

No. 618,935.

Patented Feb. 7, 1899.

W. P. FREEMAN.  
ROTATING ELECTRIC MOTOR.

(Application filed Feb. 25, 1898.)

(No Model.)

Fig. 1.

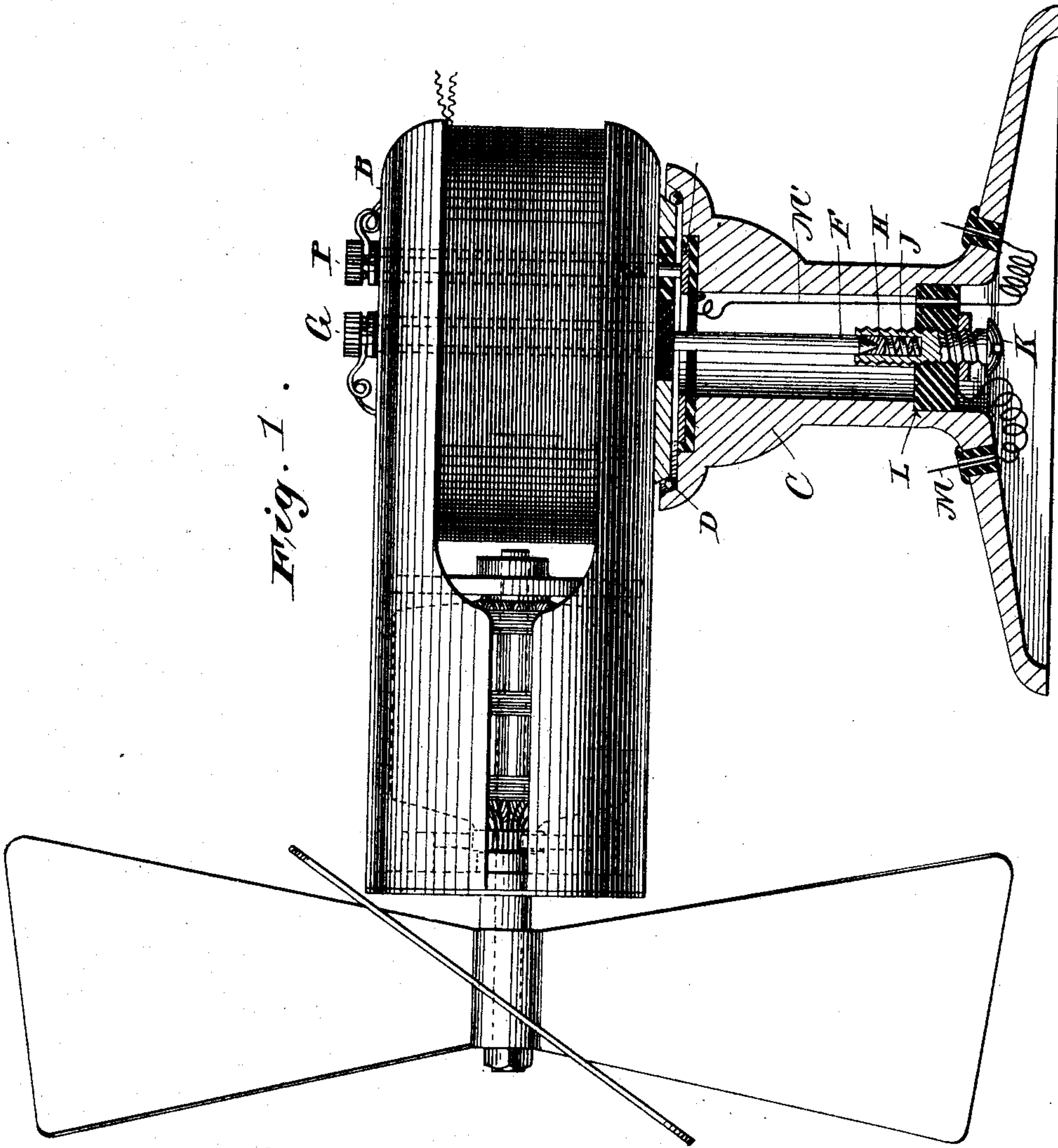
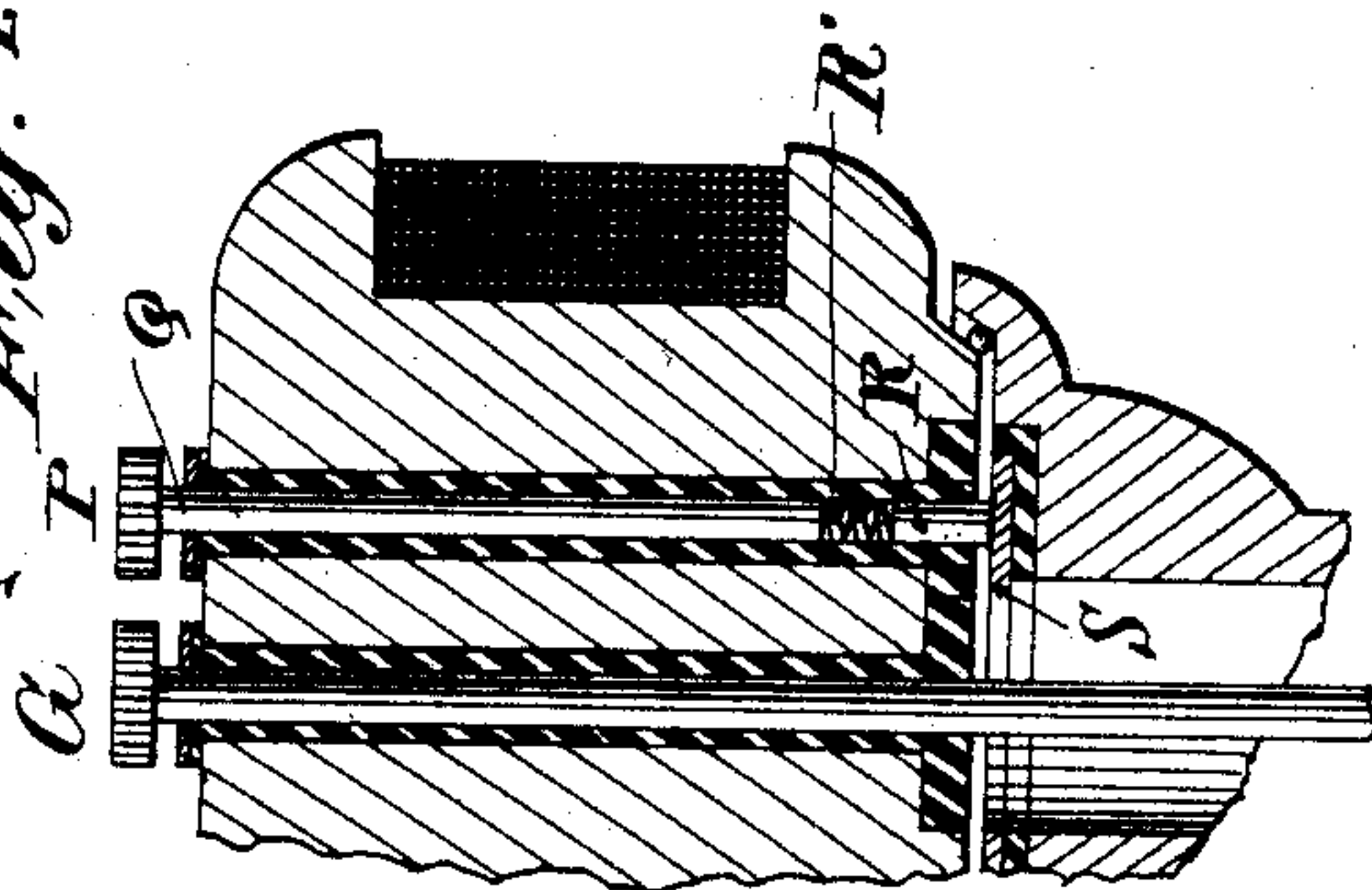


