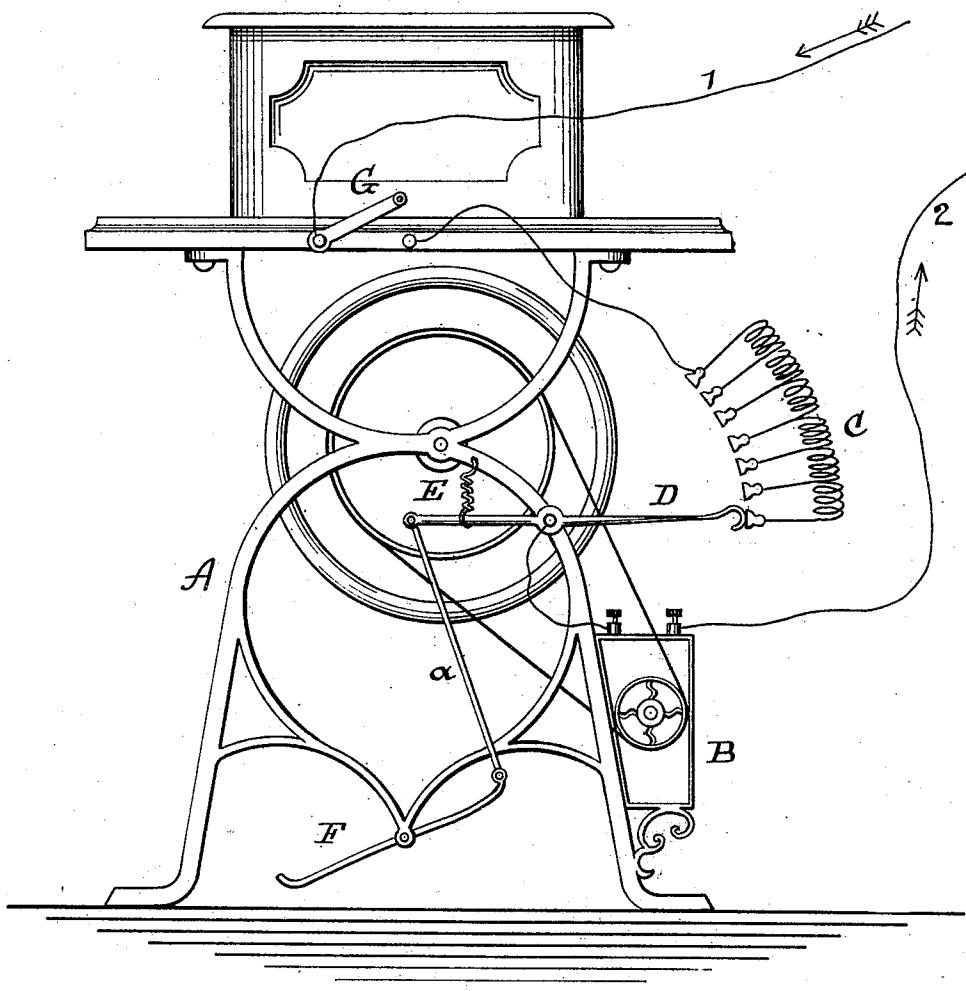


(No Model.)

T. A. EDISON.  
ELECTRO MAGNETIC MOTOR.

No. 251,541.

Patented Dec. 27, 1881.



Attest:

O. D. Mohr

per

M. Dayett

Inventor:

T. A. Edison

Dyer & Wilber

Attyo.

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY, ASSIGNOR TO THE  
EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

## ELECTRO-MAGNETIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 251,541, dated December 27, 1881.

Application filed May 31, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Electro-Magnetic Motors; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The object I have in view is an improvement in electro-magnetic motors for driving light machinery—such as sewing-machines, lathes, &c., but especially designed for sewing-machines—which improvement will enable the speed of the motor to be readily regulated, so that the driven machine can be run fast or slow, as desired, without breaking circuit, and so that in starting or stopping the motor the resistance of its circuit will be regulated in order to prevent any noticeable effect upon the electric lamps in the system, the motor and lamps being worked upon the same conductors. This I accomplish by including in the motor-circuit an adjustable resistance and a lever, operated preferably by a foot-treadle, such devices enabling the operator to throw resistance into and out of the circuit by the movement of the foot-treadle, and thereby to run the driven machine at a slower or faster speed. The lever is also adapted to stand normally so that upon closing circuit all the resistance will be thrown in, and the necessary degree of magnetization will be attained before any resistance will be thrown out, so that as the wire resistance is thrown out the motor will increase in speed and give a counter electro-motive force in its own derived circuit and compensate for the lessening of actual wire re-

sistance. In this way a nearly constant resistance will be maintained and lamps connected with the same main conductors will not be appreciably affected. A suitable switch conveniently located is provided for making and breaking circuit.

In the drawing a sewing-machine is represented in end elevation with my improvement attached thereto.

A is the frame of a sewing or other light machine, and B is the motor mounted thereon and driven by the circuit 12, derived from the main conductors of the system. C is the wire resistance, and D is a lever pivoted to the frame A, through which resistance and lever the circuit 12 passes. This lever is drawn in one direction, so as to throw all the resistance into the circuit by a spring, E, and it is connected by a rod, a, with a foot-treadle, F. G is the switch for making and breaking the circuit.

What I claim is—

1. The combination, with an electric motor, of a resistance, a lever included in the motor-circuit and adapted to be operated by hand or foot for throwing the resistance in or out of circuit, and means for normally holding the lever at the point to throw in the maximum resistance, substantially as described.

2. The combination, with the electric motor, of the resistance, the lever, the retracting-spring, the foot-treadle, and switch, substantially as set forth.

This specification signed and witnessed this 20th day of May, 1881.

THOMAS A. EDISON.

Witnesses:

RICHD. N. DYER,  
H. W. SEELEY.