

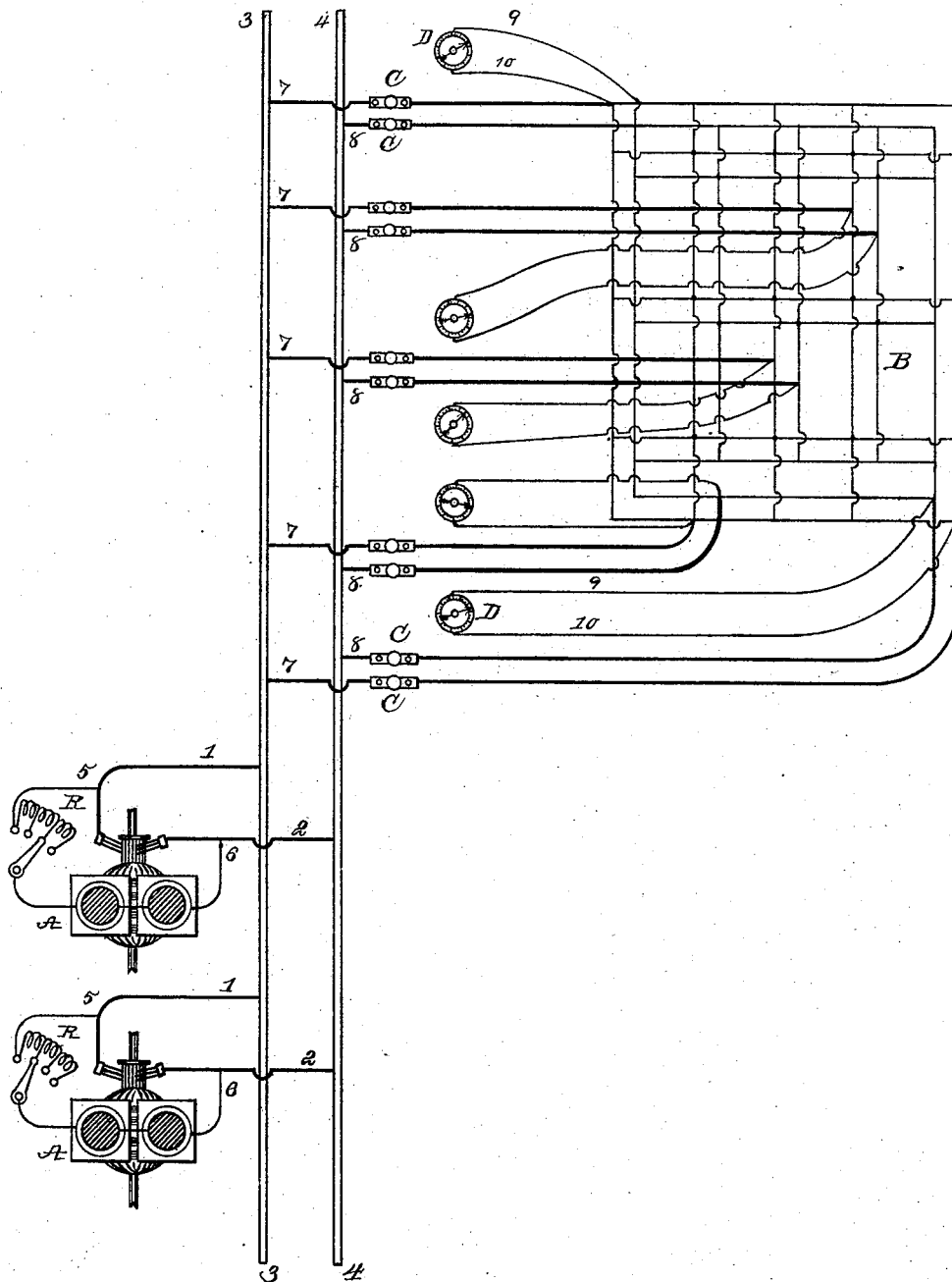
(No Model.)

T. A. EDISON.

SYSTEM OF ELECTRICAL DISTRIBUTION.

No. 287,515.

Patented Oct. 30, 1883.



ATTEST:

*E. C. Rowland*

*W. W. Seely*

INVENTOR:

*Thomas A. Edison,*

*By Rich. T. Dyer,*  
*Atty.*

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY.

## SYSTEM OF ELECTRICAL DISTRIBUTION.

SPECIFICATION forming part of Letters Patent No. 287,515, dated October 20, 1883.

Application filed June 29, 1883. (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 Systems of Electrical Distribution, (Case No. 581,) of which the following is a specification.

