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H. R. WENGEN ET AL

2,835,949

ANCHORING DEVICE

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Fig. 1

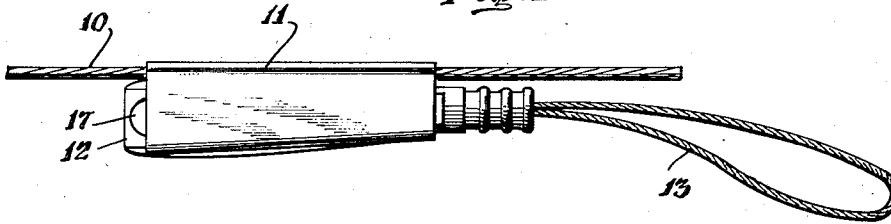


Fig. 2

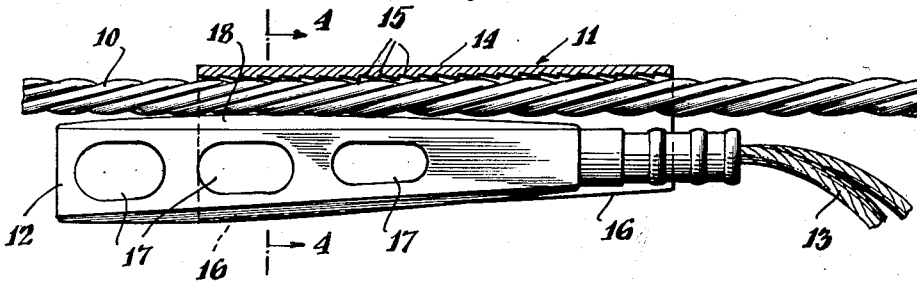


Fig. 3

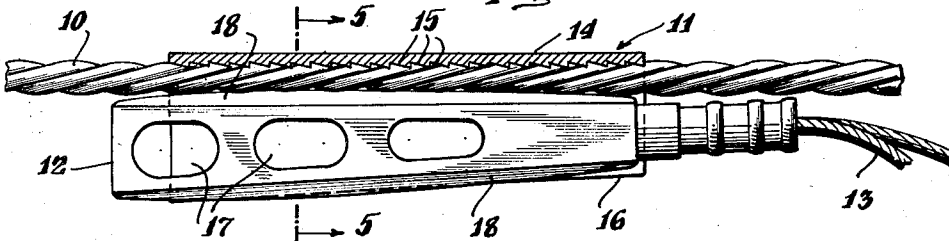


Fig. 4

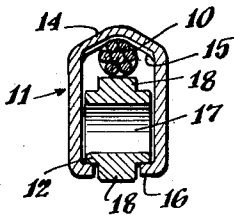


Fig. 5

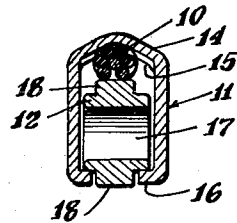
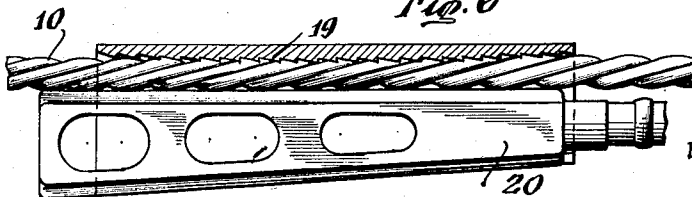


Fig. 6



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ANCHORING DEVICE

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6 Claims. (Cl. 24—126)

This invention relates to a structurally and functionally improved anchoring device for cables and especially a unit of the type which may be advantageously employed in connection with a "dead end" assembly.

It is a primary object of the invention to furnish a device of this type which will cooperate with a conductor or cable in a manner such that danger of slippage, even under initial conditions of application, will be minimized.

