

(No Model.)

R. H. HASSLER.  
FAN MOTOR.

No. 557,384.

Patented Mar. 31, 1896.

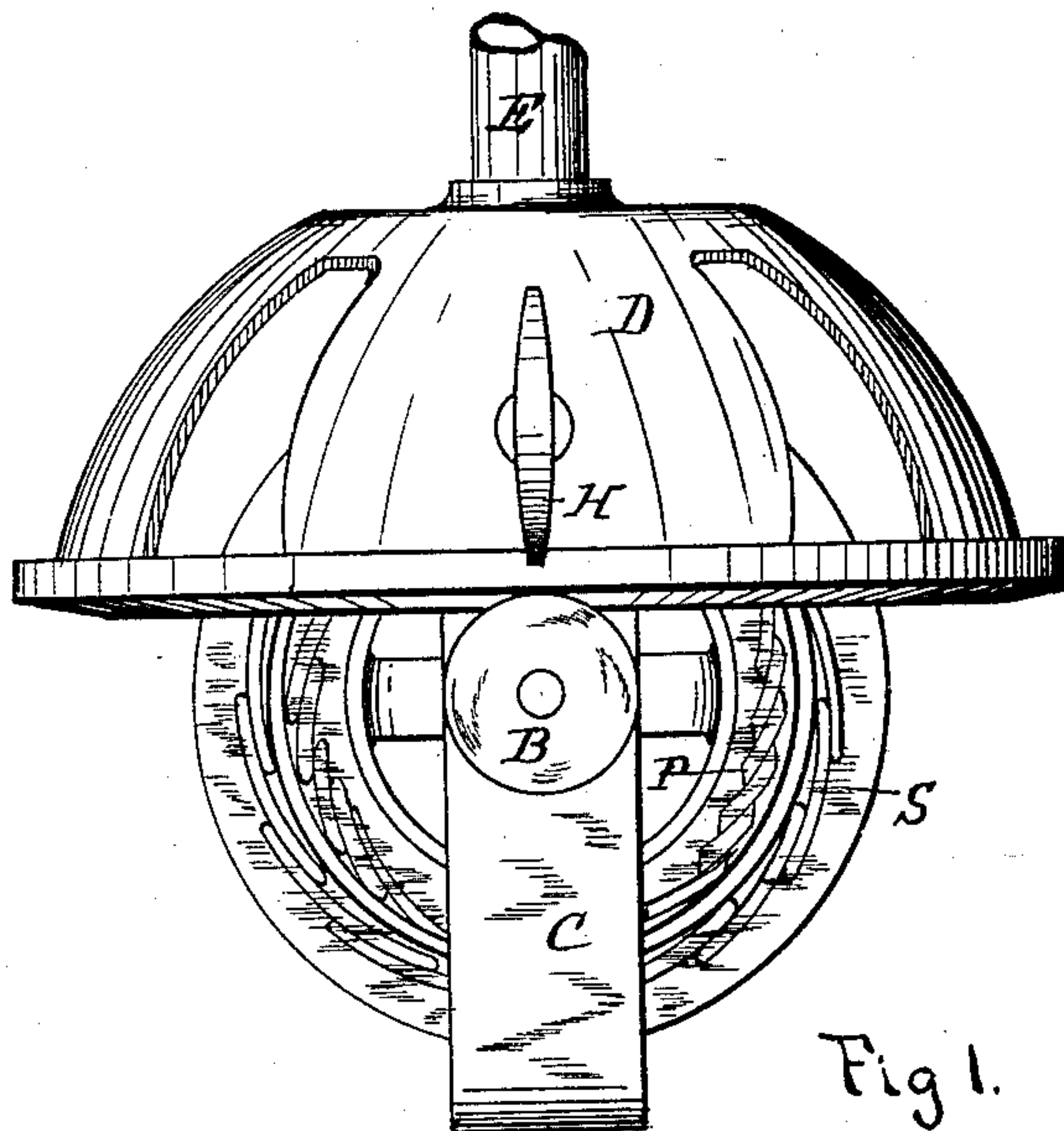


Fig 1.

