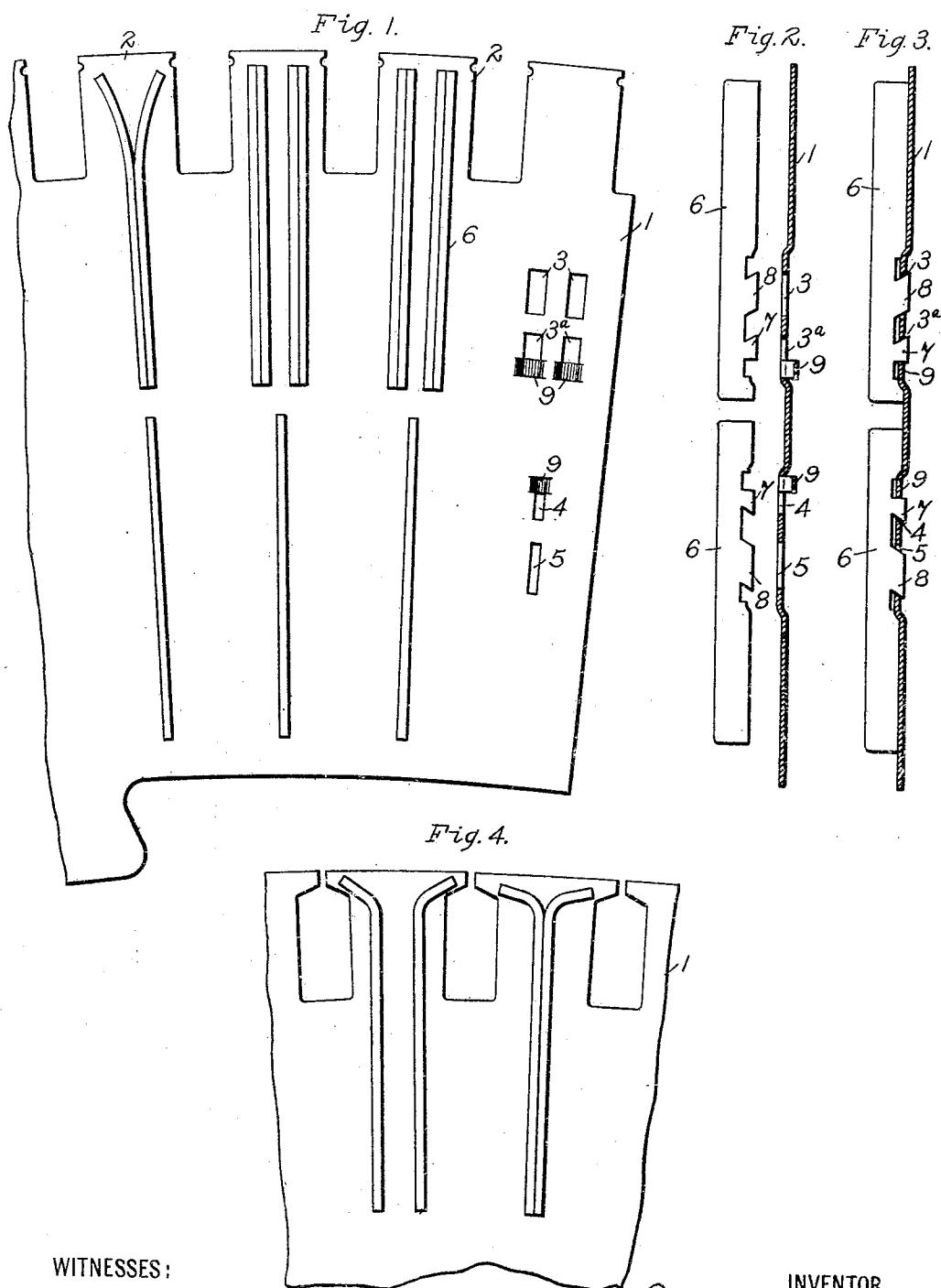


J. A. BAIRD.
 VENTILATING PLATE AND SPACING BLOCK FOR ELECTRIC APPARATUS.
 APPLICATION FILED NOV. 3, 1908.

933,737.

Patented Sept. 14, 1909.



WITNESSES:
 Fred H. Miller
 R. J. Pearson.

INVENTOR
 J. A. Baird
 BY
 W. L. Pearson
 ATTORNEY

UNITED STATES PATENT OFFICE.

JESSE A. BAIRD, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

VENTILATING-PLATE AND SPACING-BLOCK FOR ELECTRIC APPARATUS.

933,737.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed November 3, 1906. Serial No. 341,911.

To all whom it may concern:

Be it known that I, JESSE A. BAIRD, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Ventilating-Plates and Spacing-Blocks for Electric Apparatus, of which the following is a specification.

My invention relates to the ventilation of electrical apparatus and has special reference to means for spacing and ventilating laminated magnetizable core structures.

