

No. 815,847.

PATENTED MAR. 20, 1906.

J. P. MALLETT.  
DYNAMO ELECTRIC MACHINE.  
APPLICATION FILED MAY 21, 1904.

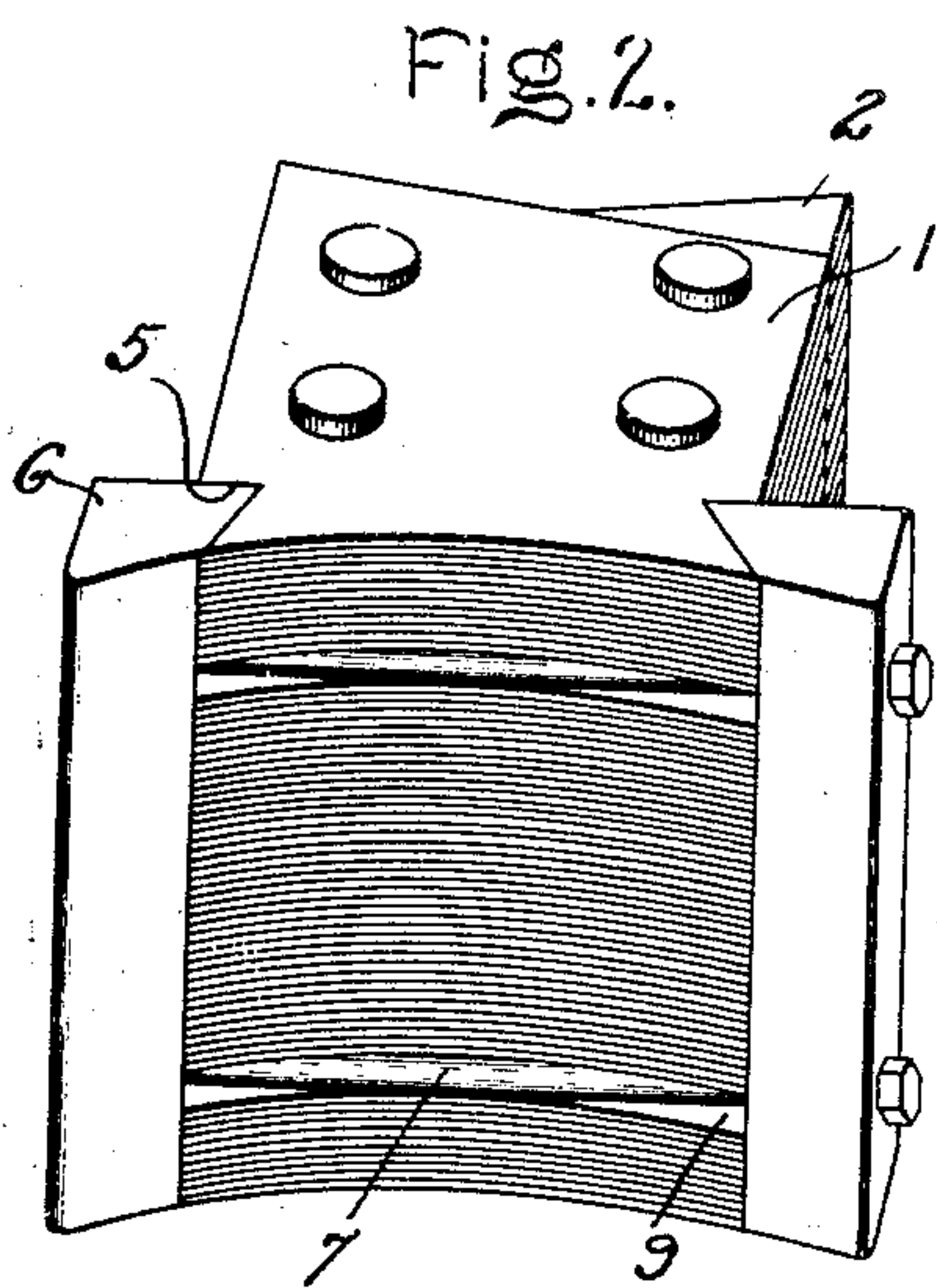
