(No Model.)

E. W. RICE, Jr.

ARMATURE FOR DYNAMO ELECTRIC MACHINES.

No. 455,887. Patented July 14, 1891.

Fig. 1.

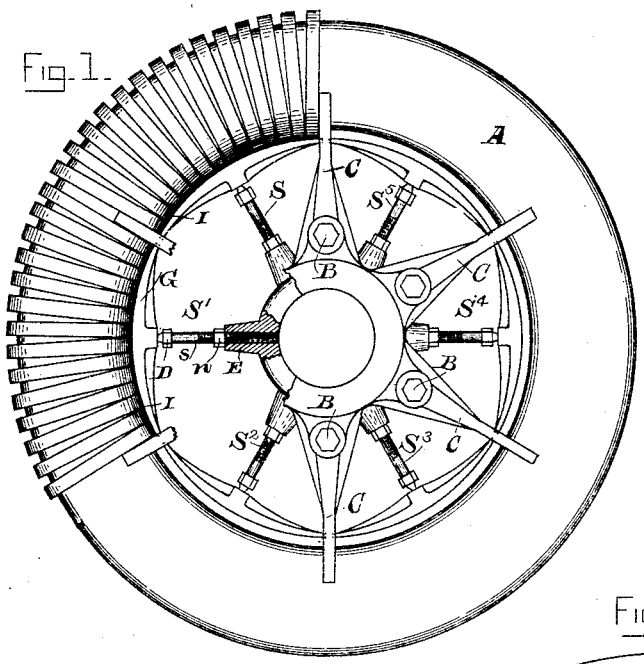


Fig. 3.

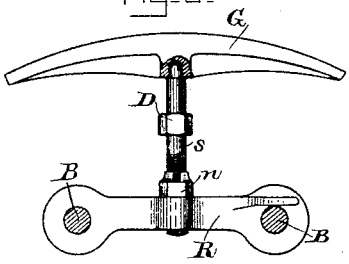
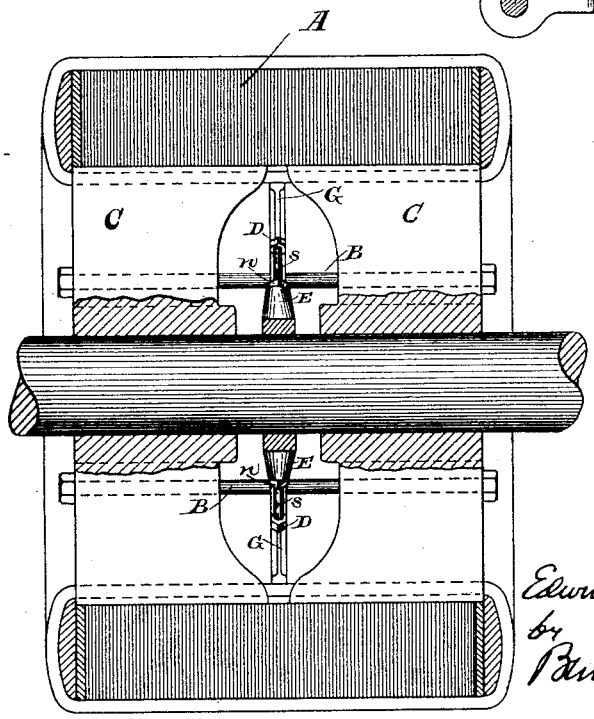


Fig. 2.



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ARMATURE FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 455,887, dated July 14, 1891.

Application filed March 21, 1891. Serial No. 385,777. (No model.)

To all whom it may concern:

Be it known that I, EDWIN WILBUR RICE, Jr., a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Improvement in Armatures for Dynamo-Electric Machines, of which the following is a specification.

My present improvements in armatures for dynamo-electric machines relate to means for holding the coils in place.

The invention relates particularly to that class of armatures known as the "Gramme" type. When armatures of this type are of quite large size or have a considerable length, the coils or wires on the inner side of the core sag in the center, and when the machine is running the wires, under the influence of the centrifugal action, chafe each other, so that the insulation is eventually impaired, and the constant bending and vibration of the wires may even sometimes be the cause of their breaking. To overcome this difficulty, I employ a support for the coils which holds them securely in position against the inner face or surface of the armature-core and prevents such objectionable and dangerous displacement of the wires.

In the accompanying drawings, Figures 1 and 2 are respectively a partly-sectioned end view and an axial section of an armature provided with my coil-supporting device. Fig. 3 shows a modification of said device.

The Gramme armature to which my invention is to be applied is supported in the usual manner by means of one or more frames, spiders, or supports secured to the shaft and engaging with the core of the armature.

Figs. 1 and 2 illustrate an armature A, supported from the shaft by supports or spiders C and fitted with the supports S S′ S^2 S^3 S^4 S^5, as many as may be necessary in each case, and the support S′ (shown partly in section) will illustrate the construction. G is a cast segment of metal, such as gun-metal or brass, although other materials than metal may be employed, if desired. Its face has the same curvature as the inner part of the armature when the coils are in position. Between each of the segments G and the hub is a permanent jack-screw *s* or any other extensible or compression device adapted to force the segments G firmly against the coils and hold them in position against the inner face or surface of the armature-core. The screw *s* has a portion D, shaped to be engaged by a wrench or otherwise turned in a lug E, projecting from the hub, and there is provided a set-nut *n*, which locks the jack in position when it is extended to the desired amount.

Fig. 2 is a section through the armature, showing the relative positions of the spider which supports the armature-core and the coil-supports described above.

Fig. 3 is a modification of the device. In this case a strap R is strung between each of the bolts B, which secure the halves of the spider together, and the jack-screw *s* enters a lug at the middle of this strap, as shown.

In case the segment G is made of metal, it is of course understood that it is properly insulated from the armature-coils by mica or other insulating material, this insulation being indicated in the drawings by a heavy line between the segment G and the coils and marked I.

The invention is not limited to the precise forms and arrangements shown for supporting the coils, as mechanical modifications might readily be made without departing from the invention, which consists, broadly, in the combination, with the coils, of the segments individually adjustable to hold the coils in position, as described.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a ring-armature having its coils wound through the ring and supports therefor engaging with its core, of two or more separate segmental coil-supports bearing against the inner side of the coils and radially adjustable, substantially as described.

2. The combination, with a ring-armature having its coils wound through the ring and supported from the shaft by devices engaging with its core, of an independent radially-adjustable coil-support bearing against and supporting the inner side of the coils.

3. The combination, with a ring-armature having supporting devices engaging with its core and having its coils wound through the ring, of individually-adjustable segmental

bearing-blocks supporting the inner sides of the coils.

4. The combination of the ring-armature core, the armature-supports engaging therewith, the coils wound through the ring, the segmental blocks bearing against said coils, and the adjusting-screws engaging with said blocks and with an interior abutment.

5. The combination, with a ring-armature core and the coils wound through the ring, of armature-supports engaging with said core, and independent segmental blocks bearing against said coils and supported by jack-screws from the armature-shaft.

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Witnesses:
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