

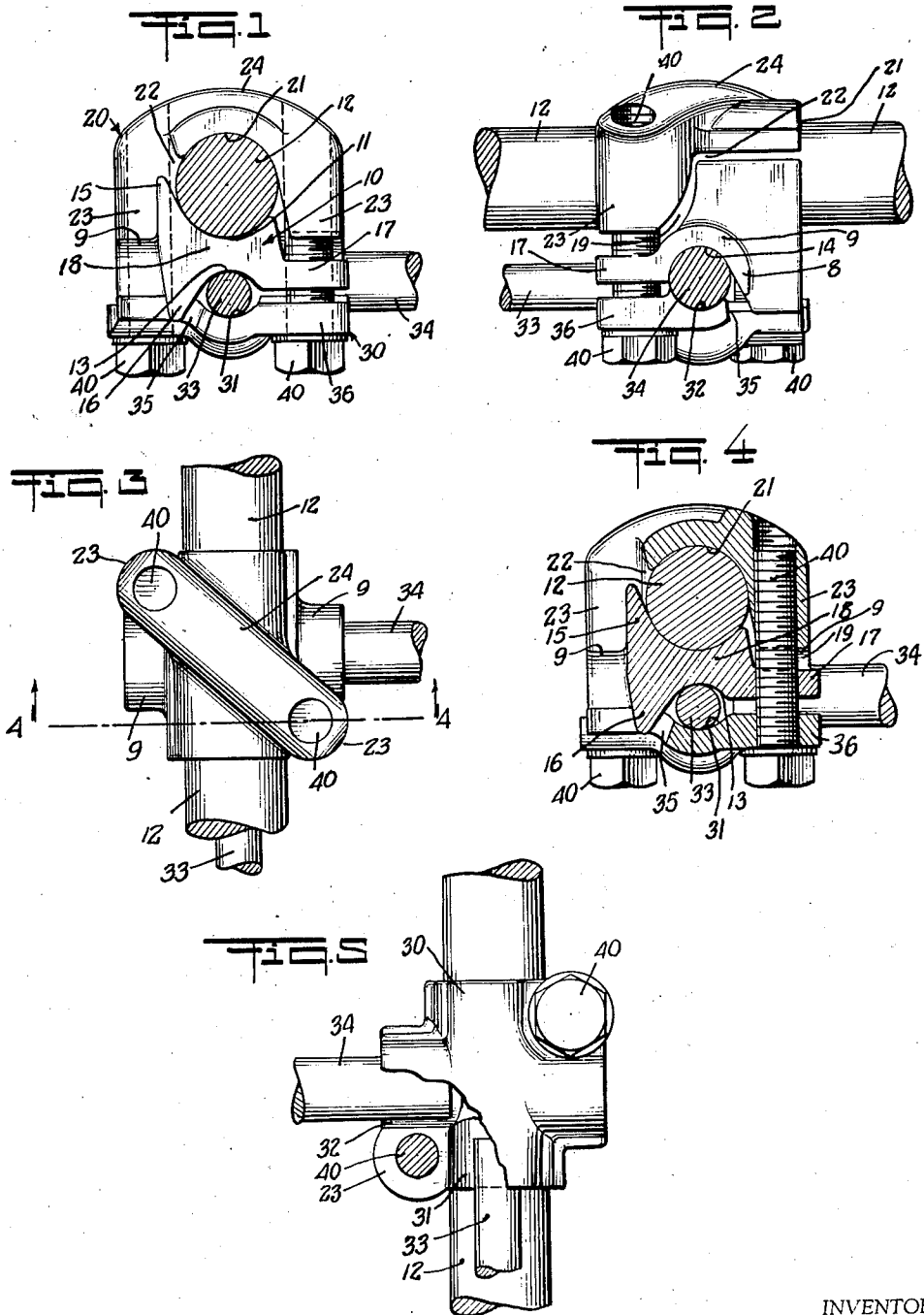
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B. DIBNER

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MULTIPLE CABLE CONNECTOR

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INVENTOR.

BERN DIBNER

BY

Harry Ernest Tubens
ATTORNEY.

UNITED STATES PATENT OFFICE

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MULTIPLE CABLE CONNECTOR

Bern Dibner, Crompond, N. Y.

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4 Claims. (Cl. 287—49)

My invention relates to clamp type electrical cable connectors, especially those suitable for use in industrial or building wiring.

The principal object of my invention is to provide a connector that may be used as a parallel tap, a T-connector, a cross connector or as an end-to-end connector, and especially adapted to connect a main conductor to two branch conductors at right angles to each other.

Another object of my invention is to provide a connector that will clamp a range of cable sizes in either the main or branch connection grooves.

Still another object of my invention is to provide a connector of minimum bulk and one which can be readily taped up.

A further object of my invention is to avoid the use of special tools to install the connector.

Still another object of my invention is to provide interlocking barriers to surround the cables so that all the various parts are properly aligned and the cables are completely enclosed, no matter in which combination they may be used.

Another object of my invention is to use high strength, low electrical conductivity materials for those parts which carry the mechanical stress, and low strength, high electrical conductivity material for that part which transmits the electrical current from one cable to the other.

Still another object of my invention is to provide a clamp which grows smaller and more compact as the cable which it clamps grows smaller in diameter.

Still another object of my invention is to accomplish the previously enumerated objects at low cost.

I accomplish these and other objects and obtain my new results as will be apparent from the device described in the following specification, particularly pointed out in the attached claims, and illustrated in the accompanying drawing, in which:

Fig. 1 is an end view of my connector with main and two branch conductors supported therein.

Fig. 2 is a side view thereof.

Fig. 3 is a top view.

