

No. 769,433.

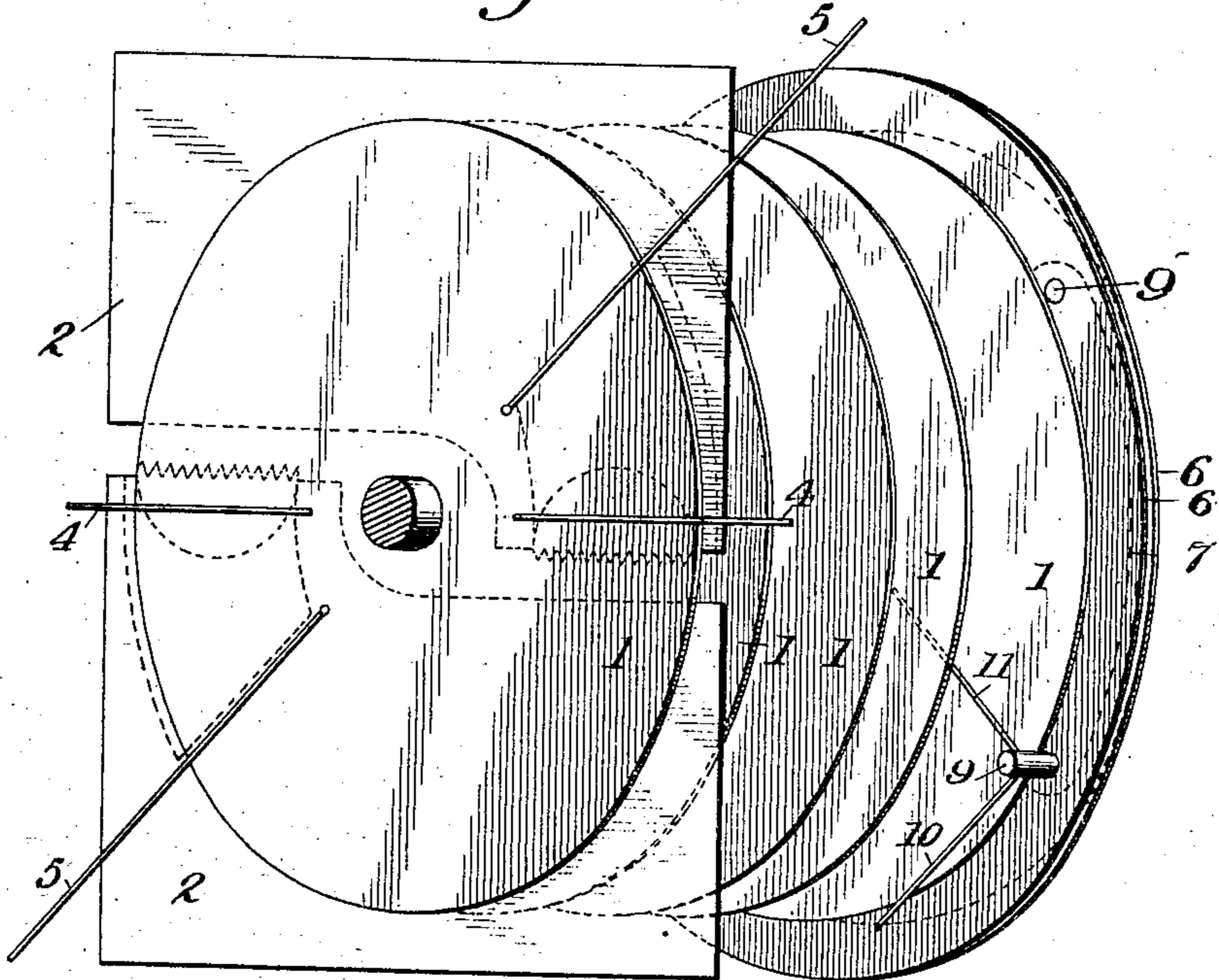
PATENTED SEPT. 6, 1904.

