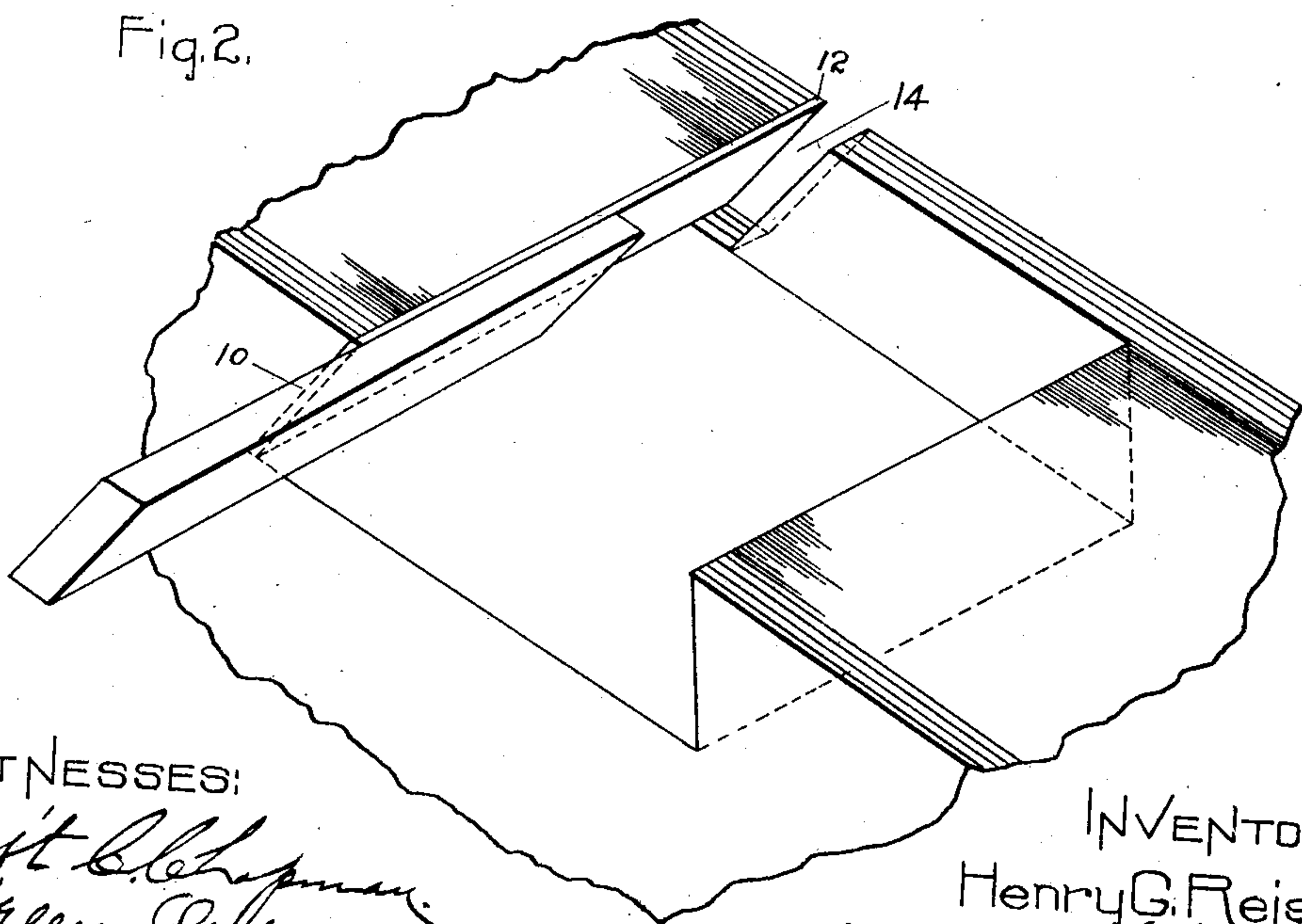
