

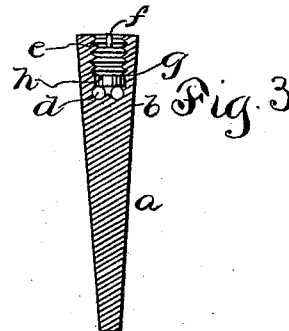
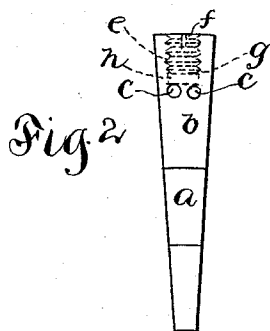
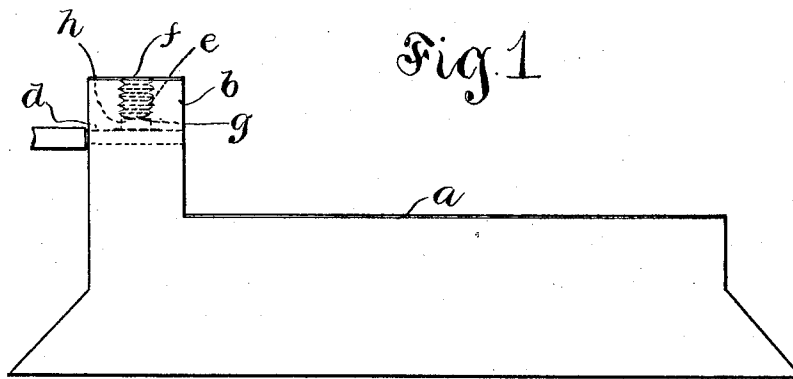
(No Model.)

E. P. WARNER.

CONNECTION FOR COMMUTATORS AND ARMATURE WIRES.

No. 487,307.

Patented Dec. 6, 1892.



Witnesses:
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UNITED STATES PATENT OFFICE.

ERNEST P. WARNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
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CONNECTION FOR COMMUTATORS AND ARMATURE-WIRES.

SPECIFICATION forming part of Letters Patent No. 487,307, dated December 6, 1892.

Application filed March 5, 1892. Serial No. 423,881. (No model.)

To all whom it may concern:

Be it known that I, ERNEST P. WARNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Connections for Commutators and Armature-Wires, (Case No. 45,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a connection for commutators and armature-wires. Its object is to provide a means for connecting the said wires to the segments of a commutator in a dynamo machine or motor, which will be at once secure and also allow the wires to be readily detached upon occasion.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of commutator-segment, showing the ends of the wires from the armature inserted therein. Fig. 2 is an end view of the commutator-segment, showing the holes in which the wires from the armature are to be inserted. Fig. 3 is an end view of commutator-segment in cross-section, showing the means for securing the wires thereto.

Similar letters of reference are used to indicate similar parts of the device in the different figures.

The commutator-segment *a* may be of any desired form. A usual form is that shown in the drawings. Upon the projecting arm *b* is placed the means of my invention for securing the conducting-wires through the commutator-segment. Two holes *c c* are drilled into the end of this arm *b*, these holes being preferably about the size of the connecting-wires *d*, which are to be inserted therein. From the outer surface of this arm *b* is drilled a hole *e*, extending downward to the point of intersection with the two holes *c c*. This hole is adapted to receive the screw *f*, which is adapted to be screwed into said hole until it is flush with the outer surface of the arm *b*. The end *g* of the screw *f* is rounded, and the button *h*, of about the same diameter as the hole *e*, is placed in said hole so as to rest upon the wires. The rounded surface of the screw *f* bears upon the button *h* at or near its center, so that as pressure is brought to

bear by the screw the button distributes the pressure equally upon the wires, thus compensating for any irregularity in the size thereof or in the holes *c c*. This secures an equal frictional engagement between the wires and the commutator-segment in each case. At the same time by unscrewing the screw *f* the pressure upon the button *h* is relieved and the wires can be easily removed, the commutator taken off and replaced, and the wires refastened.

It is obvious that my invention is applicable not only to the attachment of armature-wires to commutator-segments, but also to all kinds of electrical connections.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a commutator, the combination, with the connecting-wires *d*, of the commutator-bar provided with the holes *c c* and the hole *e* at right angles thereto, the screw *f*, adapted to screw in said hole *e*, and a button or plate *h*, adapted to rest upon the wires and receive the pressure of said screw *f*, substantially as described.

2. The combination, with the connecting-wires inserted in holes in the commutator-segment, of a plate adapted to rest upon said wires and a screw adapted to bear by its end upon said plate, whereby the pressure of said screw is distributed equally between said wires, substantially as described.

3. The combination, with a commutator-segment provided with holes, of wires inserted therein, a plate adapted to rest upon said wires, and a screw adapted to always press upon said plate at or near the center thereof irrespective of the relative sizes of the wires, substantially as described.

4. The combination, with a commutator-segment provided with holes, of wires inserted therein, a plate adapted to rest upon said wires, and a screw adapted to bear by its end upon said plate intermediate between said wires, whereby the pressure of said screw is distributed between said wires, substantially as described.

In witness whereof I hereunto subscribe my name this 6th day of February, A. D. 1892.

ERNEST P. WARNER.

Witnesses:

HARRY CRAGG,
GEORGE L. CRAGG.