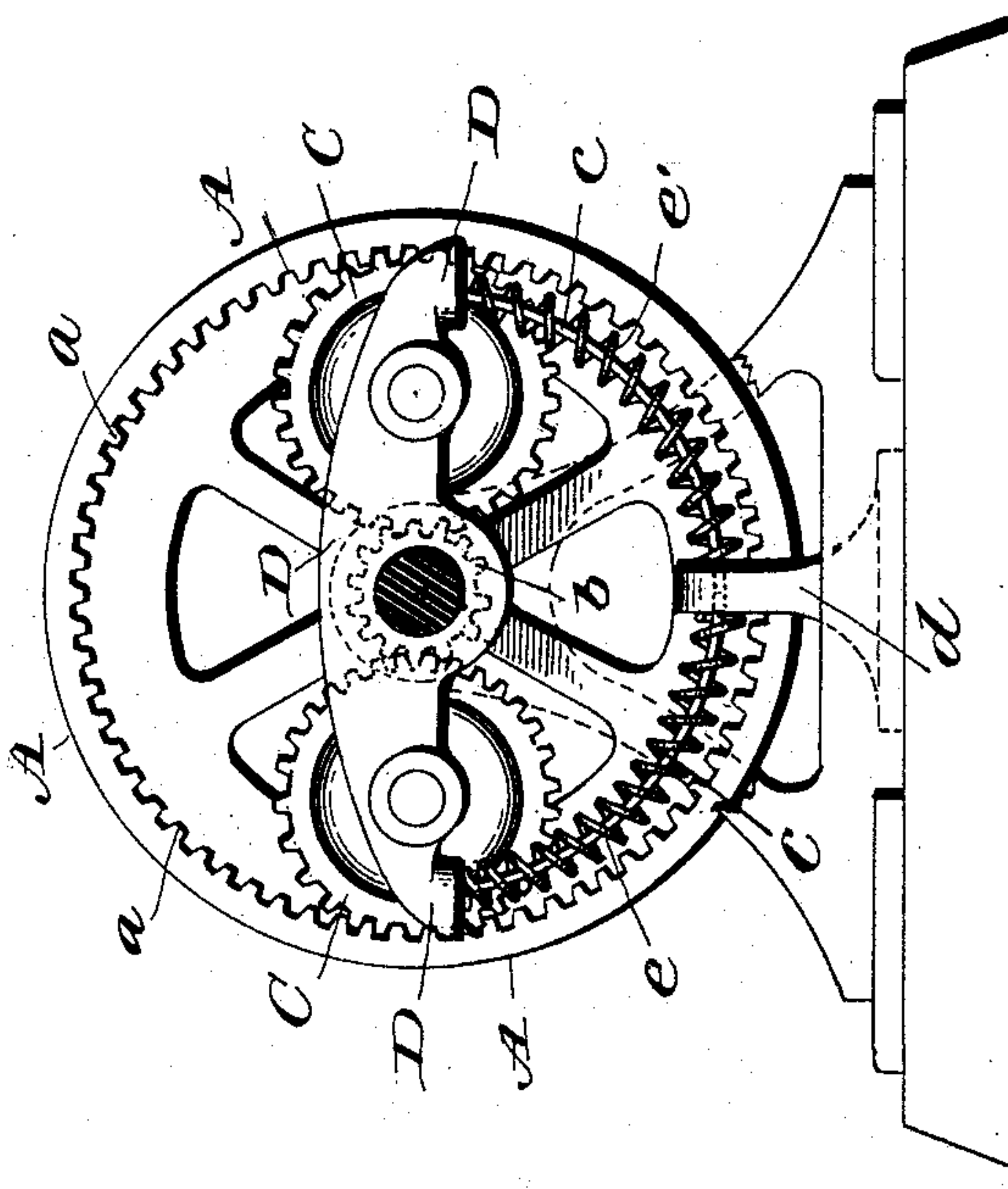
