(No Model.)

E. H. JOHNSON.

ELECTRICAL CONNECTING DEVICE.

No. 342,751. Patented May 25, 1886.

Fig. 1.

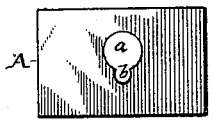


Fig. 2

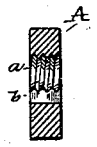


Fig. 3.

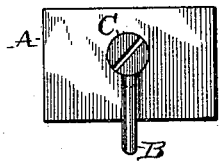


Fig. 4.

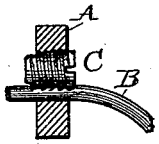


Fig. 5.

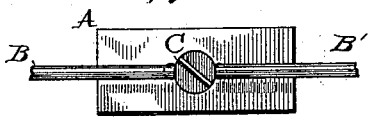


Fig. 6.

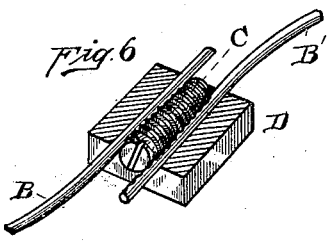
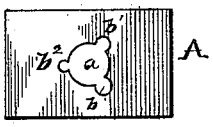


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD H. JOHNSON, OF NEW YORK, N. Y., ASSIGNOR TO BERGMANN & COMPANY, OF SAME PLACE.

ELECTRICAL CONNECTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 342,751, dated May 25, 1886.

Application filed February 18, 1886. Serial No. 192,358. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. JOHNSON, of the city of New York and State of New York, have invented a certain new and useful Improvement in Electrical Connecting Devices, of which the following is a specification.

The object of my invention is to provide a good and desirable connection—both electrical and mechanical—between one or more wires and any metal part to which such wire or wires are to be united, or between two wires forming parts of the same conductor; and my invention consists in the novel method and means for making such connection, hereinafter described and claimed.

The main feature of my invention is the inserting of a screw into an aperture in the part to which the wire is to be connected, by the side of such wire and parallel thereto, in such manner that the threads of the screw cut into the wire. The wire is thus held firmly, and a most perfect electrical union is obtained.

When two wires are to be connected together, the ends are placed in an aperture, and the screw is inserted between them parallel to the length and cuts into both of them.

My invention is illustrated in the annexed drawings, in which Figure 1 is a plan view of a metal part to which a wire is to be attached; Fig. 2, a central cross-section of the same; Fig. 3, a top view of the same with a wire connected to it; Fig. 4, a central cross-section with the wire connected; Fig. 5, a plan view showing an arrangement for connecting two wires together; Fig. 6, a horizontal section showing another arrangement for the same purpose, and Fig. 7 a view of the arrangement for connecting wires of different sizes.

Referring first to Figs. 1, 2, 3, and 4, A represents any metal part to which it is desired to attach a wire. For instance, it may be a part of an electrical switch, or a terminal of a safety-catch, or a part connected with a commutator-bar of a dynamo-electric machine to which the end of an armature-coil must be connected. The necessity for making connections of this character arises in almost every kind of electrical work.

The part A has in it two intersecting parallel apertures—the larger one, *a*, and the smaller one, *b*. Aperture *a* is screw-threaded, the screw-thread being, however, broken by the intersection of aperture *b*.

B is the wire to be connected. Its end is inserted in the aperture *b*. Apertures *a* and *b* may extend entirely through part A, or only partially through it, according to the character of such part. The blunt-pointed screw C is then inserted in aperture A and forced in parallel with the wire, and cuts into such wire the whole length of the screw. A screw-driver is preferably employed to drive the screw home; but for some purposes—as for a temporary connection—it may be sufficient to insert the screw by hand.

The connection, formed in the manner shown, is one which it is practically impossible to break. It can be loosened only by the application of extraordinary force. The electrical connection also is perfect, and does not deteriorate with time.

The screw may in some cases be inserted from the side opposite that on which the wire enters the aperture.

In Fig. 5 is shown the way in which two wires are connected together, or two separate conductors connected to the same metal part. The part A has the screw-threaded aperture *a* and two smaller apertures, *b* and *b'*, which intersect aperture *a*, and into which the wires B B' are inserted. Screw C is then forced between them. It is evident that any number of wires may be thus connected by increasing the number of apertures provided therefor, only one screw, C, being needed for any number of wires. This is shown in Fig. 7, wherein the part A is adapted to receive three wires of different sizes. The screw-threaded aperture *a* has three parallel intersecting apertures, *b b' b²*. The part being thus constructed, when the same is put into use a wire of the desired size may be inserted in the corresponding aperture, the others being left unoccupied. This is an important feature of my invention, as it enables me to adapt a part of an apparatus to be used with a wire of any size.

In Fig. 6 intersecting apertures *a*, *b*, and *b'* extend longitudinally through a block or plate, D. The ends of two wires, B B', which are to be connected together and passed into these apertures, and a long screw, C, is then

inserted between them. A good contact is thus made throughout the whole length of the screw.

What I claim is—

1. The combination, with a conducting-wire and a receptacle therefor, of a screw entering said receptacle parallel to said wire and cutting into said wire, substantially as set forth.

2. In electrical apparatus, a metal part to which a wire is to be connected, provided with two or more parallel intersecting apertures, one of which is screw-threaded, substantially as and for the purpose set forth.

3. The combination, with a metal part provided with two parallel intersecting apertures, one of which is screw-threaded, of a wire inserted in the other aperture and a screw in the screw-threaded aperture and cutting into said wire, substantially as set forth.

4. In electrical apparatus, a metal part to which a wire is to be united, provided with a screw-threaded aperture and two or more other apertures of different sizes parallel to said screw-threaded aperture and intersecting the same, substantially as and for the purpose set forth.

This specification signed and witnessed this 13th day of February, 1886.

EDWARD H. JOHNSON.

Witnesses:
A. W. KIDDLE,
E. C. ROWLAND.