No. 756,045. PATENTED MAR. 29, 1904.

N. O. NELSON.

SHUNT CONTROLLER FOR ELECTRIC MACHINES.

APPLICATION FILED JULY 13, 1903.

NO MODEL.

Fig. 1.

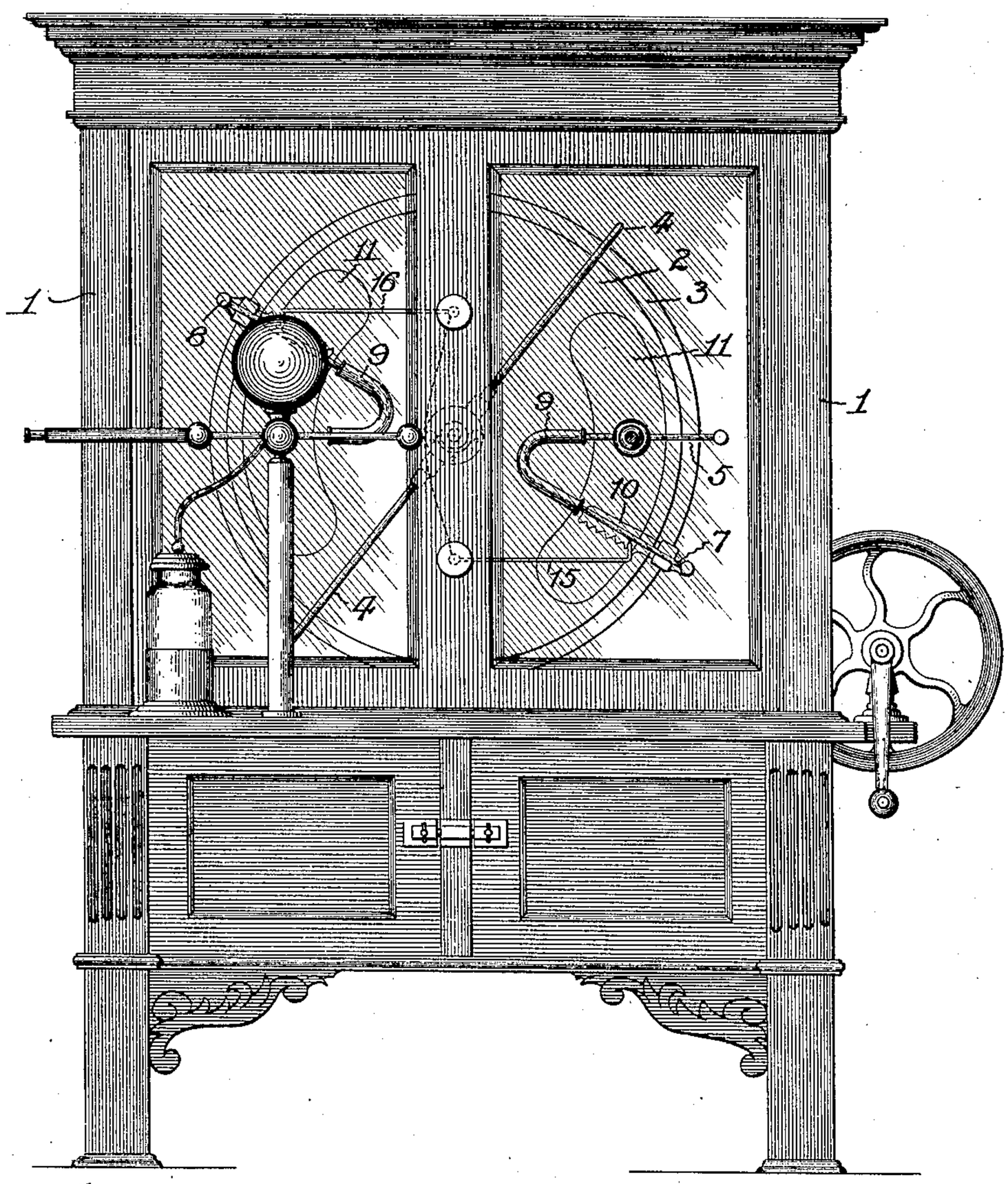
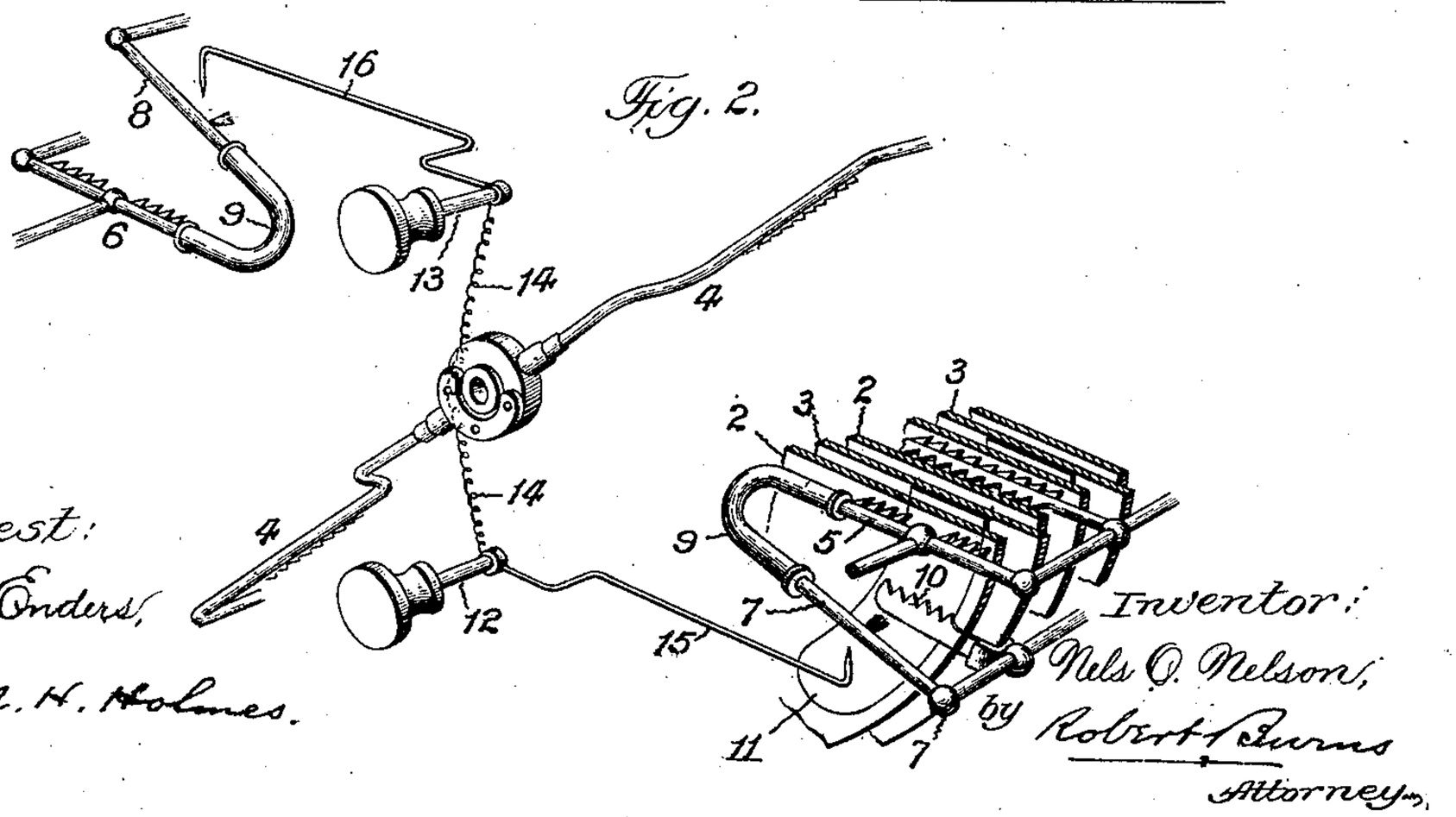


