

June 10, 1924.

1,496,817

G. E. MATHER

ELECTRICAL CONNECTER

Filed Dec. 28, 1918

Fig. 1.

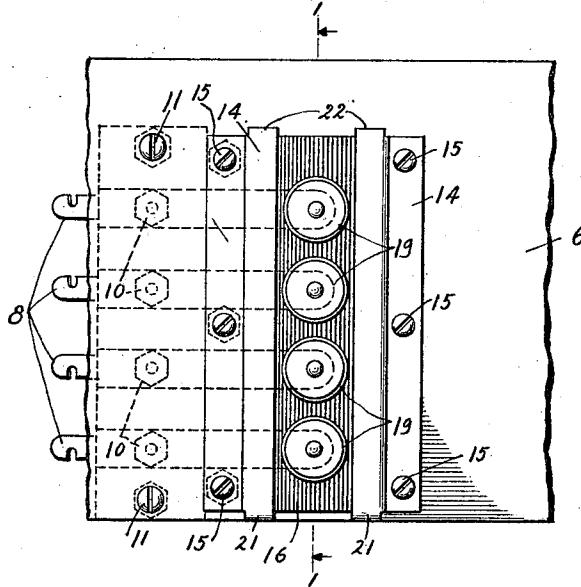
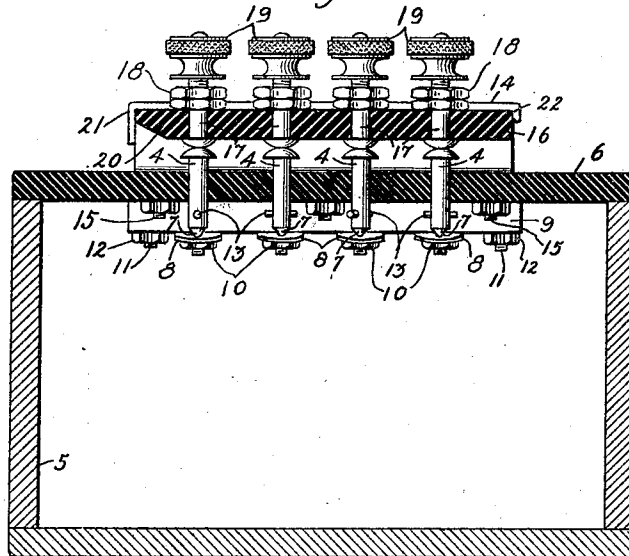


Fig. 2.



Inventor:  
George E. Mather.  
by J. E. Roberts Att'y.

## UNITED STATES PATENT OFFICE.

GEORGE E. MATHER, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## ELECTRICAL CONNECTER.

Application filed December 28, 1918. Serial No. 268,696.

*To all whom it may concern:*

Be it known that I, GEORGE E. MATHER, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Electrical Connecters, of which the following is a full, clear, concise, and exact description.

This invention relates in general to electrical connectors and more particularly to a means for making a quickly detachable connection between a conducting cord and an apparatus box.

In certain types of field sets used for signaling purposes means are provided for the simultaneous sending of telegraph and telephone messages, but in general the operator delegated to handle the telegraph business is not authorized to use the apparatus for telephoning. It is therefore the common practice to provide a telephone headset comprising a transmitter and receiver, together with a connecting cord to those authorized to use the apparatus for telephoning, and to provide this headset with a multiple plug adapted to engage a corresponding jack in the set to make the desired connections.

Since field sets must necessarily be used in all kinds of weather, it is necessary that the type of connector used be so designed as to prevent the entrance of moisture or dust into the set and to insure good connections under the most severe weather conditions. A further requirement is that the connector be of simple construction and arranged so that it may be quickly and accurately placed in position and so held as to prevent the possibility of its being accidentally pulled out of position. It is therefore an object of the present invention to provide a connector which will satisfactorily meet service requirements as outlined. A further object is to provide a connector which will not only make the desired connections, but also one which may be arranged to automatically alter other connections upon being placed in position.

To accomplish these objects and in accordance with a feature of this invention there is provided a connector comprising a series of contact plungers adapted to be engaged by a corresponding series of contact members.

Another feature of the invention consists

in providing suitable guides for maintaining the two series of contacts in engagement, these guides being also equipped with stops to prevent the parts being accidentally drawn out of engagement. This and other features of the invention may be more clearly understood by reference to the accompanying drawing, in which Fig. 1 is a plan view of a connector embodying the features of this invention; and Fig. 2 is a sectional view along the line 1—1 of Fig. 1 and looking in the direction of the small arrows.

Referring to the drawing, the casing 5 of the field set is provided with a top 6 of suitable insulating material such as hard rubber or micarta and equipped with holes through which the contact plungers 4—4 freely slide. These plungers are provided at their lower ends with contact points 7—7 which engage contacts on the spring members 8—8 shown as secured to the insulating block 9 by means of bolts and nuts 10—10, the insulating block 9 in turn being secured to the top 6 by means of the bolts 11 and nuts 12. The pins 13—13 extending through the plungers 4—4 are provided to limit the travel of the plungers. On the upper side of the top 6 are provided two Z shaped guides 14—14 secured in place by suitable screws 15—15.

The plug portion of the connector consists of a block 16 of insulating material provided with headed studs 17—17 threaded at one end and held securely in place by means of the nuts 18—18. Knurled-headed nuts 19—19 are provided to aid in securing the terminals of the cord leading to the telephone headset. The width of the block 16 is such as to allow it to slide freely between the upright portions of the guides 14—14 and one end is beveled, as shown at 20, to facilitate inserting the plug in position. The guides are so formed as to provide suitable stops 21—21 at one end to prevent the plug being inserted at that end. Similar stops 22—22 are provided at the other ends of the guides to prevent the plug from being accidentally pulled out of engagement. These latter stops, however, are not of sufficient length to prevent the free entrance of the plug.

With the connector described there is no possibility of the plug being inserted so as to make the wrong connections, the plug is

2  
easily inserted and is held securely in place even though subjected to rough treatment. The construction moreover is simple and efficiently prevents the entrance of moisture  
5 and dust within the set independent of whether the plug is inserted or not.

What is claimed is:

A connector comprising a plug member including a block of insulating material  
10 beveled at one end and having a plurality of contact studs securely fixed therein, a plurality of movable contact plungers adapt-

ed to be engaged by said contact studs, a pair of Z-shaped guides for guiding the contact studs into engagement with the  
15 plug, and means independent of the contact members for automatically locking the plug member in position when the contact studs are in engagement with the plungers.

In witness whereof, I hereunto subscribe  
20 my name this 24th day of December A. D., 1918.

GEORGE E. MATHER.