Fig. 4 is a sectional view taken along line 4—4 of Fig. 3.

Fig. 5 is a bottom view, partially in section.

Referring to the drawing, numeral 10 is the center body having one groove 11 on one side for the main cable 12 and two crossing grooves 13 and 14 on the other side for the branch conductors. The end body 20 is positioned adjacent the center body and has a groove 21 facing the

groove 11 of the center body and cooperating with the same to grip the main cable 12. The end body 30 is positioned adjacent the center body on the remaining side and has two crossing grooves 31, 32 facing respectively the grooves 13, 14 of the center body and cooperating with these grooves to grip the branch cables 33 and 34.

The center body 10 has upwardly and downwardly extending projections 15 and 16 interlocking with cutaway sections 22, 35 of the end bodies to complete the encirclement of the cables, whereby the cable strands are prevented from spreading or escaping.

The end body 20 has two extending internally threaded lugs 23, diagonally positioned with respect to the end body and located on opposite sides of the groove 21. Thus, the two lugs 23 are positioned at corners diagonally opposite to each other with respect to the groove 21 and also with respect to the other grooves of the other bodies. A diagonal reinforcing rib 24 runs from one lug 23 to the other.

Both the center body 10 and the end body 30 have a pair of extending bored bolt lugs 17 and 36 respectively, through which the clamping bolts 40 pass and keep the bodies properly aligned.

Sufficient thickness, as at 18, is provided between the opposite grooves 11 and 13 of the center body to provide for the clearance of the insulation when parallel cables are installed. The thickness of the metal between the crossing groove 14 and the groove 11 may be considerably reduced. I have provided this level difference to make possible a more compact clamp. Similarly, in the body 30, the crossing groove 31 is situated at a different level than the groove 32, corresponding with the levels of grooves 13 and 14, and this is also desirable to make the clamp more compact.

The lugs 23 of end body 20, project towards the center body 10, and fit into corresponding recesses 19 therein. These projecting lugs are additionally important because they provide extra threads for the bolt and thus insure maximum strength, equivalent to a U-bolt construction.

Extensions 9, located on opposite sides of center body 10, provide additional gripping surface for grooves 14, and project at one end thereof, as at 8, to encircle the cable inserted therein.

It should be noted that the views of the connector shown in Figs. 1 and 2, are identical to

the views of their reverse sides. This symmetry makes possible a further ease of assembly.

The end bodies 20, 30 are made of strong material which may be low in electrical conductivity. The center body 10 is made of less strong, but highly conductive material, such as pure copper or a suitable alloy.

By the foregoing construction I have provided a compact clamp, adapted to serve a wide variety of sizes. The desirable objective of providing a device adapted to function as a distributor-feeder connector taking current from a main cable and distributing it to right angled branch cables is an important advantage in addition to the ordinary combinations of cable connections. By the provision of interlocking projections of the central body with corresponding cut-outs located on both end sections, I have created a connector made of a number of parts which are self aligning with or without installation on the cables, and permit the insertion of the bolts into aligned apertures, reducing cross strain on the bolts and parts.

I have shown my preferred construction with two diagonally positioned bolts which when in engagement with the end plate 20, provides, in effect, a U bolt construction of exceptional sturdiness. Of course, four bolts may be used.

I have thus described my invention, but I desire it understood that it is not confined to the particular forms or uses shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from the spirit of my invention, and, therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which, objects of my invention are attained and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of the many that can be employed to attain these objects and accomplish these results.

What I claim and desire to secure by Letters Patent is as follows:

1. A cable connector comprising a center body and two end bodies, one side of said center body having a groove, and the opposite side having two crossing grooves, one end body positioned on the single grooved side of the center body and having a groove adapted to cooperate with the groove of that side of the center body to grip a run cable; the other end body positioned on the double grooved side of the center body and having two crossing grooves adapted to cooperate with the crossing grooves of the center body to grip two tap cable ends of different di-

ameters inserted at the angle of the crossing grooves, the end body having the single groove being provided with only two threaded apertures obliquely spaced with respect to the run conductor grooves; and cap screws for threaded engagement with the threaded apertures for clamping said three bodies together; said center body being provided with outwardly extending ear sections having relatively less thickness than the thickness of the center section and provided with recesses for the cap screws to permit tilting movement of the center section with respect to the axis of the cap screws, to insure proper clamping of the inserted tap cables of varying diameters.

2. A cable connector comprising a center body having one groove on one side and two crossing grooves on the opposite side; an end body positioned on the single grooved side of the center body and having a groove adapted to cooperate with the groove of that side of the center body to grip a cable; a second end body positioned on the double grooved side of the center body and having two crossing grooves adapted to cooperate with the crossing grooves of the center body to grip tap cables, the center body having external extensions projecting toward the end bodies and interlocking with cutaway sections of the latter; and means to clamp the three bodies together.

3. A cable connector comprising a center body with two differently grooved opposite surfaces; two end bodies positioned on the grooved sides of the center body and having grooves adapted to cooperate with the corresponding grooves of the center body to grip cables, one of these end bodies having two diagonally positioned threaded lugs extending towards the center body and the remaining end body provided with corresponding diagonally positioned holes, said center body provided with corresponding diagonally positioned recessed and apertured ear sections to accommodate said lugs; and bolts threaded in said lugs and passing through the diagonally positioned holes in the remaining end body, and apertures in the recessed ear sections in the center body, for clamping the three bodies together about the cables.

4. A cable connector according to claim 1 wherein one of the crossing grooves of the center body is formed at a different level than the other crossing groove and the two corresponding crossing grooves of the facing end body are correspondingly formed at different levels with the groove transverse to the run cable, closer thereto.

BERN DIBNER.