April 6, 1954 B. DIBNER 2,674,647

INSULATED CONNECTOR FOR ELECTRIC CABLES

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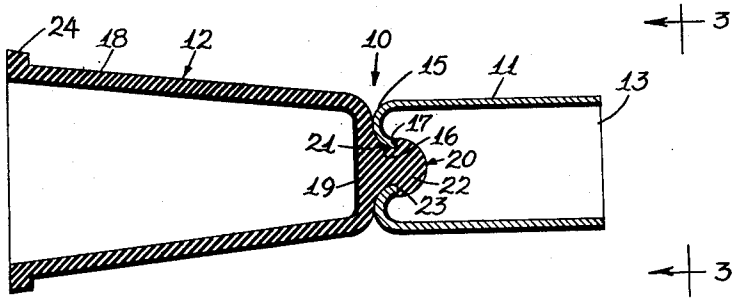

FIG. 1.

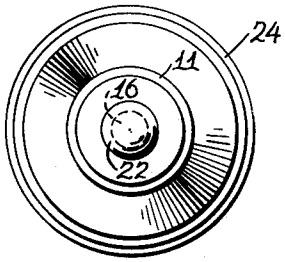

FIG. 3.

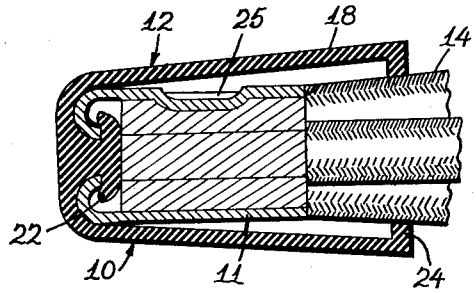

FIG. 2.

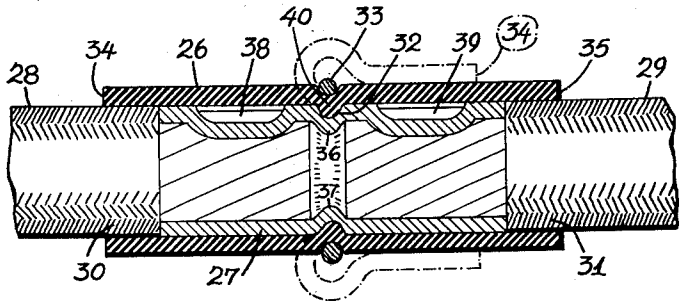

FIG. 4.

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INSULATED CONNECTOR FOR ELECTRIC CABLES

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1 Claim. (Cl. 174—87)

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My invention relates to insulated connectors. Hitherto connectors have been made with insulating covers either moulded to the connector body, or made separately and affixed thereto. In some instances it is possible to indent the metal sleeve through the insulation, but generally it is desirable to remove the insulation for indentation directly on the metal.

It is an object of my invention to provide a connector body with an insulating cover which is adapted to be secured to the metal connector body in a manner which will permit sufficient movement of the insulation to permit indentation directly on the metal wall of the body.

Other objects are to provide a preformed insulated connector wherein the aforementioned insulation may be readily extended over the indented connector body for insulating the same; to provide a simple means for securing the insulating cover to the metal connector body, and to provide an insulating cover that may be attached to a metal sleeve so that both ends of the sleeve may be directly indented.

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 claim, and illustrated in the accompanying drawing, in which—

Fig. 1 is a cross-sectional view of a form of my device wherein the bored metal connector body is secured at one end to a bell-shaped insulating cover.

Fig. 2 is a similar view with the bell-shaped insulating cover rolled over the indented connector body to insulate the same.

Fig. 3 is an end view of the device of Fig. 1, in the direction indicated by the arrows 3—3.

Fig. 4 is another form of my device with the insulating cover secured to the middle of a metal sleeve, enabling an indenting type of connection to be made at either end of the sleeve.