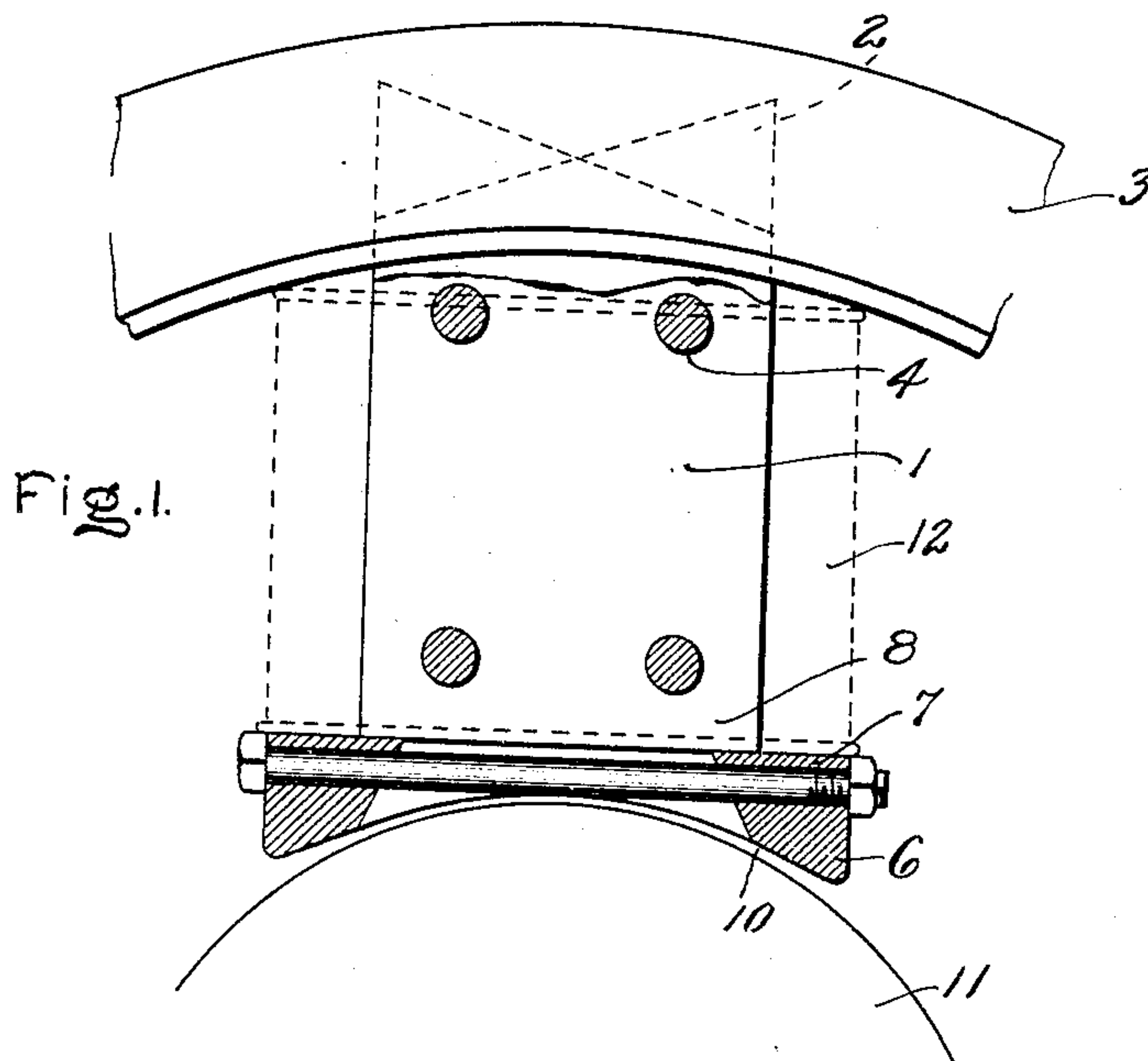
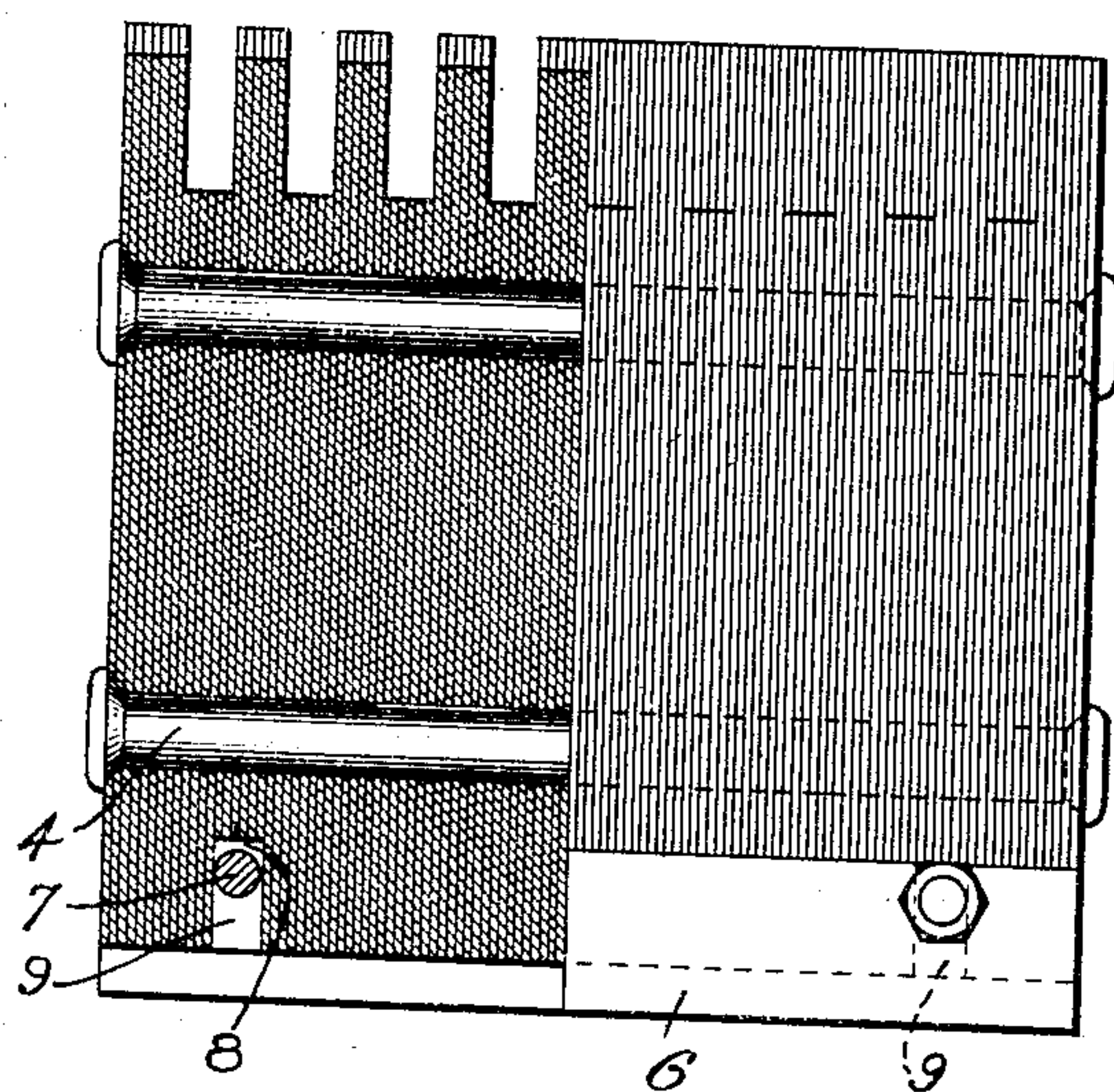


