

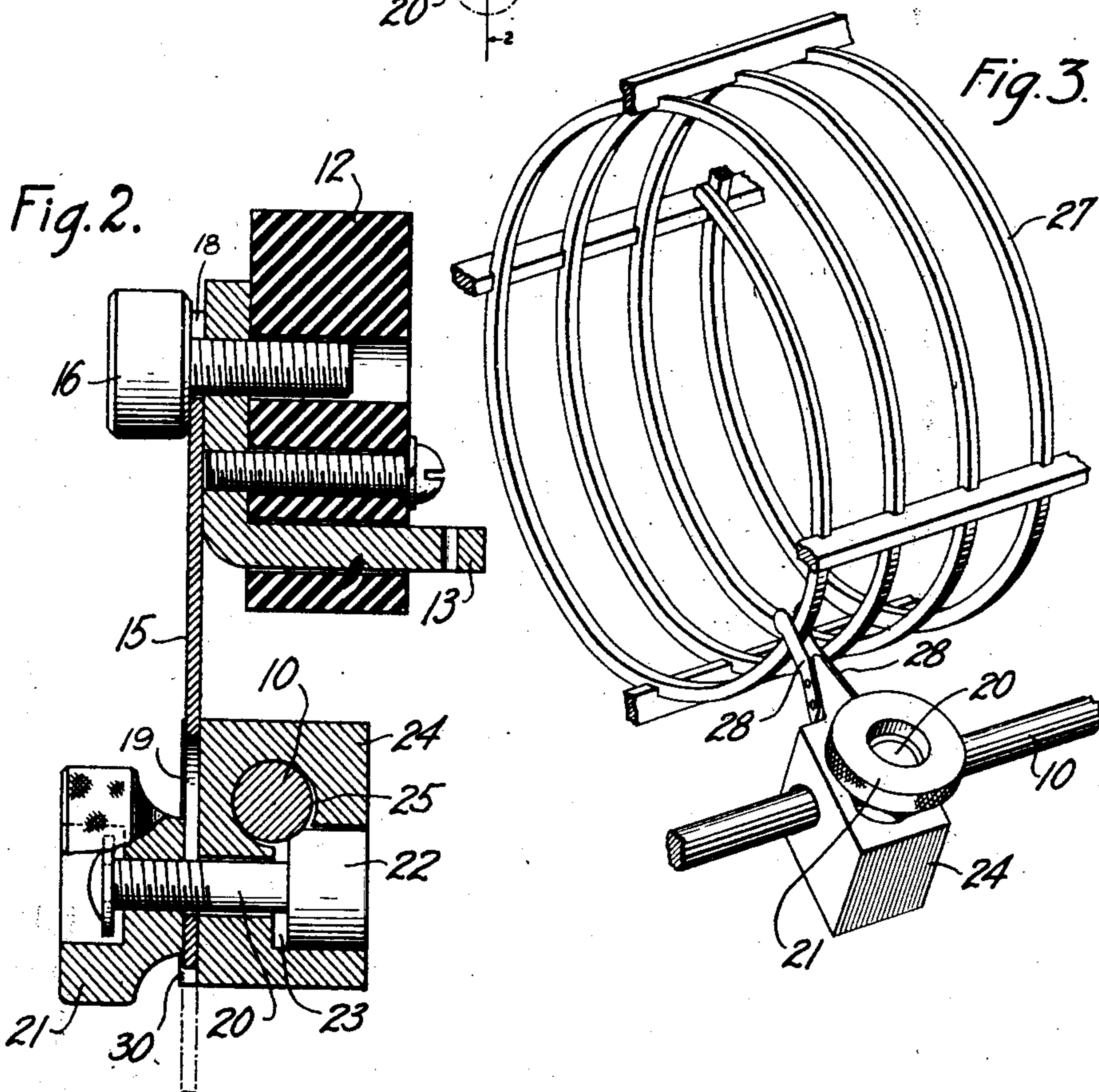
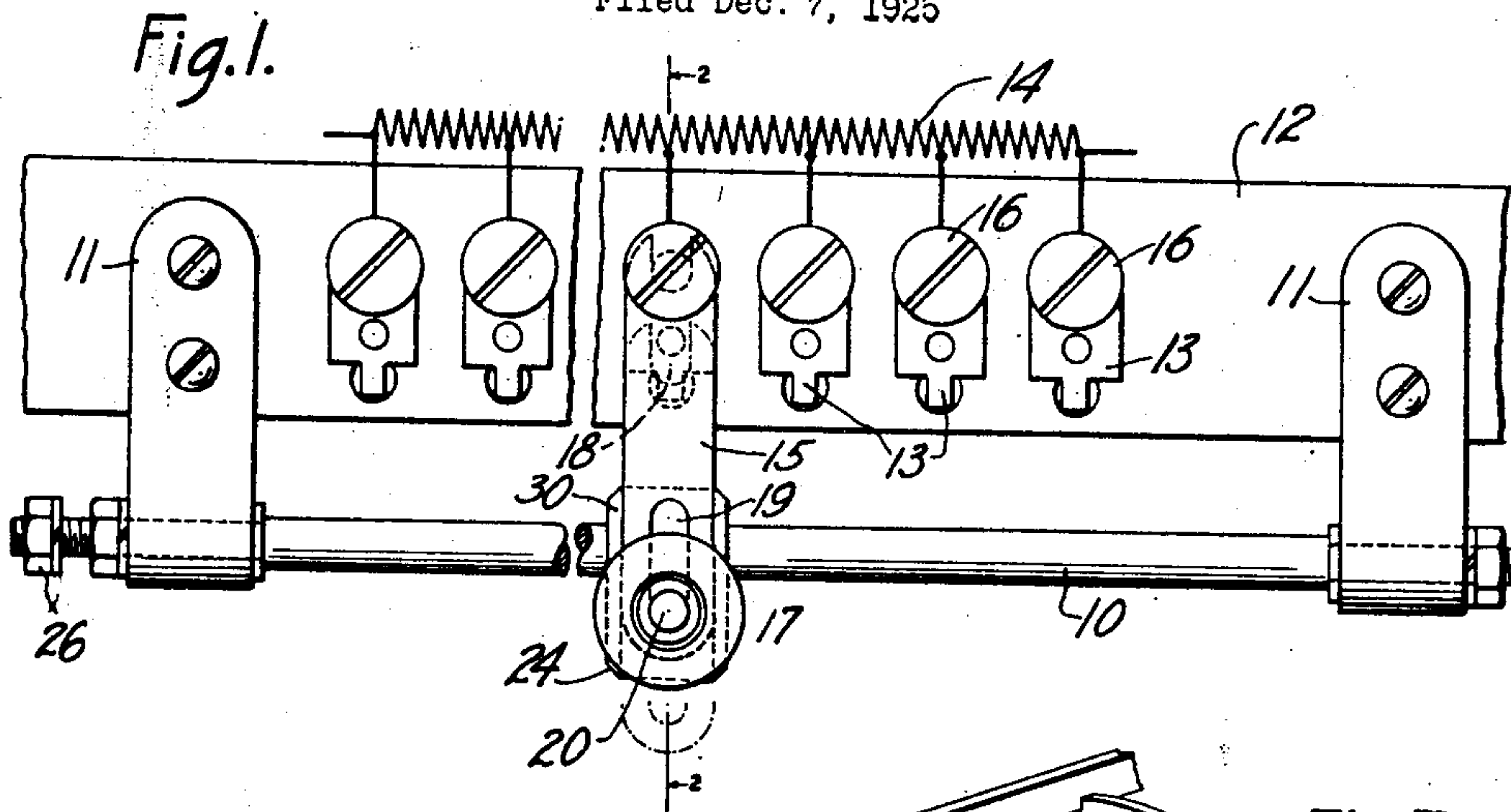
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CONNECTER