Thus the lineman will not be confronted with a "slip" problem. Moreover, by means of the present teachings, it will not be necessary for the user to resort to hammering or other manipulation of the parts to establish a firm engagement between the device and the conductor. With an initial condition of tension exerted, slippage will in effect be completely eliminated and the coupling between the conductor or cable and the anchoring device will be distributed over a relatively large surface area.

Still another object of the invention is that of providing an assembly of this type which will include relatively few parts, each individually rugged and simple in construction and capable of functioning over long periods of time with freedom from all difficulties.

With these and other objects in mind, reference is had to the attached sheet of drawings illustrating practical embodiments of the invention and in which:

Fig. 1 is a side elevation of the assembly applied to a conductor;

Fig. 2 is a sectional side view of the parts in their initial condition;

Fig. 3 is a similar view showing the position assumed when full tension is applied;

Figs. 4 and 5 are transverse sectional views taken respectively along the lines 4—4 and 5—5 in the direction of the arrows as indicated in Figs. 2 and 3; and

Fig. 6 is a view similar to Fig. 3 but showing an alternative form of construction.

In these views, the numeral 10 indicates a conductor or wire which is to be secured. To obtain this result, there is applied to that conductor an anchoring device embracing a sleeve element 11 which encloses a wedge element 12. The wedge has connected to it in any acceptable manner a cable 13 or other coupling member. This may pass around a support such as a post. Therefore, with the wedge and sleeve gripping the conductor and cable 13 secured, it is apparent that strains on the conductor to the left, as in Fig. 1, will result in its being retained against movement.

Now considering the specific construction involved and with particular reference to Figs. 2 to 5 inclusive, it will be observed that sleeve 11 embraces a generally U-shaped body, the base portion 14 of which may be indented. The inner face of this base is preferably provided with serrations in the form of a series of teeth 15. The width between the arms of the sleeve should be adequate to accommodate all diameters of cable in association with which the anchoring device is to be employed. The outer ends of the arms defining the sleeve are extended in-

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wardly as indicated at 16. The spacing between the adjacent edges of these inwardly extending end portions is adequate to accommodate therebetween a part of the wedge element.

That element presents a tapered body, the central area of which is preferably formed with a series of openings 17. Its maximum width is slightly less than the space existing between the inner faces of the two arms embraced in the U of the sleeve. Its longitudinal edges are defined by raised or ledge portions 18 having a width slightly less than the distance between the edges of inwardly projecting portions 16. Such ledges are incorporated merely in the upper and lower edges of the wedge element as shown in the several views. It will be observed that the outer or bearing surfaces of the ledges 18 are longitudinally curved.

Thus, as generally illustrated, the sleeve 11 will be applied to the cable or conductor 10 by threading the latter through the sleeve or else passing it through the space existing between the inwardly turned edge portions 16. Wedge 12 will also be disposed within the sleeve and the parts will therefore assume the relationship shown in Fig. 2. If, now, as a consequence of a pull being exerted upon the loop 13 or an equivalent anchoring member, the wedge moves to the right as shown in Figs. 1, 2 and 3, then the "high point" in the ledge 18 which is in contact with conductor 10 will force it into intimate contact with the adjacent inner face portion in the base of the U. Due to the crotch structure incorporated in the base surfaces 14, the conductor will be centered with respect to the ledge. As the wedge moves relatively to the sleeve in an inward direction, an initial bite between it and the conductor occurs adjacent the highest point in the curved edge of the wedge. This will force the adjacent zone of the conductor into engagement with the serration or tooth 15 within that zone. In fact, it may force the conductor into engagement with several of these teeth. As the strain on element 13 increases incident to conductor 10 exerting a pull, the wedge will be forced further into the socket or sleeve.

