

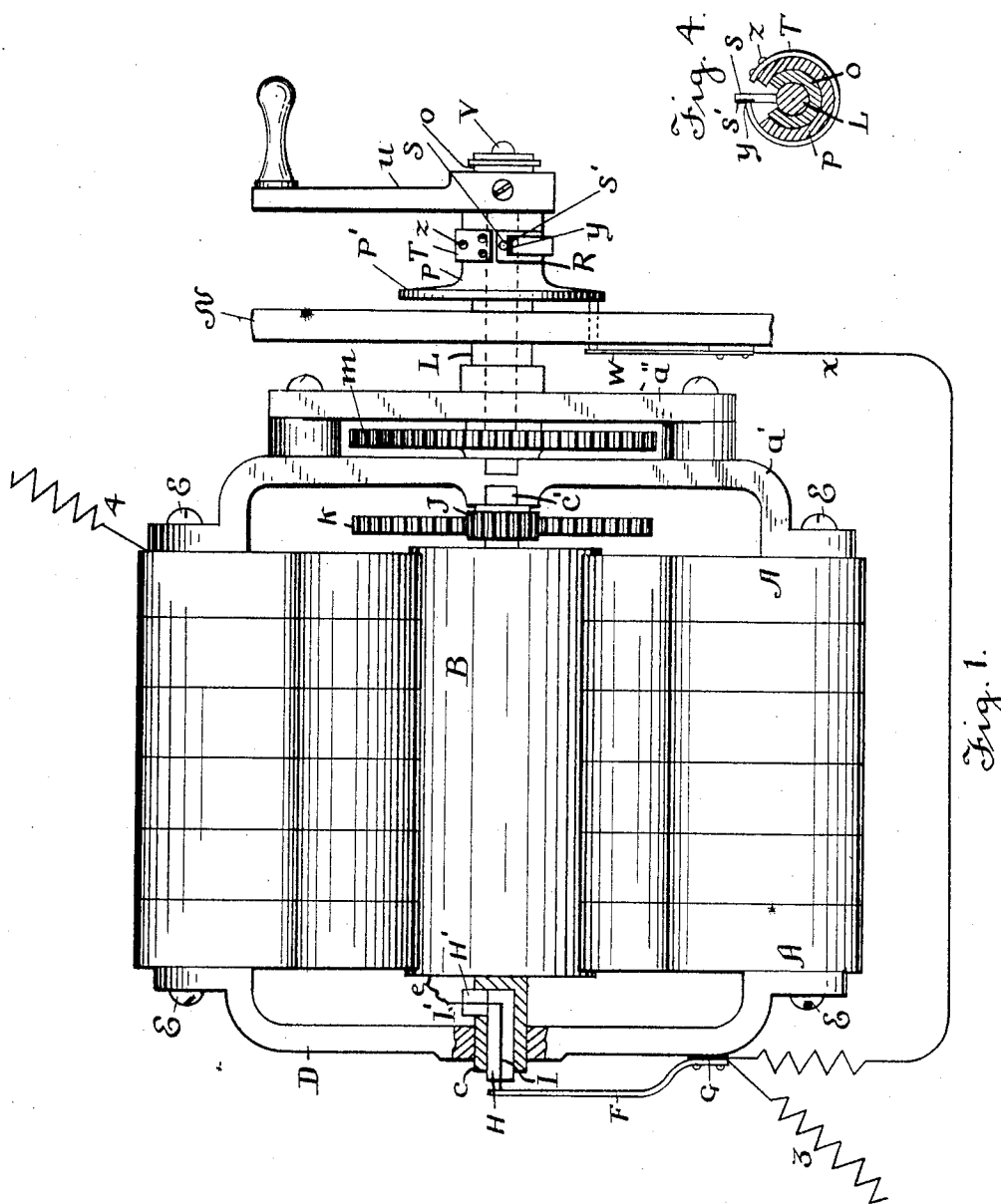
(No Model.)

2 Sheets—Sheet 1.

W. GILLETTE.
MAGNETO ELECTRIC GENERATOR.

No. 579,975.

Patented Apr. 6, 1897.



Witnesses
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Inventor.
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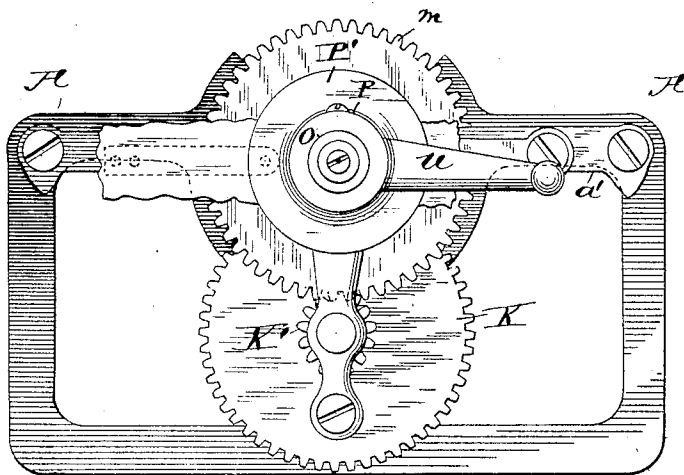


Fig. 2.

