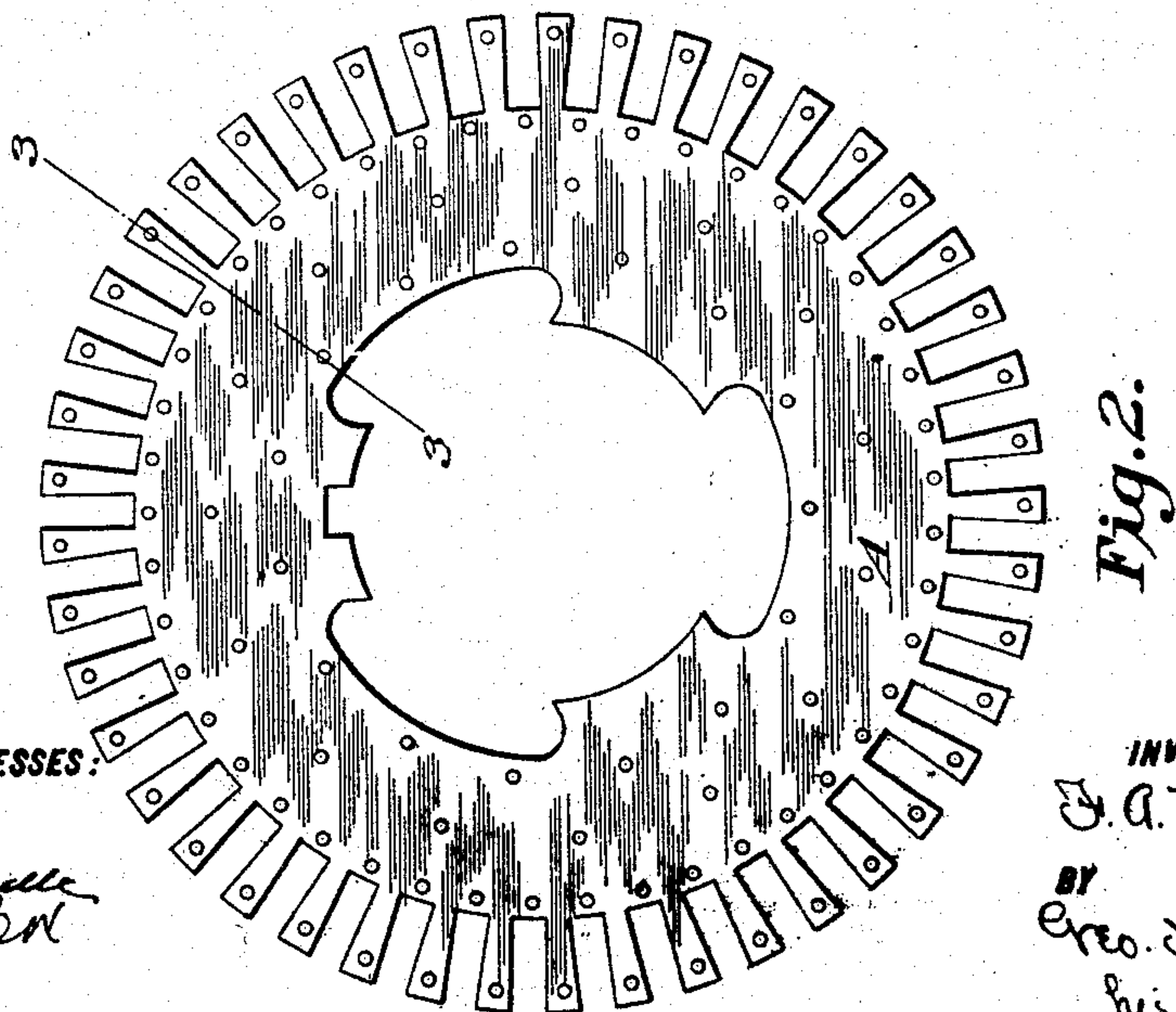
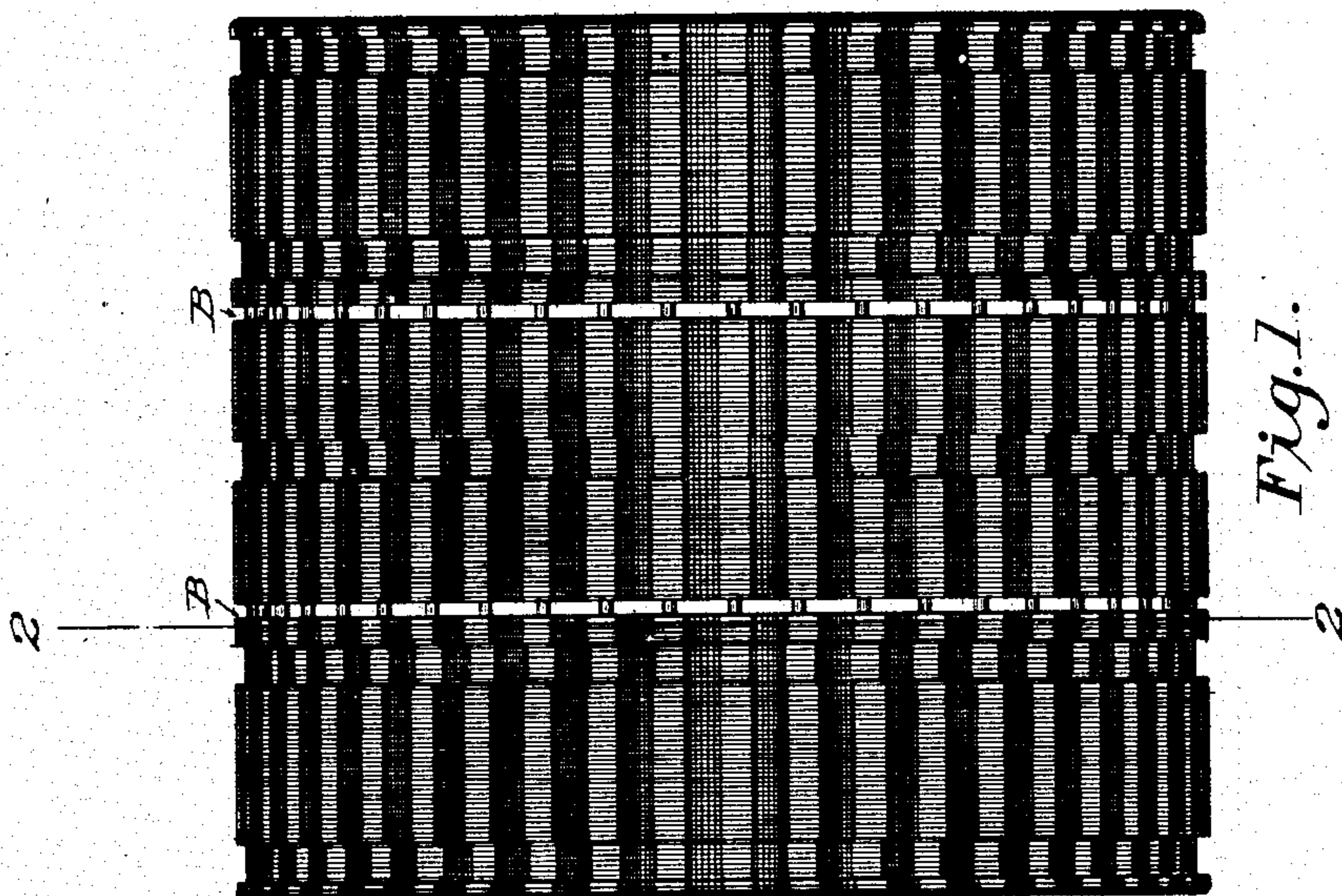
