

J. DAVIS.
TEST CONNECTOR.

APPLICATION FILED JAN. 16, 1915.

1,173,099.

Patented Feb. 22, 1916.

Fig. 1.

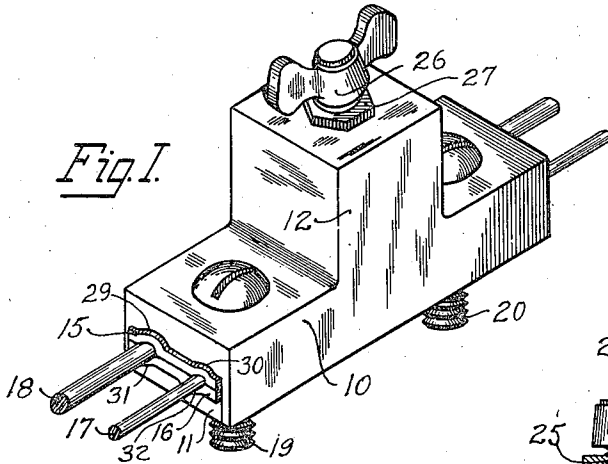


Fig. 2.

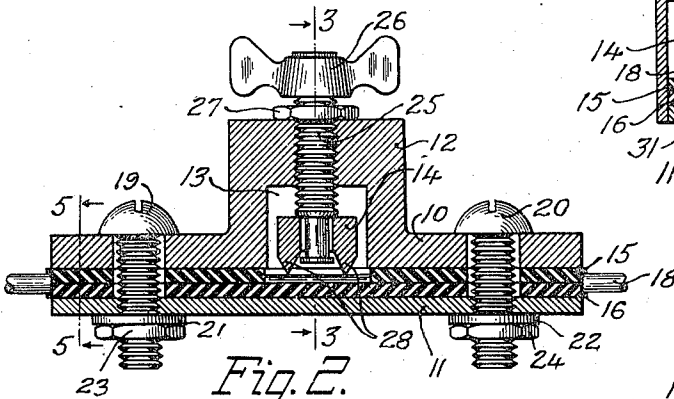


Fig. 3.

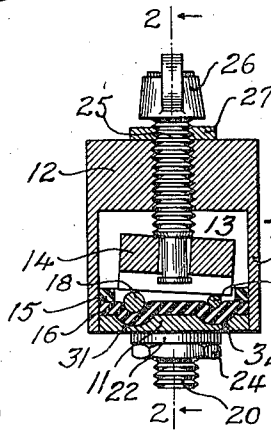


Fig. 5.

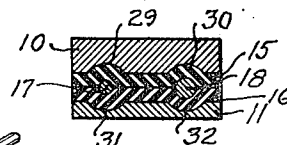
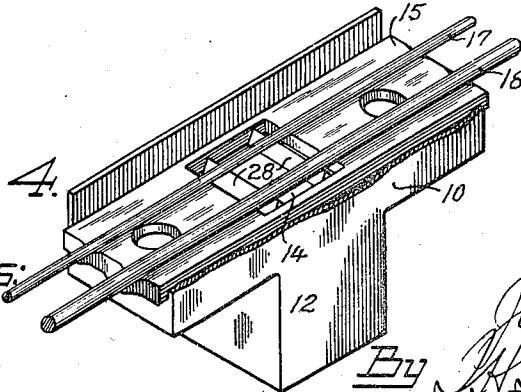


Fig. 4.



Witnesses:
Wm. Berghahn.
J. E. Larsen

Inventor:
John Davis
By H. Ferguson
Attorney.

UNITED STATES PATENT OFFICE.

JOHN DAVIS, OF BLOOMINGTON, ILLINOIS.

TEST-CONNECTOR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN DAVIS, a citizen of the United States, residing at Bloomington, in the county of McLean, State of Illinois, have invented certain new and useful Improvements in Test-Connectors, of which the following is a specification.

The present invention relates to test connectors such as are employed in the electrical arts for mechanically securing two or more wires and arranging for conveying electricity from one to the other. In such devices the wires are firmly held in position between clamping members which may be readily separated for the insertion or removal of the wires. In devices of this class heretofore employed, the wires have usually engaged the metal surface of the clamping members and the latter have served to conduct the current from one wire to the other. As a result the engaging surfaces of the wires and the clamping members readily become corroded when subjected to the weather and wherever such devices have been used in telephone circuits interference has been produced in such circuits.

One object of the present invention is to provide a connector which will be serviceable in such telephone circuits without producing disturbance to conversation.

Another object is to provide a connector which may have its wires readily connected into circuit with each other or disconnected without removing the main clamping members from engagement with the wires.

Other objects and advantages of the invention will be apparent from the following detailed description when taken in connection with the accompanying drawings, and the scope of the invention will be particularly pointed out in the appended claims.

In said drawings Figure 1 is a perspective view of a test connector constructed in accordance with my invention; Fig. 2 is a central longitudinal vertical section of the same taken on a plane indicated by the line 2—2 of Fig. 3; Fig. 3 is a transverse vertical section of the same taken on a plane indicated by the line 3—3 of Fig. 2; Fig. 4 is

a perspective view of a portion of the device inverted to show the manner in which the bridging contact engages the wires; and Fig. 5 is a transverse section of the device taken on a plane indicated by the line 5—5 of Fig. 2.

Throughout these views like characters refer to like parts.

