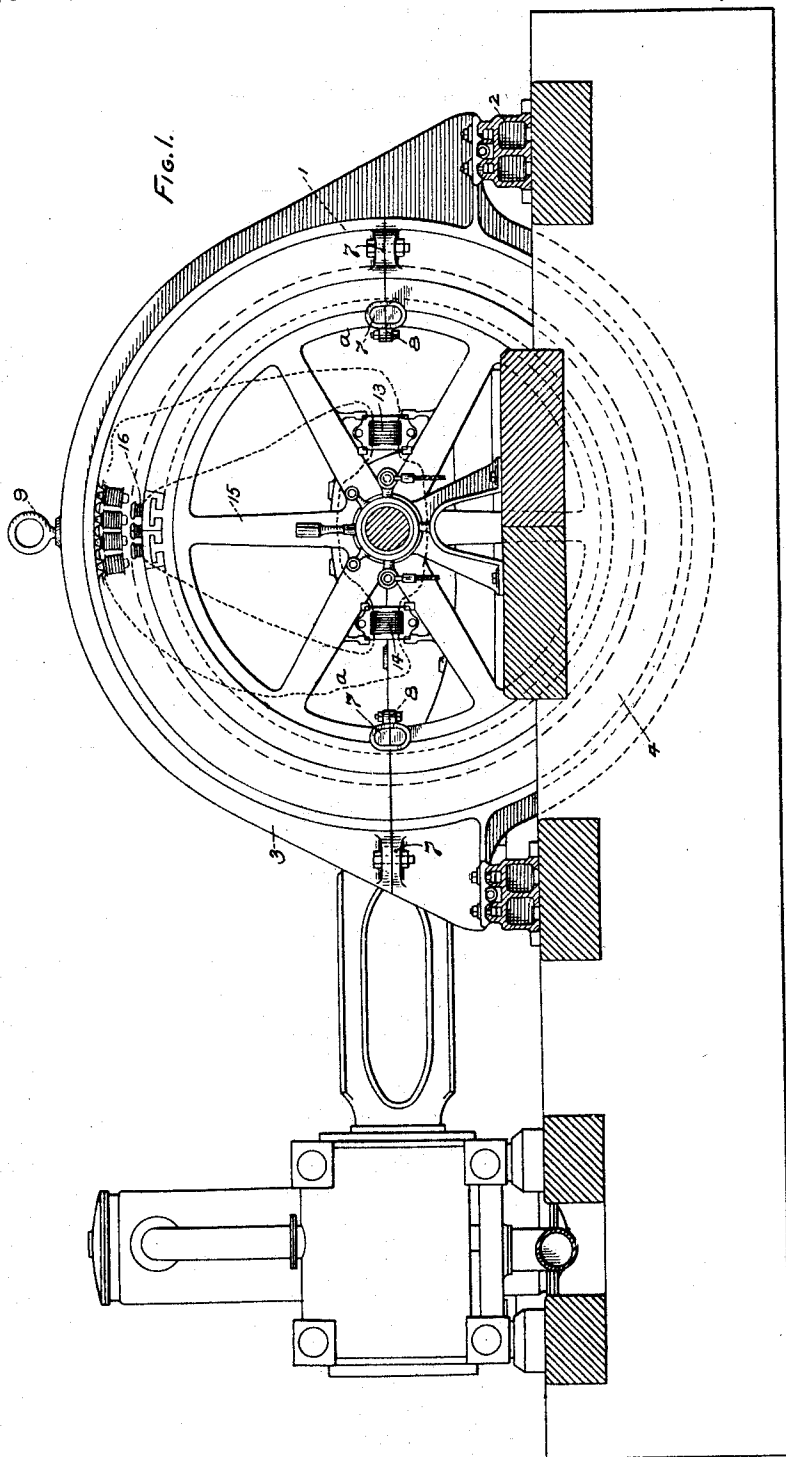


A. SCHMID.
ALTERNATING CURRENT GENERATOR.

No. 505,927.

Patented Oct. 3, 1893.