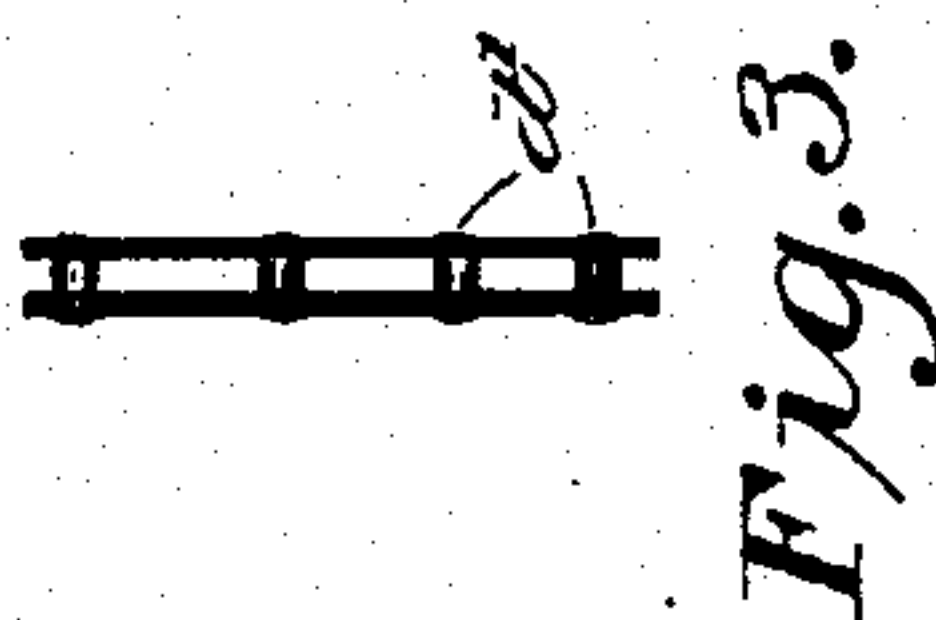


