIGURE 2.

In the accompanying drawing, FIGURE 1 shows an electrical conduit 10 which is conventional in all respects. The same holds true for the pulling rope or cable 12 and the electrical conductor 14. Conductor 14 is of the multi-conductor type inasmuch as this type of conductor presents a difficult problem in pulling through conduit 10. Being a multi-conductor, conductor 14 has a plurality of wires 16 therein.

The gripping device 18 is made of a cone 20 and a truncated cone 22 adapted to fit over the outside surface of cone 20. The cones may be made of any suitable material, for instance, stainless steel. Cone 20 has the apical part open, and a steel rope 24 which is flexible is inserted in the opening 26. The ends of the flexible steel rope are frayed, and molten solder 28 is poured into cone 20 and allowed to harden. This makes it virtually impossible to ever pull the leader rope 24 from cone 20. There is an eye 30 at the outer end of the leader 24, and it is engaged with loop 13 at the inner end of the pulling rope 12.

In order to prepare electric conductor 14 for use with the gripping device 18, the conductor is skinned back a suitable distance, for instance from three to about seven inches in order to have approximately three to seven inches of the wires 16. The wires are flared out and placed on the inner cone outer surface and then they are folded down around the cone towards the small end. Then the truncated cone is slid down around the wires 16 and the leader 24 is pulled by a jerking motion. This

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tightens the grip of the cones, and the ends are bent over as shown in FIGURE 2. The gripping device 18 is now ready to be used.

Notice that the gripping device is no greater in diameter than the diameter of the conductor 14. With the conventional basket-weave type which grips on the exterior of the conductor, this same advantage is obviously not obtained. Any size opening that conductor 14 can pass through can be pulled with gripping device 18. With the mechanical arrangement described and shown, the harder the pull on leader 24, the tighter the grip becomes between inner cone 20, wires 16 and outer cone 22. There is no chance of losing conductor 14 through the fault of the gripping device 18.

Conductor 14 is a rather large diameter conductor having a copious quantity of wires 16. In such use, it is suggested that the inner wires 17 be cut and only the outer wires 16 be used. This is, however, a mere suggestion. For conductors having a smaller number of wires, it is possible and often preferable to use all of the wires of the conductor for actual gripping between device 18 and the wires.

The cone diameters have an advantage. The inner diameter of the small end of the outer truncated cone 22 is slightly smaller than the outer diameter of the large end of the inner cone 20 so that the truncated cone 22 will not at any time slip off the larger end of cone 20. This is a safety precaution during the use of the device, and enables the device to be hung on a nail or peg by using eye 30 without having the outer cone 22 slip off the inner cone.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. The combination of an electrical conductor having stripped wire ends, and a gripping device for pulling said conductor through a conduit, said gripping device comprising a hollow conical inner member disposed axially between said stripped wire ends of said conductor with its base adjacent the conductor and its apex oriented longitudinally outwardly therefrom, a pulling cable extending through an axial passage in the apex portion of said inner member into the hollow interior of the latter, solder-like means provided in the hollow interior of said inner member and securing said pulling cable therein, and a hollow frusto-conical outer member movably positioned on said inner member, said stripped wire ends of the conductor extending between said inner member and the inner surface of said outer member and being grippingly engaged thereby, said stripped wire ends of said conductor being provided with outturned and reversely bent terminal portions superposed on the outer surface of said outer member.

2. The combination of an electrical conductor having stripped wire ends, and a gripping device for pulling said conductor through a conduit, said gripping device comprising a hollow conical inner member disposed axially between said stripped wire ends of said conductor with its base adjacent the conductor and its apex oriented longitudinally outwardly therefrom, a pulling cable extending through an axial passage in the apex portion of said inner member into the hollow interior of the latter, solder-like means provided in the hollow interior of said inner member and securing said pulling cable therein, and a hollow frusto-conical outer member positioned on said inner member and movable longitudinally thereon,

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said stripped wire ends of the conductor extending between said inner member and the inner surface of said outer member in a direction toward the apex of the inner member and having outturned and reversely bent terminal portions at the outer surface of the outer member whereby to hook the outer member and urge the same longitudinally of the inner member toward said conductor to grip said stripped wire ends between the inner and outer members during application of a pulling force to said cable.

3. The combination of an electrical conductor having stripped wire ends provided with outturned and reversely bent terminal portions constituting hooks, and a gripping device for pulling said conductor through a conduit, said gripping device comprising a hollow conical inner member disposed axially between said hooks with its base facing the conductor and its apex oriented longitudinally outwardly therefrom in the direction of pull to be applied, a pulling cable extending through an axial passage in the apex portion of said inner member into the hollow interior of the latter, solder-like means provided in the hollow interior of said inner member and securing said pull-

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ing cable therein, and a hollow frusto-conical outer member surrounding said inner member with said stripped wire ends therebetween, said hooks having bight portions in abutment with the minor end of said outer member and free end portions lying against the outer surface of the outer member, whereby pulling force applied to said cable is transmitted to said conductor by both the engagement of said hooks with said outer member and the interposition of the wire ends between the outer and inner members of the gripping device.

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