(No Model.)

P. JABLOCHKOFF.

DYNAMO ELECTRIC MACHINE.

No. 266,993. Patented Nov. 7, 1882.

Fig. 1

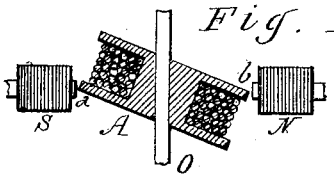


Fig. 2

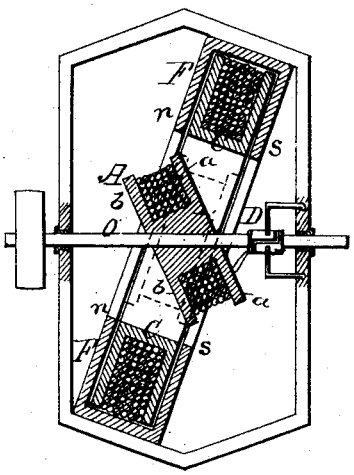


Fig. 3

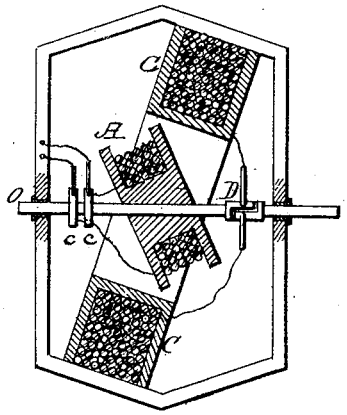


Fig. 5

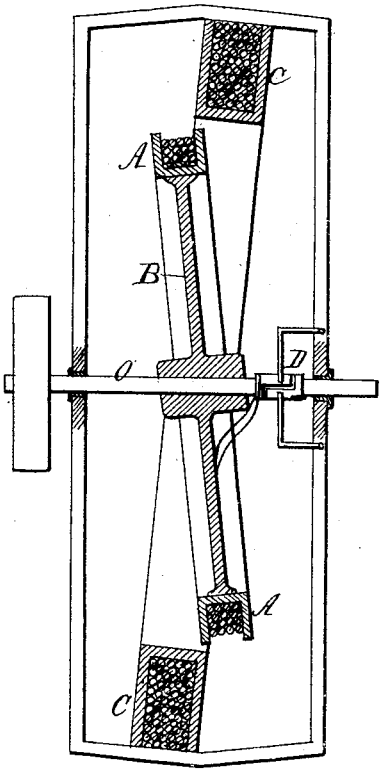
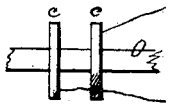


Fig. 4



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UNITED STATES PATENT OFFICE.

PAUL JABLOCHKOFF, OF PARIS, FRANCE.

DYNAMO-ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 266,993, dated November 7, 1882.

Application filed September 6, 1882. (No model.) Patented in France May 2, 1882, and in England June 13, 1882, No. 2,769.

To all whom it may concern:

Be it known that I, PAUL JABLOCHKOFF, a resident of Paris, France, have invented certain Improvements in Dynamo-Electric Machines, of which the following is a specification.

The object of my invention is the production of a dynamo-electric machine of great simplicity, which can be used either as a generator or as a motor. The distinguishing feature of my machine is the inclination of the axis of rotation relatively to the magnetic field—an orientation somewhat suggestive of the inclination of the ecliptic, wherefore I have named my invention the "ecliptic dynamo-electric machine."

Figure 1 of the accompanying drawings is a section of the simplest form of my invention. Fig. 2 is a similar section of another form. Fig. 3 is a similar section of still another form. Fig. 4 is a fragmentary view, showing one of the details of the machine illustrated in Fig. 3; and Fig. 5 is a vertical section of a further modification of my invention.

The simple form of my machine shown in Fig. 1 consists of an armature, A, placed between two poles, N and S, of the field-magnets. The armature is so wrapped with wire as to constitute an electro-magnet, of which its opposite soft-iron cheeks, *a* and *b*, constitute the opposite poles. The axis of the shaft or spindle O stands obliquely to the planes of the cheeks *a b* to such an extent that in revolving the poles *a* and *b* successively confront the fixed poles N and S of the field.

In the construction shown in Fig. 2 the field-magnet consists of a coil, C, surrounding the armature A, and fixed at the same inclination to the axis of the spindle O as is the armature, so that when the armature is in one position, as shown in dotted lines, the two coils are both in the same plane. The armature is shown in full lines as turned a half-revolution from the position shown in dotted lines, and in a plane at the greatest variance to the plane of the field-coil. The coil C is inclosed by a soft-iron ring, F, so that it forms a circular electro-magnet, of which the opposite rims or flanges, *n s*, form the opposite poles. In the position shown in full lines the pole *a* of the armature is in nearest proximity to the pole *n* of the field and the pole *b* to the pole *s;* but in the position shown in dotted lines the pole *a* is nearest to the pole *s* and the pole *b* to the pole *n*. The armature of a machine of this construction produces an alternating current when used as a generator, as will be well understood, and to transform this into a continuous current it is necessary to use a commutator, D, the construction of which is well known. The current in the field-magnet will be continuous.

The construction shown in Fig. 3 is identical with that of Fig. 2, except that the iron ring F is omitted, thereby rendering the coil C a simple solenoid. This enables me to avoid reversing the current in the armature by reversing it in the field instead. I thus avoid the heating resulting from the changes of polarity in the soft iron of the armature. The current to or from the armature is taken from disks *c c* on the spindle O, insulated from each other and pressed upon by springs connected to the respective binding-posts. These disks are shown more in detail in Fig. 4. The current to the coil C traverses the commutator D, by which it is alternated. This construction embodies my whole invention.

Fig. 5 shows the application of my invention to machines of large diameter. The armature A forms the felly of a large wheel, B, which is mounted on the shaft A in a plane inclined to the axis of the shaft, as already described. The felly of the wheel only need be of iron, the remainder of the wheel being of any suitable material.

I claim as my invention—

1. A dynamo-electric machine the armature of which consists of a coil encircling the axis on which it revolves, and arranged in a plane inclined to said axis, substantially as and for the purposes set forth.

2. The combination, to form a dynamo-electric machine, of an armature consisting of a coil encircling the axis on which it revolves, and wound on a soft-iron spool the opposite ends or cheeks of which become its poles, and fixed on its rotary spindle in a plane inclined relatively to the axis thereof, with a field-magnet the fixed poles of which are arranged in proximity to the opposite poles of the armature, substantially as set forth.

3. In a dynamo-electric machine, an armature consisting of a coil wound on a soft-iron spool, which is fixed on its spindle with its

axis crossing the axis of revolution of the spindle at an angle, in combination with a field-magnet consisting of a larger coil encircling the armature, and fixed in a plane identical, or nearly so, with that of the armature-coil at one point in the revolution of the latter, substantially as set forth.

4. The combination of an armature consisting of a coil wound on a soft-iron spool and mounted on a spindle whose axis of rotation passes through the coil at an angle to the central axis thereof, with a solenoid field-coil encircling the armature, and arranged in an inclined plane identical, or nearly so, with that of the armature at some one point in its revolution, and with commutators arranged to cause a continuous current to traverse the armature-coil and an alternating current to traverse the field-coil, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PAUL JABLOCHKOFF.

Witnesses:
G. CHAPENT,
ROBT. M. HOOPER.