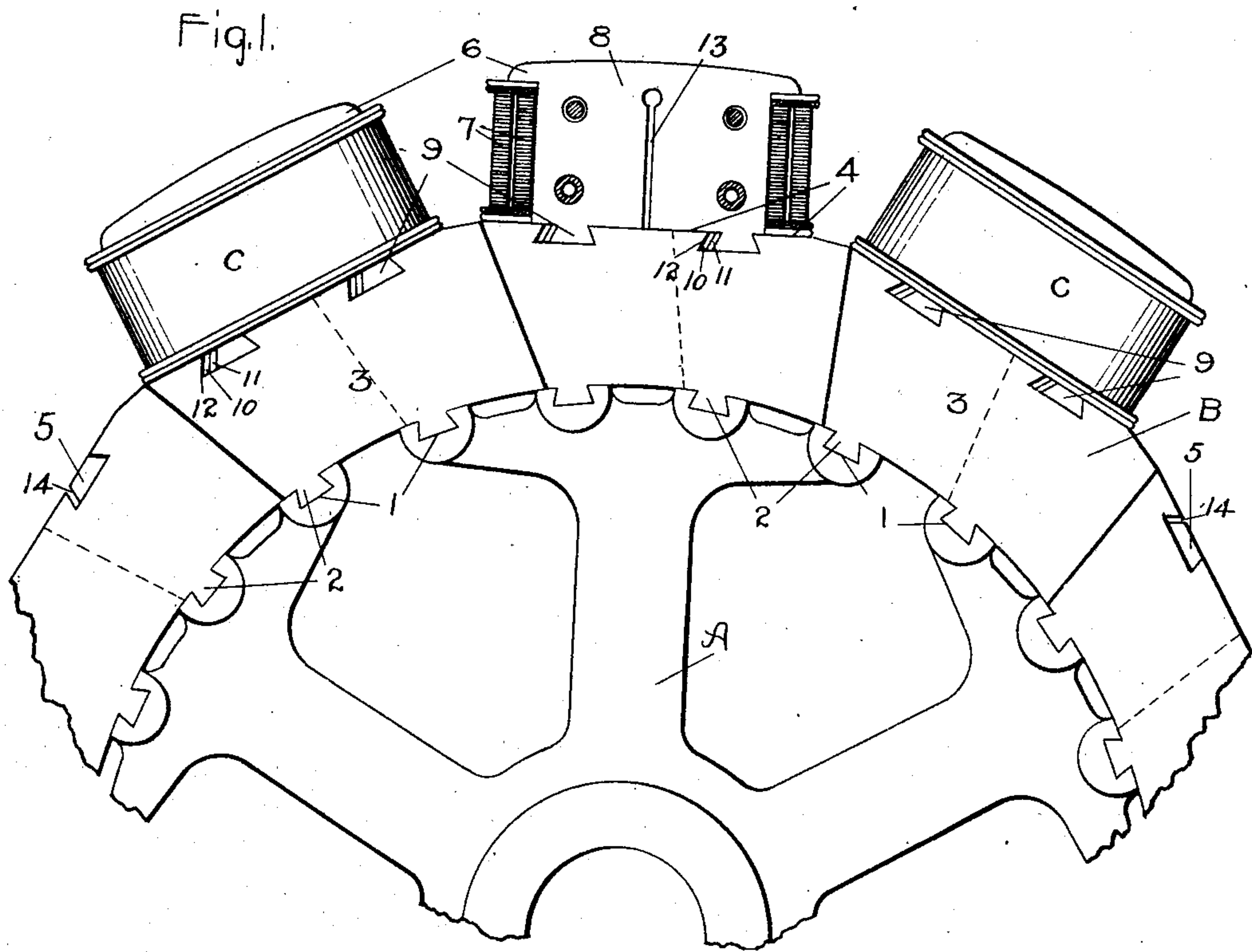