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN P. MALLET, OF MADISON, WISCONSIN, ASSIGNOR TO NORTHERN ELECTRICAL MANUFACTURING COMPANY, A CORPORATION OF WISCONSIN.

## DYNAMO-ELECTRIC MACHINE.

No. 815,847.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed May 21, 1904. Serial No. 209,000.

*To all whom it may concern:*

Be it known that I, JOHN P. MALLET, a citizen of the United States, residing at Madison, county of Dane, and State of Wisconsin, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a specification.

My present invention relates to dynamo-electric machinery; and it consists in certain features of construction and arrangement of field-magnets therefor.

The points of novelty which characterize my invention are pointed out with particularity in the claims annexed to and forming a part of my present specification. For a better understanding of my invention, however, reference may be had to the accompanying description and drawings, in which I have described and illustrated one embodiment of my invention.

Of the drawings, Figure 1 is an elevation with parts broken away and in section, showing a portion of a field-magnet. Fig. 2 is a perspective view showing a pole-piece, and Fig. 3 is an elevation of the pole-piece with a portion in section taken at right angles to Fig. 1.

In the particular construction which I have illustrated in the drawings the body of the pole-piece 1 is formed of laminæ. The upper ends of the groups 2 of the laminæ are beveled alternately in opposite directions and are cast into the cast iron or steel field yoke or ring 3. The laminæ are secured together by a number of bolts or rivets 4. Most of the laminæ composing each pole-piece are notched on opposite sides adjacent the armature end of the pole-piece, as indicated at 5. Bars 6, preferably formed out of some material, such as cast-iron, having a lower magnetic permeability than the laminated body of the pole, enter the grooves formed in the opposite sides of the pole-pieces by the successive notches formed in the laminæ. The bars 6 extend parallel to the axis of rotation of the armature and are secured together by securing means, such as threaded bolts 7. To form a passage for each bolt 7, certain of the laminæ 8 are shortened, so that their lower ends terminate in the plane including the upper sides of the notches 5. This forms a passage or channel 9 in the armature end of the pole-piece extending transversely to the axis of the armature of a width equal to the diam-

eter of a bolt 7. The inner ends of the laminæ are curved, as shown, so as to be separated by a substantially uniform short air-gap 10 from the outer surface of the armature 11. The inner edges of the bars 6 may, however, be tangential to the circle of curvature of the inner ends of the laminæ.

With the construction described it is only necessary to machine or grind the portions of the bars 6 which come into contact with the laminæ. The field-coils 12 (shown in Fig. 1) rest against and are held in place by the bars. To remove the field-coil, it is of course only necessary to unscrew the securing-nuts from the bars 7 and remove the bars 6.

The bars 6 when formed of magnetic material having a lower degree of magnetic permeability than the body of the pole-piece form desirable pole-tip pieces, as they give a fringed or graduated field strength at the edges of the pole-piece, which is a very desirable feature, particularly in commutating-machines.

The construction described is a reliable and efficient one and by reason of its simplicity can be manufactured at a comparatively low cost.

While my invention may be advantageously employed, as shown, with pole-pieces having their outer ends cast into the field ring or yoke, it will of course be clearly understood that it may be embodied in constructions where the pole-pieces are separable from the ring or yoke or are carried by the internal member of a dynamo-electric machine.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination, a pole-piece having grooves formed in opposite sides of its armature end, pole-tip pieces formed of material of different magnetic permeability from the pole-piece entering said grooves, slots or passages being formed in the armature end of said pole-piece, and bolts for securing said pieces together passing through said passages.

2. In combination, a laminated pole-piece having grooves formed in opposite sides adjacent its armature end, pole-tip pieces entering said grooves, some of the laminæ being shortened to form passages in the armature end of the pole-pieces, and bolts for securing said pieces together located in said passages.

3. In combination, a laminated pole-piece, some of the laminæ of which are shortened



to form passages in the armature end of said pole-piece, and cast-metal pole-tip pieces secured to the pole-piece by bolts extending through said passages.

5 4. In combination, a field ring or yoke, a laminated pole-piece permanently secured thereto, some of the laminæ composing the pole-pieces being shortened to form a passage in the armature end of said pole-piece, and coil-retaining pole-tip pieces secured to  
10 said pole-piece by a bolt extending through said passage.

5. In combination, a laminated pole-piece, some of the laminæ of which are shortened  
15 to form a passage adjacent the armature end of said pole-piece, and a coil-retaining device secured to said pole-piece by a securing device extending through said passage.

20 6. In combination, a pole-piece the body of which is formed of laminæ, some of which are shortened to form a passage adjacent the

armature end of the pole-piece, and a pole-tip piece secured to said pole-piece by a bolt located in said passage.

7. In combination, a pole-piece having  
25 slots or passages formed at its armature end extending transversely to the armature-axis, pole-tip pieces, and means located in said slots or passages for securing said pole-tip  
30 pieces to the pole-piece.

8. In combination, a pole-piece having  
35 grooves or slots formed in its armature end extending transversely to the armature-axis, a coil-retaining device, and securing means therefor entering said grooves or slots.

In witness whereof I have hereunto set my hand this 16th day of May, 1904.

JOHN P. MALLETT

Witnesses:

H. L. MORRIS,  
A. J. BUENZLI.