

E. M. TINGLEY.
DYNAMO ELECTRIC MACHINE.

APPLICATION FILED DEC. 3, 1906. RENEWED SEPT. 30, 1909.

956,549.

Patented May 3, 1910.

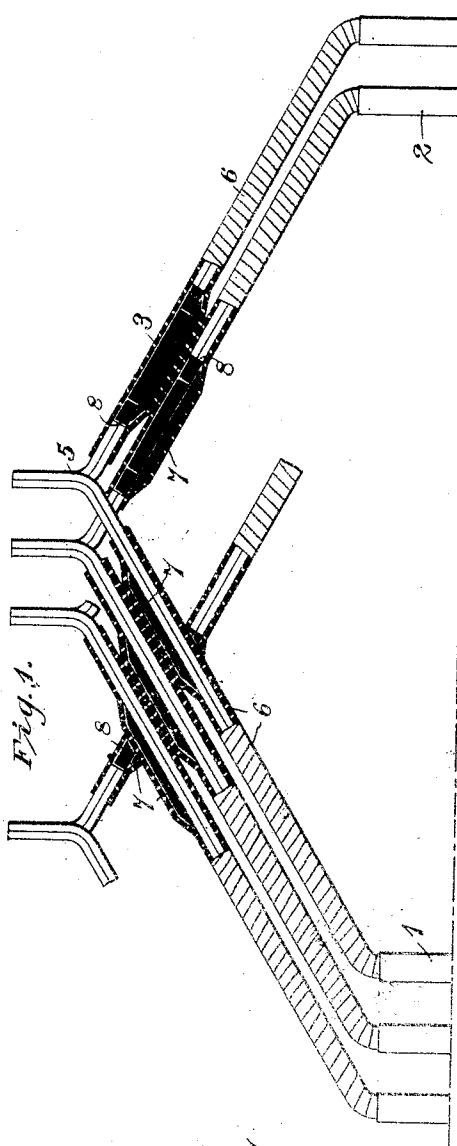


Fig. 1.

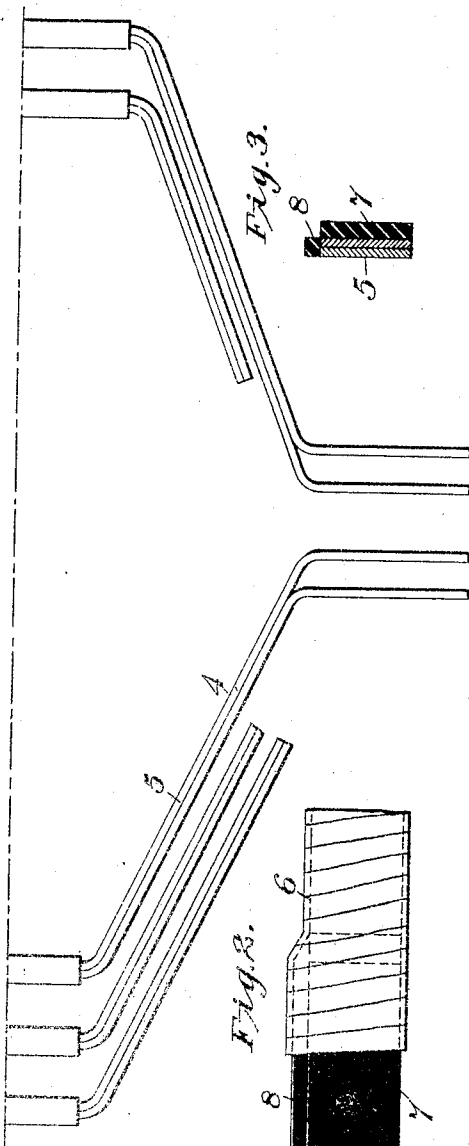


Fig. 2.

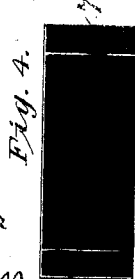


Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.

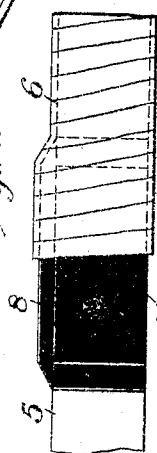


Fig. 8.

