

May 22, 1928.

E. E. KELLEMS

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CABLE GRIP

Filed Feb. 21, 1927

Fig. 3.

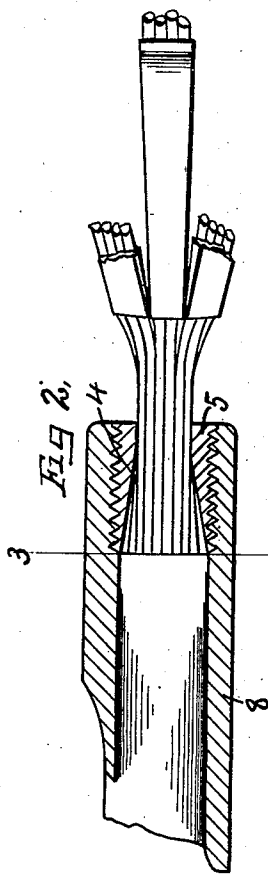
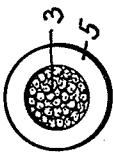


Fig. 1

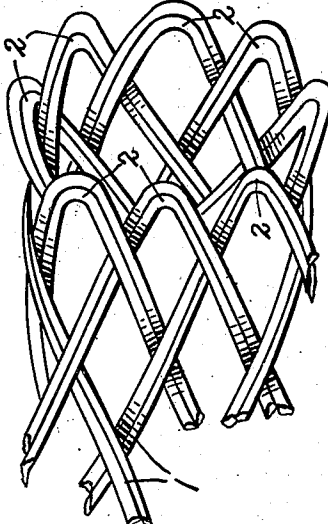
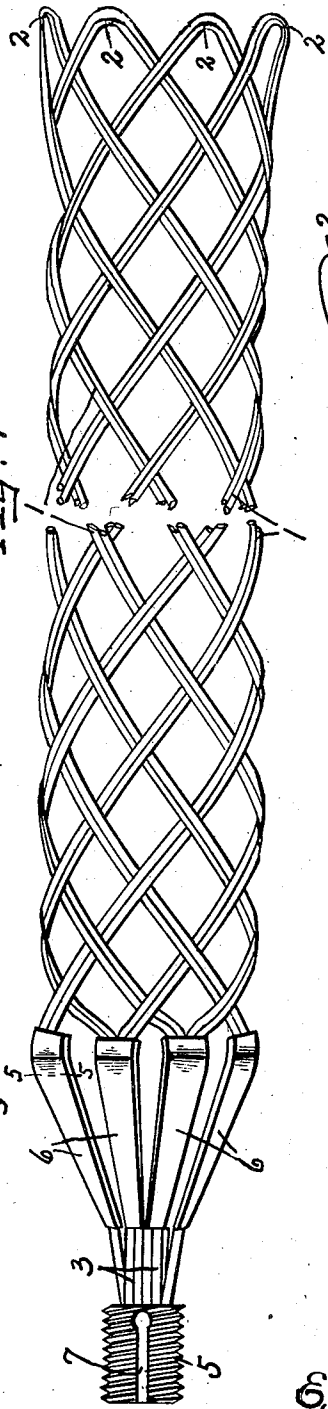


Fig. 4.

Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## CABLE GRIP.

Application filed February 21, 1927. Serial No. 170,043.

This invention relates to certain improvements in cable grips in which strands of wire or other suitable material are woven into tubular form for longitudinal extension and contraction whereby the diameter will be reduced when extended and increases when contracted so as to respectively grip and release the cable or other object engaged thereby.

10 In the manufacture of cable grips of this type it has been customary to weave the strands in tubular basket form from the draft and toward the open end of the grip so that the return folds of the strands might form a draft loop adapted to be attached to a suitable draft device for drawing the cable endwise.

Under these conditions the strands at the open end of the grip were left more or less loose or in some instances bound together in pairs circumferentially to prevent unweaving of the strands but under the severe usage to which the grips are subjected it is found to be difficult to prevent the unraveling of the strands particularly at the open end thereof without effecting its free radial expansion and contraction.

Furthermore, even when the free ends of the strands are bound together in pairs the end edges are more or less sharp and harsh upon the hands of the operators particularly when compressing the grip longitudinally from its open end to reduce it from the cable.

33 The strands at the draft end of the grip are usually bunched together to form the draft loop or for securement to some other form of draft device thereby reducing this portion of the grip while the adjacent expandible and contractile portion is of considerably larger diameter and therefore is subjected to the most severe strains and wear when drawing the grip with the cable therein through underground conduits and overhead ring supports.

One of the objects of the present invention is to weave the strands of the tubular grip from the open end of said grip toward the draft end so that the strands may form continuous return bends at the open end of the grip which not only facilitates the placing of the grip over and upon the cable or other object to be drawn endwise but also permits the open end to be engaged by the

hand and moved endwise toward the draft end for releasing the grip from the object without injury to the hands of the operator, the opposite ends of the strands being bunched together and firmly secured into a suitable draft device.