Witnesses

W. H. Weber.
R. L. Tener

Inventor
Albert Schmid
By *his Attorney*
Jerry and Mackay

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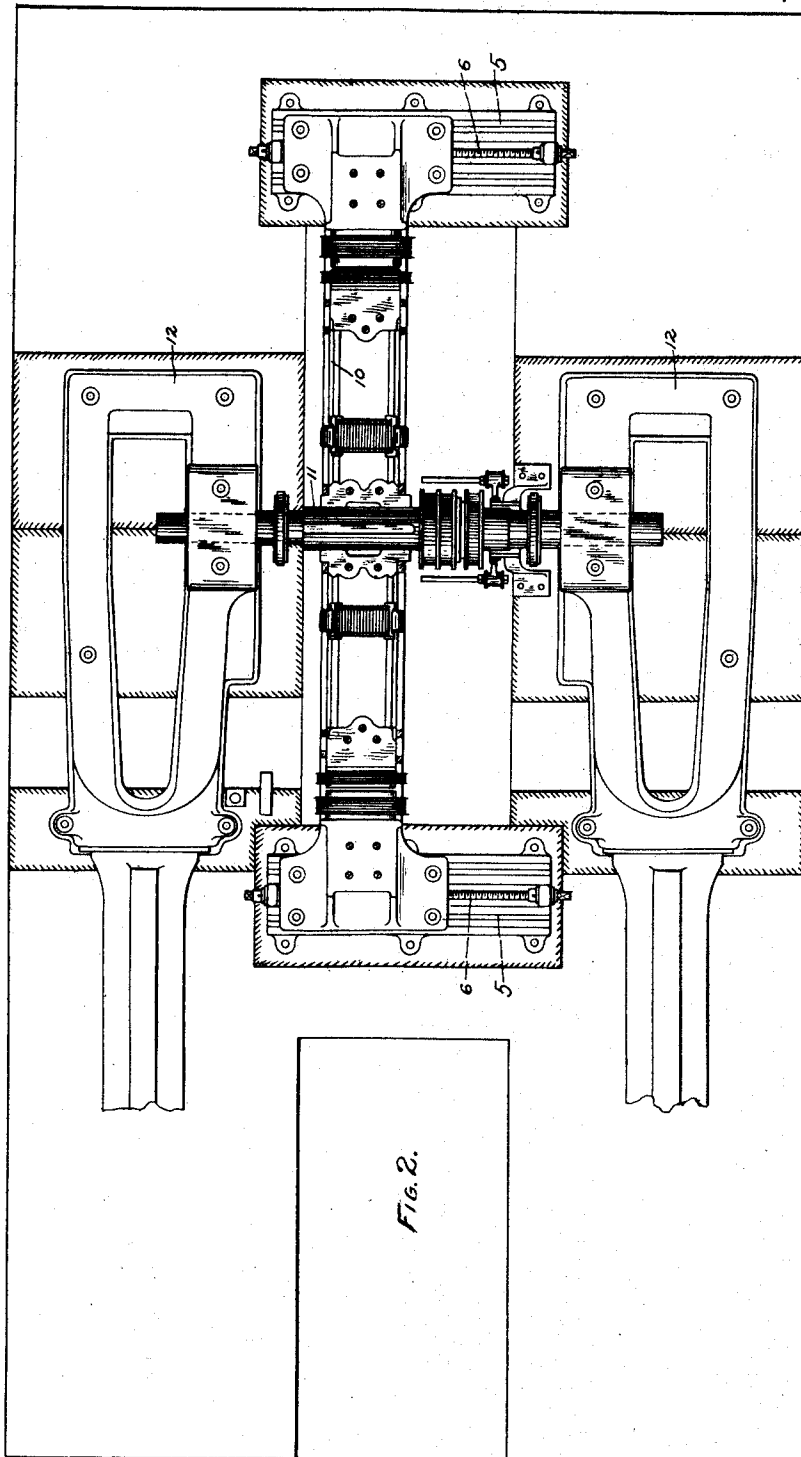


Fig. 2.

Witnesses

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Inventor
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Terry and Mackay

UNITED STATES PATENT OFFICE.

ALBERT SCHMID, OF PITTSBURG, PENNSYLVANIA.

ALTERNATING-CURRENT GENERATOR.

SPECIFICATION forming part of Letters Patent No. 505,927, dated October 3, 1893.

Application filed November 3, 1892. Serial No. 450,882. (No model.)

To all whom it may concern:

Be it known that I, ALBERT SCHMID, a citizen of the United States, residing in Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Alternating-Current Generators, (Case No. 513,) of which the following is a specification.

