June 30, 1931. A. KAYSER 1,812,748

DYNAMO ELECTRIC MACHINE

Filed Sept. 7, 1928

Fig.1.

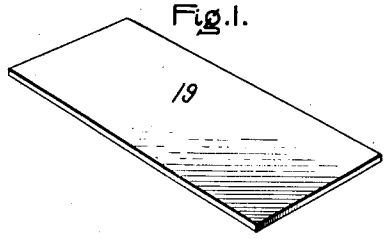


Fig.2.

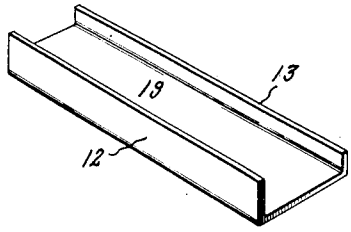


Fig.3.

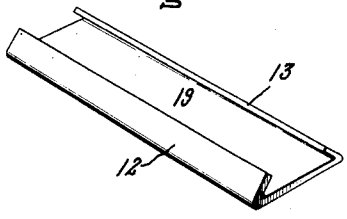


Fig.4.

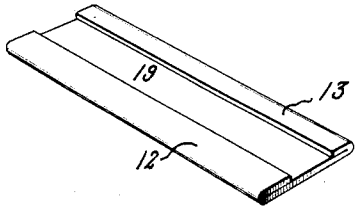


Fig.5.

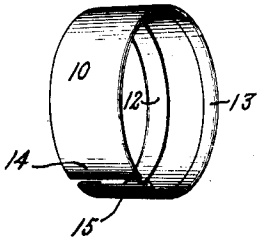


Fig.6.

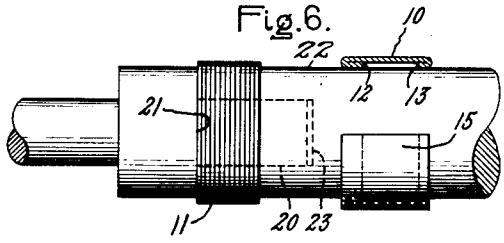


Fig.7.

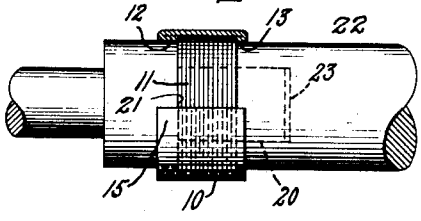
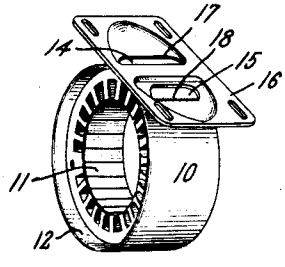


Fig.8.



Inventor:
August Kayser,
by Charles E. Mullen
His Attorney.

Patented June 30, 1931 1,812,748

UNITED STATES PATENT OFFICE

AUGUST KAYSER, OF FORT WAYNE, INDIANA, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK

DYNAMO ELECTRIC MACHINE

Application filed September 7, 1928. Serial No. 304,515.

My invention relates to dynamo-electric machines, and more particularly to stationary members for such machines and to a method of making the same.

The object of my invention is to simplify the construction of stationary members of dynamo-electric machines and their method of manufacture so that they can be easily and cheaply produced with a minimum expenditure of labor and use of material. The construction by which I accomplish this includes a magnetic structure adapted to provide a flux path in the stationary member when the machine is completed and a frame surrounding the magnetic structure having inturned edges for supporting the magnetic structure therein. The method which I employ in making this stationary member comprises forming a split ring with axially spaced abutments thereon, arranging a magnetic structure between the abutments, and securing together the ends of the split ring to support the magnetic structure therein.

My invention will be more fully set forth in the following description referring to the accompanying drawings, and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming part of this specification.

In the drawings Figs. 1, 2, 3 and 4 show the successive steps employed in folding the opposite edges of a plate upon themselves to form opposing abutments between which the magnetic structure in the completed stationary member is supported; Fig. 5 is a perspective view of the plate shown in Fig. 4 after it is formed in the shape of a split ring; Fig. 6 is a side elevation showing the magnetic structure of the stationary member supported on mandrels and the split ring which forms the frame of the stationary member in position to be fitted on the magnetic structure; Fig. 7 is a view similar to Fig. 6 showing the split ring arranged over the magnetic structure, and Fig. 8 is a perspective view of the completed stationary member.

