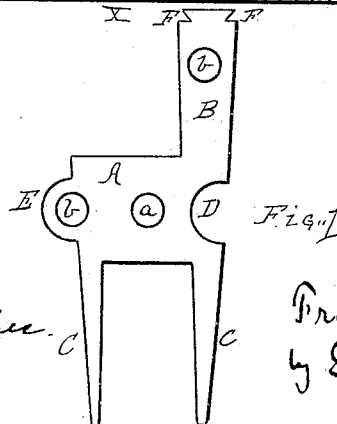
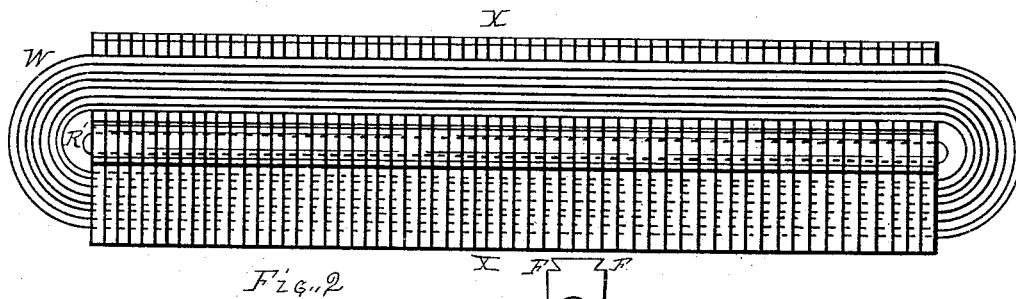
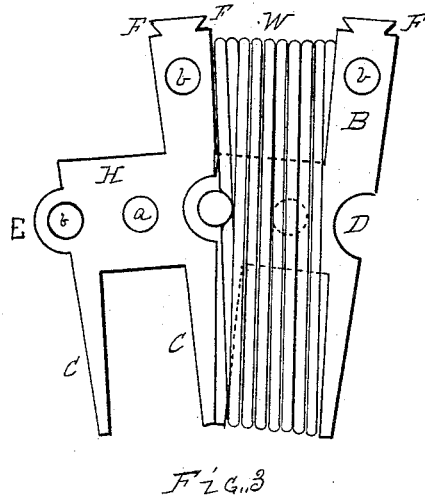


F. E. FISHER.
DYNAMO ARMATURE.

No. 383,565.

Patented May 29, 1888.



Witnesses
Cyrus L. Lothrop
Emma Hesseltine

Inventor.

Frank E. Fisher.
by Geo. H. Lothrop.
att'y.

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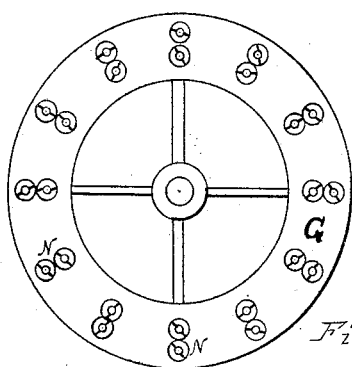


Fig. 5

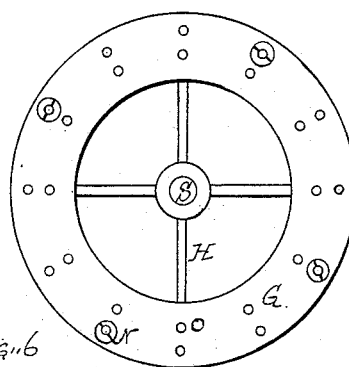


Fig. 6

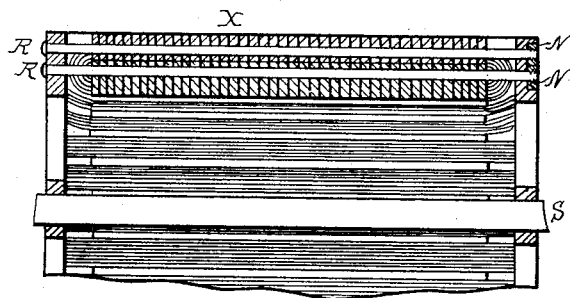


Fig. 4

Witnesses.
Cyrus Lathrop.
Emma Hesslbacher.

Inventor.
Frank E. Fisher.

By his Attorney,
Geo. H. Lathrop.

UNITED STATES PATENT OFFICE.

FRANK E. FISHER, OF DETROIT, MICHIGAN.

DYNAMO-ARMATURE.

SPECIFICATION forming part of Letters Patent No. 383,565, dated May 29, 1888.

Application filed October 3, 1887. Serial No. 251,341. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. FISHER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Armatures for Dynamos and Motors, of which the following is a specification.

My invention consists in an improvement in the construction of armatures for dynamo-electric machines or electric motors, hereinafter described and claimed.

Figure 1 is a side elevation of one of the thin iron plates of which the armature-sections are built up. Fig. 2 is a rear elevation of a complete section. Fig. 3 is an end elevation of one complete and one unwound section. Fig. 4 is a longitudinal section through the upper portion of the armature, and Figs. 5 and 6 are end elevations of the armature.

A represents a thin plate of iron having a nearly rectangular center, an upward projection, B, and two downward projections, C C, as shown in Fig. 1. In one side of the center is a concave opening, D, and opposite this is a convex projection, E, adapted to fit into D. *a* and *b b* represent three holes through the plate A.

X represents a complete section of the armature, and W represents the wire bobbin on each section.

R and R' represent brass rods, by which the plates A of each section are held together and secured to a wheel, G, with spokes H and a central hub at each end of the armature.

S represents the armature-shaft.

F F represent dovetail grooves at the upper ends of projections B, whose office is to hold metallic shields when the armature is to be used in a motor, in accordance with my patent of March 29, 1887, and application filed December 9, 1886.

To construct an armature-section, X, I take two brass rods, R, longer than the completed section, and slide them through the holes *b b* in a sufficient number of the plates A to form a section of the required length, putting paper or other insulating material between the plates, and then pass a shorter brass rod, R', through the hole *a* in the plates. A bobbin of insu-

lated wire, W, is then wound over the assembled plates, passing over the center, and underneath passing between the projections C C, by which it is held in place. When a sufficient number of sections have been thus wound, they are placed in the wheels G, the rods R R of each section passing through holes in the rims in said wheels and being fastened in any suitable manner—as, for instance, by being upset at one end, as shown at O, Fig. 6, and having a nut, N, at the other end, or by nuts at both ends. It is, however, better to so fasten the rods R R to the wheel that they can be easily taken out to remove a section of the armature. When one section has been put in place, another is added, the concavity D fitting over the convexity E of the first section, so that the projections B of the two sections hold the upper strands of the wire bobbin in place, and this is repeated until the armature is complete.

The connections of the bobbins, the shaft S, and the commutator do not form any part of the invention herein claimed, and are well known. Therefore I have neither shown nor described them.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An armature-section made up of thin iron plates A, each provided with an upward projection, B, and two downward projections, C C, having holes *b b* to receive the rods R R, and having the concavity D and convex projection E, substantially as shown and described.

2. In an armature, the plates A, provided with the upward projections B, having dovetail grooves F F therein, substantially as shown and described.

3. An armature in which the separate sections are made up of thin iron plates A, provided with upward projections B and downward projections C C, and having holes *b b* to receive the rods R R, each plate having the concavity D and convex projection E, each section being detachably secured to wheels G G, substantially as described.

FRANK E. FISHER.

Witnesses:

GEO. H. LOTHROP,
CYRUS E. LOTHROP.