Jan. 5, 1943. M. LEE 2,307,690

MULTIPLE CABLE CONNECTOR

Filed July 30, 1940

FIG. 1

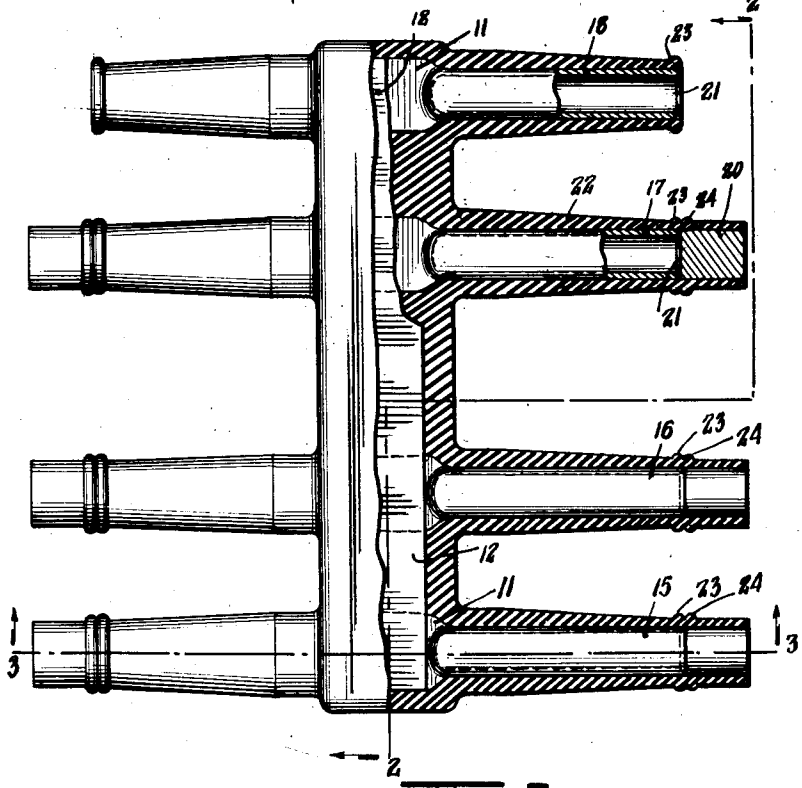


FIG. 2

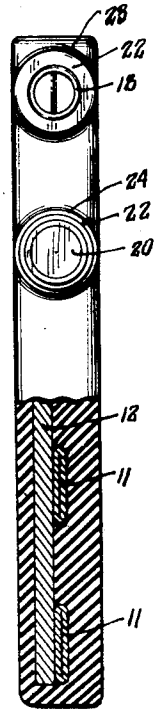


FIG. 3

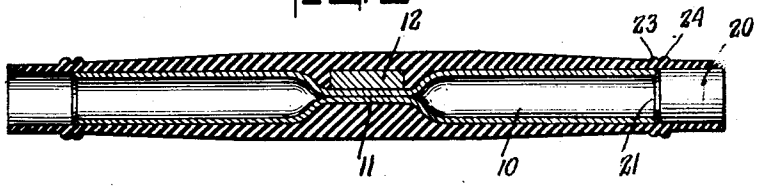
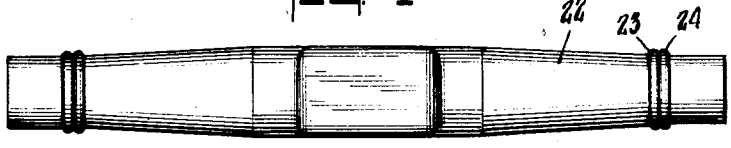


FIG. 4



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MULTIPLE CABLE CONNECTOR

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Application July 30, 1940, Serial No. 348,377

3 Claims. (Cl. 174—72)

My invention relates to multiple cable connectors.

The principal object of my invention is to provide a compact electrical connector for a plurality of cables, which will be compact, fully insulated and convenient to support and rack in underground vaults, manholes and handholes.

