June 24, 1924. 1,499,098

S. S. CASSARD

TERMINAL FOR ELECTRICAL CONDUCTORS

Filed Feb. 11, 1919

Fig. 1.

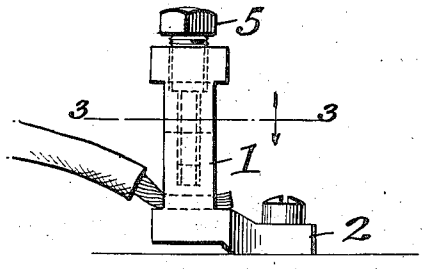


Fig. 2.

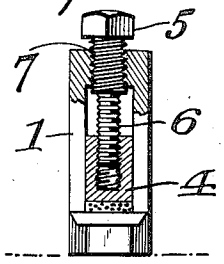


Fig. 4.

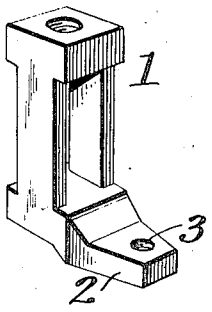
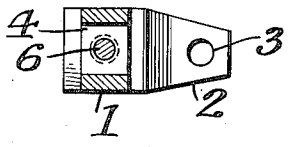


Fig. 3.



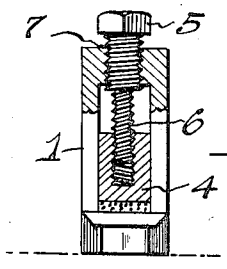


Fig. 5.

Inventor.

Samuel S. Cassard

By

W. B. Morton Jr. Attorney.

Patented June 24, 1924. 1,499,098

UNITED STATES PATENT OFFICE.

SAMUEL S. CASSARD, OF BROOKLYN, NEW YORK.

TERMINAL FOR ELECTRICAL CONDUCTORS.

Application filed February 11, 1919. Serial No. 276,403.

To all whom it may concern:

Be it known that I, SAMUEL S. CASSARD, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented new and useful Improvements in Terminals for Electrical Conductors, of which the following is a specification.

This invention relates to terminals and connectors for electrical conductors to facilitate the connection of the conductor to a binding post or similar attachment, or to connect two or more connectors together.

One object of the invention is to provide a terminal or connector of large electrical capacity for its weight and size, and which shall also be capable of manufacture at small cost and largely by automatic machinery.

Another and important object of the invention is to provide a terminal in which the end of the conductor may be readily inserted, notwithstanding distortion of the wires forming the cable, and which will, by a simple operation of turning the screw, firmly compress the wires, whatever the shape of the cable, into a compact mass into firm contact with the metal of the connector.

A further object of the invention is to provide a terminal or connector which can be sold assembled with no loose parts and ready for the insertion of the electrical conductor without preliminary adjustment.

A further object of the invention is to provide a terminal or connector of a design such that one size of the terminal will be adaptable for conductors of widely different diameters.

In the accompanying drawing I have shown a preferred embodiment of my improved terminal, and in said drawing,

Fig. 1 is a side elevation of my improved terminal with the conductor attached;

Fig. 2 is a vertical section of the terminal shown in Fig. 1 and at right angles to Fig. 1;

Fig. 3 is a transverse section on line 3—3 of Fig. 1;

Fig. 4 is a perspective view of the socket member of my improved terminal, and

Fig. 5 is a sectional view similar to Fig. 2 illustrating a modification.

Referring to the drawings, 1 indicates the main member or body of the terminal, which consists essentially of a sleeve or socket portion of rectangular cross-section and an extension 2 on one wall of the socket in which a hole 3 is provided to receive the binding post to which the terminal is to be attached.

A block 4, approximately square in cross-section, and of a size to have a snug sliding fit in the rectangular opening of the socket piece, constitutes the clamping member of the terminal, the conductor being inserted between one face of the block and the opposite wall of the socket piece. The block is supported in position and actuated to clamp the conductor or cable by means of a screw 5, here shown as having two oppositely threaded portions 6 and 7, respectively. The part 6 is preferably of smaller diameter than the part 7 and is threaded in a hole tapped in what may be regarded as the upper face of the block. The larger part 7 of the screw works in a thread in the upper wall of the socket piece, so that when the screw is rotated in one direction the screw will be advanced into the socket by means of the thread 7 and the block 4 will also be advanced with relation to the screw by the thread 6. The screw 5 is provided with a head either milled to facilitate its operation with the fingers or shaped for engagement with a screw-driver or wrench.

