

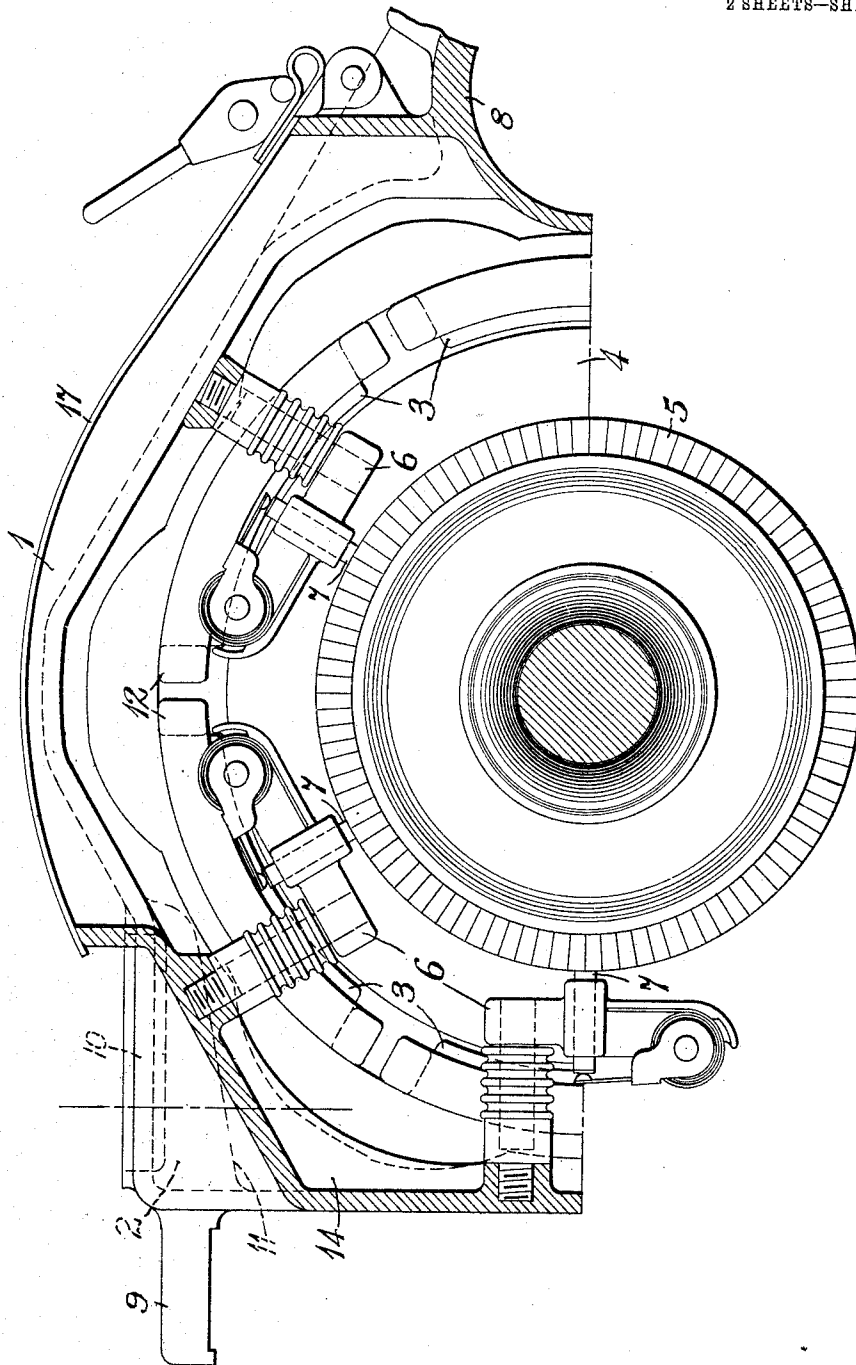
S. M. KINTNER.
RAILWAY MOTOR.
APPLICATION FILED MAY 4, 1908.

947,338.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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R. F. Dearborn

