(No Model.)

T. A. EDISON.

DYNAMO ELECTRIC MACHINE.

No. 287,514. Patented Oct. 30, 1883.

Fig. 1.

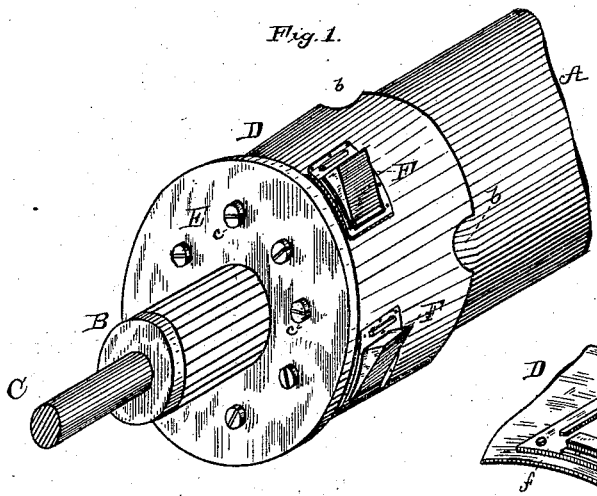


Fig. 5.

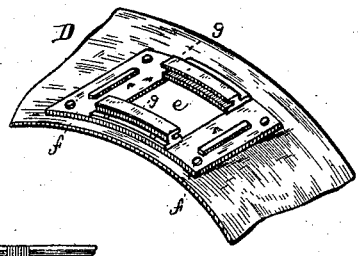


Fig. 6.

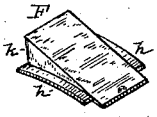


Fig. 2.

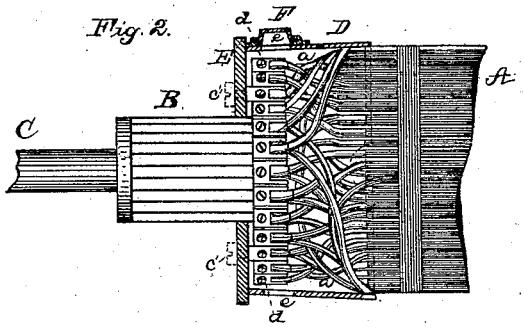


Fig. 3.

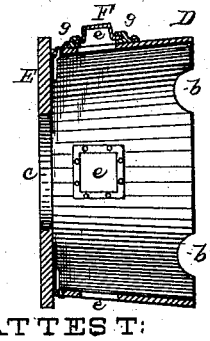
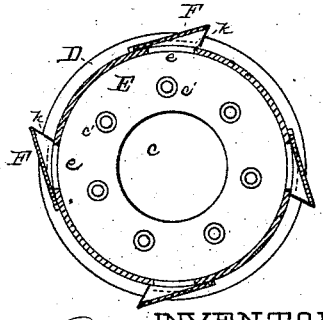


Fig. 4.



ATTEST:

E. C. Rowland

H. W. Seely

INVENTOR:

Thomas A. Edison,

By Rich. N. Dyer,

Atty.

UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 287,514, dated October 30, 1883.

Application filed June 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Dynamo-Electric Machines, (Case No. 582,) of which the following is a specification.

The object of this invention is to maintain a current of air upon the armature of a dynamo-electric machine, to prevent heating thereof, and especially to keep cool the connecting devices between the armature-coils and the commutator.

Said invention relates to the arrangement of a blower with relation to the armature of the machine, and also to the construction of a blower suitable for the purpose mentioned.

In carrying out my invention I employ a blower external to the armature, and mounted directly thereon. Such blower is placed directly over the connections between the armature and commutator, so as to inclose such connections, extending, however, over the end of the armature, so as to force air along the surface of said armature. The blower which I prefer to use consists of a cylinder, of wood or other insulating material, open at one end, and having an aperture at its other end of such size as to fit closely upon the commutator-cylinder. In the surface of said blower-cylinder are several openings, and over said openings are placed buckets, cups, or fans, so that when the cylinder is revolved air is caught by said buckets, cups, or fans and forced in directly upon the commutator-connections and out at the open end of the blower-cylinder. Said open end fits closely upon the armature-cylinder, but several notches or slots are formed in its edge, so that the air can escape through such notches to the surface of the armature. The buckets on the outside of the blower-cylinder are removable and reversible, so that they may be turned around to catch the air if the direction of revolution of the armature should at any time be reversed.