The body or casing of the connector is made up of an upper block or member 10 and a cooperating lower member 11. The former is provided with a central upward extending portion 12 cut away so as to provide a cavity 13 in which a bridging contact member 14 is located. Strips of insulation 15 and 16 are located between the opposing faces of the plates 10 and 11 so as to engage opposite sides of the wires 17 and 18. Screws 19 and 20 extend through apertures in the opposite ends of the plate 10 and insulating members 15 and 16. These screws have threaded engagement with apertures in the clamping plate 11 so that all the parts may be securely drawn together and held in clamped position. Washers 21—22 and nuts 23—24 upon the screws 19 and 20, respectively, serve to lock the parts in their clamped position. The bridging contact member 14 is loosely fitted upon the lower end of a stem 25 which passes through and has threaded engagement with the upwardly extending portion 12 of the upper clamping plate. The upper end of the stem 25 is provided with a winged head 26 by which the stem may be rotated to raise the bridging member 14 out of engagement with the wires 17 and 18, or to force the same down into engagement therewith. A lock nut 27 upon the threaded portion of the stem 25 will serve to lock the stem in adjusted position. The loose connection between the stem 25 and bridging contact member 14 is provided so as to enable the bridging contact member 14 to seat itself firmly and readily upon the wires held by the connector. As illustrated, wires of different sizes may be thus connected and suitable bringing connection will be made with them by the bridging member 14. The lower sur-

face of the bridging member may be variously fashioned, but is preferably provided with a plurality of ridges 28 provided with sharp lower edges so as to cut into the surface of the wires and insure good contact. The insulating members 15 and 16 are preferably sheets or strips of soft rubber. They thus closely embrace the wires 17 and 18 throughout a considerable length and thus provide a water-proof and weather-proof closure about the wires and between the clamping members 10 and 11 so that moisture cannot enter the cavity 13 and interfere with the conductive engagement of the bridging member 14 and the wires 17 and 18 held by the connector. In order to provide sufficient space for the insulation between the wires and the adjacent clamping plates, the latter are provided with grooves, the grooves of plate 10 being designated 29—30, and those of the member 11, 31—32. These grooves may be of the same size or they may be of different sizes, as desired. Likewise, the wires upon which the connector is employed may be of the same or different sizes.

It will be seen that in operation the connector need not be removed when once put in place. The electrical connection between the wires may be made or broken by manipulating the winged head 26 to lower or raise the bridging contact. As clearly shown in Fig. 4, the upper insulating strip 15 is provided with an opening through which the bridging member 14 may be moved into engagement with the contained wires.

It will be apparent that the particular embodiment of the invention which I have herein disclosed may be modified in several particulars without departing from the invention. It will also be apparent that the device although particularly applicable to service upon telephone circuits may be used in other connections. I, therefore, do not wish to be limited to the specific disclosure or utility specified but aim to cover all alterations and adaptations which come within the scope of the invention by the terms of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is:—

1. A test connector comprising an inclosing casing separable for the insertion of wires and having relatively large flat opposing faces for bearing on opposite sides of a plurality of wires spaced from each other and extended lengthwise of said casing, flat sheets of relatively soft insulating material covering said faces and embracing said wires upon opposite sides so as to embed them and thereby insulate them from each other and from said casing and said sheets engaging each other and said faces so as to provide a waterproof closure to protect the interior

of said casing from the weather, and a contact within said casing operable from without said casing to electrically connect and disconnect said wires.

2. A test connector comprising two plates or blocks having opposing faces, a piece of relatively soft insulation resting upon each of said opposing faces, one of said pieces having a hole through it, means for clamping said plates and the intervening insulating pieces together, a contact movable in a cavity in one of said plates or blocks and in said hole in said piece of insulation, and means for controlling the movement of said contact from the outside of the connector to make and break contact with wires passing through said connector.

3. A test connector comprising two plates or blocks having opposing faces, each of said faces having two grooves registering with the grooves in the opposing faces, a piece of relatively soft insulation resting upon each of said opposing faces, one of said pieces having an opening through it, means for clamping said plates and the intervening insulating pieces together, a metal contact member located in a cavity in one of said plates, and means for moving said contact member in the opening in said piece of insulation to make and break contact with wires held by the connector.

4. A test connector comprising two plates or blocks having opposing faces, each of said faces having two grooves registering with the grooves in the opposing faces, a piece of relatively soft insulation resting upon each of said opposing faces, one of said pieces having an opening through it, means for clamping said plates and the intervening insulating pieces together, a movable stem passing through one of said plates or blocks into a cavity formed on its inner side, a bridging contact loosely pivoted to the inner end of said stem, and means at the outer end of said stem for moving said contact into and out of engagement with the wires held by the connector.

5. A test connector comprising two plates or blocks having opposing faces, a piece of relatively soft insulation resting upon each of said opposing faces, means for clamping said plates and the intervening insulating pieces together, a contact movable in a cavity in one of said plates or blocks, and means for controlling the movement of said contact from the outside of the connector to make and break contact with wires passing through said connector.

6. A test connector comprising two plates or blocks having meeting portions arranged to hold a plurality of wires spaced from each other side by side and extended lengthwise of said blocks, a piece of relatively soft insulation resting upon each of said meet-

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ing portions, means for clamping said
blocks and the intervening insulating pieces
together, a metal contact member located in
a cavity in one of said blocks, and means for
5 moving said contact member to make and
break contact with wires held by the con-
nector.

In witness whereof, I hereunto subscribe
my name this 14 day of January, A. D. 1915.

JOHN DAVIS.

Witnesses:

CHARLES T. MCKINNEY,
WALTER D. SLATTERY.