My invention relates to improvements in alternating current generators of the multipolar type.

One object of my invention is to so arrange the compensator whereby the field-magnets are fed from the armature with currents proportional to main line currents as to balance the armature and to render the magnetic reactions in the compensator converter entirely independent of those in the armature of the generator.

Another object of my invention is to so construct the field-magnet and armature of an alternator that they may be easily separated for inspection and repairs.

In the accompanying drawings, Figure 1 is a side elevation partly in section, of an alternator constructed according to my invention, and Fig. 2 is a plan view thereof, showing the upper half of the field-magnet removed.

I have shown in the drawings a type of armature for which I have already applied for a patent, Serial No. 450,881, filed November 3, 1892. In said application I have claimed the dovetailed arrangement in Fig. 1 herein, and I therefore make no claim for the same in this application.

In Fig. 1, 1 is the field-magnet supported on abutments 2, preferably raised from the ground and composed of two semi-circular portions, 3 and 4. The lower portion of the field-magnet is adapted to slide upon ways 5, mounted on the abutment 2, and the screws 6 are preferably employed for the purpose of causing the field-magnet to slide on said ways. The parts 3 and 4 are provided with lugs 7, adapted to be brought together as shown in Fig. 1 and held together by means of bolts or other suitable devices, for the purpose of firmly uniting the two portions of the field-magnet. The ring staple 9 in the top of the portion 3 is used for the purpose of lifting said portion off of the portion 4. As shown

in Fig. 2, the armature 10 is mounted upon a shaft 11, having bearings 12 at opposite sides of said armature and of the field-magnet, the abutments of the field-magnet and the armature bearings being raised sufficiently to keep the lower portion of the field-magnet away from the ground, and the bearings of the armature being far enough apart to allow the field-magnet to be slid away from the armature sufficiently far to expose its coils. It is evident from this description that by use of the screw 6 the field-magnet may be slid upon the ways 5 independently of the armature and the coils of the latter thus exposed for purposes of repair or inspection.

In order to facilitate the repair and inspection of the field-magnet coils, the upper portion of the field-magnet may be removed by unscrewing the bolts and lifting the portion 3 by means of the staple 9.

At 13 and 14 in Fig. 1 are shown two compensators connected in a well known manner to the armature and field-magnets by means of circuits indicated in dotted lines on the figure. The primaries of these converters, 13 and 14, are in series with the armature and may be in series or in multiple arc with each other. The secondary currents are used to excite the field-magnet. The use of such compensators is no part of my invention, as converters connected in this manner with the armature have been heretofore used, the magnetic circuits, however, having been portions of the armature itself. For simplicity of connection it is desirable that separate magnetic circuits be supplied for these converters, and such is the construction which I have illustrated. Another reason for the use by me of separate magnetic circuits lies in the fact that the armature illustrated in Fig. 1 and preferably employed in this connection is composed of a cast fly-wheel 15, upon the surface of which the armature coils 16 are mounted in the manner indicated in Fig. 1. The coils 16 are wound upon laminated cores forming the magnetic circuit of the armature and dove-tailed upon the surface of the cast fly-wheel 15, as shown at Fig. 1. As before stated, this particular construction of armature forms the subject of another application, and I have merely shown it to explain the advantage derived from providing separate

magnetic circuits for the converters 13 and 14, it being evident that the cast iron arms of the fly-wheel 15 would not be suitable for this purpose. I employ two converters, as shown, 5 in my compensator in order that the armature may be balanced by placing one on each side of a plane of symmetry.

The advantages arising from the form of generator above described are simplicity of 10 construction, convenience of repair and inspection and independence between the magnetic circuits of the armature and compensators.

It will be evident that some of the elements 15 of the electric machine herein described are equally well adapted for motors or generators.

What I claim is—

1. In an electric machine, an armature, a field-magnet and a compensator mounted on said armature and having a magnetic circuit 20 independent of the armature.

2. In an electric machine an armature, a field-magnet and two compensators mounted upon the armature, one upon each side of a plane of symmetry and provided with mag- 25 netic circuits independent of the armature.

In testimony whereof I have hereunto subscribed my name this 1st day of November, A. D. 1892.

ALBERT SCHMID.

Witnesses:

JAMES WM. SMITH,
HAROLD S. MACKAYE.