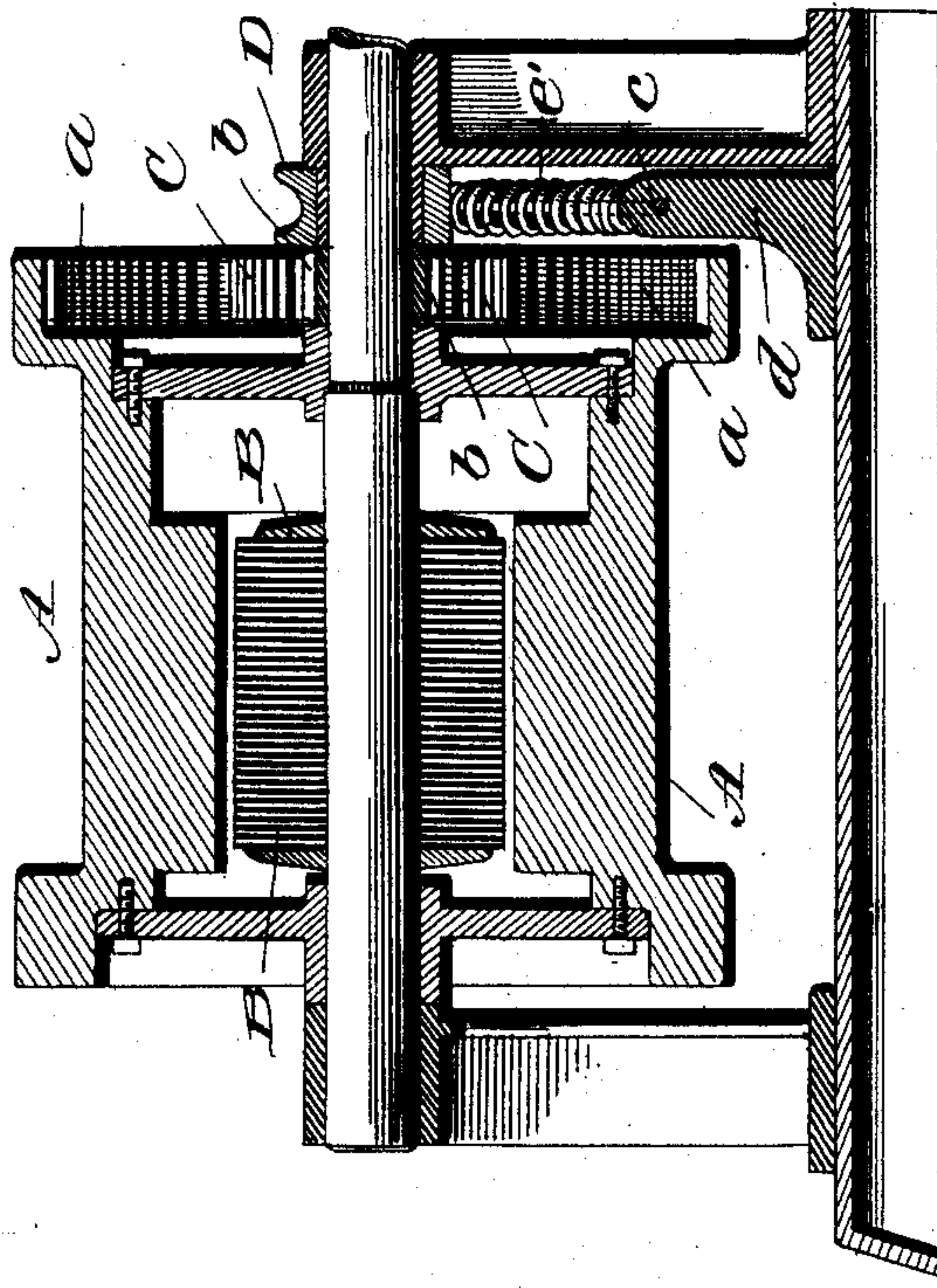


