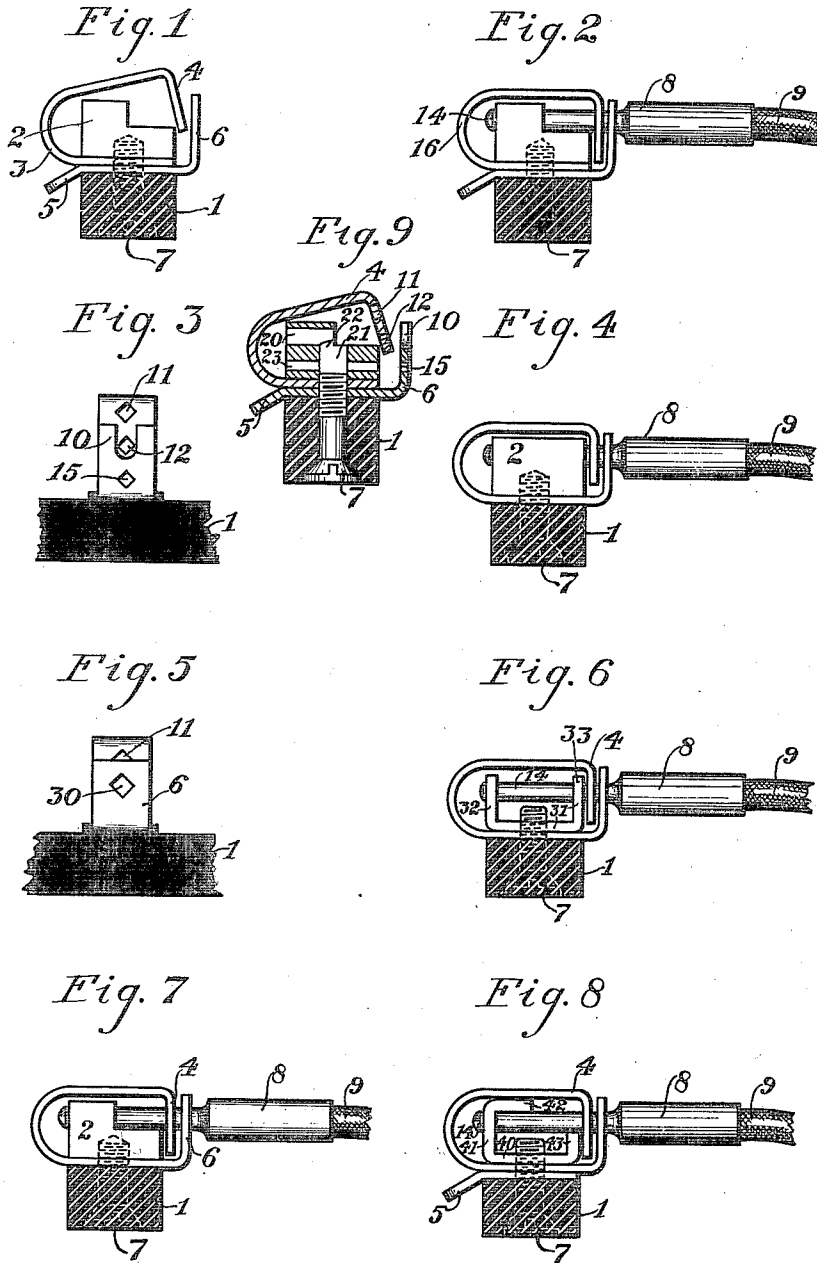


R. H. MANSON.
ELECTRICAL TERMINAL CONNECTOR.
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985,821.

Patented Mar. 7, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, RAY H. MANSON, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Electrical Terminal Connectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to terminal connectors such as are used in electric circuits and the like for the purpose of connecting two conductors together. At present the terminals in general use consist of set screws or arrangements for soldering the contacts together. These absorb much time and cause much trouble in making the connections; and, when the connections are made, they depend for their permanency upon the security of the set screw or the soldering.

In my invention I employ a terminal into which I may readily insert a plug terminal tip or the bare end of a wire which is caught and secured therein, making a permanent connection; and, at the same time, a good contacting association between the conductors. To do this I employ stationary means into which the terminal is inserted and which engages the wire terminal at two points distant from each other. The resilient member engages the wire terminal at a point distant from both stationary points, and by its resiliency endeavors to rotate the wire terminal about one of the points as an axis, thus holding it so firmly pressed against the stationary parts that it cannot be removed until the pressure exerted by the resilient member is removed. Connection is both quickly and conveniently made, and can be as readily taken down. The operation upon the device by which the connection is made, is simple and can be performed in inconvenient places.

It is important that terminals which are intended for long uninterrupted service should not deteriorate, and loosen or release the terminals. Set screws and like terminal connectors are apt to lessen their grip with long usage, while soldered terminals can be made only in accessible positions. Soldered connections also have the disadvantage of being hard to interrupt, and, after interruption, inconvenient to restore, as their nature

necessitates the use of a soldering iron. I avoid these troubles, as, by my connector, the connection may be easily made and broken, and when so made, will hold without loosening or releasing its grip until a disconnection is desired. Such disconnection may readily be made and the parts reconnected with the use of the hands alone. It will be seen that I have produced a connector combining many of the advantages of those in use, eliminating many of their inconveniences, and dispensing with the use of screw drivers, soldering irons and other like instruments.

My invention will be best understood by reference to the following description when taken in connection with the accompanying illustrations showing specific embodiments thereof, while its scope will be more particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a side elevation of the preferred form of my connector, showing the position of the parts when the connector is not in use. Fig. 2 is a similar view showing a terminal connected in the grip of the connector. Fig. 3 is a front elevation of Fig. 1. Fig. 4 is a side elevation of a modified form. Fig. 5 is a front elevation of Fig. 4. Figs. 6, 7, and 8 are side elevations of other modifications. Fig. 9 is a vertical longitudinal cross section of Fig. 1.

