

(No Model.)

H. M. BYLLESBY.
DYNAMO ELECTRIC MACHINE OR MOTOR.

No. 469,193.

Patented Feb. 16, 1892.

Fig. 1.

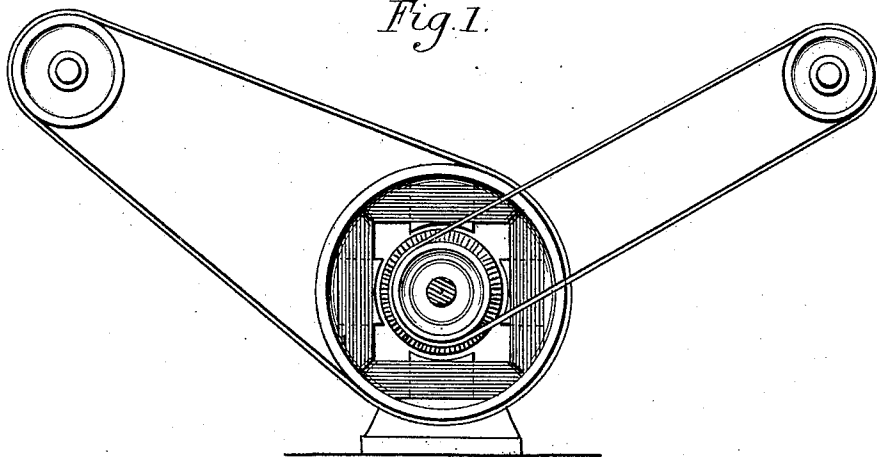
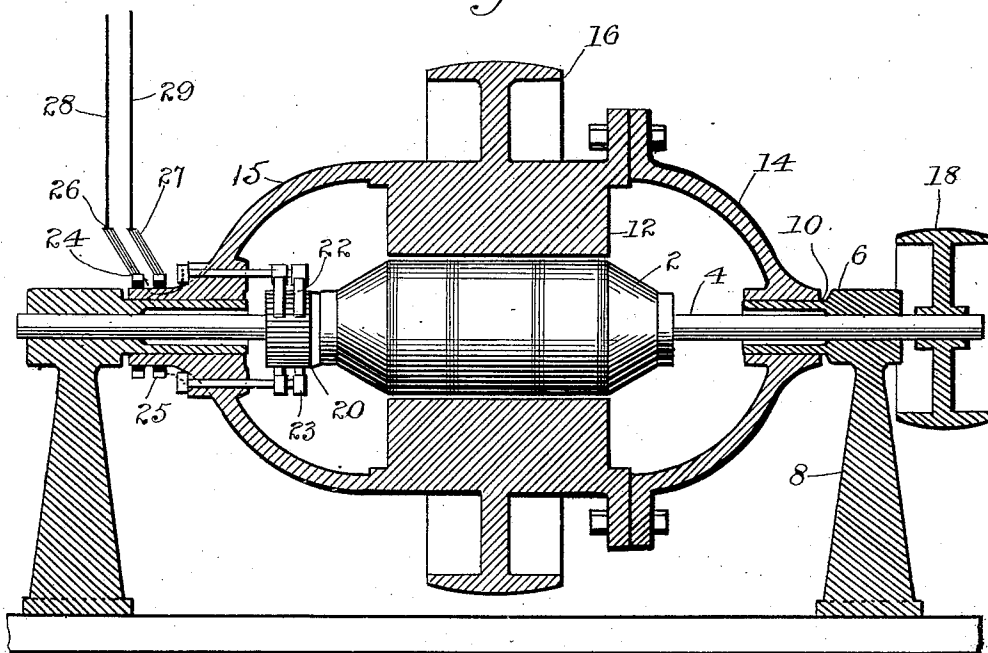


Fig. 2.



Witnesses:-

A. Max Welch
C. G. Hawley.

Inventor:-

Henry M. Byllesby,
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Attys.

UNITED STATES PATENT OFFICE.

HENRY M. BYLLESBY, OF ST. PAUL, MINNESOTA.