INVENTOR

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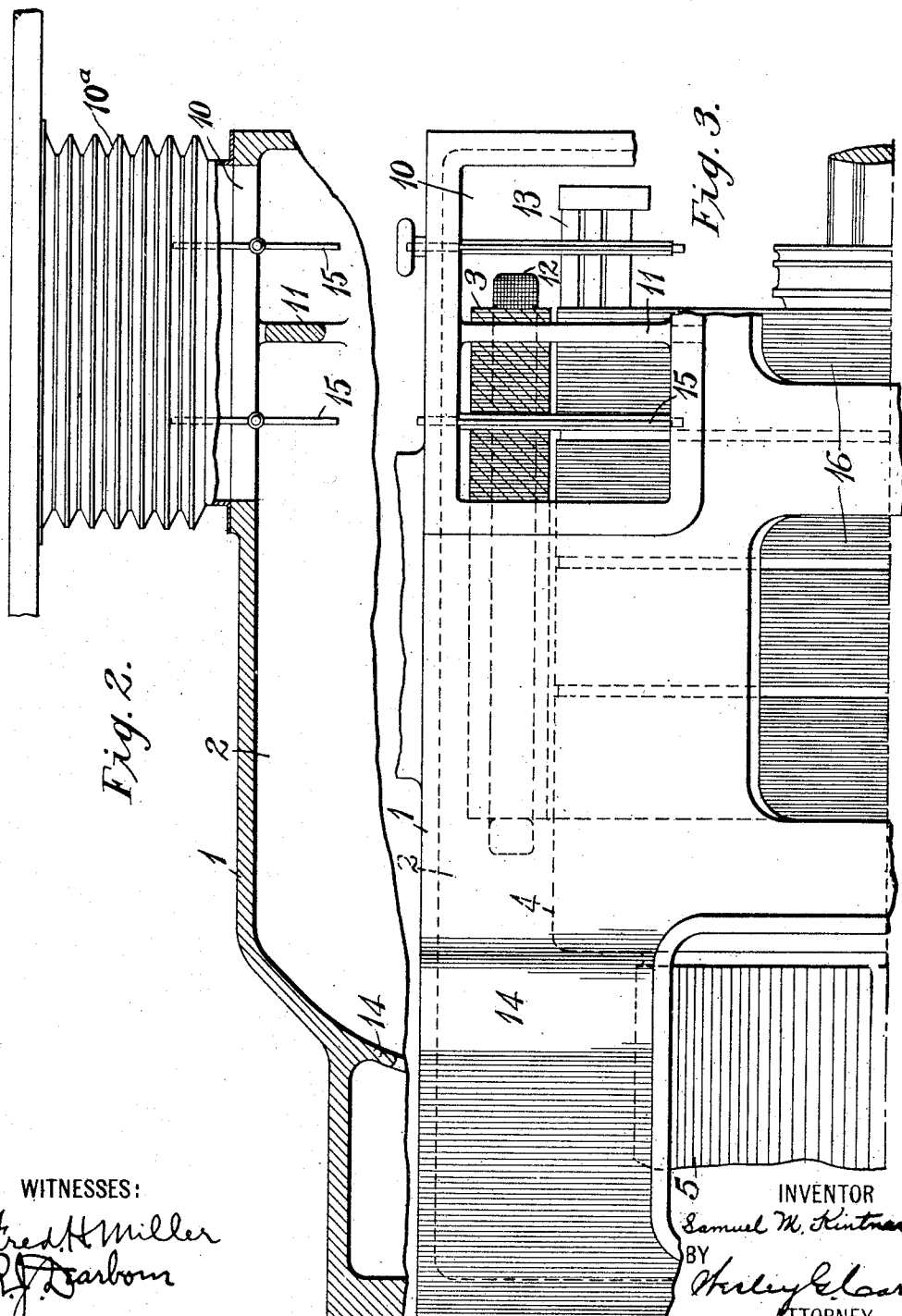
Wesley K. Carr
ATTORNEY

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Fred H. Miller
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UNITED STATES PATENT OFFICE.

SAMUEL M. KINTNER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, OF EAST PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

RAILWAY-MOTOR.

947,338.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed May 4, 1908. Serial No. 430,849.

To all whom it may concern:

Be it known that I, SAMUEL M. KINTNER, 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 Railway-Motors, of which the following is a specification.

My invention relates to dynamo-electric machines and particularly to railway motors.

The object of my invention is to provide improved facilities for cooling motors of the aforesaid class.

Electric driving motors for locomotives and other vehicles capable of developing large power are often cooled by forced draft which is established by a blower or fan carried in the vehicle cab, a pipe or conduit being arranged to conduct the air from the fan to the motor frames. When an arrangement of this kind is employed, it often happens that while some parts of the motor are properly cooled other parts, of which the commutator is an example, are not adequately protected from abnormal temperature rises.

According to my present invention, the usual field magnet frame of the motor is somewhat modified in order to provide a longitudinal hollow enlargement or passage-way which is suitably equipped with dividing partitions, dampers which control the size of the inlet ports, and deflectors for effectively distributing the cool air which is supplied through the usual opening in the frame.

Figure 1 of the accompanying drawings is an end elevation, partially in section, of a portion of a railway motor constructed in accordance with my invention and Figs. 2 and 3 are respectively a longitudinal section and a plan view of a portion of the same motor, the walls of the ventilating passage-way being broken away to disclose the dividing partition, the dampers, and the deflecting walls.