No. 887,521.

PATENTED MAY 12, 1908.

H. G. REIST.
DYNAMO ELECTRIC MACHINE.
APPLICATION FILED JAN. 24, 1903.



WITNESSES:

Art. B. Chapman.
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INVENTOR:

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Atty.

UNITED STATES PATENT OFFICE.

HENRY G. REIST, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

DYNAMO-ELECTRIC MACHINE.

No. 887,521.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed January 24, 1903. Serial No. 140,369.

To all whom it may concern:

Be it known that I, HENRY G. REIST, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to dynamo electric machines, and especially to the high speed revolving field type.

It is well known that the factor which determines the size and speed of the more powerful dynamo electric machines is the capacity of the revolving parts to withstand the stresses produced therein by the centrifugal forces, and that as these machines have been built heretofore it has been impossible to run them at as high speeds as many other kinds of machines of corresponding sizes have been driven.

The object of my invention is to provide a revolving field with its component parts so interconnected that it will withstand the stress produced by greatly increased speeds.

The invention will be more readily understood by reference to the accompanying drawing forming a part of this specification, in which

Figure 1 is a top plan of a portion of a horizontally revolving field with the end plate removed and one of the pole pieces shown in section; Fig. 2 is a perspective view of a fragment of the field core showing the lower end of a dovetailed recess with the friction plate and a key in position.

The central support of the revolving field consists of a spider A having the outer ends of its arms expanded in arcs of a circle and provided with a plurality of dovetailed transverse grooves 1. The grooves 1 are spaced equidistantly, and are adapted to receive dovetailed projections 2 from the inner edges of the laminæ 3 constituting the field core B. The laminæ 3 are made in short sections and each is provided with two or more dovetailed projections 2, and they are assembled so as to break joints, whereby a very strong and substantially continuous core is formed. The outer edges of the laminæ 3 are shaped so as to form flat faces 4 in the outer periphery of the core B, and have dovetailed recesses 5 cut therein for the reception of corresponding projections from the pole pieces C.

The pole pieces C have substantially parallel sides and shouldered horns 6 for the reception of the spools of copper wire 7, and are composed of laminæ 8 and end plates bolted together in the usual manner. The laminæ 8 are each provided with two dovetailed projections 9 corresponding to the dovetailed recesses 5 in the field core, but of somewhat less extent to provide spaces for locking keys 10 and 11 and friction strips 12. On account of the practical impossibility to bring about exact registry of both projections 9 of a pole piece with their recesses 5, slots 13 are cut in the middle of the laminæ 8 from the inner edges to near the outer edges to render them flexible, so that both projections 9 may be forced home in their respective recesses 5 by the keys 10 and 11. The key 10 is made much thicker than key 11, the thin end of key 10 being substantially equal to the thick end of key 11, so as to provide sufficient stock to prevent swaging of the small end of key 10 when struck upon to remove the key. The slots 13 are formed in the core laminæ by punching, and as a consequence the sides of the recess formed thereby in the assembled core are more or less ragged and would tend to cut the surface of key 10 if driven in contact therewith; in order to prevent such cutting action I provide a thin friction strip 12 between the side of the recess and the driven key 10.

The pole pieces C with their coils of copper wire often weigh several thousand pounds each, and accordingly render their assemblage with the core B more or less difficult. In order to facilitate the assemblage of these parts I provide means for arresting and supporting the pole pieces C in proper relation to the core B consisting of steps or stops located at the lower ends of the recesses 5 in the core B upon which the projections 9 of the pole pieces and the stationary keys 11 may rest while the keys 10 are being driven home. These steps are formed by omitting the notches 5 in the lowermost laminæ of the core B, or by providing only small slots 14 for the passage therethrough of driven keys 10 and the friction strips 12, as indicated in Fig. 2.

While I have shown my invention as applied to a particular form of dynamo, it is apparent that it is in no way restricted thereto, and it is capable of many changes and modi-

fications without departing from its spirit or scope.

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

- 5 1. The combination of a rigid core and a flexible pole piece connected thereto by a plurality of dovetail joints.
2. The combination of a rigid core and a pole piece slotted transversely and connected
10 thereto by a pair of dovetail joints, located one on each side of the transverse slot.
3. The combination of a laminated core, a laminated pole piece connected thereto by an interlocking joint, keys to lock said joint,
15 and means to prevent the laminæ from cutting said keys.
4. The combination of a recessed core, pole pieces provided with projections adapted to enter said recesses, and steps provided at the
20 ends of said recesses to support said pole pieces.
5. In combination, a rigid core member and a flexible pole piece member, one of said
25 tail recesses, and the other of said members

being provided with a pair of corresponding dovetail projections.

6. In combination, a core member, a pole piece member formed in two main parts flexibly connected together, and separate means 30 for securing each of said parts to the core member.

7. In combination, a recessed core, a pole piece provided with a projection which enters a recess in said core, a stop located at one 35 end of said recess whereby the passage of the projection of the pole piece through the recess is prevented, and a locking device for securing the projection on the pole piece in the recess, said stop being formed so that it 40 does not interfere with the insertion of the locking device in the recess from either end thereof.

In witness whereof I have hereunto set my hand this 23rd day of January, 1903.

HENRY G. REIST.

Witnesses:

BENJAMIN B. HULL;
HELEN ORFORD.