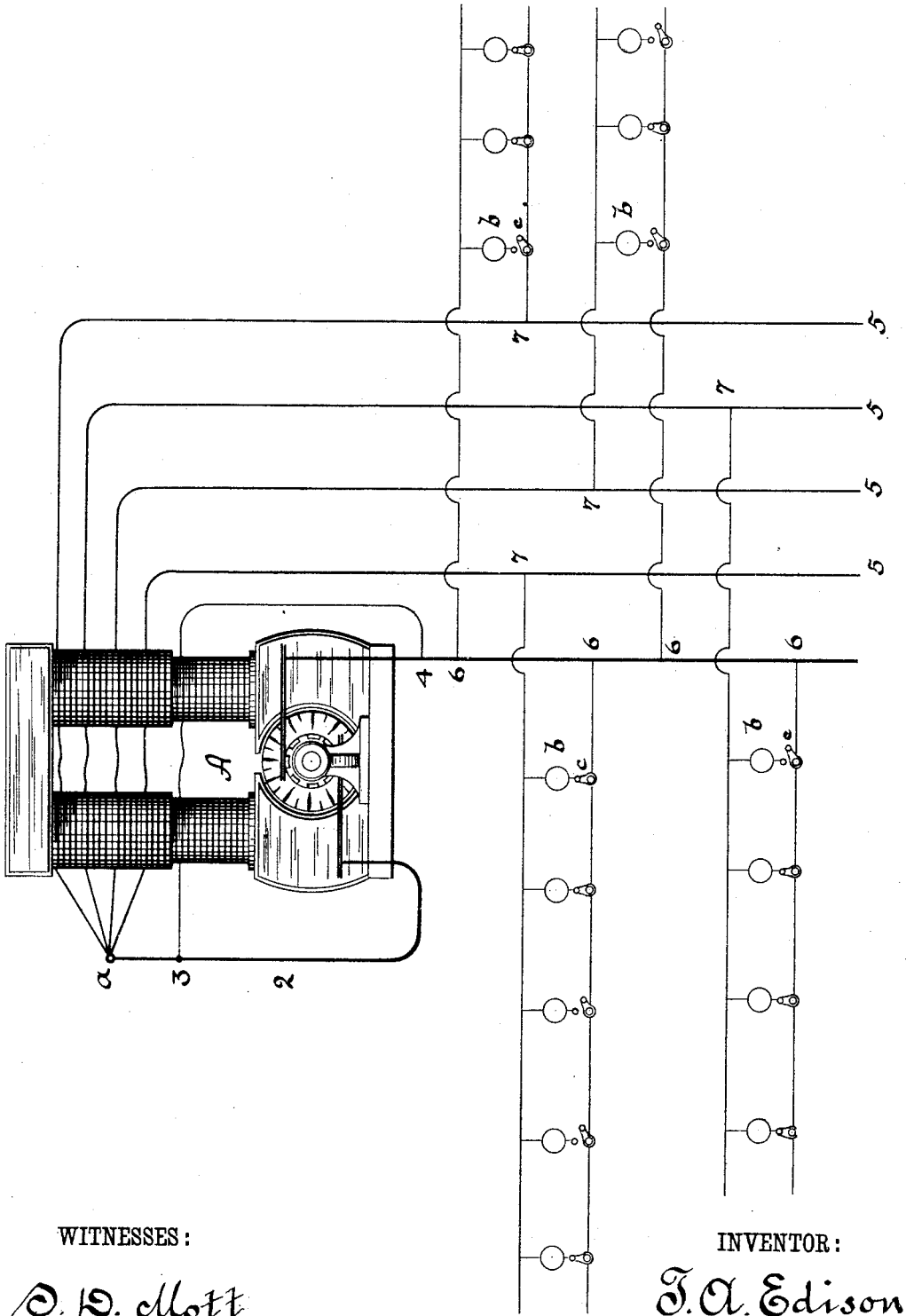
(No Model.)

T. A. EDISON.

REGULATOR FOR DYNAMO ELECTRIC MACHINES.

No. 264,664. Patented Sept. 19, 1882.



