April 7, 1925. 1,532,351

D. L. SHEA

DYNAMO ELECTRIC MACHINE

Filed Oct. 20, 1921

Fig.2.

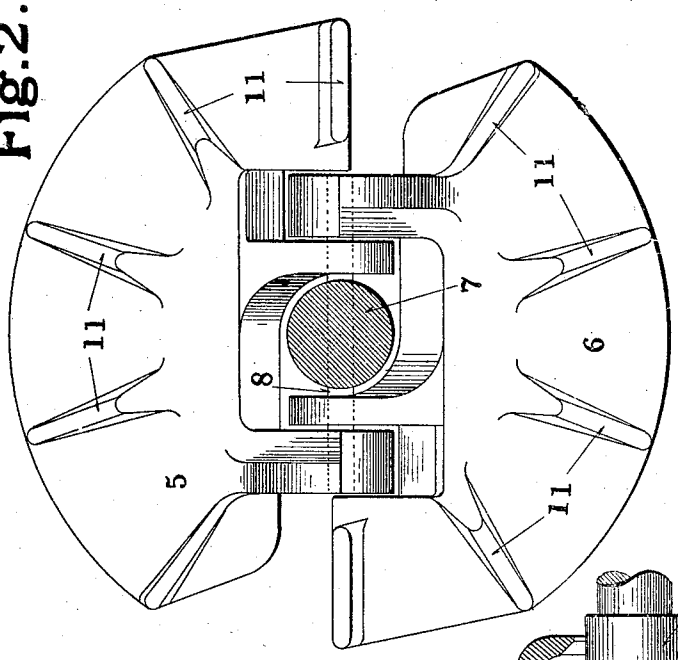
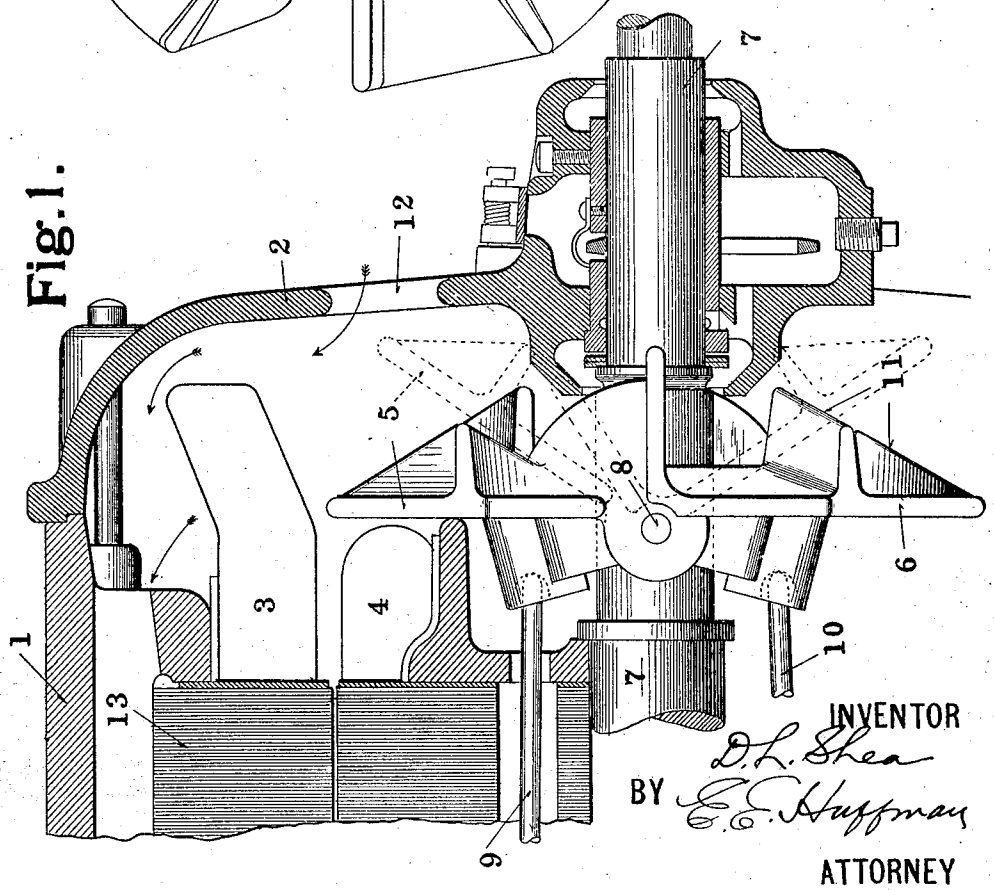


Fig.1.