Another object of my invention is to provide a connector which is low in cost.

A further object consists in providing a multiple connector especially adapted for use with an indenting tool.

Still another object of my invention is to provide a connector which may be conveniently manufactured with any of a variety of numbers of individual cable terminals; said connectors all being insulated in the same rubber mold.

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 a plan view, partially in section of my device.

Fig. 2 is a side view, partially in section of the same, taken along line 2—2 of Fig. 1.

Fig. 3 is an end sectional view taken along the line 3—3 in Fig. 1.

Fig. 4 is an end view.

Referring more particularly to Fig. 3 of the drawing, reference numeral 10, indicates a tubular section of copper tubing having a central substantially flattened section 11. A flat bus bar 12, is brazed, soldered, riveted, bolted, or otherwise rigidly attached to the flattened section 11 of two or more of these tubing sections 10.

The flattened bar 12 should have a thickness, which, preferably, does not cause it to extend beyond the unflattened tubing. Thus the maximum thickness of the multiple connector need not exceed the diameter of the tubing used for establishing the connections, an important consideration in obtaining the most compact connector and one of minimum size.

The tubular connectors are designed for indentation on the electrical stranded cables inserted therein. The tool for producing the indentations requires a considerable space around the tubular sections 10, and accordingly I have formed my multiple connector in units of pairs separated by sufficient space in between the pairs to permit the tool to be inserted therein. Thus in Fig. 1, tubular sections 15 and 16 are spaced from each other by a smaller distance than 16 and 17. There is thus provided a suitable space for the tool to be inserted between 16 and 17 for use on tubular sections 16 and 17. Sections 15 and 18 are indented by applying the tool, from the ends of the connector.

In placing the rubber insulation over the connector body, I prefer to use a mold adapted to accommodate a connector having the maximum number of outlets. Where less than the maximum is needed, the unused portion of the mold may be blocked off by a suitable stopper and a connector having a lesser number of outlets may be properly insulated. This is accomplished by reason of the thin bus bar connecting each tubing section which enables the cross-sectional area between sections to be blocked by a stopper of uniform cross-section. Thus numerous cable combinations may be insulated in a single mold, a great economy. In preparing the mold for the insulation process, a plug 20 is inserted adjacent each of the openings 21 of the tubular sections, and the insulation 22 molded over the tubular section and the plugs. A beaded section 23 and 24, is provided on each side of the junction, which may be cut, when the connection is desired and the bead provides a satisfactory method of rolling back the insulation on itself to expose the tubular section for the indenting process.

The flat shape of my connector makes it very easy to support in the manhole since it can be reached on standard cable racks or laid flat alongside or over the other. Since there are three phases and a neutral on practically all alternating current circuits, at least this number of connectors is required in each underground vault, manhole or handhole and space is at a premium in which these connectors may be placed. The flat shape which I have thus provided is, therefore, most desirable.

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:

I claim:

1. A multiple connector comprising two or more sections of copper tubing flattened at their central portions, and a flat bus bar, having a width substantially equal to the length of the flattened portions, and rigidly attached to the outside of the flattened portions of the tubing so as to prevent movement thereon to provide a multiple connector with the tubing sections arranged parallel to one another.

2. A multiple connector comprising two or more sections of copper tubing flattened at their central portions, and a flat bus bar, having a width substantially equal to the length of the flattened portions, and a thickness substantially equal to one-half the diameter of the tubing, and rigidly attached to the outside of the flattened portions of the tubing so as to prevent movement thereon to provide a multiple connector with the tubing sections arranged parallel to one another.

3. A multiple connector comprising three or more sections of copper tubing flattened at their central portions, and a flat bus bar, having a width substantially equal to the length of the flattened portions, and rigidly attached to the outside of the flattened portions of the tubing so as to prevent movement thereon to provide a multiple connector with the tubing sections arranged parallel to one another, said tubing sections spaced from each other a greater distance between each even and succeeding odd numbered sections, than between the odd and succeeding even numbered sections, starting from one end thereof.

MARVIN LEE.