WITNESSES:

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REGULATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 264,664, dated September 19, 1882.

Application filed August 7, 1882. (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 Regulating the Generative Capacity of Dynamo or Magneto Electric Machines, (Case No. 393;) 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 to produce simple and efficient means for regulating the generative capacity of a dynamo or magneto electric machine, which will be wholly dependent upon and controlled by the throwing in and out of the translating devices, arranged in multiple-arc or derived circuits, without the use of actuating mechanism other than the usual circuit-controllers at the individual translating devices.

This invention is an improvement upon that described in my Patent No. 248,422, in which only part of the current furnished the lamps passes through the circuit of the field-magnet, and circuit-controllers, in addition to the usual ones at the individual translating devices, are employed to make and break separate field-circuits.

In carrying out the present invention one of the main conductors is divided into a number of parts, each of which parts is connected with bobbins on the limbs of the field-magnet between the commutator-brush and the lamp-circuits. Between each part of the divided conductor and the undivided main conductor is located one set of conductors in multiple-arc or derived circuits, from which last conductors the lamps or other translating devices are arranged; but a number of such sets of conductors may be connected with each part of the divided main conductor; or the separate lamp-circuits may be connected directly with each part of such divided main conductor. In addition to the bobbins spoken of, a portion of the field-magnet is wound with wire, which forms part of a field-circuit, which has such resistance produced by the winding itself or by extra resistance as to supply only a small amount of current, enough to primarily energize the magnets. This circuit is preferably a derived or multiple-arc circuit from the main conductors; but it may be one supplied from a battery, a dynamo or magneto electric machine, or other external source. When the multiple-arc circuits of part or all of the translating devices connected with any division of the main conductor are closed by the usual circuit-controllers the current flowing through them will also flow through the bobbins of the field-magnet connected with the particular division of the main conductor, and the energy of the field-magnet will be increased in direct proportion to the number of translating devices in circuit, and as the other divisions are closed by the addition of other lamps or groups of lamps the field-magnet becomes more and more energized, increasing to the desired extent the electro-motive force of the machine. This may be better understood by reference to the drawing, which is a diagrammatic view of a dynamo-electric machine with its circuits.

A is the field-magnet of the machine, and 1 2 are the main conductors leading therefrom. 3 4 is the field-circuit of constant resistance. At the point *a* the main conductor 2 is divided into a number of conductors, 5 5, each of which includes a portion of the coils of the field-magnet A. From each of the circuits 1 5 a circuit, 6 7, is derived, on which translating devices *b b*, having the usual circuit-controllers, *c*, are placed in multiple arc.

It is evident that as fast as more translating devices or groups thereof are placed in circuit the current will pass through a greater portion of the coils of the field-magnet, and the latter will therefore be more and more energized.

I do not claim broadly the combination, with a multiple-arc system of electric lighting, of a portion of the coils of the field-magnet formed by one of the main conductors, as this forms the subject-matter of a claim in application No. 68,621 of even date herewith.

What I claim is—

1. The combination, with a dynamo or magneto electric machine, of a divided main conductor therefrom, each division of which includes a portion of the coils of the field-magnet of the machine, and forms, with the other main conductor, a circuit on which translating devices are placed in multiple arc, substantially as set forth.

2. The combination, with a multiple-arc cir-

cuit of constant resistance from the main conductors of a dynamo or magneto electric machine for primarily energizing the field-magnet of such machine, of the divisions of one of such main conductors, each including a portion of the coils of said field-magnet for increasing the strength of the same, substantially as set forth.

3. The combination of a multiple-arc circuit containing a portion of the coils of the field-magnet of a dynamo-electric machine, a multiple-arc circuit containing the armature of said machine, multiple-arc circuits containing groups of translating devices, (all such multiple-arc circuits being derived from the same main conductors,) and a portion of the coils of the field-magnet formed by divisions of one of such main conductors, substantially as set forth.

This specification signed and witnessed this 10th day of February, 1882.

THOMAS A. EDISON.

Witnesses:
H. W. SEELY,
WM. H. MEADOWCROFT.