(No Model.)

E. E. NOLAN.

FASTENING MEANS FOR CORE PLATES OF ELECTRICAL MACHINES.

No. 582,481. Patented May 11, 1897.

Fig. 3.

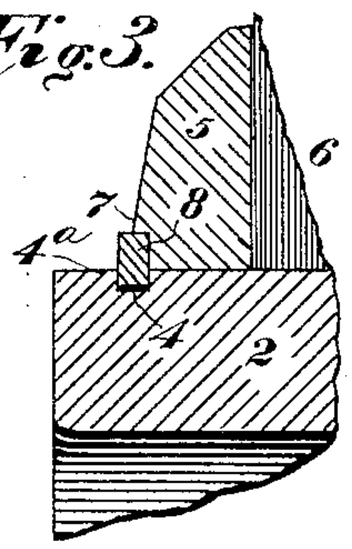
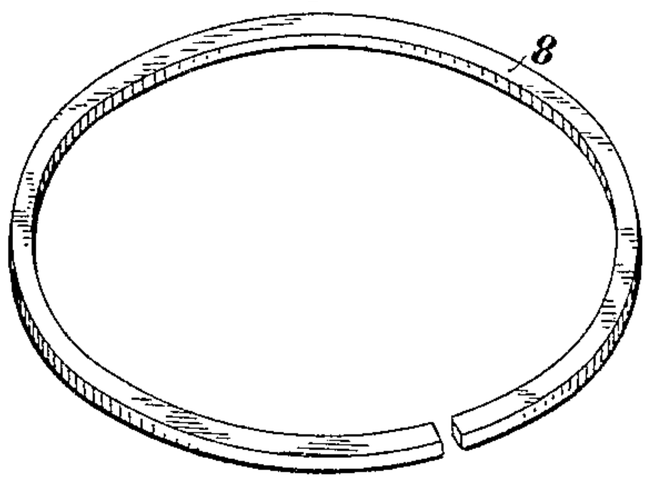


Fig. 1.

Fig. 2.



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FASTENING MEANS FOR CORE-PLATES OF ELECTRICAL MACHINES.

SPECIFICATION forming part of Letters Patent No. 582,481, dated May 11, 1897.

Application filed January 20, 1897. Serial No. 619,889. (No model.)

To all whom it may concern:

Be it known that I, EDWIN E. NOLAN, a citizen of the United States, residing in Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Fastening Means for Core-Plates of Electrical Machines, (Case No. 725,) of which the following is a specification.

My invention relates to electric generators and motors, and has particular reference to means for fastening the laminæ of the cores of such machines in position.

The object of my invention is to provide a simple, inexpensive, and efficient means for fastening the laminæ of the cores of electrical machines together and to the casting constituting the support of the same, and one which may be readily inserted and as readily removed when it is desired to dismember the machine for any purpose.

In the accompanying drawings, Figure 1 is a longitudinal sectional view in perspective of an armature-core of a generator or motor, and Fig. 2 is a perspective view of the fastening-ring. Fig. 3 is a detail sectional view, on a larger scale, of the fastening-ring and the adjacent coöperating parts.

Reference being now had to the details of construction illustrated in the drawings, 1 is an armature-shaft on which is rigidly mounted a casting 2, having a cylindrical outer periphery, as is usual in such machines. At or near one end of the core 2 is a laterally-projecting circumferential flange 3, and at or near the other end of the core is a circumferential groove 4, forming a shoulder 4^a.

5 is an annular plate, the inner periphery of which is substantially the same as the outer periphery of the core 2.

6 are the laminæ, which are provided with slots or grooves for the reception of conductors, as is usual in machines of this character, and these laminæ are clamped rigidly between the flange 3 and the annular plate 5. The said plate 5 is preferably provided with a shoulder 7, as indicated.

8 is a spring-metal ring which is partially located in groove 4, but extends outside the same and against the shoulder 7 on the plate 5.