As this action occurs, the strands of the conductor will be flattened or squashed in the manner indicated in Figs. 3 and 5. Therefore, they will be forced into locking engagement with an increasing number of teeth or serrations 15. This action may continue until the conductor 10 is in engagement with the base portion of the sleeve throughout substantially the entire length of the latter. As will be evident, with such engagement occurring the likelihood of any slippage coming into being between the anchoring device and the conductor will be decreased. Finally, these units will in effect be fixed against any movements with respect to each other. Of course, the parts may be loosened by simply forcing the wedge outwardly with respect to the sleeve as shown in Fig. 2. The wedge is completely reversible. In other words, both of its ledge portions 18 duplicate each other. Therefore, the linesman need not be concerned as to which ledge is uppermost. In either event, one ledge will engage with conductor 10 while the other ledge extends through the space existing between in-turned edge portions 16 and with the body of the wedge riding upon the internal guiding surfaces provided by these end portions.

If it is not desired to incorporate the radius or curvature in the wedge member, then it may be included in the sleeve. This has been illustrated in Fig. 6. In that view, the numeral 19 indicates the sleeve which is identical with sleeve 11 excepting only that its base portion is longitudinally curved and preferably also includes serrations as heretofore described. If it is not desired to utilize a complementary wedge of the type indicated at 12, then a wedge 20 may be employed which has straight longitudinal ledges. In any event, a radius is thus in-

cluded in the assembly which assures an initial locking engagement between the parts as a strain is exerted on the wedge. As the strain is continued with consequent shifting of the wedge inwardly into the sleeve or enclosing member, the conductor 10 will have its strands displaced with respect to each other in a manner such that the body of the conductor flattens or squashes. Under initial conditions, the linesman is assured that a slip will not occur. Therefore, he is able to proceed with his work without apprehension regarding this factor. As the wedge moves to its completely seated or final position an increasing area of the conductor is clamped between the edge of the wedge and the base of the sleeve. This will be to both sides of the "high point" established by the radius of the sleeve in this view. Therefore, a firm coupling will be assured.

It will be noted as a consequence of the structure included in base surfaces 14 that a guiding provision for the conductor is incorporated. This will assure a centering of that element as pressure is exerted upon it. Accordingly, unit 10 will be disposed midway between the side faces of the wedge and sleeve elements. Due to the fact that the faces of the wedge to each side of ledges 18 are substantially flat and with the cooperating faces of inwardly extending portions 16 being similarly contoured, a straight path of movement of the wedge is assured with respect to the sleeve as these elements are reciprocated with respect to each other. Whether the "high point" be incorporated in the face of the ledge or in the base of U a proper cooperation of the parts with the conductor will follow even under minimum shifting of the elements; the conductor extending in a substantially straight line through the assembly and beyond the same.

Thus, among others, the several objects of the invention as specifically aforementioned are achieved. Obviously numerous changes in construction and rearrangements of the parts may be resorted to without departing from the spirit of the invention as defined by the claims.

We claim:

1. A cable-anchoring device including in combination sleeve and wedge elements both tapered in only one direction, said sleeve element being U-shaped in cross section, inwardly extending portions at the ends of its arms having their opposed edges spaced from each other, said wedge

element being disposed for free sliding movement with respect to and between the arms of said sleeve element and comprising a body portion having a width greater than the space between said opposed edges, longitudinal ledges extending outwardly from the upper and lower edges of said wedge element, said ledges each having a width less than the space between such opposed edges, one of said ledges lying adjacent the base of the sleeve element and substantially parallel thereto and the other ledge riding between the opposed edges of the inwardly extending portion.

2. In an anchoring device as defined in claim 1, the inner face of the base of the sleeve element and the adjacent ledge each presenting surfaces to engage with a cable interposed therebetween and cable-gripping serrations formed in one of said surfaces.

3. In an anchoring device as defined in claim 1, the inner face of the base of the sleeve element and the adjacent ledge each presenting surfaces to engage a cable interposed therebetween and one of said surfaces being longitudinally curved toward the other to provide a point at which the cable will be initially engaged thereby.

4. In an anchoring device as defined in claim 1, the ledges being longitudinally curved in a direction outwardly from the body of said wedge.

5. In an anchoring device as defined in claim 1, the base of the U of said sleeve element being longitudinally curved toward its inwardly extending portion.

6. In an anchoring device as defined in claim 1, coupling means connected to the reduced end of said wedge element.

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