In my system of electrical distribution the lamps or other translating devices are arranged in multiple arc in circuits connected with a net-work of intersecting main conductors, and feeding-conductors without translating devices, and upon which the principal part of the loss of energy in conductors is sustained, are connected to the net-work of main conductors at various points and extend to a central station, where the current for supplying the system is generated by machines, with each of which all the feeders are connected. Two kinds of regulation are required—one of the electro-motive force of the generators, and one of the distribution of the current to various parts of the system. In my Patent No. 266,793 the latter kind of regulation is performed by throwing resistance into and out of the feeding-circuits; but I have discovered that this regulation can be efficiently performed by breaking and making the feeding-circuits. This method of regulation is set forth in my application No. 88,363, wherein is described and shown a circuit-controller for making and breaking one side of each feeding-circuit, and a method of regulation is set forth by the manipulation of such circuit-controllers.

The object of my present invention is to obtain by the making and breaking of feeding-circuits a much finer regulation with the same number of feeding-circuits than can be obtained by the means set out in said application No. 88,363, and my object is further to produce a simple and efficient connection between the feeders and the generators. The net-work of main conductors forms, it will be understood, the sides of a single circuit, the circuit being completed from one side of the net-work to the other through the translating devices, and hence the feeding-conductors extending to the central station are in fact all divisions of one circuit. Now, if one side only of the feeding-circuits is adapted to be made and broken, the other side of the feeding-circuits will always remain of the same conductivity, and all the

regulation will be performed upon one side of such feeding-circuits. Now, I propose to provide each side of each feeding-circuit with a circuit-controller, and thus it will be seen not only will the chances for regulation be doubled with the same number of feeding-circuits, but a great number of variations can be made in the arrangement of the points at which the current will enter and leave the net-work of main conductors, and hence the regulation can be made quite a perfect one with a moderate number of feeding-circuits. At the central station all the generators are connected to a pair of large parallel conductors, which extend to that point in the building where the feeding-conductors are grouped together. There the conductors of the feeding-circuits are connected with the two conductors from the machines, each through a suitable circuit-controller. This manner of connecting the conductors is found very convenient in practice, the parallel conductors being preferably run along the wall of the room in which the generators are placed, past all the generators, while conductors extend from each generator to them. The feeding-conductors may be connected at any desired point. Means are provided for indicating at the central station the electro-motive force at the end of each feeding-circuit, where the feeding-conductors are connected with the net-work of main conductors. For this purpose a circuit is run back from the terminus of each feeding-circuit to the central station, and is there provided with an electro-dynamometer. The regulation described of the distribution of the current to various parts of the system is used in connection with a regulation of the electro-motive force of the generators. This latter regulation is preferably effected by throwing resistance into and out of the field-circuits of the machines.

The invention is illustrated diagrammatically in the accompanying drawing, forming a part hereof.

A A are dynamo or magneto electric machines, connected by conductors 1 2 to the large parallel conductors 3 4 common to all the machines. The field-circuits 5 6 of the machines are preferably multiple-arc circuits from the conductors supplied by the machines, and are provided with adjustable resistances R. The feeding-circuits 7 8 extend from the common

conductors 3 4, with which they are connected at different points lengthwise of such conductors 3 4, to different points in the net-work B of connected main conductors. Each feeding-conductor is provided within the central station with a circuit-controller, C, which may be of any suitable construction, it being shown, for convenience, as the ordinary hand-plug. Circuits 9 10 are run back to the central station from the terminals of the feeding-circuits, and are provided with the electro-dynamometer D.

Some features of invention which are described or shown herein are not claimed, for the reason that they are claimed in my applications Nos. 88,356 and 88,363, and it is to be understood that all patentable features of invention described or shown but not claimed herein are reserved for protection by other patents, and have been or will be embraced in other applications for patents.

What I claim is—

1. The method of regulating the supply of current in a system of electrical distribution, comprising a system of intersecting and properly-connected main conductors, and feeding-circuits connecting such main conductors with the source of supply, consisting in making and breaking in the desired order both sides of the requisite number of said feeding-circuits, substantially as set forth.

2. In a system of electrical distribution, the combination of the intersecting and properly-connected main conductors and the feeding-circuits, the latter having circuit-controllers in both sides, substantially as set forth.

3. In a system of electrical distribution of the character described, the combination of the feeding-circuits having circuit-controllers in both sides thereof, and means for indicating the electrical condition at the termini of said feeding-circuits, substantially as set forth.

4. In a system of electrical distribution of the character described, the combination, with the feeding-circuits provided with circuit-controllers on both sides, of the generators, and means for regulating the electro-motive force of such generators, substantially as set forth.

5. In a system of electrical distribution, the combination, with two or more generators, of a pair of common parallel conductors, to which the generators are connected, and the feeding-conductors connected with such common conductors at different points lengthwise thereof, substantially as set forth.

This specification signed and witnessed this 25th day of June, 1883.

THOS. A. EDISON.

Witnesses:

H. W. SEELY,

EDWARD H. PYATT.