

J. P. NIKONOW.
 ARMATURE.
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935,397.

Patented Sept. 28, 1909.

Fig. 1.

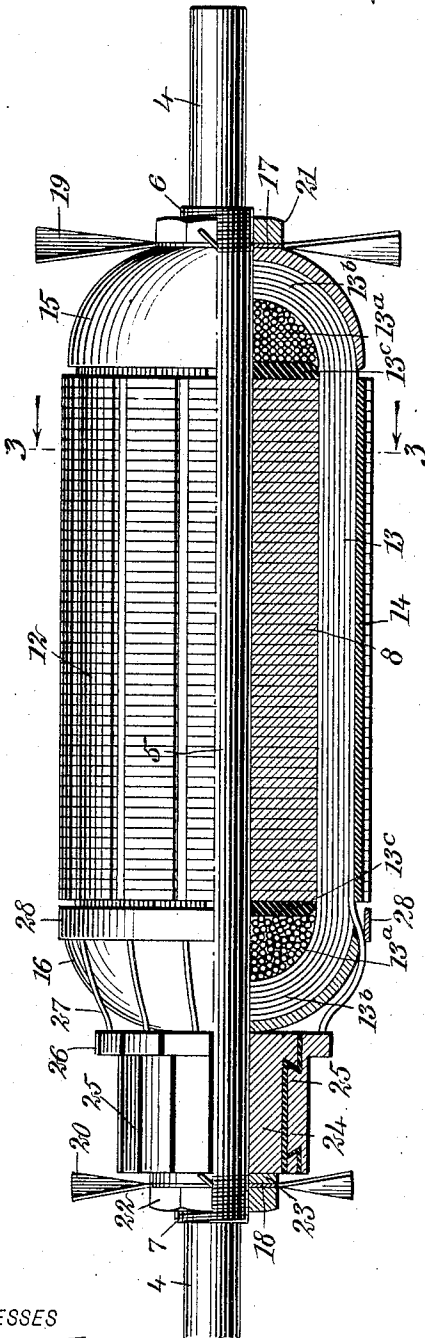


Fig. 3.

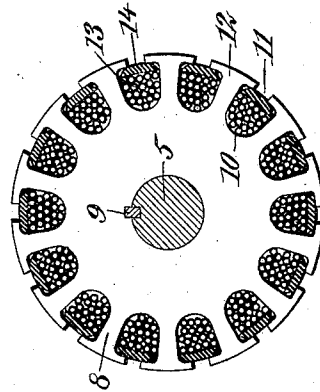
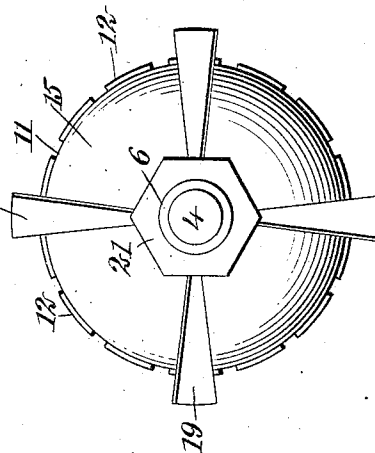


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN P. NIKONOW, OF EVANSVILLE, INDIANA, ASSIGNOR TO SCHROEDER HEADLIGHT COMPANY, OF EVANSVILLE, INDIANA, A CORPORATION.

ARMATURE.

935,397.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed November 10, 1908. Serial No. 461,382.

To all whom it may concern:

Be it known that I, JOHN P. NIKONOW, a subject of the Czar of Russia, and a resident of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and Improved Armature, of which the following is a full, clear, and exact description.

This invention relates to armatures of a type suitable for dynamos and motors, my particular purpose being to render the armature strong and durable, and especially braced against the influence of centrifugal force.

My invention further relates to means improving the circulation of air adjacent to the armature, in order to prevent overheating of the windings thereof.

My invention also relates to means for holding the electric leads of the armature securely in position to withstand the centrifugal force and yet be readily accessible at all times.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a view partly in elevation and partly in section, showing my improved armature complete; Fig. 2 is an end elevation showing the armature as seen from a point at the right of Fig. 1; Fig. 3 is a cross section on the line 3—3 of Fig. 1, looking in the direction of the arrow and showing the arrangement of the windings relatively to the laminated core in which they are placed.

A revoluble shaft 4 is provided with an enlarged portion 5 having threaded ends 6, 7, and mounted upon this enlarged portion are disks 8 so put together as to form a laminated core. A key 9 holds the disks firmly upon the shaft and the core as a whole is provided with longitudinal slots 10 extending throughout its length, these slots communicating with smaller slots 11 so as to leave teeth 12 disposed intermediate the successive slots. Windings 13 of insulated wire are formed within the slots 10 and are held in position by splints 14 of insulating material, the latter being somewhat wider than the slots 11 so as to effectively prevent disturbance of the windings. These windings are continued at 13^a, 13^b, that is to say, toward the ends of the armature, and at these points are separated from the disks 8

by end pieces 13^c of insulating material. Two metal caps 15, 16, each having a preferably hemispherical form are disposed at opposite ends of the core and engage the portions 13^a, 13^b of the windings. Engaging the caps 15 is a metallic disk 17 provided with wings 19 which are twisted slightly so as to form a fan blade. Similarly, a disk 18 is provided with fan blades 20. A nut 21 engages the disk 17 and forces it against the cap 15. This nut is threaded internally and fitted upon the threaded portion 6 of the shaft. A nut 22, threaded internally, is fitted upon the threaded portion 7 of the shaft and engages the disk 18, and the disk 18 engages an annular washer 23. Commutator segments are shown at 24 and are separated by insulating strips 25. The commutator segments are provided with arcuate lugs 26, and the latter are severally connected by the aid of leads 27 with the windings. A ring 28 of metal encircles the armature at a point intermediate the larger or outer edge of the cap 16 and intermediate this edge and the adjacent end of the core.

In assembling the parts, the disks 8 are first slipped over and keyed rigidly upon the enlarged portion 5 of the armature shaft. The end pieces 13^c are next placed in position. The windings are next put on and secured by the aid of splints 14. Next the caps 15, 16 are slipped over the ends of the shaft. At the right, according to Fig. 1, the disk 17 with the fan blades 19 is next slipped in position and the nut 21 is screwed against the disk 17 so as to force it and the cap 15 toward the left. The cap 16 is placed in position, the commutator is slipped over the end of the shaft, the leads 27 are connected and the binding ring 28 is then placed over the wires 27. The washer 23 and the disk 18 are next slipped over the left end of the shaft, according to Fig. 1, and are followed by the nut 22 which is screwed up firmly against the disk 18. The parts are thus held very firmly in position and when the armature is rotated the centrifugal force is unable to displace any part. The fan blades 19, 20 owing to the rotation of the armature, cause air currents to flow along the general direction of the armature and thus keep the same cool.

The operation of my device is as follows: The armature being assembled as above described, is placed in an electric machine such as a dynamo, motor or converter and sup-

ported in suitable bearings. The armature being now rotated, causes the fan blades 19, 20 to turn and circulate the air so as to keep the armature cool, the current consumed or
5 generated, as the case may be, passing through the commutator segments 24, substantially in the usual manner.

Having thus described my invention, I claim as new, and desire to secure by Letters
10 Patent:

In an armature, the combination of a core, windings for exciting the same, a cap engag-

ing said windings, leads connected with said windings and extending outwardly over said cap, a commutator connected with said leads, 15 and an endless metallic member encircling said leads and disposed adjacent to said cap.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN P. NIKONOW.

Witnesses:

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