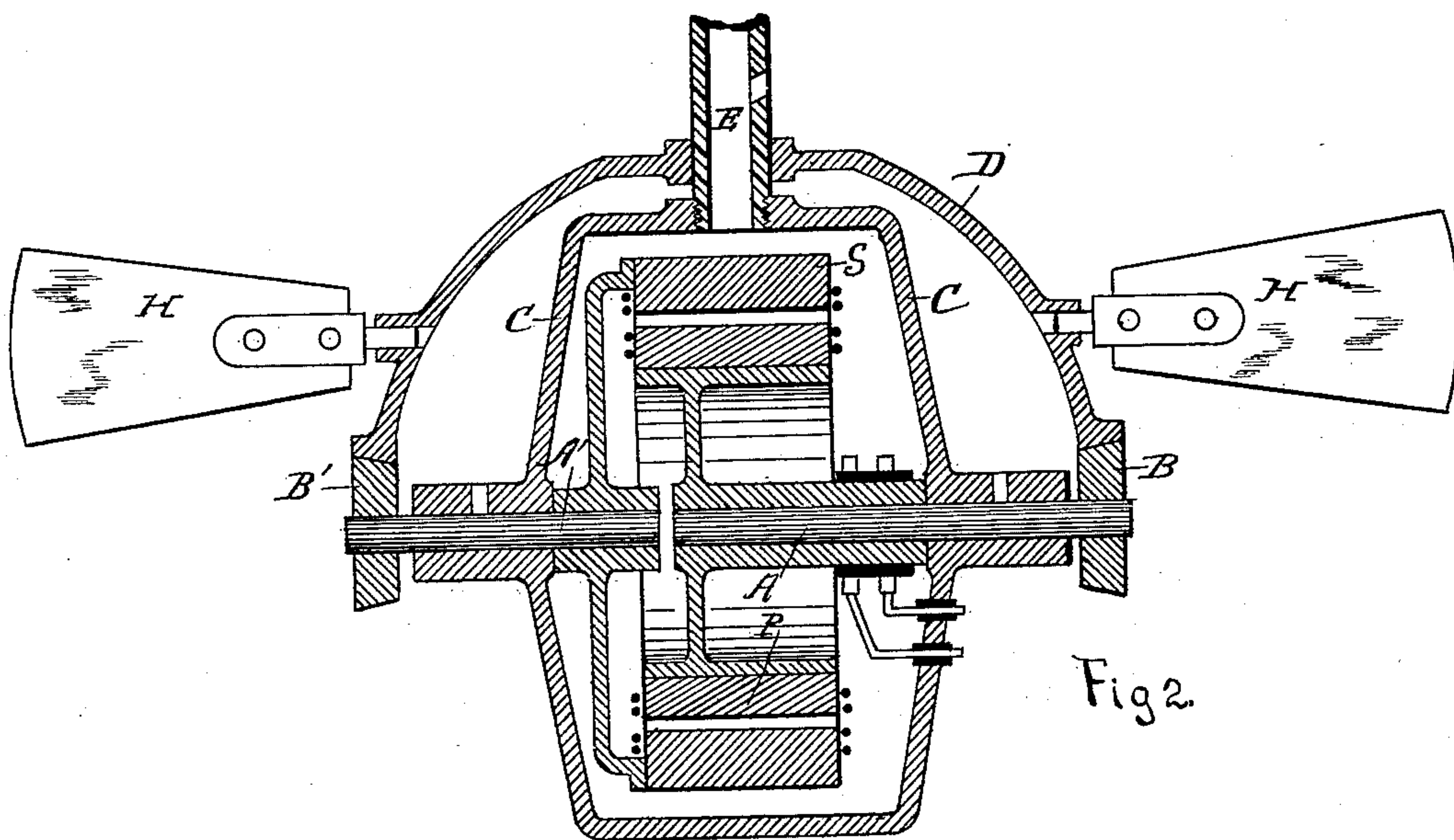


Fig 2.

Witnesses.

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# UNITED STATES PATENT OFFICE.