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UNITED STATES PATENT OFFICE.

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CONNECTER.

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This invention relates to connectors and more particularly to means for making adjustable connections to electric circuit elements.

5 In many instances, in electrical apparatus, for example, in radio transmitting systems, it is necessary to provide certain elements with adjustable connecting means whereby semi-permanent connections may be made
10 at points in the circuit. This necessity frequently arises in connection with resistors, potentiometers, inductance coils and condenser units. In connection with such apparatus, it is also desirable, in general, to be able
15 to rapidly change a connection in order to vary an adjustment of the system in which the apparatus is employed.

The present invention provides a simple and effective connecting device for making
20 rapid adjustments in electrical circuits and for producing a semi-permanent connection.

It is one object of the invention to enable easy and rapid adjustment of electrical devices.

25 Another object is to provide a rigid terminal connection for electrical apparatus.

A feature of the invention is an adjustable connector comprising a rigid conductor and a movable link conductor having a clamp
30 for making rigid mechanical and electrical connections to the conductors.

A further feature is a clamp for mechanically and electrically connecting a plurality of conductors which may be released or actuated by a single operation.
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The invention in its general aspects comprises a connecting device including a fixed conductor, a movable link conductor and a clamp for holding the two in rigid electrical and mechanical connection. The clamp
40 is mounted upon and slidable along the fixed conductor and the link is mounted upon and movable with respect to the clamp. The link conductor may be of any desired form
45 adapted for making rapid connection to the particular kind of apparatus, terminal or conductor with which it is associated.

The invention may be used for making adjustable connection to any desired apparatus, conductor or circuit and is illustrated as applied to a variable resistor and a variable coil.
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The invention is illustrated in the drawings wherein:

Fig. 1 shows the connector of the invention assembled in connection with a resistor. 55

Fig. 2 is a view partly in section on line 2-2 of Fig. 1.