(No Model.)

E. R. ESMOND.
ELECTRIC MOTOR.

No. 505,396.

Patented Sept. 19, 1893.



Witnesses:

L. C. Hills.
R. W. Fox.

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UNITED STATES PATENT OFFICE.

ERNEST R. ESMOND, OF NEW YORK, N. Y.

ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 505,396, dated September 19, 1893.

Application filed August 15, 1893. Serial No. 483,177. (No model.)

To all whom it may concern:

Be it known that I, ERNEST R. ESMOND, of the city, county, and State of New York, have invented certain new and useful Improvements in Electric Motors, of which the following is a specification.

The electric motor in which my invention is comprised is one in which both the field and armature are rotatable, and are combined with an intermediate pinion by which they are geared together.

My invention consists in making this intermediate capable of bodily swinging movement, to which end I mount it on a carrier which is pivoted to allow the necessary swinging movement to the intermediate. The carrier is preferably spring or equivalently controlled, so that a yielding resistance may be offered to the movement of the intermediate from its normal position. A motor of this kind has a wide range of use. When employed as a car motor, the pendulous intermediate can be made to act as a brake; and when used for elevating or hoisting purposes it will act as a governor to preserve uniform rate of speed under varying loads, and also to prevent abrupt starting and stopping of the hoisting apparatus.

In another application for Letters Patent, filed by me February 21, 1893, Serial No. 463,239, I have described and claimed an elevating and hoisting apparatus of this character in which the field of the motor forms the hoisting drum; and this feature is not here claimed by me.

To enable others skilled in the art to understand and use my invention, I will now proceed to describe more particularly the manner in which it is or may be carried into effect by reference to the accompanying drawings in which—

Figure 1 is an end elevation of the motor. Fig. 2 is a sectional side elevation of the same.

In Fig. 1, part of the supporting frame is broken away, in order to disclose more clearly the arrangement of the gearing.

A is the rotating field, and B is the rotating armature of an electric motor, of any improved or suitable type.

I have not deemed it necessary to illustrate the electrical connections and details, inasmuch as these form no part of my invention.

C is the intermediate pinion, journaled in a vibratory carrier D, which is hung on the armature shaft. In this illustration of my invention there are two pinions, one at each end of the carrier; but this is only to better balance the carrier. The pinion gears on the one hand with a pinion *b* on the armature shaft, and on the other hand with an internal spur wheel *a* on the field. The carrier may be a simple pendulous arm, which can be controlled either by a spring, or by a weight. The controlling device shown in the drawings, consists of a rod *c* curved in the arc of a circle struck from the axis of movement of the carrier as center, and secured at its end to opposite ends of the carrier D, with which latter it will consequently move. The rod extends through to an intermediate stationary bearing standard *d* attached to the frame of the machine; and encircling the rod are two spiral springs *e, e'*, one on each side of the central standard *d*, confined between the standard, and the ends of the carrier. These springs bear in opposite directions upon the carrier and hold it in its normal position.

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

1. An electric motor comprising a field and armature, both of them rotatable, in combination with intermediate gearing connecting the two, and a carrier for said gearing hung upon an axis on which it can vibrate to permit swinging movement of the gearing carried by it, substantially as and for the purposes hereinbefore set forth.

2. The intermediate and its pendulous spring or weight controlled carrier, in combination with the rotatable field and rotatable armature of an electric motor, substantially as and for the purposes hereinbefore set forth.

3. The combination, in an electric motor having a rotatable field and rotatable armature, with the internal spur wheel *a* and the

pinion *b* of an intermediate C meshing with
said wheel and pinion, and a carrier for said
intermediate pivoted to move upon an axis
coincident with that of the wheel and pinion
5 between which the intermediate is placed, as
set forth.

In testimony whereof I have hereunto

signed my name in the presence of two sub-
scribing witnesses.

ERNEST R. ESMOND.

Witnesses:

H. C. VAN VECHLEN,
JAMES F. GRANT.