Another object is to provide the portions of the strands adjacent the draft device with metal reinforcements firmly secured thereto to take the initial strains and wear and thereby to protect the adjacent portions of the strands as the grip is drawn through the underground conduit or overhead support.

Other objects and uses relating to specific parts of the device will be brought out in the following description.

In the drawings:—

Figure 1 is a side elevation of my improved cable grip partly broken away.

Figure 2 is a face view of a portion of the draft end of the grip showing one of the reinforcing members and the adjacent portion of a draft device in section as attached to the adjacent end of the grip.

Figure 3 is a transverse sectional view taken in the plane of line 3—3, Figure 2.

Figure 4 is a perspective view of a portion of the open end of the tubular grip.

Figure 5 is a detail sectional view taken on line 5—5, Figure 1.

As illustrated, this cable grip comprises a series of wire strands —1— of substantially uniform length folded intermediate their ends at —2— to form continuous loops at the open end of the grip, the opposite sides of said strands being extended toward the other end of the grip and woven into tubular basket form so as to contract radially when extended endwise and to expand radially when contracted endwise for the purpose of respectively gripping and releasing a cable or other object inserted therein.

The ends of the strands at the draft end of the grip are bunched together at —3— and inserted in a tapered socket —4— of a coupling member where the ends are expanded against the walls of the tapered socket —4— are soldered or otherwise permanently secured in the coupling member —5—.

The portions of the strands of the tubular grip adjacent the bunched ends —3— flare more or less abruptly toward the open end of the grip and are reinforced by metallic tubes —6—, each embracing a pair of

strands which, in this instance, are double or composed of two wires for added strength although it is evident that the strands may be composed of single wires or made up of several fine wires.

Each reinforcing member —6— is slipped over the free ends of the strands which it is adapted to embrace before said ends are inserted in the coupling member —5— and are adapted to extend slightly beyond the junction of the taper of the draft end of the tube with the main body thereof to take the strains and wear incidental to the drawing of the grip with the cable therein through underground conduits or through overhead supporting rings, not shown.

When the tubular reinforcing members —6— are placed in operative position upon the strands they may be flattened as shown in Figure 5 to firmly bind the inclosed strands together and to hold said strands and reinforcing members against relative endwise or lateral movement without interfering with the free radial expansion and contraction of the main body of the grip.

The coupling member —5— is preferably split or slotted longitudinally at —7— and threaded externally for screw engagement with the adjacent end of a shuttle or coupling member —8— similar to that shown in my pending application Serial No. 167,203, filed Feb. 10, 1927.

This screw engagement of the member —5— with the member —8— serves to compress the member —5— upon the bunch ends of the strands —3— to assist in firmly securing the draft end of the cable to the draft member —8— which may be connected in any suitable manner to a winch cable or other draft device whereby the grip with the cable therein may be drawn through an underground conduit or overhead support as desired, the reinforcing plates —6— which are tapered toward the coupling member serving to facilitate the threading of the grip through the underground conduit or overhead rings with a minimum resistance and also with a minimum wear upon the strands near their junctions with the coupling.

#### *Operation.*

Heretofore it has been customary to weave the grips of this type from the draft end toward the open end but in the present application the method of weaving is reversed so as to cause the strands at the open end of the grip to form continuous loops thus producing smooth end edges at the open end of the grip as distinguished from the sharp end

edges produced under the old method of weaving.

The formation of these continuous loops —2— at the open end of the grip enables the latter to be more easily placed over and upon a cable or other object to be installed to be drawn endwise and also greatly facilitates the release of the grip from the cable by moving the hand against the smooth end faces of the loops and then compressing the grip endwise thereby expanding the same radially to free it from the cable and permit its withdrawal therefrom.

What I claim is:—

1. A tubular-woven wire cable grip having the portions of its strands at its cable-receiving end returned toward its opposite end to form a series of loops in uniformly spaced relation about the axis of the tube.

2. A cable grip composed of wire strands interlaced about a common axis and extending continuously from the draft end of the grip to the cable-receiving end and return to the draft end to form a series of loops in uniformly spaced relation circumferentially about said axis at the cable receiving end.

3. An expansible and contractile grip composed of wire strands interlaced about a common axis and having their ends bound together at one end of the grip and their remaining portions continuous to and return from the other end of the grip to form a series of loops in circumferentially spaced relation about said axis.

4. A cable grip composed of interwoven wire strands extending continuously from the draft end of the grip to the cable-receiving end and return to the draft end, and a socketed head in which the draft ends of the strands are secured.

5. A cable grip comprising a socketed head, a tubular woven mesh of wire strands having their ends received in the head and their remaining portions continuous from the head to the cable-receiving end of the grip and return to the head the threads being uniformly spaced circumferentially about the axis of the tube.

6. A gripping device comprising a tubular woven mesh of wire strands bunched together at one end, and metal wearing members, each embracing a pair of the strands adjacent the bunched ends and extending to the larger portion of the woven mesh to protect the embraced portions of the strands against wear by external objects as the gripping device is moved from place to place.

In witness whereof I have hereunto set my hand this 27th day of January, 1927.

EDGAR E. KELLEMS.