Fig. 2.



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No. 756,045. Patented March 29, 1904.

UNITED STATES PATENT OFFICE.

NELS O. NELSON, OF CHICAGO, ILLINOIS.

SHUNT-CONTROLLER FOR ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 756,045, dated March 29, 1904.

Application filed July 13, 1903. Serial No. 165,264. (No model.)

To all whom it may concern:

Be it known that I, NELS O. NELSON, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shunt-Controllers for Electrical Machines, of which the following is a specification.

The present invention relates to electrical generators of the frictional type, and has for its object to provide a simple, effective, and readily-controllable means for regulating the discharge from the generator to suit the varying requirements met with in the use of such generators in operating X-ray tubes, the treatment of disease, and other allied uses, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

In the accompanying drawings, illustrative of the present invention, Figure 1 is a front elevation of an ordinary frictional electrical machine embodying the present invention. Fig. 2 is a detached perspective view of the parts of the present improvement and the immediate accessories thereof.

Similar numerals of reference indicate like parts in both views.

Referring to the drawings, 1 represents the usual supporting-frame or housing of the machine and in which are arranged the series of revoluble field-plates 2, the alternating series of stationary field-plates 3, the neutralizer bar or frame 4, and the other and usual appurtenances of the present type of apparatus with a view to protect such parts from local atmospheric influences.

5 and 6 are the usual series of collecting bars or combs arranged in a substantially radial direction to the axis of the field-plates 2 and 3 of the apparatus and provided with the usual serrated extensions which project into close relation to the surfaces of the aforesaid field-plates, as shown.

7 and 8 are two opposed series of inductor-bars arranged in a substantially radial direction to the axis of the aforesaid field-plates and are preferably connected at their inner ends with the respective collecting bars or combs 5 and 6 by a curved insulating connection 9, as shown. Such series of inductor bars have metallic connections 10, extending to the usual segmental coating 11 on the series of stationary field-plates 3, as shown.

12 and 13 are shafts journaled in the front wall of the casing 1 and provided at their outer ends with operating-handles by which a rotative adjustment of said shafts can be conveniently effected by hand.

14 is an electrical conductor extending between the shafts 12 and 13 to connect the same together electrically.

15 and 16 are counterpart metal rods or fingers attached to the respective inner ends of the shafts 12 and 13 aforesaid. In the present invention the free ends of the fingers 15 and 16 project toward the opposed outer pair of the series of inductor-bars 7 and 8 of the apparatus and are adjustable to and from the same in a curved path to form in conjunction with the shafts 12 and 13 and the electrical conductor 14 an adjustable shunt-circuit between the respective series of opposed inductor-bars aforesaid, and by the regulation of which the operator is enabled to control the amount of electrical current carried away from the field-plates by the usual collecting bars or combs 5 and 6 of the apparatus.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an electrical generator of the character herein described; the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars, and means for forming a shunt-circuit between the said inductor-bars, substantially as set forth.

2. In an electrical generator of the character herein described, the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars and connected at their inner ends to said collecting-bars by curved insulating connections, and means for forming a shunt-circuit between said induction-bars, substantially as set forth.

3. In an electrical generator of the character herein described, the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent re-

lation to the collecting-bars, a pair of metal fingers individual to said inductor-bars and adjustable to and from the same, and an electrical connection between the rear ends of said fingers, substantially as set forth.

4. In an electrical generator of the character herein described, the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars and connecting at their inner ends to said collecting-bars by curved insulating connections, a pair of metal fingers individual to said inductor-bars and adjustable to and from the same, and an electrical connection between the rear ends of said fingers, substantially as set forth.

5. In an electrical generator of the character herein described, the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars and connected at their inner ends to said collecting-bars, a pair of metal fingers individual to said inductor-bars and adjustable to and from the same in a circular path, and an electrical connection between the pivotal ends of said fingers, substantially as set forth.

6. In an electrical generator of the character herein described, the combination with its field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars and connected at their inner ends to said collecting-bars by curved insulating connections, a pair of metal fingers individual to said inductor-bars and adjustable to and from the same in a circular path, and an electrical connection between the pivotal ends of said fingers, substantially as set forth.

7. In an electrical generator of the character herein described, the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars and connected at their inner ends to said collecting-bars, a pair of metal fingers individual to said inductor-bars and adjustable to and from the same in a circular path, individual shafts carrying said fingers, operating knobs or handles on the outer ends of said shafts, and an electrical connection between the pivotal ends of said fingers, substantially as set forth.

8. In an electrical generator of the character herein described, the combination with the field-plates and collecting bars or combs, of a pair of inductor-bars arranged in adjacent relation to the collecting-bars and connected at their inner ends to said collecting-bars by curved insulating connections, a pair of metal fingers individual to said inductor-bars and adjustable to and from the same in a circular path, individual shafts carrying said fingers, operating knobs or handles on the outer ends of said shafts, and an electrical connection between the pivotal ends of said fingers, substantially as set forth.

Signed at Chicago, Illinois, this 6th day of July, 1903.

NELS O. NELSON.

Witnesses:

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M. H. HOLMES.