My invention is illustrated in the annexed drawings, in which Figure 1 is a perspective view of the end of an armature with the blower placed thereon; Fig. 2, an elevation of the end of the armature with the blower in longitudinal section; Fig. 3, a longitudinal section of the blower detached from the armature; Fig. 4, a cross-section of the blower, viewed from the armature end; Fig. 5, an enlarged view of a portion of the outside of the blower, showing an air-opening with the bucket removed; and Fig. 6, a view of the detached bucket.

A is the armature, B the commutator-cylinder, and C the armature-shaft, of a dynamo or magneto electric machine. The coils *a a* upon the armature are connected with the commutator-bars by suitable connecting devices, preferably as shown in other applications made by me.

D is the wooden shell or cylinder of the blower. Its open end rests closely upon the end of the armature, and is provided with notches *b*, which form openings through which the air escapes. The other end of the cylinder is the wooden plate E, having the aperture *c*, which fits upon the commutator-cylinder. The plate E is secured by means of screws *c' c'*, which enter certain of the metallic connecting-pieces *d d*, some of these pieces being extended out toward the commutator for this purpose.

The sides of the blower cylinder or shell are provided with a suitable number of openings, *e*. Around such openings the plates *f* are attached, which are preferably of metal—such as brass—and on opposite sides of each of said openings are placed the grooved strips *g g*. The projecting edges *h h* of the bucket F are inserted in the grooves of the two strips *g g*, and the bucket is thus slid into and held in position over the opening *e*. It is evident that a bucket may be placed with its open end *k* in either direction, and that the buckets may be readily removed and reversed, according to the direction in which the machine is run.

When the armature is revolved, air is caught by the buckets and forced in through the openings *e*, directly upon the connections and out through the notches *b* upon the surface of the armature.

The blower, arranged as described, is especially adapted for cooling the connections between the armature and commutator of the machine, although it is efficient also for cooling the entire surface of the armature.

I do not claim herein the peculiar construction of the blower, *per se*, as I propose to make this the subject of a separate application for Letters Patent; and it is to be understood that

all patentable features of invention shown or described, but not claimed herein, are reserved for protection by other patents, and have been or will be embodied in other applications for patents.

What I claim is—

1. The combination, with a dynamo-electric machine, of an air-blower inclosing the commutator-connections of said machine, substantially as set forth.

2. The combination, with a dynamo-electric machine, of an air-blower mounted directly upon the armature of said machine and inclosing the commutator-connections, substantially as set forth.

3. The combination, with a dynamo-electric machine, of an air-blower inclosing the commutator-connections, and provided with outlets opening upon the surface of the armature, substantially as set forth.

4. The combination, with a dynamo-electric machine, of a blower consisting of a cylindrical shell having inlet-openings and external buckets, cups, or fans, and one or more outlets for blowing air upon the surface of the armature, substantially as set forth.

5. The combination, with a dynamo-electric machine, of a blower mounted upon the armature of said machine and inclosing the commutator-connections, having air-inlets in its sides and one or more openings for blowing air upon the surface of the armature, substantially as set forth.

6. The combination, with the armature of a dynamo-electric machine, of a blower having an open end fitting over the end of said armature, and provided with notches forming air-outlets, substantially as set forth.

7. The combination, with a dynamo-electric machine, of a blower formed of insulating material, and placed directly upon the commutator-cylinder and armature of the machine, substantially as set forth.

8. The combination, with a dynamo-electric machine, of a blower formed of insulating material, mounted directly upon the armature of said machine and secured to the conducting-pieces between the armature-coils and the commutator, substantially as set forth.

9. The combination, with a dynamo-electric machine, of a blower revolved from the armature-shaft of said machine, and provided with reversible buckets, cup, or fans, substantially as set forth.

10. The combination, with a dynamo-electric machine, of the blower shell or cylinder having its open end fitting over the end of the armature, and provided with notches forming air-outlets, and its other or closed end provided with an aperture fitting upon the commutator-cylinder, substantially as set forth.

This specification signed and witnessed this 25th day of June, 1883.

THOS. A. EDISON.

Witnesses:
H. W. SEELY,
EDWARD H. PYATT.