F. A. MERRICK.
ARMATURE VENTILATION.

(Application filed Oct. 25, 1900.)

(No Model.)



WITNESSES:

W. F. Prindle
Cora H. Orr

INVENTOR

F. A. Merrick

BY

Geo. H. Carmichael,
his ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK A. MERRICK, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
LORAIN STEEL COMPANY, OF PENNSYLVANIA.

ARMATURE VENTILATION.

SPECIFICATION forming part of Letters Patent No. 675,518, dated June 4, 1901.

Application filed October 25, 1900. Serial No. 34,279. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. MERRICK, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Armature Ventilation, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to the ventilation of the armatures of dynamo-electric machines, and is designed to provide means of simple and efficient character for effecting a separation of certain of the laminæ of which an armature-core is composed for the purpose of providing ventilating-spaces between such laminæ.

With this object in view my invention consists in a short spacing-block or rivet-piece reduced at each end to form studs adapted to extend through apertures in adjacent laminæ and to be secured to such laminæ by upsetting their ends.

My invention also consists in the combination, with two adjacent plates or laminæ having apertures therein, of a plurality of short spacers separating the same and having end portions secured therein.

My invention further consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of an armature embodying my invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 2, showing two of the laminæ and the interposed separators; and Fig. 4 is a detail view of one of the separators.

The letter A designates the plates or laminæ, of which the armature-core is built up in the usual manner, being keyed or otherwise secured to a suitable support, (not shown,) with a central air-space around the armature-shaft.

B designates air-spaces which are provided at suitable intervals between adjacent laminæ, two such spaces being shown in Fig. 1. To provide these spaces, adjacent laminæ are separated longitudinally from each other

and are held apart by means of short spacers D, which are preferably of brass or other non-magnetic material. These spacers are preferably, but not necessarily, of cylindric form and are reduced at each end to form studs or rivets *d*, which enter apertures punched in the laminæ and are secured therein by upsetting their ends, as shown at *d'*, the laminæ abutting closely the shoulders formed by the ends of the body portions of the spacers. This work is of course done before the laminæ are assembled, so that the pairs of laminæ which are connected by the spacers may be placed in position on the support at the proper intervals. I prefer to arrange these spacers in the manner shown by the punching in Fig. 2—that is to say, one series near the outer ends of the teeth, a second series adjacent to the bottom of the core-slots, a third series, lesser in number, in near the central support, and a fourth series between the second and third series and alternating with the latter. I do not, however, limit myself to this arrangement, as various other arrangements may be employed.

The use of spacers such as above described provides a very simple and efficient means for the purpose and insures the spaced laminæ being held rigidly in their separated positions and without bending or distortion of their teeth.

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

1. The herein-described spacer for armature-cores, consisting of a short piece of metal having reduced and shouldered ends adapted to engage adjacent plates or laminæ of the cores and form abutments therefor.

2. The herein-described spacer for armature-cores, consisting of a short piece of non-magnetic material having reduced and shouldered ends adapted to engage adjacent plates or laminæ of the cores and form abutments therefor.

3. In an armature-core, the combination with two adjacent plates or laminæ, of a plurality of short spacing-pieces separating the same, and secured thereto at their ends.

4. In an armature-core, the combination

with two adjacent plates or laminæ, of a plurality of short spacing-pieces separating the same, and having reduced end portions engaging apertures therein.

5 5. In an armature, the combination with two adjacent plates or laminæ, of a plurality of short spacing-pieces separating the same and having studs or rivet portions at each end, which extend through the said plates or
10 laminæ and are upset at the opposite sides of the same.

6. In an armature, the combination with

two adjacent toothed plates or laminæ, of a plurality of short spacing-pieces separating the same, and secured thereto at both ends, 15 part of said pieces being arranged between the teeth of said plates or laminæ.

In testimony whereof I have affixed my signature in presence of two witnesses.

FRANK A. MERRICK.

Witnesses:

CORA G. COX,
H. W. SMITH.