Fig. 2.



WITNESS

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# UNITED STATES PATENT OFFICE.

WARREN P. FREEMAN, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS  
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## ROTATING ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 618,935, dated February 7, 1899.

Application filed February 25, 1898. Serial No. 671,689. (No model.)

*To all whom it may concern:*

Be it known that I, WARREN P. FREEMAN, of New York, State of New York, have invented certain new and useful Improvements in Rotating Electric Motors for Fans and other Uses, of which the following is a description, referring to the accompanying drawings, which illustrate a preferred embodiment of my invention and which form a part of this specification.

The object of the invention is to perfect the construction and operation of a pivotally-mounted electric motor, so that it may turn either automatically or by hand around a vertical or other axis.

It is customary to mount fan-motors on a pivot which is slightly out of line with the axis of the fan, and to thereby cause the rotation of the motor and fan upon a vertical axis, the rotation being produced by the reaction or propeller-like effect of the fan. Under the present invention the motor is mounted on ball-bearings and turns so easily that the displacement of the vertical axis to one side of the axial line of the armature-shaft may be so slight as to be hardly noticeable.

The general character of the motor is not essential to the present improvement; but I have illustrated and prefer to use the type shown in an application of mine executed and filed of even date herewith. Without, therefore, describing the motor or fan further than to say that I prefer to have the field-magnet core of the motor vertical, so as to extend my electric connections vertically through the field-magnet, I will point out the novel features of the present invention as they are illustrated in the accompanying drawings.

In the drawings, Figure 1 is a side elevation, partly in central vertical section; and Fig. 2 is a central vertical section of some of the parts which are not shown in section in Fig. 1.

At all places in the drawings like letters of reference indicate like parts.

The electric motor is shown at B. It is immaterial, so far as the present invention is concerned, whether it is the field-magnet or a portion of the frame of the motor which is made the means of attachment to the station-

ary support or standard C. The motor B is mounted upon the standard C by means of ball-bearings D, so as to turn with an almost negligible amount of friction. Concentric with the axis of motion extends a connecting-pin F, which runs up through the motor and terminates in the binding-post G. The lower end of the pin F is preferably pointed, and against it rests the spring-pressed contact H. The pressure of the spring J may be regulated by the screw K, which may be insulated, as at L. The electrical connection from the screw K may be effected by wire M or in any desirable manner. To binding-post G one terminal of the field and armature circuits of the motor is secured, so that electrical connection is established by this means through the binding-post G, pin F, contact H, and screw J to conductor M. As the pin F turns freely on the contact H, the motor is free to rotate upon its ball-bearings without disturbing electrical connection. The other terminal of the field and armature circuits of the motor B is secured to the binding-post P, and from this post a pin Q extends down through the motor through an insulating-sleeve shown in Fig. 2 in connection with the spring contactor brush R, which turns upon a stationary conducting-ring S, insulated from the standard C and directly connected to the conductor M'. The spring-brush R may fit loosely in the insulating-sleeve which surrounds pin Q, and a spring R' may be interposed between the end of the pin Q and the brush or contact-point R. The tension of the spring R' should be just sufficient to insure good contact between the brush R and the ring S, so that the motor turns easily on its ball-bearings and the brush R sweeps over the ring S with as little friction as is consistent with good electrical contact.

I have illustrated the insulating material at various points by solid black or very heavy section-lines, so as clearly to distinguish from the iron and other preferably metallic parts.

By reference to the drawings it will be seen that the electric circuits are at all points insulated from the standard C and motor B and that the motor is free to turn upon its vertical axis without disturbing the electrical



connections or the insulation. It is obvious that the axis of rotation need not necessarily be vertical, but it will in most cases be preferably vertical, just as shown in the drawings.

5 Having now fully described my invention in its most preferred form and detail, I claim as my novel features the following:

1. In combination with a suitable standard, a motor pivotally mounted thereon and turning on annular friction-reducing bearings, a yielding and pivotal connection for one of the terminals of the motor in the axial line of said bearings and a concentric contact ring and brush for the other of said terminals, substantially as set forth.

2. In combination with a suitable standard an electric motor turning on ball-bearings upon the said standard and sliding electrical connections between the terminals of the said motor and conductors secured to the said standard, the said connections being inside of the said bearings substantially as set forth.

3. In combination with a support or standard, an electric motor mounted to turn or rotate upon the said support or standard, a contact-pin F independent of the bearings of the motor and lying at the axis of rotation, and contact II with which the said pin makes mov-

able connection for one terminal of the said motor, and a second movable connection for the other terminal of said motor, substantially as set forth.

4. In combination with a support or standard, an electric motor mounted to turn or rotate upon said support or standard, on annular bearings an annular contact-ring S, within the bearings a contact-brush R forming the electrical connections for one terminal of the said motor and movable electrical connections for the other terminal of said motor, substantially as set forth.

5. In combination with a suitable support or standard, the motor mounted to turn or rotate upon said support or standard, a set of ball-bearings between the said motor and the said support or standard and two movable contact connections lying inside of the circle formed by the said ball-bearings and connected with respective terminals of the circuits of said motor, substantially as set forth.

In testimony whereof I have hereunto set my hand this 14th day of February, 1898.

WARREN P. FREEMAN.

Witnesses:

FREDERICK H. DAVIS,  
HAROLD BINNEY.