Nov. 20, 1962 W. G. OSBORN 3,065,452

CONNECTOR

Filed Aug. 3, 1959

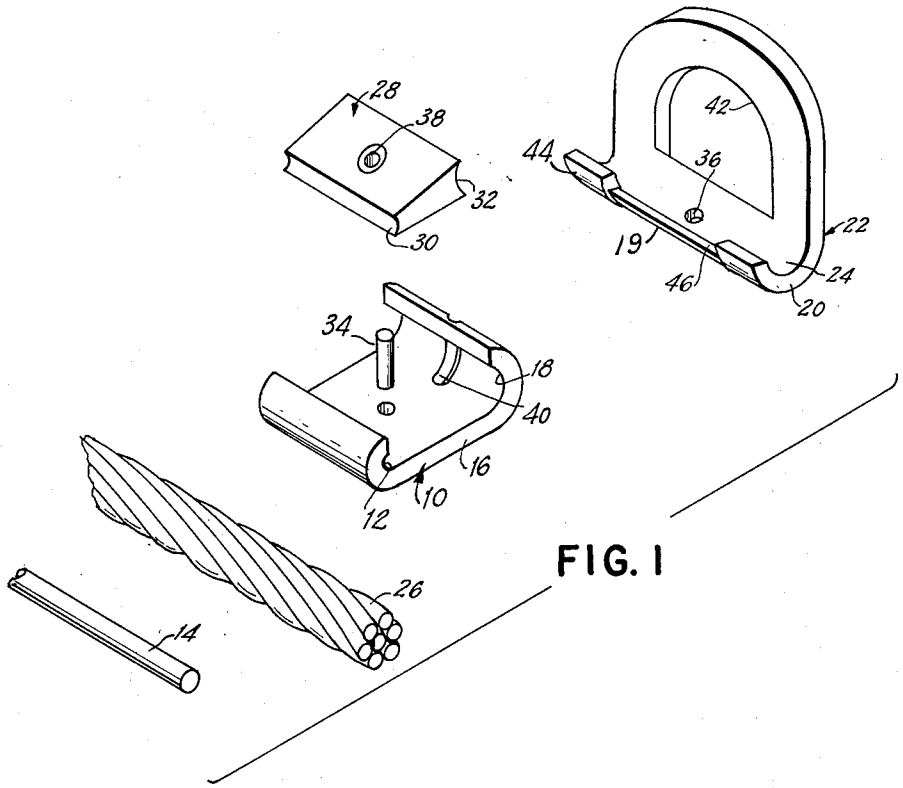


FIG. 1

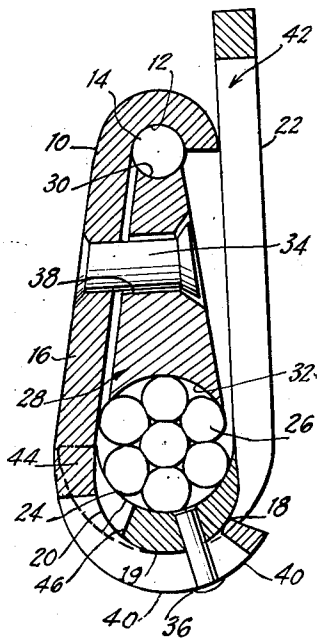


FIG. 2

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CONNECTOR

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My invention relates to a clamping connector, and more particularly, to a lever and wedge action connector which may be used for making a tap connection from a run conductor.

The objects of my invention are to provide a clamping connector having a high electrical joint efficiency; to provide a connector which causes a wiping action during installation especially useful for removing the oxide coating on the contacting surfaces of current carrying aluminum parts; to provide a tap connector which is easily applied without any tools and which is reliable in operation by maintaining a constant pressure at all times on the conductors.

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 claims, and illustrated in the accompanying drawings in which:

FIG. 1 is an exploded perspective view of the parts; and

FIG. 2 is a side elevation of the installed connector shown in cross-section on a line taken through its center.

Generally, my invention comprises a C-shaped member and an L-shaped member, each having a conductor receiving groove at one end, and a spacer having a conductor receiving groove at each end. The two members nest at one end, one on the other, and move eccentrically with respect to each other to swing the seated conductors into tight engagement with the current carrying spacer.

