

(No Model.)

T. W. LANE.
MAGNETO GENERATOR.

No. 259,644.

Patented June 13, 1882.

Fig. 1.

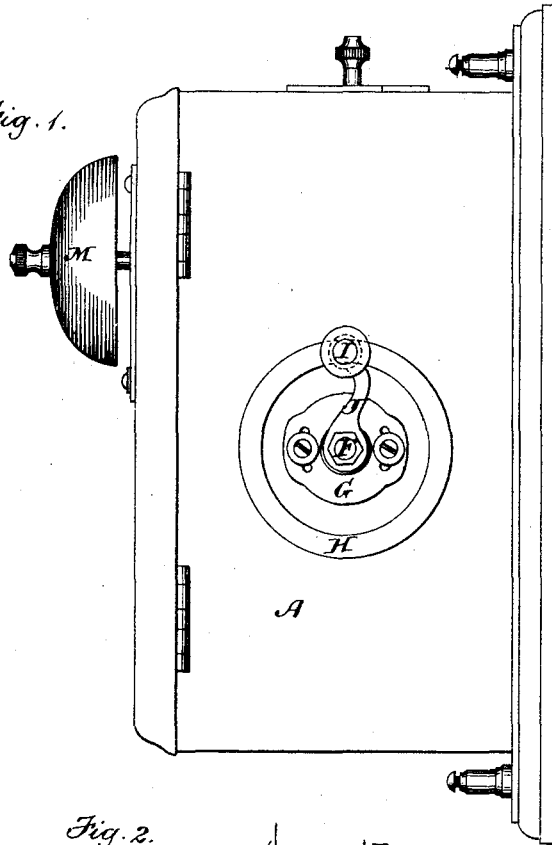


Fig. 2.

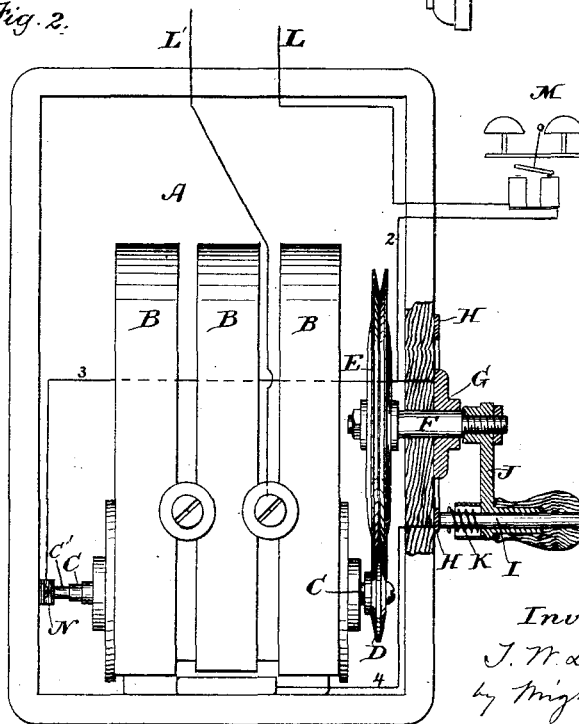
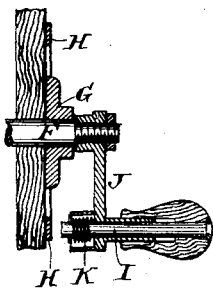


Fig. 3.



Witnesses:
C. L. Ludd
A. L. Wheeler

Inventor:
T. W. Lane.
by Wright & Brown
Attys.

UNITED STATES PATENT OFFICE.

THOMAS W. LANE, OF BOSTON, ASSIGNOR TO CHARLES WILLIAMS, JR., OF
SOMERVILLE, MASSACHUSETTS.

MAGNETO-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 259,644, dated June 13, 1882.

Application filed February 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. LANE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Magneto-Generators, of which the following is a specification.

This invention relates particularly to magneto-generators used for telegraphic and telephonic purposes, in which currents are generated by a rotating armature.

The object of the invention is to enable the operator, while rotating the armature of the generator, to put the generator in circuit by an endwise movement in one direction of the handle of the armature-crank, and to put the generator out of circuit by an endwise movement of said handle in the opposite direction.

To this end my invention consists in the improvement which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a magneto-generator provided with my improvement. Fig. 2 represents a front view of the same with the cover removed, the parts relating to my improvement being represented in section. Fig. 3 represents the sectional portion shown in Fig. 2 with the handle of the crank in a different position.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the casing of the generator.