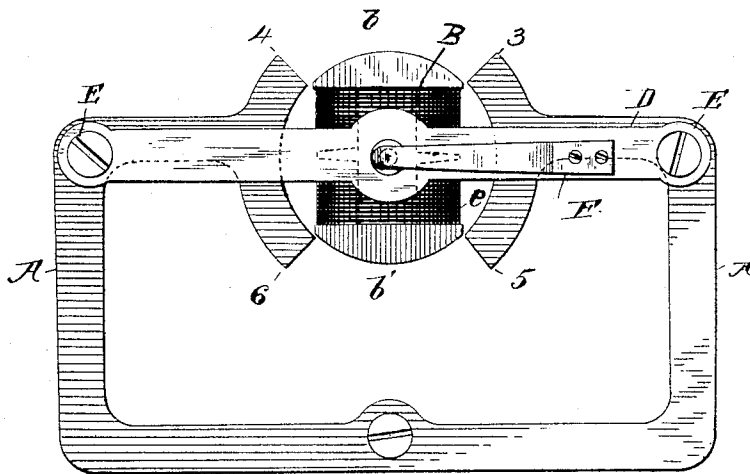


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WEBSTER GILLETTE, OF NEW YORK, N. Y., ASSIGNOR TO DAVID NOBLE ROWAN, OF IRVINGTON, NEW YORK.

MAGNETO-ELECTRIC GENERATOR.

SPECIFICATION forming part of Letters Patent No. 579,975, dated April 6, 1897.

Application filed July 31, 1895. Serial No. 557,682. (No model.)

To all whom it may concern:

Be it known that I, WEBSTER GILLETTE, a citizen of the United States, residing at New York, in the county and State of New York, have invented a new and useful Improvement in Magneto-Electric Generators; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

This invention relates to an improvement in magneto-electric generators; and the invention consists in novel features and economy of construction.

Figure 1 is a plan view of the instrument. Fig. 2 is front face view of Fig. 1, showing the arrangement of driving-gear and their supports or frame. Fig. 3 is rear view of Fig. 1, showing the form of the magnets and connections. Fig. 4 is an end view of shaft L shown in Fig. 1, showing its connections.

In Fig. 1, A represents permanent magnets. B is an armature having trunnions C C'. D is a cross-bar secured transversely to the permanent magnets A by means of bolts E E, which supports the one end of the armature B by trunnion C, passing through at or near its center. Bar D has attached to it a spring F, and insulated from it by block G of non-conducting material. H is an insulating-plug entering trunnion C to within its bearing with bar D and incasing a pin I, which is in turn insulated by means of an insulating-plug H'. H' is a plug inserted transversely to and abutting against the insulating-plug H, which has incased a pin I' for the purpose hereinafter described.

In Fig. 1 $a' a''$ is a frame supporting a train of gear, a portion of which is shown in sectional view. Frame $a' a''$ is secured to the permanent magnets by the bolts E E. Attached to trunnion C' of armature B is a pinion J. The trunnion C' intersects the portion of the frame a' about one-half its thickness to act as a support and free to rotate between its supports D and a' . K is a toothed wheel that engages the pinion J and supported by frames $a' a''$. L is a shaft carrying a toothed wheel in between the supporting-frames a' and a'' and in-

tersects frame a' , and about the center of a' abuts against trunnion C', passing through a'' , thus giving two bearings, and extends out from a'' to permit the attachment of a crank or other device for rotating the same.

N is a section of inclosing case, which is preferably of insulating material. O is a sleeve of insulating material, such as fiber or rubber, which incases the shaft L and turns freely thereon. Incasing the sleeve O and firmly attached thereto is a metallic cylinder P, having a collar P'. The cylinder has an oblong square slot R cut through its side, as also has the insulating-casing O, that corresponds with the slot R, which admits a pin S, which is secured firmly to the shaft L. To one side of the pin S is attached an insulating material S'. Secured to the metallic sleeve P and incasing or surrounding the same is a spring T, one end of which is securely attached to the sleeve P. The other end of the spring T abuts against the insulating portion of the pin S'.

U is a crank and handle securely attached to the sleeves P and O for the purpose of rotating them on the shaft L. The slot R is so arranged that in turning the crank U the insulating-sleeve O comes in contact with the pin S. The sleeve P is cut back, so as not to be in contact while turning.

V is a screw having a washer which intersects the shaft L for the purpose of keeping crank and handle in position.

W is a spring having a pin which passes through the case N and in contact with the flange P', which is connected with the spring F by means of the wire X.

To more clearly explain the action of the crank and handle, sleeves O and P, flange P', Fig. 4 shows cross-section, in which L represents the shaft, O the insulating-sleeve, showing the oblong slot R, also the sleeve P with slot R in relative position to the slot in O and P, the pin S and S', its insulating side as secured to the shaft and in relation to the sleeves P and O.

T is the spring attached to the sleeve P at the point Z and free to act against the insulating portion of the pin S at the point Y.

