Oct. 29, 1968 D. DANNES 3,408,455

ELECTRICAL CONNECTOR WITH CONDUCTOR RETAINERS

Filed May 25, 1967

Fig. 1.

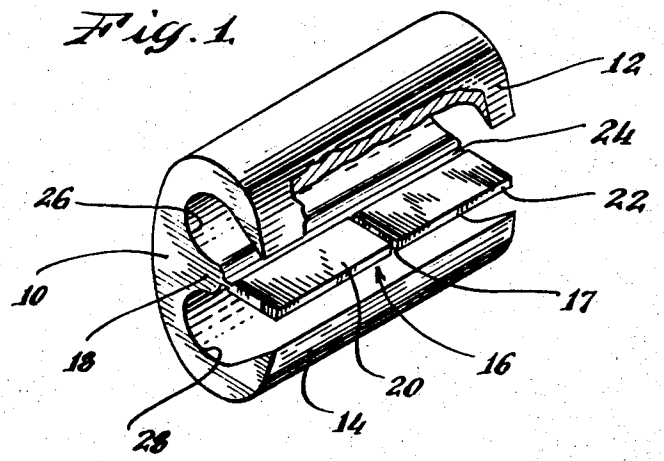


Fig. 2.

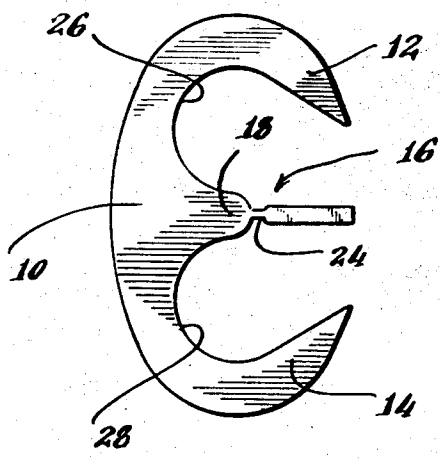
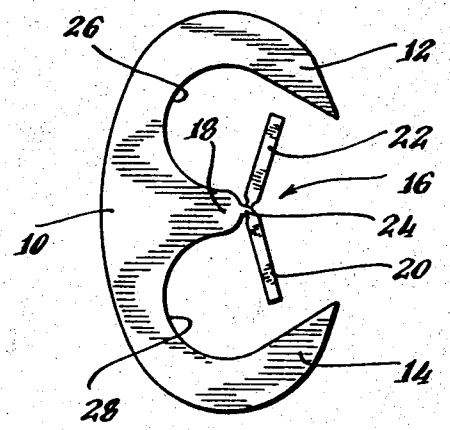


Fig. 3.



INVENTOR.
DENNIS DANNES
BY Howard L. Reiter

ATTORNEY.

United States Patent Office

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ELECTRICAL CONNECTOR WITH CONDUCTOR RETAINERS

Dennie Dannes, Norwalk, Conn., assignor to Burndy Corporation, a corporation of New York

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ABSTRACT OF THE DISCLOSURE

An electrical tap connector of the compression type having a pair of channels for receiving conductors therein, and a bendable element adjacent each channel adapted to be used for temporarily retaining conductors in the channels prior to compression of the connector.

This invention relates to electrical connectors for wires or cables, and more particularly, to compression connectors used for joining a "run" conductor to a "tap" conductor.

In the attachment of a secondary conductor or line, such as a tap-off or drop line, to an installed main line in a conventional electrical distribution system it is generally desirable to use a connector which can be placed or hooked over the conductors rather than requiring axial insertion of the conductor into a bore. However, connectors of this type generally present a problem of retaining the conductors within the connector openings prior to deformation. This problem is heightened in that the connectors are often gripped at the tip of a long handled tool during installation, so that it generally is not possible to manually hold the conductors in place while the installation tool is being positioned.

The connectors presently available for forming connections between main lines and tap lines generally include a partially closed channel through which the tap line is threaded and an open channel adapted to hook over the main line. The open channel of the known connectors may have some form of temporary restraint such as a resilient flange or tab adapted to be manually deformed against the inserted main line conductor. Other connectors have been provided with two open channels and two corresponding flanges, but these have been found to be relatively complex parts, difficult to form and comparatively expensive to produce.

Accordingly an object of this invention is to provide a simple, inexpensive connector for a pair of conductors which will retain each conductor effectively and conveniently prior to compression.

Another object is to provide a one-piece connector having open separated channels for a pair of conductors with a pair of integrally formed restraining members for preliminary securement of the connector to the conductors prior to compression of the conductor.

Another object is to provide such a compression connector for run and tap conductors which can accommodate a wide range of conductor sizes, and which includes manually deformable means for temporarily retaining conductors in the connector.

These and other objects, features, and advantages of this invention will become more apparent through reference to the following description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of a connector embodying this invention;

FIG. 2 is an end view of the connector of this invention; and

FIG. 3 is a view similar to FIG. 2 showing the connector in preliminary restraining condition.

Referring to the drawings more particularly, there is shown a one-piece connector of generally E-shaped cross section, formed by a C-shaped body **10** with arms **12, 14** and a central web **16** disposed within the C-shaped body. The web **16** comprises a base portion **18** and retaining elements **20, 22** which are integrally connected to the base portion **18** by bendable reduced thickness hinge portions **24, 26** respectively. Two conductor receiving channels **28, 30** are thus defined.

In use, a tap conductor (not shown) may be inserted transversely into either cavity **28** or **30**, and one of the movable retaining elements **20** or **22** may be manually bent over against the conductor to effectively lock it in place. The connector may then be hooked over the main or run conductor by transverse insertion into the remaining one of channels **28** or **30**. The other of elements **20** or **22** may then manually be bent down against the man conductor to lock that conductor in place prior to compression. With both conductors thus held in place, the connector then may be placed in a compression tool and compressed to complete the connection. Under compression, the arms **12, 14** are deformed forcibly into enclosing engagement about both the conductors and the central web **16**. The central web thus serves the dual function of locking the conductors in place prior to compression, and of separating the two conductors to enhance galvanic corrosion resistance in instances where the two may be of dissimilar metals. Although the movable elements **20, 22** and base portion **18** need not be made to any specific length, they are preferably dimensioned so as to assure continued separation of the conductors within the connector during and after compression.

The invention has thus been described but it is desired to be understood that it is not confined to the particular form or usage 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 the invention, and therefore, the right is broadly claimed to employ all equivalent instrumentalities coming within the scope of the appendent claims, and by means of which objects of this 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 obtain these objects and accomplish these results.

What is claimed is:

1. An electrical connector of malleable conductive metal, comprising: a unitary body member of substantially C-shape, including a back portion and two arm portions; an integral and stationary central web portion attached to said back portion and interposed between said arm portions; said back, arms, and central web defining two channels extending longitudinally in said connector; each channel having a longitudinal opening along one side thereof to receive a transversely inserted conductor; said central web portion including two integral bendable retainer portions extending therefrom and initially disposed in longitudinal alignment so that they may

be bent transversely and independently in opposed directions, each toward a different arm portion to engage and retain conductors disposed on opposite sides of said stationary central web.

2. The connector of claim 1 wherein said bendable portions are connected with said stationary web portion through integral reduced thickness portions, said reduced thickness portions being manually deformable

to permit non-elastic deformation of each bendable portion toward a different one of said arm portions.

References Cited

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DARRELL L. CLAY, *Primary Examiner.*