B B represent the horseshoe-magnets, and C represents the arbor of the rotary Siemens armature between the poles of the magnets. The arbor is provided with a friction-pulley, D, engaging with a grooved friction-wheel, E, affixed to a crank-shaft, F, which is journaled in a metallic sleeve, G, attached to the outside of the casing.

H represents an annular metallic plate attached to the outer side of the casing. Said plate is concentric with the shaft F, and forms a bearing or contact for a metallic bolt or pin, I, which constitutes the handle of the crank metallic J. Said pin is movable lengthwise in the crank, so that its inner end can bear against the annular plate H, as shown in Fig.

2, or be separated from said plate, as shown in Fig. 3.

I prefer to provide a spring, K, to hold the pin I with a yielding pressure against the plate H. The pin I and crank J form a metallic connection between the plate H and sleeve G when the pin I is in contact with said plate; but when the pin is drawn outwardly there is no metallic connection between the plate and sleeve. It will be seen, therefore, that by suitably connecting said plate and sleeve with the generator and with the line the generator will be put out of circuit when the pin I is in contact with the plate H and put in circuit when the pin is separated from the plate.

The electrical connections may be variously modified in arrangement. In the present instance I have shown the sleeve G connected by wire 2 through the signal-bell M (shown in diagram in Fig. 2) with the line-wire L, and by wire 3 with a spring, N, which bears against one end of the insulated pin C' of the armature-arbor C. The annular plate H is connected by wire 4 with a metallic portion of the frame of the generator, and the other line-wire, L', is also connected with the metallic frame of the generator at a point near the connection of the wire 4. When the pin I is in contact with the plate H, as shown in Fig. 2, a magnetic current over line-wire L' will pass through the metallic surfaces of the generator-wire 4, plate H, pin I, crank J, collar G, and wire 2 through the signal-bell to line-wire L, thus avoiding the resistance occasioned by the armature-coil, the generator being out of circuit.

The pulley D is of insulating material, so that the current will not pass from the collar G through the metallic frame of the generator.

When it is desired to use the generator to transmit a current to the line the operator turns the crank J and at the same time moves the handle outwardly, thus breaking the connection between the plate H and sleeve G, and connecting the line-wires L' and L through the armature of the generator and the wires 3 2, thus enabling magneto-currents to be sent into the line.

It will be seen that the devices constituting my improvement are very simple, and although not automatic in their operation, yet they ena-

55

60

65

70

75

80

85

90

95

100

ble the generator to be put into and out of circuit with but little effort of the operator beyond the usual labor of rotation of the crank.

In a pending application which I filed May 8th, 1881, I have claimed an armature combined with means to rotate it and at the same time put the generator in circuit, the said generator being automatically cut out of circuit thereby at the cessation of rotation of said armature. I do not therefore claim any such automatic action in this application.

It will be seen that the simple rotation of the crank will have no effect in putting the generator into and out of circuit, an independent endwise movement of the crank-handle being required to effect either of said operations.

I am aware that in Letters Patent No 252,797 a magneto-generator is described, in which the armature is rotated by a crank arm or handle constructed to be rocked or vibrated by the force exerted on its wrist pin or handle, provided with a spring contact-finger normally resting against a disk surrounding the shaft to which the crank is attached. When said crank is turned the pressure exerted upon it necessarily rocks the crank-handle, and thus separates the contact-finger from the disk and breaks the short circuit around the machine. Hence the generator cannot be operated without breaking the short circuit. My improved crank, on the other hand, being rigidly attached to its shaft and provided with the handle I, which is adapted to be moved longitudinally toward and from the plate H, but not to be moved or rocked laterally, is adapted to be rotated without disconnecting the pin or handle

I from the annular plate H in case it is desired to operate the generator without breaking the short circuit; and thereby ascertain the condition of the connections. If the connections are imperfect, the operation of the generator with the short circuit unbroken will cause the bell connected with the generator to ring; but if the connections are perfect the bell will remain silent. It will be seen, therefore, that my crank is adapted to perform a function which cannot be performed by one which is necessarily rocked so as to break the short circuit when the crank is rotated. My construction is also more simple and durable, and is less expensive than that shown in the patent above referred to.

I claim—

In a magneto-generator, the combination, with the annular plate H, metallic collar G, and electrical connections, as described, of the armature-rotating crank rigidly attached to its shaft, and provided with the pin or handle I, adapted to move longitudinally, but incapable of lateral or rocking motion, whereby the generator is enabled to be operated either while the pin I is separated from the plate H or in contact therewith, as and for the purposes set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 25th day of February, 1882.

THOMAS W. LANE.

Witnesses:

C. F. BROWN,
A. L. WHITE.