

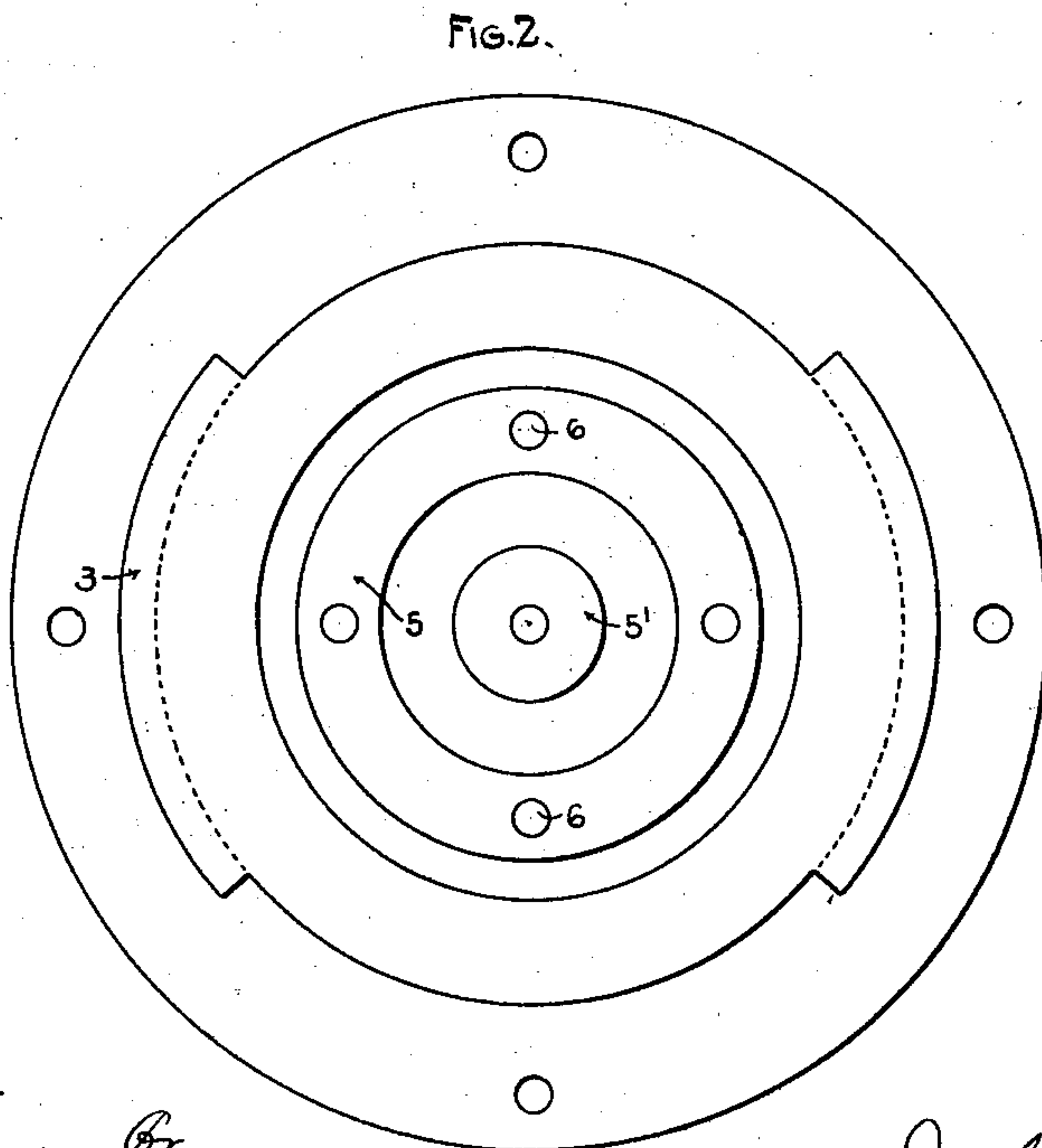