In order to assemble the parts in the position shown in Fig. 1, the laminæ constituting the outer portion of the core are first built up upon the casting 2, and the annular plate 5 is then placed in position and pressed inward against the plates by any suitable mechanism to a point slightly beyond that shown in the drawings. The ring 8 is then sprung into place in groove 4, when the plate 5 is released and springs outward against the said ring. The parts are thus rigidly clamped in position, and by reason of the shoulder 7 there is no possibility of the fastening-ring 8 being thrown out of its normal position by centrifugal force due to rotation of the armature.

It will be readily seen that if it is desired to separate the parts of the core it will be merely necessary to subject the plate 5 and laminæ 6 to sufficient pressure to permit the ring 8 to pass the shoulder 7, when it may be sprung out of the groove 4.

While I have shown my invention as applied to a core having a cylindrical outer periphery and designed to rotate, I desire to be understood that it is equally well adapted to and is intended to be used in connection with cores—such, for example, as those of the stationary members of induction-motors in which the laminæ are arranged upon a cylindrical inner periphery—such construction being obviously a mere reversal of that shown herein and above described.

It will also be understood that my invention is not limited to the construction in which a single circumferential flange 3 is employed, since a plurality of projecting lugs or flanges would be equivalent in operation, although not perhaps so advantageous in construction as the form shown. It will also be understood that the shoulder 4^a, formed by the groove 4 in the casting 2, might be replaced by a plurality of shoulders and formed otherwise than by cutting a groove in the core if it should be found desirable to do so. A plurality of sections or segments might also be employed in lieu of the single ring 8, if desired.

I claim as my invention—

1. A core for electrical machines comprising a casting having a cylindrical surface and provided with a circumferential flange at or near one end and a circumferential groove at or near the other end, an annular plate adjacent to said groove, laminæ clamped between the flange and the annular plate, and a fastening-ring located partially in said groove and bearing against the outer side of said annular plate.

2. A core for electrical machines, comprising a casting having a cylindrical surface and provided with a circumferential flange at or near one end and a circumferential groove at or near the other end, an annular plate provided with a shoulder on its outer side, laminæ clamped between the flange and the annular plate and a fastening-ring located partially in said groove and bearing against the shoulder on said plate.

3. A core for electrical machines comprising a casting having a cylindrical surface and provided with a circumferential flange at or near one end, a circumferential shoulder of less diameter at or near the opposite end, an annular plate adjacent to said shoulder, laminæ between said annular plate and the flange on the casting, and a spring-ring interposed between said annular plate and said shoulder.

4. A core for electrical machines comprising a casting having a cylindrical surface and provided with a flange adjacent to one end and with a shoulder adjacent to the opposite end, an annular plate provided with a shoulder, laminæ between said annular plate and the flange on the casting, and a spring-ring interposed between the shoulder on the annular plate and the shoulder on the casting.

In testimony whereof I have hereunto subscribed my name this 7th day of January, A. D. 1897.

EDWIN E. NOLAN.

Witnesses:
WESLEY G. CARR,
HUBERT C. TENER.

Disclaimer in Letters Patent No. 582,481.

582,481.—*Edwin E. Nolan*, Wilkinsburg, Pa. FASTENING MEANS FOR CORE-PLATES OF ELECTRICAL MACHINES. Patent dated May 11, 1897. Disclaimer filed April 27, 1908, by the assignee, the *Westinghouse Electric & Manufacturing Company*.

Enters this disclaimer—

"To claims 1 and 3 of said patent, reading as follows:

"1. A core for electrical machines comprising a casting having a cylindrical surface and provided with a circumferential flange at or near one end and a circumferential groove at or near the other end, an annular plate adjacent to said groove, laminæ clamped between the flange and the annular plate, and a fastening-ring located partially in said groove and bearing against the outer side of said annular plate.

"3. A core for electrical machines comprising a casting having a cylindrical surface and provided with a circumferential flange at or near one end, a circumferential shoulder of less diameter at or near the opposite end, an annular plate adjacent to said shoulder, laminæ between said annular plate and the flange on the casting, and a spring-ring interposed between said annular plate and said shoulder."—[*Official Gazette, May 5, 1908.*]