Fig. 3 is a view in perspective showing the device of the invention adapted for making adjustable connection to an inductance coil. 60

In Fig. 1, a rigid conductor 10, which is illustrated as a cylindrical rod, is supported by suitable hangers 11 attached to an insulating plate 12 which may be, for example, of bakelite. The insulating plate 12 also carries a row of terminal conductors 13 which may be permanently electrically connected to separate points along a resistance
65 70 14.

The resistance 14, may be replaced by any other electrical device such for example, as a series of condensers or inductance units.

A link conductor 15 is adapted to connect
75 the terminals 13 to the rigid conductor 10. This is accomplished at one end by means of binding posts 16, which are threaded to the terminal elements 13, and at the opposite end by means of a clamp 17 which is illustrated in detail in Fig. 2. 80

The link 15 has one end provided with an open slot 18 adapted to allow the link to be inserted between the head of any binding post and the associated terminal conductor
85 13. At the opposite end of the link 15 is a closed slot 19 for the insertion of a bolt 20 of the clamp 17 by means of which the link is held in a rectangular groove 30 on the face of the clamp block 24. The slot 19
90 allows the link a limited movement in the groove 30 with respect to the bolt 20 and the binding post 16 when the knurled nut 21, which is threaded to the bolt 20, is released.

The head of bolt 20 has a portion of its inner edge beveled and included in the slot
95 23 provided in the clamp block 24 in such manner as to have its beveled edge positioned adjacent to the conductor 10 which is inserted in another slot 25 communicating
100 with the slot 23. When the nut 21 is tightened the head 22 of the bolt is pressed against the conductor 10 and the link 15 is held in a normal position between the nut 21 and the block 24 as illustrated in full lines
105 in Fig. 1.

When it is desired to change the link to another position this may be done by merely

loosening the associated binding post 16 and the knurled nut 21. The slots provided in the link allow its removal from one binding post and its connection to another without completely removing either the binding post or the knurled nut.

The nut 21 is retained upon the bolt 22 and allowed only a limited movement by a washer riveted to the end of the bolt.

The beveled edge of the head of bolt 20 is positioned adjacent to the conductor 10 so that even when the nut 21 is unscrewed to the limit of its movement, the head 22 is prevented from turning in the slot 23.

This feature possesses the advantage that the bolt is held in position when the nut 21 is turned so that the clamp may be readily tightened. Moreover, by a single adjustment of the nut 21, the link may be held in position and the member 24 clamped to the conductor 10, or the whole arrangement may be released, so that the link 15 may be withdrawn from one terminal 13; the block 24 may be moved along conductor 10, and the link 15 may be reconnected to another terminal 13.

The provision of a rigid conductor 10 is of considerable importance, because by this means the necessity for providing a flexible conductor connected to the movable link 15 is obviated and the disadvantages of such flexible conductors, namely, the liability to breakage and the danger of contact with other apparatus or circuit elements is avoided.

External connection to the link 15 or the associated resistor 14 may be made through the conductor 10 by means of the terminal 26. Suitable permanent or other connection may be made to either end of the resistance 14 or another connector like that shown may be provided for this purpose.

In Fig. 3 the connector of this invention is illustrated in relation to an inductance coil comprising a bare conductor 27 of rectangular form. The connector shown in this figure is similar to that described in connection with Figs. 1 and 2 with the exception that the link 15 is replaced by contact springs 28 attached to the block 24 for more readily making connection directly to the coil conductor and thereby eliminating all terminals or binding posts.

By a single adjustment of the nut 21 in this figure, the clamp may be loosened and the springs 28 may be moved to any desired turn of the coil and quickly connected thereto.

An added advantage of the arrangement of this invention is that the sliding movement of the link 15 against the terminal 13 and the block 24 maintains a clean surface between these members whereby a good electrical connection is secured at all times. Likewise, the sliding movement of the springs 28 along the conductor 27 of the coil in Fig. 3 maintains a good electrical connection therewith in the same manner.

Although the invention is described in connection with certain specific structural arrangements, it may nevertheless be applied to numerous other embodiments and this application is to be limited only as indicated by the scope of the appended claims.

What is claimed is:

1. In combination, a plurality of elements arranged in a row, a conductor common to said elements and positioned parallel to said row, a movable link conductor adapted to make electrical connection to any of said elements, a block member upon which said link conductor is mounted to move at right angles to said conductor to effect connection to said elements, said block being slidably mounted on said conductor to change the relation of said link to said elements, and means adapted to secure said link and said block to said conductor to establish an electrical connection between said conductor and any of said elements.

2. In an electrical connector, a fixed conductor and a movable conductor, and means for retaining said fixed and movable conductors electrically connected comprising a block provided with two slots positioned at right angles to and communicating with each other, one of said slots including said fixed conductor, the other of said slots including a bolt, said bolt having a beveled head adapted to engage said fixed conductor to prevent rotation of said bolt.

In witness whereof, I hereunto subscribe my name this 1st day of December A. D., 1925.

WILLIAM J. ADAMS, JR.