

No. 747,698.

PATENTED DEC. 22, 1903.

H. GEISENHÖNER.
DYNAMO ELECTRIC MACHINE.

APPLICATION FILED AUG. 28, 1901.

NO MODEL.

Fig. 1.

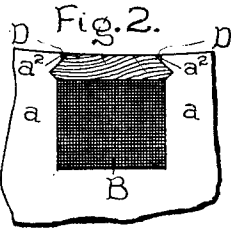
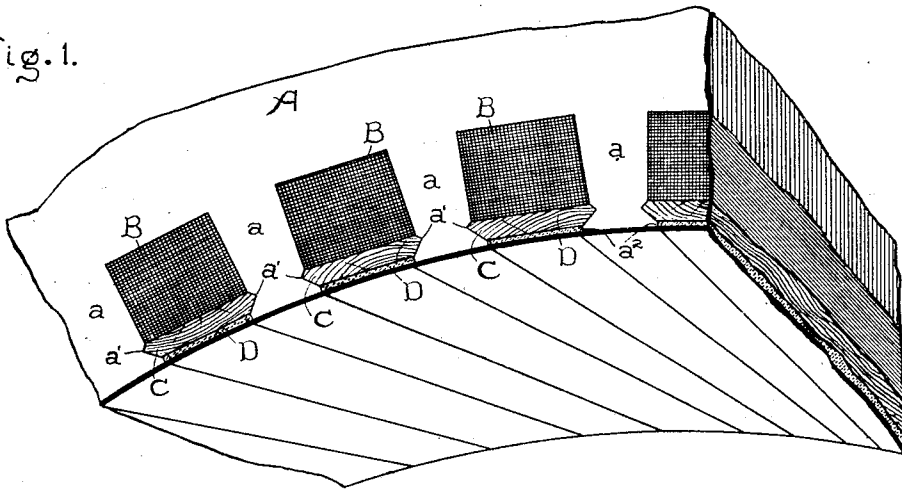
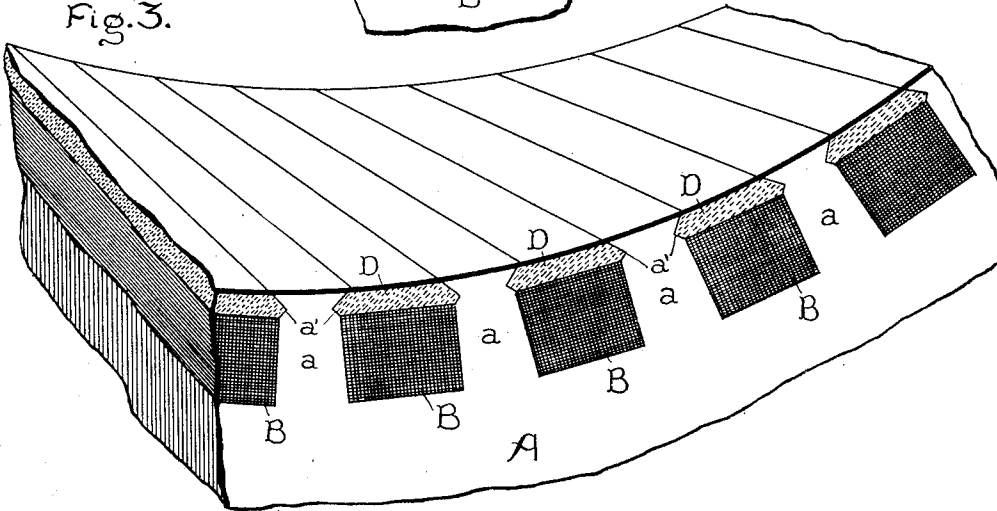


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

Y GEISENHÖNER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 747,698, dated December 22, 1903.

Application filed August 28, 1901. Serial No. 73,533. (No model.)

To all whom it may concern:

Be it known that I, HENRY GEISENHÖNER, 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.

This invention relates to electric machines, and especially to those in which the windings of insulated wire are embedded in slots in the core of one or both elements of the machine. The coils of wire are usually secured in place by wedges of wood or insulated fiber driven into grooves cut in the sides of the core-teeth. It is customary to let the teeth project slightly beyond the surface of the wedge, so that shallow grooves are left between the teeth. Sometimes the wedges are thick enough to rise flush with the tops of the teeth, but even then there is a small triangular groove between the radial edge of the tooth and the beveled edge of the wedge. These grooves offer sharp edges and opposing surfaces to the current of air which sweeps over them when the machine is in operation, and this causes a whistling or humming sound, besides setting up eddies and cross-currents of air, which I believe retard the rotation of the moving element of the machine.

The object of my invention is to get rid of this noise and resistance, and I accomplish it by placing in the grooves a suitable filling or cement which can be readily applied and smoothed off flush with the tops of the teeth and will then set and become hard and rigid without shrinking. Any substance which fulfils these conditions may be used. A satisfactory substance is one which is a non-conductor of electricity, such as the "iron-filler" paint used to fill up the surface of iron castings and afford a smooth foundation for the finishing coats of color paint. I may, however, mix iron filings or chips with the filling in order to reduce the length of the air-gap and provide a better path for the magnetic flux.

Instead of merely filling the grooves above or at the sides of the wooden wedges I may dispense with the wedges and use the filling in the entire space in the slot above the windings. This larger body of filling is less likely

to scale off or be broken than the thin layer above a wooden wedge. In this case the magnetic filling is especially advantageous.

In the accompanying drawings, Figure 1 shows a portion of one element of a dynamo-electric machine, illustrating one mode of using my invention. Figs. 2 and 3 show modifications.

In Fig. 1 a portion of the core A is shown provided with teeth *a*, having grooves *a'* in their sides to receive the wedges C, which hold the windings B in place. In the space outside the wedge is placed the filling D, which lies smooth and flush with the ends of the teeth and extends entirely across between the radial edges *a*² thereof.

In Fig. 2 the wedge is shown coming up flush with the ends of the teeth, but leaving a small triangular groove, in which the filling is placed.

In Fig. 3 the wedges are dispensed with, the filling being placed in the entire space above the windings, so as to interlock with the grooves *a'* and hold the windings in place.

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

1. An electric-machine element having a filling of cement between the teeth of its core and flush with the ends of said teeth.
2. An electric-machine element having its windings secured by wedges, and a suitable filling located in the otherwise vacant spaces outside of said wedges.
3. An electric-machine element having its windings secured by wedges, and a suitable filling extending over said wedges between the teeth and flush with the ends of said teeth.
4. An electric-machine element having coils between the core-teeth, and a filling of cement between the teeth outside of the coils and flush with the ends of the teeth.
5. An electric-machine element having coils in the core-spaces, and a magnetic-cement filling between the teeth outside of the coils and flush with the ends of the teeth.

In witness whereof I have hereunto set my hand this 26th day of August, 1901.

HENRY GEISENHÖNER.

Witnesses:

BENJAMIN B. HULL,
MARGARET E. WOOLLEY.