Referring to the drawings, the stationary member for dynamo electric machines which I have shown embodying my invention comprises a split ring 10 forming a frame for supporting the magnetic structure 11 which, in this instance, is indicated as being made of laminations but which may be of any other suitable form. The edges of the split ring 10 are inturned as indicated at 12 and 13 so as to form abutments between which the magnetic structure 11 is supported. The magnetic structure is maintained in the split ring 10 by securing the adjacent ends 14 and 15 thereof together so as to clamp the magnetic structure in place between the abutments formed by the inturned edges 12 and 13. The ends 14 and 15 of the split ring 10 may be secured together in any convenient manner, but in the particular construction which I have illustrated they are secured together by welding a base member 16 of the frame to the adjacent ends of the split ring as indicated at 17 and 18. By this construction I provide a stationary member for dynamo electric machines which can be easily and cheaply produced.

In accordance with my invention I make this stationary member by a method which comprises forming a split ring with axially spaced abutments thereon, arranging a magnetic structure, of suitable form to provide the necessary flux paths in the completed machine, between the abutments, and securing together the ends of the split ring to support the magnetic structure therein.

In this particular instance I form the split ring in four steps. I first turn up the opposite edges 12 and 13 of a plate 19 by placing the plate in a suitable die, then turn the edges 12 and 13 toward the plate 19 as indicated in Fig. 3, and finally fold the edges 12 and 13 against the plate. I then bend the plate 19 in the form of a split ring 10 shown in Fig. 5 with the folded edges 12 and 13 on the inner periphery thereof, so that they form opposing abutments for retaining the magnetic structure of the stationary member therein. After the split ring is formed I arrange a plurality of toothed laminations constituting the magnetic structure 11 on a mandrel 20 having a shoulder 21 and compress these laminations between the shoulder 21 and a mandrel 22 which is formed with a bore 23 slidably fit-

ting the mandrel 20. The number and thickness of the laminations constituting the magnetic structure 11 are such that when they are compressed the outer periphery thereof can be readily fitted inside the split ring 10 between the inturned edges 12 and 13 thereof. I then arrange the split ring 10 over the laminations so that they fit the inside of the ring between the inturned edges 12 and 13 thereof as shown in Fig. 7, and after drawing the adjacent ends of the split ring together so that the magnetic structure 11 fits the inside of the ring closely I fasten the ends 14 and 15 of the split ring together. In the present construction I do this by arranging the base member 16 so as to conform to the split ring 10 adjacent the ends 14 and 15 thereof, and then weld these ends to the base member as indicated at 17 and 18 in Fig. 8. I then remove the completed stationary member from the mandrels 20 and 22 which permits the lamination of the magnetic structure 11 to expand against the folded edges 12 and 13 of the split ring 10 and securely holds them in place.

Variations in the construction of the stationary member which I have described and of the method of making the same will occur to those skilled in the art, so that I do not desire to be limited to the particular construction or the particular method set forth, but I intend in the appended claims to cover all modifications of the construction or of the method of making the same which do not depart from the spirit and scope of my invention.

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

1. A stationary member for dynamo-electric machines comprising an annular magnetic structure and a frame surrounding said magnetic structure, said frame having the edges thereof folded upon themselves and abutting said magnetic structure for retaining the same in said frame.

2. A stationary member for dynamo-electric machines comprising an annular magnetic structure, and a frame surrounding said magnetic structure and closely fitting the outer periphery thereof, portions of said frame extending axially beyond said magnetic structure, said portions being folded upon themselves to form opposing abutments engaging said magnetic structure for retaining the same in said frame.

3. A stationary member for dynamo-electric machines comprising an annular magnetic structure, a frame in the form of a split ring surrounding said magnetic structure and closely fitting the outer periphery thereof, portions of said frame extending axially beyond said magnetic structure, said portions being folded upon themselves to form opposing abutments engaging said magnetic structure for retaining the same in said frame, and a base member secured to the adjacent ends of said frame for supporting said magnetic structure therein.

4. The method of making a stationary member for dynamo-electric machines comprising forming a split ring with axially spaced abutments thereon, arranging a magnetic structure between the abutments, and securing together the ends of the split ring to support the magnetic structure therein.

5. The method of making a stationary member for dynamo-electric machines comprising forming a split ring with axially spaced abutments thereon, compressing a plurality of toothed laminations constituting a magnetic structure, arranging the magnetic structure between the abutments on the split ring, and securing together the adjacent ends of the split ring to support the magnetic structure therein.

6. The method of making a stationary member for dynamo-electric machines comprising folding opposite edges of a plate upon themselves to form opposing abutments, forming the plate in the shape of a split ring, with the folded edges spaced axially thereof, arranging a magnetic structure between the abutments, and securing the adjacent ends of the split ring together to support the magnetic structure therein.

In witness whereof, I have hereunto set my hand this 4th day of September, 1928.

AUGUST KAYSER.