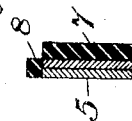


Fig. 9.

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DYNAMO-ELECTRIC MACHINE.

956,549.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed December 3, 1906, Serial No. 346,087. Renewed September 30, 1909. Serial No. 520,328.

To all whom it may concern:

Be it known that I, EGBERT M. TINGLEY, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Dynamo-Electric Machines, of which the following is a specification.

My invention relates to dynamo-electric machines, and it has for its object to provide means for spacing and stiffening the armature windings of machines having relatively large capacities.

When sufficient space is provided for ventilation between adjacent coils of large size armature windings, it is desirable to provide means for spacing and stiffening the end connecting portions of the winding, which shall not materially reduce the exposed surface.

According to my present invention, relatively short spacing blocks are interposed between adjacent coils of the winding and are held in position by the usual insulating wrapping that surrounds the end portions of the winding.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a view, partially in plan and partially in section, of an armature winding arranged in accordance therewith, and Figs. 2, 3, 4, 5, 6 and 7 are detail views of the spacing blocks of my invention.

Referring to the drawings, the coils illustrated may form a portion of a well known type of armature winding, each coil having two parallel straight portions 1 and 2, which are largely included in the slots of a magnetizable core, and V-shaped end connecting portions 3 and 4 which complete the coil. Each coil comprises a plurality of turns of conducting material, such as a copper strap 5, that are protected and insulated by a wrapping 6 of paper, mica and cotton tape, or other suitable insulating materials. Near the point of the V of the end connecting portions of the winding, the adjacent coils are separated and stiffened by blocks 7 and 8 of fiber or other insulating material, which are held in position by the insulating wrapping 6 by which they are bound to the strap conductors.

The blocks 7 are adapted to fit against the side of the strap while the blocks 8 are

bound against the edge of the strap, between the inner and outer layers of the winding, which are formed in a well known manner, since a portion of two coils is included, one above the other, in each armature slot.

Since the spacing blocks are bound in position by the insulating wrapping, their application is simple and inexpensive and their length is such as to interfere to a minimum degree with the ventilation of the winding.

It will be readily understood that my improved spacers may be applied to various armature windings within the scope of my invention, and that their application is not restricted to the number per coil or to the arrangement shown in the drawings.

I claim as my invention:

1. In a dynamo-electric machine, the combination with an armature winding comprising a plurality of coils each of which consists of two parallel straight portions and substantially V-shaped end-connecting portions, of relatively short spacing and insulating blocks located near the point of the V-shaped end connecting portions and between both the adjacent sides and the adjacent edges of said portions, and means for fastening the respective side and edge blocks to adjacent coils.

2. In a dynamo-electric machine, the combination with an armature winding comprising a plurality of coils each of which consists of two parallel straight portions and substantially V-shaped end-connecting portions, of spacing and insulating blocks disposed between the end portions of the adjacent coils and held in position by insulating wrappings that surround the coils.

3. In a dynamo-electric machine, the combination with an armature winding comprising a plurality of coils each of which consists of two parallel straight portions and substantially V-shaped end-connecting portions, of means interposed between adjacent sides and between adjacent edges of said end-connecting portions for so supporting and separating said portions as to interfere with the ventilation of the winding to a minimum degree.

4. In a dynamo-electric machine, the combination with an armature winding comprising a plurality of coils, of insulating blocks bound to the coils by an insulating wrapping

for so stiffening and separating the winding as to interfere with the coil ventilation to a minimum degree.

5 In a dynamo-electric machine, the combination with an armature winding comprising a plurality of coils each of which consists of two parallel straight portions and substantially V-shaped end-connecting portions, of short spacing and insulating blocks
10 located near the point of the V-shaped end connecting portions and between the ad-

jacent surfaces thereof, and insulating wrappings for said portions which hold the spacing blocks in position.

In testimony whereof, I have hereunto 15 subscribed my name this 28th day of November, 1906.

EGBERT M. TINGLEY.

Witnesses:

F. D. NEWBURY,
BIRNEY HINES.