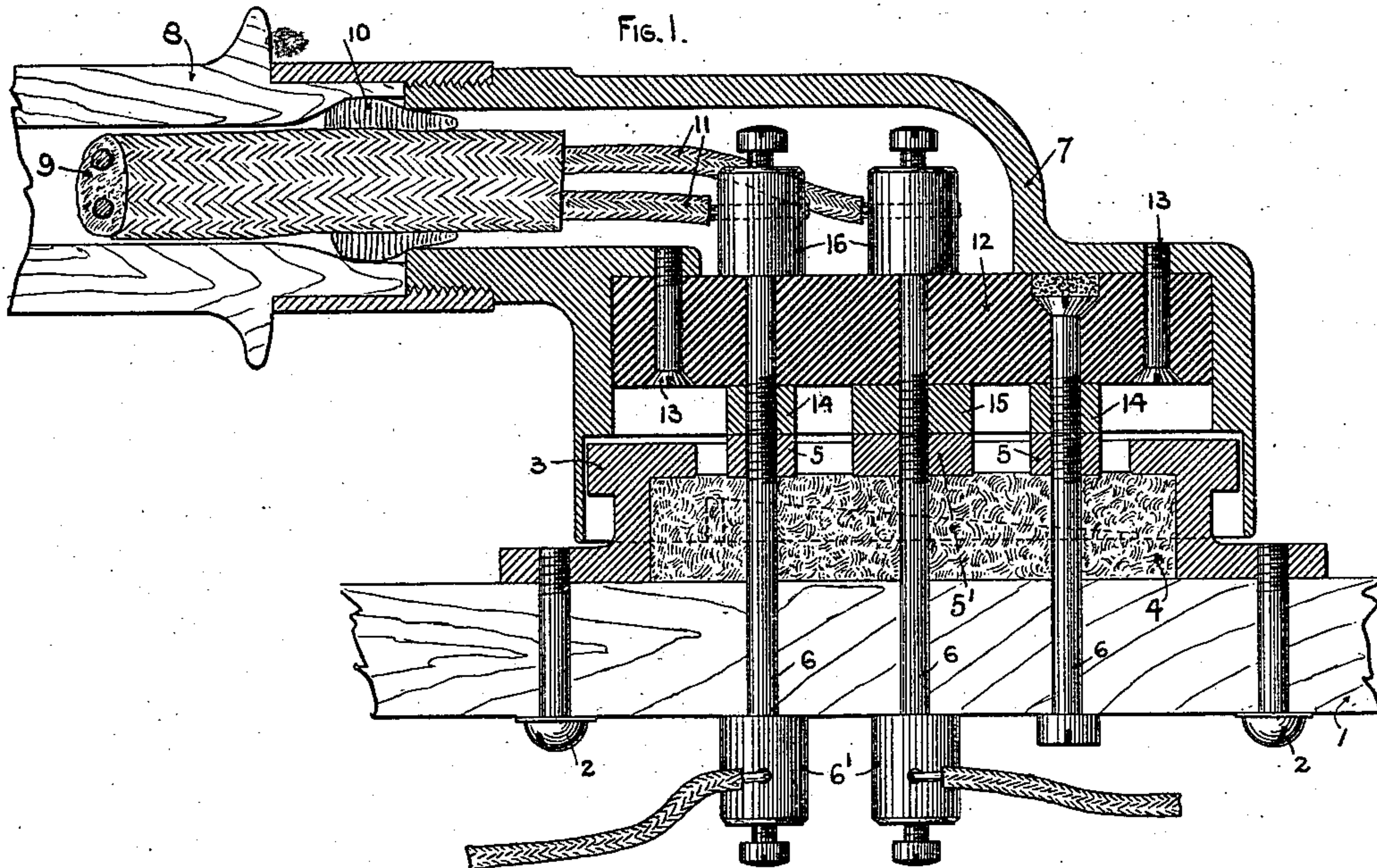
(No Model.)