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UNITED STATES PATENT OFFICE.

DANIEL L. SHEA, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WAGNER ELECTRIC CORPORATION, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

DYNAMO-ELECTRIC MACHINE.

Application filed October 20, 1921. Serial No. 508,907.

To all whom it may concern:

Be it known that I, DANIEL L. SHEA, a citizen of the United States of America, residing at the city of St. Louis, State of Missouri, United States of America, have invented a certain new and useful Dynamo-Electric Machine, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to specific means for producing forced ventilation of dynamo electric machines of the type in which movable weights are used for actuating a switch under the influence of centrifugal force and it is the object of the invention to achieve this result simply and economically and without the necessity of any increase in the overall length of the machine due to the addition of separate means for producing said forced ventilation. One particular type of machine to which my invention is applicable is illustrated in Weichsel United States Patent No. 1,214,980 issued February 6, 1917.

In the accompanying drawings, Figure 1 illustrates, partly in cross section and partly in elevation, a sufficient portion of an electric motor to show the embodiment and operation of my invention and Figure 2 is an end view of the centrifugally operated weights showing also the means of attachment to the rotor shaft.

In the drawings, 1 indicates the casing and 2 the end plate of a dynamo electric machine, a stator coil being indicated by the numeral 3 and a rotor coil by the numeral 4. The weights 5 and 6 are pivoted to the rotor shaft 7 by means of a pin 8 extending through the shaft and through the ears on the weights. These weights are shown in the position which they occupy when the machine is operating at a speed above that which is sufficient to cause them to move from the stand-still position (indicated by dotted lines) and actuate the rods 9 and 10 which shift a suitable short circuiting mechanism such as shown in the Patent No. 1,214,980 hereinabove referred to. The weights are provided with integral webs or flanges 11 projecting from the body of the weight in a direction substantially parallel to the rotor shaft and in planes substantially radial to that shaft.

The outer edges of the fan blades 11 are inclined toward the peripheries of the weights, thus permitting the weights to have sufficient path of travel notwithstanding the close proximity of the end plate to the weights and yet be of such radial length as to bring the fan blades to effective position under running conditions.

The end plate 2 is provided with openings 12 as shown and the flanges or projections act as fan blades when the weights are in running position and produce air currents past the ends of the stator windings 3 and over the stator laminations 13 through spaces between them and the casing 1. By this action air is drawn into the casing of the machine partly through the openings 12 in the end plate 2 and partly through the rotor and air gap between the rotor and stator from the other end of the machine. The particular control and distribution of the air currents within the machine and produced by the blades or projections on the weights being no part of my invention need not be further described.

It will be noted that by forming the fan blades for the circulation of air integral with the weights forced ventilation is secured in a very economical manner and that no increase in the length of the machine is necessary to accommodate these blades as would be the case if they were attached to any other moving part.

Having fully described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A dynamo electric machine having centrifugally operating switching means, said centrifugal means comprising a weight in pivotal relation with the rotor and provided with a plurality of substantially triangular integral projections adapted to act as fan blades for producing air circulation about the parts of the machine when the weight is in running position, said fan blades being positioned in planes radial to the rotor shaft with their bases nearest the shaft.

2. A dynamo electric machine having switching means comprising weights pivoted on an axis in the plane of the rotor shaft axis and rotatable on said pivots, said

weights being provided with a plurality of substantially triangular integral projections forming fan blades positioned in planes radial to the rotor shaft with their bases nearest the shaft.

3. A dynamo electric machine having centrifugally operating switching means comprising a segmental disc in pivotal relation with the rotor and positioned transverse to the rotor shaft and provided with a plurality of integral substantially triangular fan blades in angular relation with the disc.

In testimony whereof, I have hereunto set my hand and affixed my seal.

DANIEL L. SHEA. [L. S.]