More specifically, the connector clamp **10** is the C-shaped member having a curved seat **12** at one end for receiving the conductor **14** therein. The connector body is provided with a straight back section **16** which terminates in a semi-cylindrical bearing surface **18** for supporting the outer bearing central surface **19** of the curved wedge shaped section of the L-shaped lever **22**. The inside curved surface **24** of section **20** forms the seat for the second cable **26**. Between seats **12** and **24** is positioned a spacer member **28** provided with corresponding seats **30** and **32** for positioning the two cables.

The inner seat **24** and outer bearing surface **19** of the curved wedge shaped section **20** of the lever **22** are eccentric so that rotating the lever **22** on bearing surface **18** of clamp **10** will cause the cable **26** to be moved towards the back section **16** and seat **12** and into tight clamping engagement in the seats **24** and **32**.

Floating rivets **34** and **36** may be provided which extend respectively from section **16** and **20** through opening **38** and slot **40**, respectively, in spacer **28** and in bearing surface **18** of the clamp **10**. These rivets terminate in enlarged heads to keep the parts together as a unit when not installed on the cables. The rivets fit loosely in their respective slots so as not to interfere with the movement of parts during installation.

The movement of the parts is facilitated by providing an opening **42** in the lever section to receive the curved portion carrying the bearing **18** of C-shaped clamp **10** when in the open position of the parts as shown in FIG. 1. The opening **42** corresponds to the width of the C clamp **10** and spacer **28**. To provide the lever support for the bearing and conductor seats, the curved portion of the lever extends beyond the width of the spacer and clamp, forming wing sections **44** to which the lever arm **22** is joined. The wing sections are recessed as at **46** to accommodate the clamp member when the connector is closed.

In operation the parts are assembled in the relationship shown in FIG. 2. The conductors **14** and **26** are inserted into their seats and the lever arm pivoted into closed position as is illustrated in FIG. 2. It is obvious that one or both of the conductors may be a continuous run conductor.

The closing movement causes the spacer to be moved with respect to the cables, thus causing the wiping action desirable with aluminum parts. The cables are directly clamped to a single intervening block of metal, reducing the contact resistance required in multiple spacer parts.

I have thus described my invention, but I desire it understood that it is not confined to the particular form or use 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 embodiment herein shown and described is only one of the many that can be employed to attain these objects and accomplish these results.

I claim:

1. The combination of a connector and two cables comprising an outer clamp member having first and second concave, spaced apart opposed cable seating surfaces each having a longitudinal axis parallel to the other; an inner clamp member having first and second concave, spaced apart cable seating surfaces each having a longitudinal axis parallel to the other; said inner clamp member disposed between said outer clamp member concave surfaces; said inner member first concave surface being adjacent, opposed and having its longitudinal axis parallel to the longitudinal axis of said outer member first concave surface, to form a first cable receiving seat therebetween, said inner member second concave surface being adjacent, opposed and having its longitudinal axis parallel to said outer member second concave surface, to form a second cable receiving seat therebetween; a first cable disposed between said inner and outer member first concave surfaces; a second cable disposed between said inner and outer member second concave surfaces; and a lever member having a portion disposed for pivotal sliding movement about said second cable between said second cable and said outer member second concave surface, said lever member portion including an outer arcuate bearing surface in contact with the outer member second concave surface, said arcuate bearing surface being eccentric relative to said outer member second concave surface whereby relative movement between said outer arcuate bearing surface and said outer member second concave surface from a connector open position to a connector closed position causes said lever member eccentric surface to compress said second cable, inner member and first cable against the first concave surface of said outer clamp member.

2. The combination of claim 1 wherein when said con-

nector is in said open position said second cable is free for removal or insertion along a path substantially normal to the longitudinal axis of said concave surfaces, and when said connector is in said closed position said cables, outer, inner and lever members are cammed tightly together.

3. The combination of claim 2 including an extension on said lever member providing a portion whereby said lever member may be pivoted about said second cable.

4. The combination of claim 3 including means loosely interlocking said inner, outer and lever members into a nonseparable assembly.

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