DYNAMO-ELECTRIC MACHINE OR MOTOR.

SPECIFICATION forming part of Letters Patent No. 469,193, dated February 16, 1892.

Application filed June 8, 1891. Serial No. 395,467. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. BYLLESBY, of St. Paul, Ramsey county, Minnesota, have invented certain Improvements in Dynamo-Electric Machines or Motors, of which the following is a specification.

My invention relates to improvements in dynamo-electric machines or motors, its object being to employ a construction by means of which the armature-shaft may be run at a comparatively low speed, while relative to the field-magnets its speed is approximately twice as great, whereby greater efficiency is secured, and also to provide a machine the field-magnets and armature of which will both transmit or receive power.

To this end my invention consists in providing concentric field-magnets and armature, both journaled in suitable bearings and free to rotate one within the other.

My invention further consists in the construction and combination hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a diagrammatic view showing the relative arrangement of the field-magnets and armature and the connections for transmitting or receiving power in my improved type of motor or dynamo; and Fig. 2 is a vertical longitudinal section of my improved machine, showing the construction and arrangement of the various parts.

In the drawings, 2 represents the armature mounted upon the shaft 4, which is journaled in bearings 6, carried by suitable supports 8. The bearing-boxes 6 are provided with inwardly-projecting quills 10, surrounding but not in contact with the shaft 4.

12 are the field-magnets, of any preferred construction, arranged concentrically around the armature 2 and provided with end yokes or cones 14 and 15, which take bearing upon the surface of the quills 10. The field-magnets are provided with the pulley or drum 16, and the shaft with the drum 18, by means of which power may be transmitted or received through belts, as shown diagrammatically in Fig. 1. The commutator 20 is provided with the brushes 22 and 23, which may be arranged in any suitable position, having support pref-

erably upon the yoke 15, carried by the fields. Arranged upon the exterior of the yoke 15 are insulated contact-rings 24 and 25, electrically connected, respectively, as shown, with the brushes 22 and 23, upon which rings brushes 26 and 27, connected to the leading-wires 28 and 29, bear. It will thus be seen that when used as a motor the armature and field-magnets both rotate, but in opposite directions, so that with a given motor speed or motion between the armature and field-magnets relative to each other practically half the speed only is given to the armature-shaft, and power may be transmitted by both field-magnets and armature by suitable connections, as shown. When used as a dynamo, power is applied by both field-magnets and armature in opposite directions by belts or other suitable means. It is also obvious that while the field-magnets are shown encircling the armature, the converse construction may be employed, if preferred, and the armature be constructed to surround and rotate about the field-magnets.

I claim—

1. The combination of concentric oppositely-rotatable armature and field-magnets, power-transmitting devices actuated both by said armature and said field-magnets, commutator-brushes carried by said field-magnets, and insulated contacts carried by said field-magnets, electrically connected, respectively, with said brushes and also with the line-wires, substantially as and for the purposes set forth.

2. The combination of the armature 2 with the journal-supports 8 for its shaft, the quills 10, rigid to said supports, the field-magnets 12, concentric with said armature, journaled upon said quills, commutator-brushes carried by said field-magnets, the insulated rings 24 and 25, carried by said field-magnets and electrically connected, respectively, with said brushes, and the brushes 26 and 27, respectively making contact with said rings and electrically connected with the line-wires, substantially as and for the purposes set forth.

3. The combination, with the armature 2, mounted upon the shaft 4 and having the commutator 20, of the journal-supports 8 for said shaft, the drum 18, mounted upon said shaft, the quills rigid upon said supports and

inclosing said shaft, the field-magnets 12, concentric with the armature and journaled upon said quills, the drum 16 upon said field-magnets, the commutator-brushes carried by said
5 field-magnets, the insulated rings carried by said field-magnets electrically connected with the respective commutator-brushes, and the brushes respectively bearing upon said rings

and connected to the line-wires, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 4th day of June, 1891.

HENRY M. BYLLESBY.

In presence of—

T. D. MERWIN,

A. MAE WELCH.