The terminal is preferably sold with its parts assembled and with the lower part 6 of the screw threaded well into the block 4, but with the upper part 7 merely started in the thread of the socket piece. With the parts so arranged the space between the block and the clamping face of the socket piece will be open to its full extent ready to receive the cable. After the end of the cable is inserted in the opening thus provided, the screw will be rotated in the proper direction to advance the screw by means of its threaded part 7 into the socket. The rotation of the screw in this direction will cause the part 6 to screw out of the block with the effect of advancing the block toward the cable faster than the screw, or if the threads are of equal pitch, to twice the extent that the screw is advanced.

Under the pressure of the block the end of the cable will be spread out to fill the socket opening, so that whatever the size of the cable with relation to the socket opening, a full surface contact between the cable and the terminal will be provided. In practice, of course, the terminals will be

furnished in different sizes, each adapted for a number of different sizes of cables. Preferably the dimensions of the terminal will be so proportioned with reference to the cables with which it is to be used, that the clamped end of the cable will not be spread out too flat and thus render it liable to be broken.

The oppositely threaded screw shown in the drawings is advantageous for several reasons. It provides a large range of adjustment for the block in proportion to the thickness of the block and without using a screw of excessive length. The arrangement also permits the terminals to be sold assembled and at the same time ready for immediate application to the cables without pre-adjustment of the parts.

It also permits the parts to be made entirely with automatic machinery and provides a working connection between the block, the screw and the socket piece which could otherwise be obtained only with swivel or pin-and-groove joints requiring costly hand labor.

I have shown the extension 2 as offset somewhat from the base of the sleeve portion of the terminal. The purpose of this is to reduce the area to be machined in order to provide a smooth contact surface. The area of the extension alone is sufficient for the conduction of any current which may be carried by the conductors for which the terminal is adapted, and by offsetting the extension in the manner shown this portion only of the bottom surface of the terminal need be machined.

If desired the screw may be made with its threads running in the same direction but of different pitch, as shown in Fig. 5 in which parts 6 and 7 of the screw are threaded in the same direction with threads of different pitch, so as to advance the block upon rotation of the screw, but of course not to the same extent upon an equal number of turns as provided by the threads of opposite directions.

It is obvious also that the details of the device may be otherwise varied without departing from the spirit of the invention or the scope of the appended claims.

My invention is particularly applicable for connecting a cable to a binding post, and I have therefore designated it as a terminal, but it may obviously be used for connecting two cables by merely clamping the ends of both in the socket piece, and where I have used the word "terminal" in the appended claims it is to be understood as descriptive of the preferred use of the device and not as a limitation to such use only.

I claim:

1. In a terminal for electrical conductors, the combination of a socket piece, a clamping piece, a screw having threaded connection with both pieces and arranged to effect a relative movement of the pieces upon rotation of the screw, the threads of said respective connections being of different pitch and the two threaded portions of said screw being integral.

2. In a terminal the combination of a socket piece having an opening, a clamping member of smaller dimensions than the opening mounted for movement therein, and an integral screw threaded in said clamping member and also in a wall of said opening, said threads being designed to force the clamping member toward a wall of said opening upon rotation of the screw.

3. In a terminal the combination of a socket piece having an opening, a clamping member of smaller dimension than the opening mounted for movement therein and an integral screw having oppositely threaded portions, one portion threaded in said clamping member and the other in a wall of the socket piece.

4. In a terminal the combination of a socket piece having a rectangular opening, a block of less thickness than one dimension of said opening, and mounted for movement therein, and an integral screw having oppositely threaded portions with one portion threaded in said block and the other portion threaded to the wall of said opening.

Signed at New York city, in the county of New York and State of New York, this 31st day of December, 1918.

SAMUEL S. CASSARD.