ROBERT H. HASSLER, OF DAYTON, OHIO.

## FAN-MOTOR.

SPECIFICATION forming part of Letters Patent No. 557,384, dated March 31, 1896.

Application filed November 27, 1895. Serial No. 570,317. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT H. HASSLER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Electric Motors of the Class Designed for Running Ceiling-Fans; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in electric motors for ceiling-fans, with a more specific reference to a friction-gearing by means of which the motor may be run at a higher speed than the fans.

Previous efforts have been made to drive ceiling-fans by friction-gearing from high-speed motors, but with imperfect success, owing to certain mechanical defects in the gearing. Therefore an object of this invention is to provide a friction-gearing that is free from the above objections. In fans of this character the weight of the fan-blades is an objectionable element, causing pressure on the bearings and imposing unnecessary work on the motor. In the present invention the said weight is utilized to serve a useful purpose. In a ceiling-fan run by friction-gearing the necessary pressure between the friction-wheels is also an objectionable element, causing increased friction at the bearings, and consequently putting additional work on the motor. Therefore a more specific object of this invention is to overcome these objectionable features. The downward pressure due to the weight of the large wheel and the fan-blades is utilized in the present instance to furnish the necessary pressure between the friction-wheels, and any thrust bearing on the vertical shaft is avoided.

In the accompanying drawings, which form a part of this application, Figure 1 is an elevation of a motor of the alternating-current type having my improved friction-gearing thereon. Fig. 2 is a middle sectional view.

Similar letters of reference indicate corresponding parts.

E designates a vertical tubular stationary shaft, which is attached at one end to a frame C, and the other end of which is attachable to the ceiling in any convenient or suitable manner.

P designates a field-magnet or primary member of an electric motor and is mounted on a shaft A. S is an armature or secondary member of the motor and is mounted on a shaft A'. These two shafts rotate in bearings in opposite directions in the frame C and have mounted thereon friction-wheels B and B'.

D designates a dome-shaped structure which forms a third friction-wheel that is adapted to rotate in a horizontal plane about the axis of the motor or shaft E with its rim resting upon the friction-wheels B and B'. The fan-blades H and H' are attached to this dome-shaped wheel D, and the weight of said blades and wheel is equalized on opposite sides of the vertical axis of the motor and furnishes the required pressure between said wheel D and the smaller friction-wheels B and B'. This pressure prevents said wheels B and B' from slipping, so that the said pressure is always in proper adjustment, even after the small friction-wheels are considerably reduced in size by wear. By distributing the pressure or weight of the blades and the wheel D, as described in the foregoing, any tendency of said wheel D to assume an angular or uneven position is obviated. Inasmuch as ceiling-fans are very susceptible to any unbalanced lateral force it is apparent that a double friction-gear is a substantial means for overcoming any one-sided or unsteady motion of the fan.

While I have shown and described my improved gearing in connection with a motor of the alternating-current type, it may also be applied to motors of the direct-current type without departing from the spirit of the invention. Such changes as may be necessary to adapt it to the direct-current type will be readily suggested to those familiar with the art.

Having fully described my invention, I desire to claim and secure by Letters Patent—

1. An electric motor with field and armature revolving in opposite directions in a vertical plane, a wheel attached to the armature

and a second wheel attached to the field, the two wheels adapted to drive by friction a third wheel revolving in a horizontal plane and attached to a ventilating-fan.

5 2. An electric motor with field and armature revolving in opposite directions in a vertical plane, a wheel attached to the armature and a second wheel attached to the field, the two wheels adapted to drive by friction a  
10 third wheel revolving in a horizontal plane and attached to a ventilating-fan; the weight of the third wheel and fan-blades being borne by the journals of the armature and field of the motor.

3. An electric motor having a wheel at- 15  
tached to its rotating part and arranged to drive by friction a second wheel revolving in a horizontal plane and attached to a ventilating-fan, the weight of said second wheel being borne by the journal of the rotating part 20  
of the motor.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT H. HASSLER.

Witnesses:

R. J. McCARTY,

GEO. W. MANNIX, Jr.