The object of my invention is to provide a spacing device that shall be inexpensive in construction and durable in use and that shall comprise improved means for attaching the spacing members to the supporting plate.

Laminated core structures for dynamo-electric machines and for other electrical apparatus have often been provided with spacing or ventilating grids or plates to which spacing blocks were attached. The cast grids of the prior art were relatively expensive and occupied a considerable space, because of the material, such as brass or other composition of copper, of which they were made, and they, therefore, materially interfere with the ventilation which they were intended to promote. When magnetizable plates, similar to or slightly thicker than the main laminae of the core were utilized for ventilating purposes, spacing blocks or fingers were usually attached to them by means of rivets or similar devices.

According to my present invention, I provide a spacing member comprising a magnetizable plate which is similar in outline to the adjacent plates of the laminated structure with which it is employed and, by a very simple and improved means, I attach a plurality of spacing blocks or fingers all of which are similar and which may readily be punched from sheet metal of suitable thickness.

One of the advantages of my improved structure lies in the fact that a plurality of spacing fingers may be assembled close together to form substantially a single block without any change in the fingers themselves and with only a slight modification of the plate to which they are attached.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a face view of a segment of a spacing plate which is constructed in accordance therewith. Fig. 2 is a sectional elevation of the plate shown in Fig. 1, the spacing blocks or fingers being shown slightly removed from the plate itself, both parts being in condition for assembling, and Fig. 3 is a similar view of the assembled structure. Fig. 4 is a view, similar to Fig. 1 but showing finger blocks which are slightly modified in order to better enable them to support the teeth, of a core structure having partially closed slots.

Referring to Figs. 1, 2 and 3, the spacer comprises a sheet metal plate 1 having substantially straight teeth 2 and punched holes or openings 3, 3^a, 4 and 5. Spacing fingers 6 are provided with half dove-tail projections 7 and 8 which are adapted to readily enter either the holes 3 and 3^a or the holes 4 and 5 when portions of the plate adjacent to the holes 3^a and 4 are modified, as hereinafter explained, and the fingers may be rigidly fastened in position by again flattening the modified portion of the plate. When the plate 1 is punched, loops 9 are formed therein by bending out portions of the plate adjacent to the holes 3^a and 4 and, after the spacing fingers are placed in position, the distorted portion of the plate may be returned to its normal position by a single hammer blow. It may be desirable to so form the projections 7 and 8 that their outer ends will be in line with the edge of the body portion of the finger, and, in case this is done, the portions of the plate in which the holes 3, 3^a, 4 and 5 are located must be off-set, as indicated in Figs. 2 and 3, so that the projections may extend therethrough.

A plurality of spacing blocks may be assembled side by side by providing holes of sufficient width to receive their dove-tail projections.

A further advantage of the spacing fingers of my invention is exemplified in Fig. 4, to which reference may now be had. The notched portions of the fingers may be the same in every case, but the length and shape of the fingers may be varied to suit existing conditions. For example, the ends of the fingers may be bent as shown in Fig. 4 to support the teeth of a laminated structure having a plurality of slots, which are adjacent to the ventilating spaces.

It will be understood that other variations

may be effected within the scope of my invention.

I claim as my invention:

- 5 1. Ventilating means for laminated structures comprising a plate having groups of holes therethrough, spacing fingers having dove-tail projections that enter the holes, and displaceable means pertaining to the plate for locking the fingers in position.
- 10 2. Ventilating means for laminated structures of electrical apparatus comprising a magnetizable plate having a plurality of groups of holes, spacing blocks or strips having dove-tail projections which engage the
15 holes in the plate, and displaceable means pertaining solely to the plate for locking the blocks or strips in position.
- 20 3. Ventilating means for laminated structures comprising a plate having groups of holes, spacing fingers having dove-tail projections that enter the holes, and a locking device consisting of a portion of the plate which may be offset adjacent to one hole of each group.
- 25 4. Ventilating means for laminated structures of electrical apparatus comprising a magnetizable plate having a plurality of groups of holes, spacing blocks or strips hav-

ing dove-tail projections that engage the holes in the plate, and a locking device consisting of a portion of the plate which may
30 be offset adjacent to one hole of each group.

5. In a laminated structure for electrical apparatus, the combination with a magnetizable plate having a plurality of similar
35 groups of holes, of finger blocks or spacers severally provided with projections which engage the corresponding holes and are locked in position by displaceable portions
40 of the plate.

6. Ventilating or spacing means for laminated structures comprising a plate having groups of holes, spacing blocks or fingers having half dove-tail projections, and a locking
45 device consisting of a portion of the plate adjacent to one hole of each group which may be deflected to permit the half dove-tail projections to enter the holes.

In testimony whereof, I have hereunto subscribed my name this 24th day of October, 50
1906.

JESSE A. BAIRD.

Witnesses:

R. J. DEARBORN,
BIRNEY HINES.