It will be seen that by turning the handle U the pin S is brought in contact with the sleeve O and will cause the shaft L to rotate, thus driving the train of gear and causing the armature B to rotate within the poles of the permanent magnets A, thereby setting up a current of electricity in the coil of the armature B, which is transmitted out through 3 or 4. When the handle is released, the sleeves O and P are forced back by the spring T, bringing the pin S in contact with the sleeve P, thus making contact with the shaft L, and thus out through connections 3 and 4, as shown in Fig. 1, thereby shunting the circuit by the armature B. In Fig. 1, 3 may be the incoming connection and 4 the outgoing connection, or vice versa.

By the foregoing description it will be seen that while turning the handle U the circuit is established through the spring F, pin I, and pin I', through wire on the armature out at conductor 4.

When handle is at state of rest, the circuit is established from conductor 3, through wire X, spring and pin W to flange P', through P to pin S, to shaft L, through frame a' a'' and gear, and out at contact 4, thus shunting the armature out.

Fig. 2 is a face view to more clearly show the arrangement of the gear.

In Fig. 2 A is face view of the permanent magnet shown in Fig. 1. a' a'' is frame which supports the gear in which is the main driving-wheel, which matches into pinion K', which in turn revolves the gear-wheel K, as shown in Fig. 1, which engages the pinion J and which is attached to trunnion C' of armature B.

In Fig. 2 P' is a collar attached to and forming a part of a sleeve P, as shown in Fig. 1, which incases and is substantially secured to an insulating-sleeve O, as shown in Figs. 1 and 2.

U is a handle attached to sleeve P, as shown in Figs. 1 and 2, for the purpose of revolving the train of gear as follows: Turning the handle revolves the gear-wheel m, as previously shown in Fig. 1, which matches into pinion K', which revolves gear-wheel K, which matches into pinion J, as shown in Fig. 1, which is attached to the armature-trunnion C'. The object is to increase the speed of the armature without occupying greater space.

Fig. 3 shows rear end view of Fig. 1. A is a permanent magnet. B is an armature. D is a frame with bolts E E and spring F. b b' represent end view of the poles of armature B. e is insulated wire surrounding armature B.

In Fig. 3 it will be observed that the poles of the magnet A are presented full face to the poles of the armature B, thus transmitting the full strength of magnetism to the armature while its poles are rotated between the poles of the permanent magnet A, while the pole b rotates from 3 to 5 and b' from 6 to 4. It is

seen that the full magnetic effect is exercised on the armature B, as its poles are in direct face with permanent magnet A. During its rotation from 3 to 5 and 6 to 4 there is no current established within the wire surrounding armature B. At the instant the poles of armature B leave the poles of permanent magnet A a reverse polarity is set up in armature B, setting up a current of electricity for each change in opposite directions through the coil of insulated wire surrounding armature B.

It will be seen that by adding more magnets and elongating the armature and bolts the capacity of the generator may be increased without other alteration of parts.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a magneto-generator, the combination of a series of permanent magnets, with their extreme ends presented to the face of the armature with a shunting device, consisting of a sleeve of insulating material surrounding a shaft, and attached thereto a sleeve of conducting material, having a flange at one end, both of such sleeves having an elongated slot in the same, admitting a carrying-pin inserted in the shaft on which the insulating-sleeve operates, with a spring attached to the conducting-sleeve, to act as a recoil to the conducting and insulating sleeves, such sleeves being operated by a handle or other device, and such shunting device being attached to or in combination with a shaft driving a train of geared wheels, substantially as described.

2. In a magneto-generator, the combination of a series of permanent magnets, with their extreme ends presented to the face of the armature, a train of overlapping gear, to rotate the armature, the gear consisting of a larger driving-wheel, intersecting and rotating a smaller pinion-wheel, which in turn rotates a larger wheel, which in turn rotates a smaller wheel, which is attached to the trunnion of the armature, consisting of a sleeve of insulating material surrounding a shaft, and attached thereto a sleeve of conducting material, having a flange at one end, both of such sleeves having an elongated slot in the same, admitting a carrying-pin inserted in the shaft on which the insulating-sleeve operates, with a spring attached to the conducting-sleeve, to act as a recoil to the conducting and insulating sleeves, such sleeves being operated by a handle or other device, and such shunting device being attached to or in combination with a shaft driving a train of geared wheels, substantially as described.

3. In a magneto-electric generator, the shunting device, consisting of a sleeve of insulating material surrounding a shaft and attached thereto a sleeve of conducting material, having a flange at one end, both of such sleeves having an elongated slot in the same, admitting a carrying-pin inserted in the shaft on which the insulating-sleeve op-

erates, with a spring attached to the conducting-sleeve, to act as a recoil to the conducting and insulating sleeves, such sleeves being operated by a handle or other device, and
5 such shunting device being attached to or in combination with a shaft driving a train of gear-wheels, substantially as described.

Signed by me this 29th day of July, A. D.
1895.

WEBSTER GILLETTE.

Witnesses:

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M. AUGUSTA MEYER.