I. W. DETWILLER.  
INFLUENCE MACHINE.

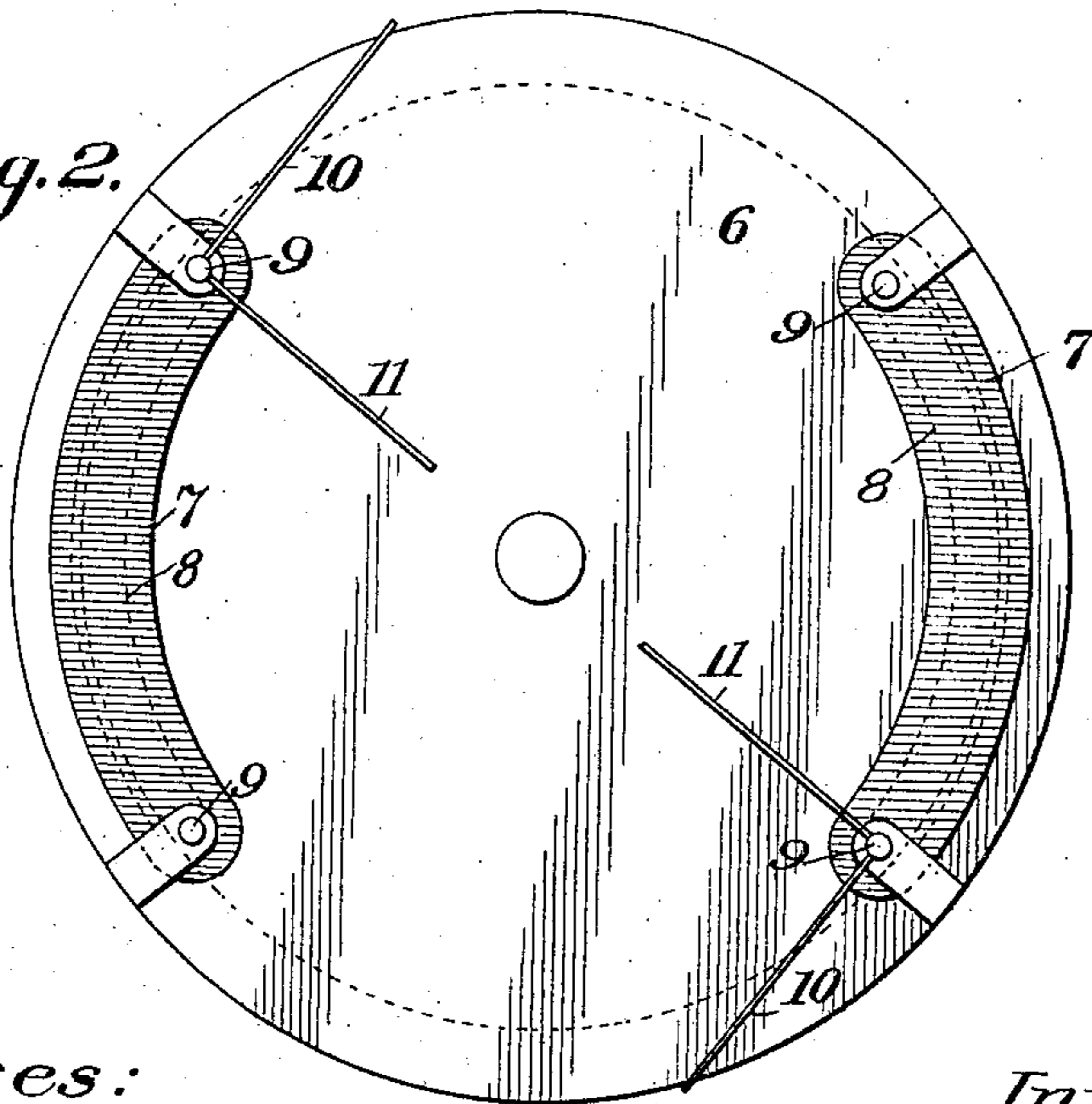
APPLICATION FILED OCT. 17, 1901. RENEWED JAN. 16, 1904.

NO MODEL.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*Edward C. Rischman*  
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*Inventor.*

*Isaac W. Detwiler,*  
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# UNITED STATES PATENT OFFICE.

ISAAC W. DETWILLER, OF BUFFALO, NEW YORK.

## INFLUENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 769,433, dated September 6, 1904.

Application filed October 17, 1901. Renewed January 16, 1904. Serial No. 189,377. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC W. DETWILLER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Influence-Machines, of which the following is a full, clear, and exact description.

My invention relates to improvements in influence-machines, and more especially to improvements in means for starting and exciting the same.

