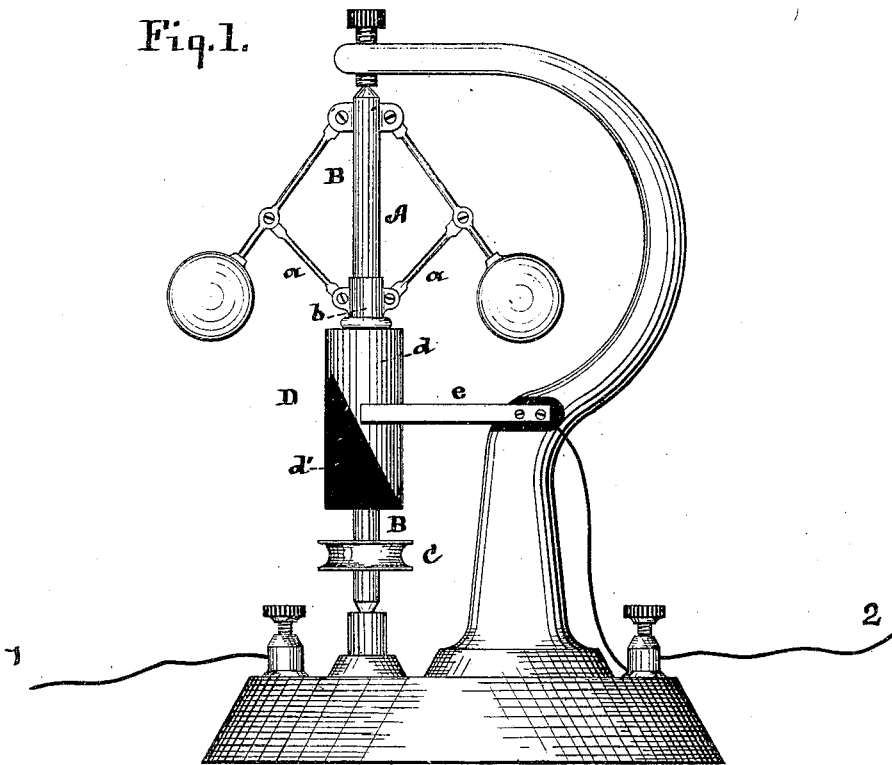


(No Model.)

T. A. EDISON.  
GOVERNOR FOR ELECTRIC ENGINES.

No. 248,434.

Patented Oct. 18, 1881.



ATTEST:

*D. D. Mott*  
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INVENTOR:

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*per Dyer & Wilbur*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

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EDISON ELECTRIC LIGHT COMPANY, OF NEW YORK, N. Y.

## GOVERNOR FOR ELECTRIC ENGINES.

SPECIFICATION forming part of Letters Patent No. 248,434, dated October 18, 1881.

Application filed August 9, 1880. (No model.) Patented in Canada, March 31, 1881.

*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 Electric Engines; 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.

This invention relates to a governor for electro magnetic engines.

Governors, as usually hitherto made for such engines, have been arranged to break the circuit upon the occurrence of a too great speed, the circuit being again closed upon the proper lessening of the speed; but it is evident that the abnormal speed will be continued by the momentum of the parts for a greater or less interval after the breakage of the circuit. This plan gives rise to undesirable variations in the speed of the engine, as the speed must first rise when the circuit is broken, then fall when it is again completed, thus alternating in rise and fall of speed, often giving a jerky motion to the engine and connected gearing. The better plan would seem to be to so arrange the governor that ordinarily the abnormal or greater than desired speed should not be reached, the speed being maintained practically uniform.

The object of this invention is to accomplish this result; and to that end it consists in a governor by which the circuit is broken at regular intervals—that is, once in every revolution of the governor—and ordinarily at a certain determined point, the engine running by momentum until the circuit be again completed, thus, so to speak, allowing the current to act through only a portion of the stroke, cutting it off then, after a manner analogous to the cutting off in steam engines, the governors being also so arranged that as the speed increases the current shall be cut off and the engine run by momentum a proportionately longer time during each revolution, forming a variable automatic cut-off exactly analogous to the steam-engine cut-off.

In the drawing the figure illustrates such a governor.

A is a centrifugal ball-governor, composed

of two balls attached to the fly-rods, which are pivoted in supports fixed upon the shaft B, which is mounted in suitable bearings and receives motion by means of a cord or belt passing around the pulley C and connecting it to some moving part of the engine.

The arms *a a* of the governor are pivoted to a sleeve, *b*, to which is attached a commutator, D, both arranged to slide up and down upon the shaft B. The commutator D is made of a conducting portion, *d*, and insulating portion *d'*, each cut diagonally and united at their diagonal edges. The circuit to the engine passes by conductor 1 to the shaft B, then by the conducting portion *d* to spring *e*, supported on but insulated from the frame of the governor, and thence to 2. The governor is so adjusted that upon rotation at the proper speed and with the proper pressure of current the commutator will be in the right position for the circuit to be complete during enough of each rotation of D to maintain uniform such speed. As either additional work is given the engine to do or less current is supplied, the governor slowing will cause the current to be on for a greater portion of the rotation, or, so to speak, will cut off at a great fraction of the stroke, or vice versa.

What I claim is—

1. A governor for an electric engine arranged to break the circuit at regular definite intervals, consisting of a rotating contact-maker, constructed as described, with means for automatically imparting thereto a longitudinal movement, and a contact-spring bearing thereon and interposed in the motor circuit, substantially as set forth.

2. A governor for an electric engine, consisting of a rotating contact-maker constructed as described, and arranged to break the circuit during every revolution of the governor at a point in and for a fraction of the revolution, dependent upon the speed of the engine, substantially as set forth.

This specification signed and witnessed this 31st day of July, 1880.

THOS. A. EDISON.

Witnesses:

WM. CARMAN,  
S. L. GRIFFIN.