Referring to the drawings, the motor here illustrated comprises a relatively stationary field magnet frame 1 having a longitudinal enlargement or passage-way 2 of triangular section and a plurality of inwardly projecting pole pieces 3, a rotatable armature member 4, a commutator cylinder 5, relatively

stationary brush holders 6 and brushes 7 therefor.

The field magnet frame is provided with bearing projections 8 which are adapted to engage the truck axles of the vehicle (not shown) and with nose projections 9 which rest on a cross bar or beam of the truck frame, in the usual manner.

The hollow enlargement or passage-way 2 is provided with an inlet port 10 having a supply pipe 10^a through which air may be forced for cooling the motor. A cross partition 11 is introduced in the passage-way substantially below the middle of the inlet port so that the in-coming air is divided into two portions one of which flows mainly through the spaces formed between the field magnet windings 12 and the end connections 13 of the armature winding which are located at the opposite end of the armature from the commutator cylinder. The other portion of the air flows from the port 10 mainly along the passage-way 2 until it is deflected against the commutator cylinder by an end wall or deflector 14.

The relative volumes of air which flow in the paths referred to above may be controlled by a pair of regulating dampers 15 which may be adjusted to vary the areas of the inlet openings at the sides of the partition 11.

The arrangement of the commutator brushes is such that a continuation of the passage 2 is formed by one pair of the brush holders and brushes, the cool air being thereby more effectually directed against the surface of the commutator cylinder.

The warm air which has passed through the various active parts of the motor is finally permitted to escape through a plurality of openings 16 in the field magnet frame 1, part of the usual opening in the upper part of the frame over the commutator being sealed by a suitable cover 17.

It will, of course, be understood that my invention is not restricted to any particular form of dynamo-electric machine and I desire that only such limitations shall be imposed as are indicated in the appended claims.

I claim as my invention:

1. In a dynamo-electric machine, the combination with a stationary field magnet frame having a longitudinal passage-way

and a partition near one end thereof, of a rotatable armature, and a commutator adjacent to the end of the passage-way which is remote from said partition.

5 2. In a dynamo-electric machine, the combination with a stationary field magnet frame having a longitudinal enlargement constituting a passage-way, an inlet port near one end of the passage-way and a cross
10 partition for dividing the in-coming fluid, of a rotatable armature, a commutator cylinder adjacent to the end of the passage-way which is remote from the inlet port and contact brushes which provide a continuation of
15 the passage-way.

3. In a dynamo-electric machine, the combination with a stationary field magnet frame having a longitudinal enlargement of triangular section forming a passage-way
20 for cooling air, an inlet port at one end of the passage-way and a deflecting wall at the opposite end, of a rotatable member and a commutator cylinder adjacent to the deflecting wall of the passage-way.

25 4. In a dynamo-electric machine, the combination with a stationary field magnet frame having a longitudinal enlargement of triangular section forming a passage-way for ventilating fluid, an inlet port at one end
30 of the passage-way, a cross partition in the inlet port and a deflecting wall at the opposite end of the passage-way, of a rotatable armature, a commutator cylinder adjacent to the deflecting wall of the passage-way, and
35 brushes which provide a continuation of the passage-way.

40 5. A dynamo-electric machine comprising stationary and rotatable core members, a supporting and inclosing frame therefor having a longitudinal enlargement forming

a passage-way for air, an inlet port near one end of the passage-way, and a partition in the inlet port.

6. In a dynamo-electric machine, the combination with a stationary field magnet
45 frame having a longitudinal passage-way, an inlet port at one end of the passage-way, a partition in the inlet port, and means for adjusting the effective dimensions of the port openings at the sides of the partition,
50 of a rotatable armature having a commutator cylinder adjacent to the end of the passage-way which is remote from the inlet port.

7. In a dynamo-electric machine, the combination with a stationary field magnet
55 frame having a longitudinal passage-way, of a partition near one end of the passage-way and means for varying the effective dimensions of the passage-way at each side
60 of the partition.

8. In a dynamo-electric machine, the combination with a stationary field magnet frame having a longitudinal passage-way,
65 an inlet port near one end of the passage-way, a partition in the inlet port, and adjustable dampers for regulating the effective dimensions of the inlet port openings at the sides of the partition, of a rotatable armature having a commutator cylinder adjacent
70 to the end of the passage-way which is remote from the inlet port.

In testimony whereof, I have hereunto subscribed my name this 30th day of April, 1908.

SAMUEL M. KINTNER.

Witnesses:

F. S. HISS,

BIRNEY HINES.