J. E. NEHER.

CONNECTOR FOR TERMINALS OF ELECTRIC CIRCUITS.

No. 546,471.

Patented Sept. 17, 1895.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JULES E. NEHER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF SAME PLACE.

## CONNECTOR FOR TERMINALS OF ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 546,471, dated September 17, 1895.

Application filed July 30, 1894. Serial No. 518,991. (No model.)

*To all whom it may concern:*

Be it known that I, JULES E. NEHER, a citizen of the Republic of Switzerland, residing in Pittsburg, in the county of Allegheny, State of Pennsylvania, have invented a new and useful Improvement in Connectors for the Terminals of Electric Circuits, (Case No. 607,) of which the following is a specification.

My invention relates to apparatus for making connection between the terminals of electric circuits, and has for its object to provide means whereby a close and rigid connection may be quickly and easily made and whereby perfect insulation of the terminals may be secured. In order to attain these objects, I employ as a support for one contact-piece or terminal, or for one set of the same, as the case may be, a resilient non-conducting substance, which serves to press such terminal or set of terminals into close contact with the opposing terminal or set of terminals, and at the same time to surround and insulate the same from adjacent conducting parts.

My invention is primarily intended for use in connection with motors operated by high-tension alternating currents, to which purpose it is well adapted; but I do not desire to limit it to such use, since it is obviously well adapted for making connection between conductors carrying any variety of current and any variety of electrical machine, whether generator or motor.

In the accompanying drawings, Figure 1 is a vertical section of a connector embodying the essential features of my invention, and Fig. 2 is a detail view showing the interrupted screw-thread connection between the cap and ring.

Referring to the drawings, 1 is a suitable base-plate, which may be the base of a starting-rheostat, provided the device is used in connection with a motor. Supported upon this base and connected thereto by means of bolts or screws 2 is a flanged ring 3, the outer portion of which has the form of an interrupted screw-thread. In the interior of this ring and resting upon the base 1 is a body of yielding resilient insulating material, preferably soft rubber, 4. Supported upon this body

of insulating material are contact-pieces 5 and 5', said pieces being connected to the upper ends of bolts or pins 6, which are free to slide through holes in the base 1. Attached to the lower ends of one or more of the bolts or pins 6 are binding-posts 6', two of such posts being shown in the drawings.

7 is a cap or head, which is provided at its inner end with an interrupted screw-thread adapted to engage the screw-thread upon the flanged ring 3. Attached to the outer end of this cap or head, preferably by means of a screw-thread connection, is a hollow handle 8. Through this handle extends a cable 9, in which is embedded the line conductor or conductors 11, there being two shown in the drawings. Any desired packing 10 may be employed for filling the space between the cable and the handle 8. Fastened to the interior of the head 7, immediately above its screw-thread, and by any suitable means—as, for example, by screws 13—is an insulating-plate 12, preferably of hard rubber.

Fastened to the under side of the plate 12 by means of suitable bolts or screws is a contact-ring 14, and within this ring and similarly attached to the under side of the plate is a contact-piece or button 15. Each of these contact-pieces is connected to a conductor 11 by means of a binding-post 16. The contact-pieces may be of any desired form and may be surrounded by insulating material, if desired.

When it is desired to make connection between the two sets of terminals, the handle 8 may be grasped by the hand and the interrupted screw-thread on the head 7 be caused to engage with the corresponding part of the ring 3, and the former may be turned sufficiently to bring the sets of terminals into engagement. A further rotation of the said head will serve to depress the contact-pieces 5 5' into the yielding material 4 to some extent, and by reason of the resilient character of said material 4 the terminals will be held in close contact. It will thus be seen that the parts may be readily united and as readily separated when desired, and that when united the connection between them is such that they



will not become disengaged except when such disengagement is desired.

The particular device shown in the drawings and hereinbefore described is merely illustrative of the principle of my invention, and the details may be widely varied within the range of mechanical skill without departing from the spirit of the invention. Hence I do not desire to limit myself to the exact form of the device as a whole, or to that of any of its parts, nor to the number of conductors or contacts employed; but

What I claim as my invention, and desire to secure by Letters Patent, is--

1. In a connector for the terminals of an electric circuit, the combination with a yielding, resilient, insulating support for one of said terminals, of an unyielding, insulating support for the opposing terminal and means for clamping the said parts together, substantially as described.

2. The combination of a head having a substantially unyielding insulating plate carrying a contact piece, with a soft rubber support carrying a contact piece and means for pressing said contact pieces together and into said soft rubber support, substantially as described.

3. The combination of a head having an unyielding insulating plate therein and having a screw-threaded inner end, with a base plate, a ring mounted thereon having a screw thread at its outer end, a body of yielding, insulating material in said ring, and contact terminals carried by said insulating plate and by said

body of yielding, insulating material respectively, substantially as described.

4. The combination of a head having an insulating plate therein and provided with a hollow handle, with an electric line conductor supported in and protected by said head and handle, a contact device carried by said insulating plate, a base plate, a ring carried by said base plate, a soft rubber insulator in said ring, and a contact device carried by said insulator and extending through said base plate, substantially as described.

5. The combination of a plurality of line conductors and a plurality of contact devices, with suitable supporting and insulating means therefor, a soft rubber bed or plate, a plurality of contact devices supported thereby and means for clamping said two sets of contacts together, substantially as described.

6. The combination with a line conductor and its terminal contact device suitably supported and insulated, a body of yielding, resilient, insulating material, an unyielding support therefor, a contact device supported thereby and means for forcing said contact devices together and maintaining them in contact, substantially as described.

In testimony whereof I have hereunto subscribed my name this 27th day of July, A. D. 1894.

JULES E. NEHER.

Witnesses:

JAMES W. SMITH,  
HUBERT C. TENER.