Referring more particularly to the drawing, reference numeral 10 designates an electrical connector comprising a hollow metal body member or sleeve 11 and a preformed insulating cover 12. The sleeve 11 is tubular in shape, having a wall thickness suitable for indentation. It is open at one end 13 to receive the bared ends of the conductors 14, and the other end 15, is shaped into a concave socket 16, the edge 17, acting as a shoulder. The insulating cover 12, is made of any well known insulating material that can be flexed without cracking or breaking, such as rubber, vinylite or the like. It is bell-shaped, with a skirt portion 18 terminating in the closed end

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wall 19, and an integrally formed projection 20 extending from the end wall and provided with a curved neck portion 21, a head or button portion 22, and a shoulder 23. A peripheral bead 24 is formed on the free end of the skirt portion 18 for reinforcing the edge of the cover.

The insulating cover is installed on the sleeve by simply snapping the button 22, camming it into the socket 16, the shoulder 23, engaging the edge 17 of the connector sleeve to resist withdrawal. The rounded end 15 snugly engages the neck portion 21 and conforms substantially to end wall 19 of the cover, avoiding sharp corners which would cut the insulation. Instead of providing a button portion 22, to be snapped into position in the socket, the end 15 of the sleeve may be crimped around the projection 20 by a pliers or similar tool.

When installing the connector to the conductors as shown in Figure 2, the conductors are bared to approximately the depth of the sleeve and inserted therein, compressing the button 22 against the edge 17, further locking the insulating cover to the sleeve. The sleeve is then indented as at 25, or otherwise attached to the conductors and the skirt of the insulating cup is pulled or rolled over the metal sleeve reversing its position.

The skirt extends over the end of the sleeve, the bead 24 gripping the conductor insulation to prevent entrance of foreign matter.

In Figure 4 is shown a modification of my device for use as a straight splice. It comprises the insulating cover 26, snugly inserted over a metal sleeve 27, each end of which receives the bared end of one of the conductors 28 and 29, allowing the conductor insulation 30 and 31 to abut the ends of the sleeve. A peripheral groove 32 is provided centrally on the outside of the sleeve, to permit a split metal ring 33 to secure the insulation to the sleeve, with free ends 34 and 35.

When the joint is to be made, the conductor ends are inserted within the sleeve, the ends engaging stops 36 and 37, which may be formed in making groove 32, and the free ends of the insulating cover alternately rolled toward the center as shown in dot-dash position to uncover the end of the metal sleeve which it is desired to indent. The completed indentations 38 and 39 are alternately covered to complete the installation. Peripheral beads may also be here provided for the ends of the insulating cover. Additionally, a retaining bead may be formed centrally on the inner surface of the insulating cover,

shaped as at 40 to engage the groove 32, for securing the cover to the sleeve.

In both forms of my device, the insulating cover may be secured to the connector body at the factory or installed on the job. In place of an indentation, other well known methods of securing a conductor to a connector body may be employed.

The devices above described provide a unitary construction of ferrule and insulation, while enabling the insulation to be drawn back to permit indentation. Ease of handling and packaging is thus obtained with elimination of the possibility of lost parts at the time of installation. The insulation is not injured in the indentation process, and may extend beyond the end of the ferrule to cover and tightly grip the conductor insulation preventing short circuit conditions due to splayed conductor insulation.

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 claim, and by means of which, objects of my invention are attained and new results accompilshed, 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.

I claim:

An electrical terminal connector for attaching conductors thereto, comprising a malleable metal sleeve-like body section having an open end for receiving the conductors, and an apertured portion at the other end, and a cup-shaped insulating cover closed at one end, said end provided with a projection positioned in the apertured portion of the metal body section and secured thereto, said insulating cover made of flexible material to enable the edge of the cup-shaped cover to be withdrawn from the open end of the connector body to permit the malleable metal body section to be directly indented to the conductors when inserted therein, while said cover is secured to said metal body section.

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