In the drawings I have used similar letters for corresponding parts of the different modifications.

Referring now first to Figs. 1, 2, 3, and 9, 1 is a base shown here of insulating material. 2 is a stationary piece having two perforations 20 and 23, each for the insertion of a terminal. A threaded perforation 21 is cut in this piece, and a screw or other binding member 7, driven through the base into this perforation to bind the parts together. The upper part of this recess intersects the terminal recess, cutting the recess 20 away at the lower part of the orifice thereof. At 3 I show a spring member bent over at right angles at end 4. A second member 5 constitutes a terminal for the connection of a lead. This is bent up at right angles, as shown at 6. The member 3 is recessed at 11 and 12. The member 5 is recessed at 15, and a vertical slot 10 is cut in the upper part of 6.

To make a connection, I may proceed in

two ways: First, insert the end 8 of a conductor through the recess 11 into the orifice of the perforation 20. The cut away part 22 permits such insertion when the terminal is at such an angle as it is necessary for the terminal to assume in this position of the parts. By forcing the conductor end of the terminal down, the member 3 is bent over, the terminal entering the slot 10 and penetrating into the perforation 20 when the recess 11 is in such a position as to correspond therewith. The terminal is now retained in this position, as the resiliency of the spring undertakes to rotate it about one of the points of engagement in the perforation as an axis, so retaining the terminal, and, by the constant pressure, assuring a good contact. Or, I may depress the spring member 3 until the recess 11 corresponds with the perforation 20 and then insert the terminal, releasing the spring, whereupon the terminal is caught and held as described above. I provide corresponding recesses 12, 15 and 23 below the slot 10, which may be used to connect a conductor to the binding post by depressing the spring member 3 until these holes are in alinement and then inserting the terminal. The spring member is then released and rising grips the terminal holding it in place.

In Figs. 4 and 5 I show two stationary parts and a resilient member, each having a recess therein which may be made to correspond by depression of the resilient member. The part 6 instead of having a slot cut in the upper part, carries the perforation 30.

In the modification in Fig. 6, I show a punching 31 having two parallel parts 32 and 33, each of which bears a recess for the insertion of the terminal.

The modification in Fig. 7 corresponds to that shown in Fig. 1, excepting that the parts 3 and 5 are consolidated into one piece.

In Fig. 8 I show another modification, in which the member 2 is represented by a piece 40 bent over at right angles into a short stub 43, being U-shaped at 41 with a leg 42 at right angles to 41. The terminal is inserted over the stub into a perforation in the member 41, the part 42 bearing against the tip of the terminal.

While I have shown my device in these particular forms, it will be obvious to those skilled in the art that numerous and extensive departures from the form and details of the apparatus here shown, may be made without departing from the spirit of this invention, the same being herein shown solely for the purpose of clearly illustrating the same.

I claim:

1. In a terminal connector for electrical apparatus, the combination of a stationary piece having a terminal recess therein, a second stationary piece having a slot there-

in, a movable resilient member having a terminal recess therein, a terminal adapted to be inserted through said slot into said recess when the movable member is moved to a position where one recess is in alinement with the other, said movable member adapted by virtue of its resiliency when released to grip said terminal and retain it in position.

2. In a terminal connector for electrical apparatus, the combination of a stationary member having a perforation therein, an electric terminal adapted to be inserted into said perforation, the edge of the orifice of said perforation being cut away to allow the insertion of the terminal into said perforation when inclined at an angle thereto, a normally elevated spring member having a recess therein corresponding to the perforation in the stationary member, said spring member adapted to be depressed to cooperate with said stationary member to retain said terminal.

3. In a terminal connector for electrical apparatus, the combination of a stationary member having a perforation therein, the edge of the orifice of said perforation being cut away at the bottom, a spring member having a perforation therein, normally elevated above said stationary member, a terminal for an electric conductor adapted to be inserted through the perforation in the spring member into the orifice of the stationary member and when pushed forward to enter the perforation and to engage and depress the spring member, said spring member cooperating with the stationary member to retain said terminal connection therewith.

4. In a terminal connector for electrical apparatus, the combination of a base, a stationary member fastened to said base, a part of the top of said stationary member being elevated above the other part, said elevated part being perforated, a spring member mounted on said base and being perforated at one end and an electric terminal adapted to be inserted through said perforations, the spring member engaging said terminal when so inserted and retaining it in contact with said stationary member.

5. In a terminal connector for electrical apparatus, the combination of a base, a stationary member attached to said base, a perforated lug extending from the top surface of said stationary member, the bottom of the perforation being flush with the top of said member, a spring member having a perforation therein adapted to be moved into a position where the perforations are in alinement and a terminal for an electric conductor adapted to be inserted into said perforations and when so inserted to be caught and retained by said spring member.

6. In an electrical terminal connector for electric conductors, the combination of a

perforated member, the orifice of the perforation being enlarged, a spring member having a perforation therein normally in a position in which said perforation is out of
5 alinement with the first perforation and a terminal for an electric conductor, said terminal adapted to be inserted through the perforation in the spring member while the perforations are out of alinement, the
10 end of the terminal resting in the enlarged orifice when so inserted, the terminal being adapted to enter the perforation in the first named member when thrust forward

and to depress the spring member to a position in which it is under strain to return 15 to normal, the spring member by virtue of such strain gripping the terminal and retaining it in connection with the first named member.

In testimony whereof I affix my signature 20 in presence of two witnesses.

RAY H. MANSON.

Witnesses:

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F. O. RICHEY.