June 30, 1942. M. BROVERMAN 2,288,390

ELECTRICAL CONNECTOR

Filed Feb. 7, 1941

Fig. 1.

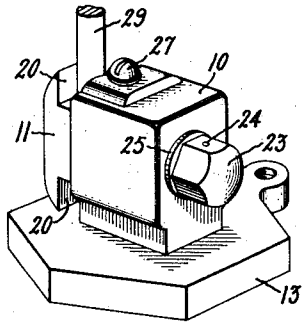


Fig. 2.

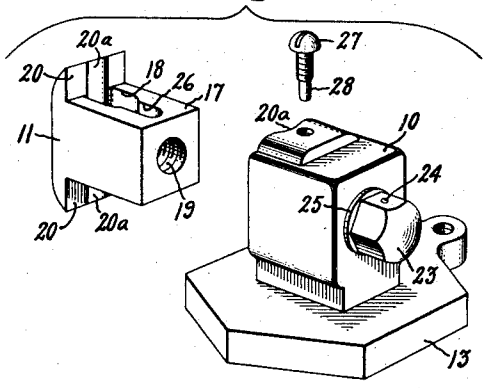
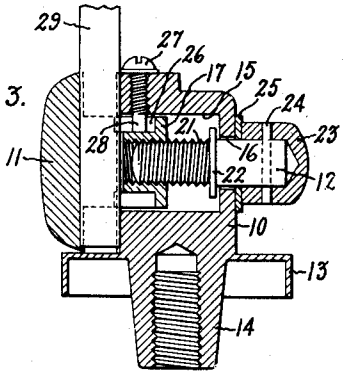


Fig. 3.



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ELECTRICAL CONNECTOR

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Application February 7, 1941, Serial No. 377,886

1 Claim. (Cl. 173—259)

My invention relates to electrical connectors, more particularly to solderless connectors of the type which are well adapted for use as cable terminals.

It is an object of my invention to provide a new and improved electrical connector of the above type in which the relatively movable parts which clamp the conductor are positively positioned relative to each other when no conductor is in place.

It is another object of my invention to provide a new and improved electric connector in which the possibility of the parts of the connector becoming disassembled when the connector is loosened from the cable or loosened prior to application to the cable, is eliminated.

A still further object of my invention is to provide an improved electrical connector of the above type which is easy to use, which presents a minimum of sharp surfaces so that the application of insulating tape is facilitated and which may be manufactured at a reasonably low cost.

Further objects and advantages of my invention will become apparent as the following description proceeds, reference being had to the accompanying drawing in which Fig. 1 is a perspective view of a connector embodying my invention having a conductor end secured thereto; Fig. 2 is an exploded view showing the details of the parts of the connector of Fig. 1, and Fig. 3 is a sectional view of the connector of Fig. 1.

Referring now to the drawing, I have shown my invention embodied in a connector comprising a body or supporting member 10 and a cooperating clamping or eye member 11 which is held in assembled relation with respect to the body member by a stud 12. A terminal member may be associated with either the body 10 or clamping member 11 and in the particular embodiment illustrated the terminal 13 is connected to one end of the body 10 and is in the form of a cap suitable for the cap of an insulating bushing and provided with an internally threaded extension 14 for the reception of the bushing stud (not shown). The body 10 is of generally rectangular shape and is provided with a recess 15 extending inwardly from one face thereof. An opening 16 extends inwardly from the opposite face and communicates with the bottom of the recess 15. The clamping member 11 is provided with a rectangular portion 17 which is of a size and shape to be received in the recess 15 in telescopic relation therewith provided with a longitudinally extending conductor receiving opening 18 and a threaded opening 19 extending in a direction substantially perpendicular to the conductor receiving opening and arranged to be in alignment with the opening 16 of the body member 10 when the parts are in assembled relation. End portions 20 of the clamping member 11 extend beyond the end walls of the recess 15 and in opposed relation to the lower end wall of the body member 10. Suitable curved bearing surfaces 20a may be formed on the lower end walls of the body 10 and the end extensions 20 of the member 11.

The parts 10 and 11 are held in assembled relation by the stud 12 which serves to determine the relative position of the members 10 and 11 to control the effective area of the conductor receiving openings 18 and to positively position the parts 10 and 11. As shown in the drawing, the stud is provided with a threaded portion 21 which is received in the threaded opening 19 of the clamping member 11 and a collar 22 which engages the bottom of the recess 15 adjacent the opening 16. The stud is provided with a suitable head 23 which, in the particular arrangement, is secured thereon by a pin 24 to permit assembly of the stud in the body member 11. A suitable lock washer 25 is provided between the upper surface of the body member 10 and the head of the stud to prevent loosening of the stud when the parts are in clamped engagement with the conductor. The stud has non-threaded engagement with the body member 10.

In order to prevent disassembly of the parts 10 and 11 when the stud is rotated to adjust the relative position of these parts, interengaging means are provided which permit the desired relative movement. As illustrated in the drawing, the interengaging means comprise a slot 26 formed in the end of the clamping member 11 and a screw 27 threaded into the end wall of the body portion 10 and having an end portion 28 extending into the elongated slot 26.

From the foregoing description, it is seen that the effective area of the conductor receiving opening 18 may be varied by rotating the stud 12, the conductor being received in the opening 18 and between the opposed bearing surfaces 21 on the end wall of the body 10 and the extension 20 of the clamping member 11. In Figs. 1 and 3, a conductor end 29 is shown in the connector with the parts thereof adjusted to clamping position.

It will be noted that the present construction in which the stud is threaded into the clamping member and limited from longitudinal or axial movement with respect to the body member, that

the clamping member is positively positioned with respect to the body member in all opposite positions of the stud. This construction is of considerable importance especially in applications where facility of positioning the conductors in the clamp is desired. It will be noted further that by this provision and in addition to the retaining means for holding the parts 10 and 11 in assembled relation, it is impossible for any of the parts to become disassembled during the process of applying the connector to a conductor or cable end. It should also be noted that the construction affords a connector in which no threaded or sharp portions are exposed so that the application of insulating tape or the like is facilitated. The illustrated embodiment of my invention also provides non-circular portions of parts 10 and 11 as the telescopic parts so that relative rotation between the parts is prevented. These features facilitate the application of the connector to a cable or conductor end, particularly in elevated or awkward positions where it is difficult for the workman to use both hands effectively.

What I claim as new and desire to secure by Letters Patent of the United States is:

An electrical connector comprising a body member provided with a substantially rectangular recess opening on one face thereof and with an opening extending through the opposing face thereof and communicating with said recess, a clamping member having a conductor receiving opening formed therein and also having a portion of rectangular cross section positioned in said recess, said clamping member being provided with a threaded opening extending in a direction substantially perpendicular to said conductor receiving opening and in alignment with the opening is said body member, said clamping member having portions extending beyond the recess in said body member and in opposed relation to portions of said body member surrounding said recess to provide opposed surfaces of extended area between said body and said clamping member, a threaded fastening means extending through the opening in said body member and having threaded engagement with the threaded opening of said clamping member, said fastening means being provided with means cooperating with said body member to prevent substantially longitudinal movement with respect thereto so that rotation of said fastening means is effective to determine the relative positions of said body and said clamping member, and interengaging means on said body and clamping member for limiting the relative movement of said members in a direction to increase the size of said conductor receiving opening extending beyond the face of said body member to prevent accidental disassembly of said members.

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