My invention further relates to the discovery of means whereby a starter or exciter may be made a constituent part of and operative with the generator.

More specifically my invention relates to means whereby influence-machines of the so-called "Holtz" type may be made operative without a separate exciter and whereby the means employed to produce the necessary excitation may be converted into means for generation and the accomplishment of this without brush-contact.

My discovery may be stated as follows: If upon a shaft carrying armature-disks of the Holtz type and having ordinary fields two stationary disks are mounted between one pair of Holtz disks, and if these two stationary disks are placed face to face with intervening paper and foil segments, and if these segments are connected electrically and brought to the outer surface of the disks, and if brushes be mounted upon these segments of the stationary disks and capable of frictional contact with one of the adjacent Holtz disks and the machine is then started excitation will follow and the stationary disks will act as fields having corresponding polarity with the regular stationary fields, and thus the exciting fields and disks will act as a generator. If after the tension is established the brushes be removed, the stationary field-disks will immediately change polarity, and under some conditions the excitation established will degenerate entirely, while under other conditions it will sometimes remain, so that the machine will be operative. If, on the other hand, the brushes be moved out of contact with the Holtz plate, so that they act as

combs, or if they be entirely removed and regular combs substituted in their stead, the polarity of the two stationary field-disks will be held in correspondence with the polarity with the other fields, and from that on said stationary disks and the adjacent Holtz plates will unitedly act as a unit of the generator. It will be evident, therefore, that with this discovery I am able to construct an influence-machine wherein the unit, acting as an exciter at the starting of the machine, may be made a constituent unit in the generator.

I will now describe the construction and operation of the same by reference to the annexed drawings, consisting of one sheet, in which—

Figure 1 is a diagrammatic perspective of my invention. Fig. 2 is a face view of one of the stationary field-disks, also showing at the rear in dotted outline a Holtz disk.

1 1 represent the armature-disks of the ordinary Holtz type.

2 represents one of the fields (the others being omitted for clearness) of the segmental type, showing in outline the paper segments and the foil segments upon their edges. These are mounted in the well-known manner and require no further description. The combs 4 and the neutralizers 5 are in like manner of the well-known and familiar construction.

6 6 represent the field-disks of the exciter. These are mounted over the shaft of the armature and between a pair of Holtz disks. The disks 6 6 are provided with paper segments 7 and foil segments 8. The foil segments 8 extend to the periphery of the disks and are connected laterally by rivets 9, uniting the plates and terminating in pivots which carry the brushes and combs, as hereinafter described. To these pivots in the quadrants of the combs are mounted brushes 11 11, which are constructed so as to form contact with one of the adjacent Holtz plates. These are so pivoted that they may be made to move in and out of contact with the faces of the adjacent Holtz plate.

10 10 are combs of the ordinary type pivoted with the brushes above described, which may be brought into the position of the brushes and to take their place.



The operation is as follows: The brushes 11 11 are thrown into position to make contact with the adjacent rotating disks. Tension is produced and communicated to the plates 1. This condition attained, the machine may be used in this form and under this condition, but has the objection of brushes in actual contact. To avoid this objection, the brushes are turned upon their pivot out of contact, and the combs 10 10 are thrown into the position occupied by the brushes, and thereupon the condition of polarity is maintained and the stationary fields and the adjacent Holtz plates operated as a constituent part or unit of the machine.

Having thus described my invention in a diagrammatic form and shown its method of operation, what I claim is—

1. In an influence-machine, one or more generating units requiring separate excitation, a stationary disk, brushes capable of producing initial excitation, and means for substituting combs for the brush-contact when the excitation is established, substantially as and for the purposes set forth.

2. An influence-machine, consisting of ro-

tating disks and fields, requiring an issue excitation, an exciting unit mounted in connection therewith, consisting of stationary fields and adjacent rotating disks, brushes for producing the initial excitation, and means for substituting combs for the brush-contact when the excitation is established, whereby the exciting unit becomes a unit of and a constituent part of the generator, substantially as and for the purposes set forth.

3. In an influence-machine, the combination of a field and disks requiring separate excitation with a stationary disk and adjacent rotating disks, and brushes capable of producing initial excitation and means for substituting combs for the brush-contact when the excitation is established, whereby the exciting unit becomes a unit of the generator, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ISAAC W. DETWILLER.

Witnesses:

D. B. TUTTLE,

E. H. BURNHAM.