No. 880,429. PATENTED FEB. 25, 1908.

R. B. TREAT.

COIL RETAINER FOR DYNAMO ELECTRIC MACHINES.

APPLICATION FILED NOV. 12, 1907.

Fig. 1.

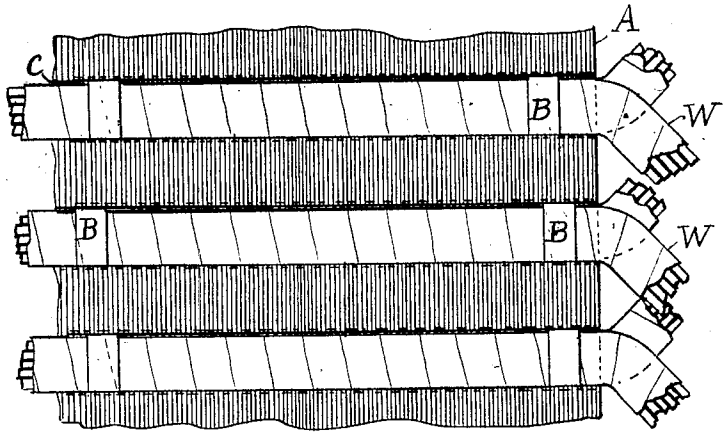


Fig. 2.

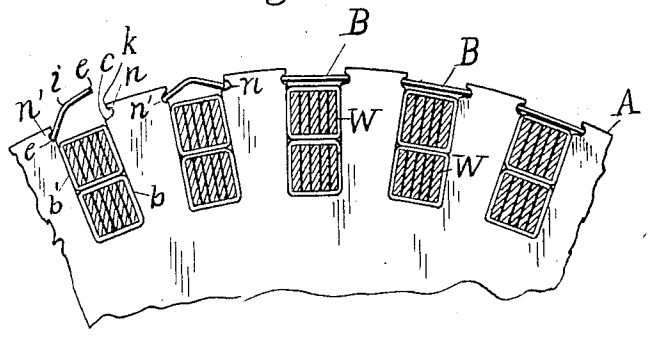


Fig. 3.

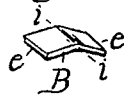
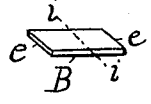


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT BELDEN TREAT, OF NEWARK, NEW JERSEY, ASSIGNOR TO CROCKER-WHEELER COMPANY, OF AMPERE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

COIL-RETAINER FOR DYNAMO-ELECTRIC MACHINES.

No. 880,429. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed November 12, 1907. Serial No. 401,784.

To all whom it may concern:

Be it known that I, ROBERT BELDEN TREAT, a citizen of the United States of America, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Coil-Retainers for Dynamo-Electric Machines, of which the following is a specification.

The object of this invention is to provide a device for securing the coils or windings in the slots of dynamo-electric machine elements which is of simple construction, easy of application and reliable.

The invention relates to the construction of the dynamo-electric machine elements to which the device is applied, as well as to the device itself, whereby the device may be passed into place through the mouth of the slot and secured without danger of injury to the windings or insulation thereon.

In the accompanying sheet of drawings which forms a part of this application—Figure 1 shows a portion of the face of an armature embodying my invention, the core being slotted and windings being shown in the slots and locked with coil-retainers. Fig. 2 shows a portion of the end of the armature with the coil-retainers in edge view at various steps in the process of inserting and securing. Fig. 3 is a perspective view of a coil-retainer prepared for insertion by distorting it by bending. Fig. 4 is a perspective view of a coil-retainer in the flattened form given after insertion.

The invention is illustrated in connection with an armature, the core of which is formed of circular iron punchings A with peripheral spaces, the punchings being laid together so as to form a drum with slots from end to end of considerable length. The customary windings W W are laid in the slots. In the side walls *b b'* of each slot and near its mouth are notches *n n'*. The wall *b* of the slot at its mouth and above one of the notches *n* is cut back at *k*, thereby uncovering a shoulder *c* so that the width of the slot at the mouth above the notches is greater than the width immediately under the notches. Coil-retainers B B of bendable material are provided which consist conveniently of rectangular pieces of sheet metal with parallel engaging edges *e e* at a distance apart, when completely flattened out, sufficient to engage the opposing notches in the slot walls. Preliminary to inserting, the coil-retainers are deformed by bending along a line *i i* parallel with the engaging edges so as to bring these engaging edges nearer together and spaced less than the distance *n' k* but greater than the distance *n' c*.

The coil-retainers are applied, after the windings are in place, by insertion through the mouth of the slots, one engaging edge of each retainer being inserted in the notch *n'*, above which the wall of the slot need not be cut back, and the other engaging edge permitted to fall on the shoulder *c*, both engaging edges being thereby supported. The retainer is then flattened by striking it at the middle, thereby unbending or straightening it along the line *i i* from the shape which was given to it before insertion, and causing the edges to separate and fully engage the notches.

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

1. The combination of a slotted dynamo-electric machine element, the walls of each slot near its mouth being notched and spaced further apart at the mouth above the notches than immediately below the notches, windings located in the slots, and coil-retainers capable of passing through the mouth of a slot into line with the notches and of being expanded into engagement with the notches, substantially as described.

2. The combination of a slotted dynamo-electric machine element, the walls of each slot near its mouth being notched and one of the walls being cut away above its notch, thereby uncovering a shoulder, windings located in the slots, and coil-retainers capable of passing through the mouth of a slot into line with the notches and of being expanded into engagement with the notches, substantially as described.

3. The combination of a slotted dynamo-electric machine element, the walls of each slot near its mouth being notched and spaced further apart at the mouth above the notches than immediately below the notches, windings located in the slots, and coil-retainers capable of passing through the mouth of a slot into line with the notches and of being expanded into engagement with the notches by straightening along an element parallel with the engaging lips, substantially as described.

4. The combination of a slotted dynamo-

electric machine element, the walls of each slot near its mouth being notched and one of the walls being cut away above its notch, thereby uncovering a shoulder, windings located in the slots, and coil-retainers capable of passing through the mouth of a slot into line with the notches and of being expanded into engagement with the notches by straightening along an element parallel with the engaging lips, substantially as described.

Signed by me at Ampere, N. J., this 17th day of October, 1907.

ROBERT BELDEN TREAT.

Witnesses:

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