

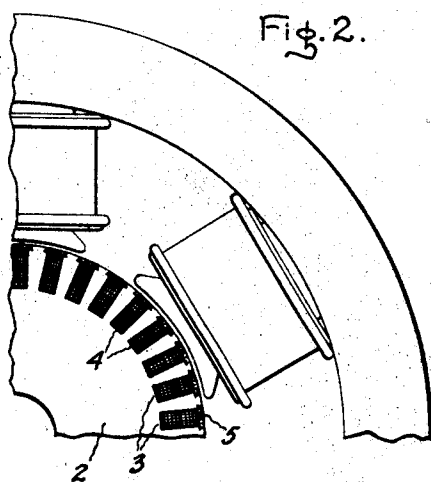
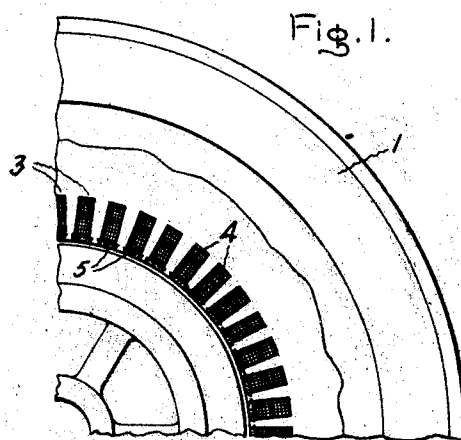
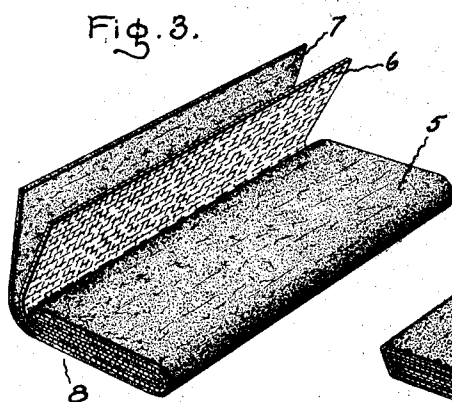
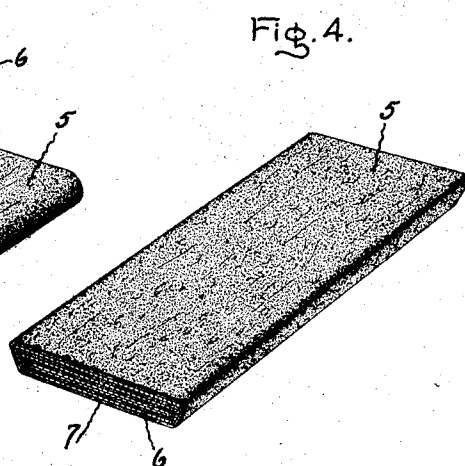
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S. R. BERGMAN

1,684,255

MAGNETIC WEDGE

Filed Feb. 8, 1926



Inventor:
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UNITED STATES PATENT OFFICE.

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MAGNETIC WEDGE.

Application filed February 8, 1926. Serial No. 86,694.

My invention relates to dynamo-electric machines having core structures provided with slots in which lie windings and an object of my invention is the provision of improved means for closing the slots to retain the windings and to provide a flux path of the desired permeability.

My invention will be better understood from the following description taken in connection with the accompanying drawing, and its scope will be pointed out in the appended claims.

Referring to the drawing, Fig. 1 is a fragmentary view of an induction motor, the stator slots of which are closed by slot closers or wedges embodying my invention; Fig. 2 is a fragmentary view of a synchronous machine in which similar wedges are used to close the slots of the rotor; Fig. 3 is a perspective view on a larger scale of a wedge such as shown in Figs. 1 and 2 in the process of construction; and Fig. 4 is a similar view of a completed wedge.

The stator 1 of Fig. 1 and the rotor 2 of Fig. 2 have slots 3 in which lie the coils 4 and extending across the mouth of each slot is a slot-closer or wedge 5 shown in the form of a flat bar or strip whose side edges are beveled to fit the notches in the sides of the slots. The shape of the wedge is shown only by way of example, its particular form being immaterial to my invention.

The wedge comprising my present invention is an improvement over the wedge disclosed in my Patent No. 872,324, Dec. 3, 1907, and assigned to the same assignee as the present application. Under certain operating conditions it was found that wedges constructed in accordance with that patent would swell from the heat of the machine to such an extent that they interfered with the free movement of the rotor. The swelling of those wedges I found to be due to the japan binder employed therein. In accordance with my present invention I construct the wedge of magnetic cloth using as a binder a resinous condensation product preferably a phenolic condensation

product such as bakelite. The manner of forming the wedge which I have found most expedient is to roll up a strip of magnetic cloth, such for example as iron cloth, with a strip of spinnable material, such as cotton cloth, which is covered with the binder. The wedge 5 being formed in this manner is shown in Fig. 3 where the strip of iron cloth 6 and the strip of cotton cloth 7 having thereon the resinous condensation product, are being rolled up together to form the flat roll 8. The completed roll is then placed in a die having the desired shape and is then subjected to the necessary heat and pressure to cure the binder. The wedge thus made has in it iron in a finely distributed form, the strands of which are insulated from each other thereby preventing eddy current losses. The wedge, moreover, is not affected by heat or moisture and will therefore not expand or get out of shape in service. Wedges so made have the mechanical strength necessary to retain the coils in the slots and to resist without damage the strains imposed upon them incident to their being driven into position in the slots. By providing partial magnetic paths across the slots, the amount of iron obviously being variable within comparatively wide limits, the wedges serve to reduce the core losses and the magnetizing current without materially increasing the slot leakage.

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

1. A dynamo-electric machine comprising a core structure having slots therein, a winding in the slots, and means for closing the slots comprising rolls of magnetic cloth having between the convolutions thereof a roll of fabric impregnated with a resinous condensation product.

2. As an article of manufacture a magnetic wedge comprising a roll of magnetic cloth having between the convolutions thereof a roll of spinnable material and a resinous condensation product.

In witness whereof I have hereunto set my hand this 4th day of February, 1926.

SVEN R. BERGMAN.