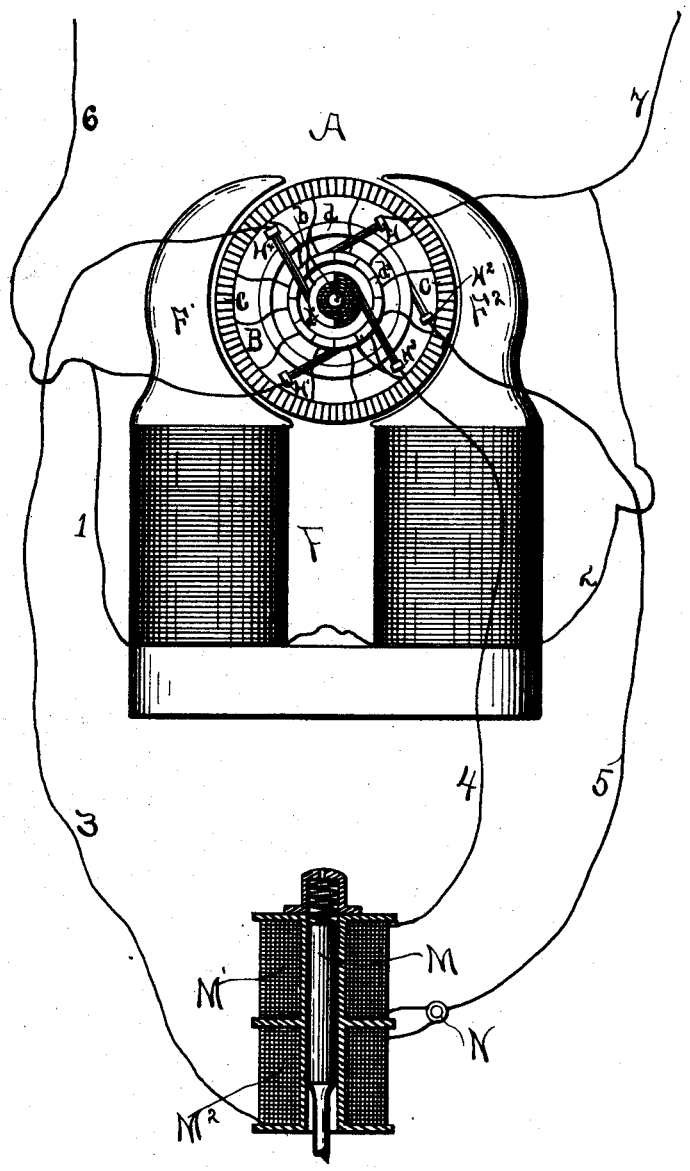
(No Model.)

H. N. MARVIN.

ELECTRIC RECIPROCATING TOOL.

No. 419,861. Patented Jan. 21. 1890.



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ELECTRIC RECIPROCATING TOOL.

SPECIFICATION forming part of Letters Patent No. 419,861, dated January 21, 1890.

Application filed April 29, 1889. Serial No. 309,129. (No model.)

To all whom it may concern:

Be it known that I, HARRY N. MARVIN, a citizen of the United States, residing in Syracuse, in the county of Onondaga, in the State of New York, have invented certain new and useful Improvements in Electric Reciprocating Tools, of which the following is a specification.

My invention relates to the construction and organization of apparatus for generating electric currents.

The object of my invention is to provide a generator of electric currents that shall be capable of supplying to one set of conductors a continuous current, while at the same time alternately supplying two other sets of conductors with a pulsatory current.

My invention is intended more particularly to be used in connection with my system of operating reciprocating tools, as described in a previous application, Serial No. 276,184. In the aforesaid application I showed a machine having its field of force excited from a separate source and not adapted to develop a continuous current. My present generator comprises a dynamo of an ordinary construction provided with a special adaptation for producing, in addition to the ordinary continuous current, currents of a pulsatory character suitable for the operation of reciprocating tools upon my system above mentioned.

The following is a description of my invention, reference being had to the accompanying drawing, which is a diagram showing an end view of the generator and a section of the reciprocating tool. This generator here shown consists of a field-magnet F, provided with two poles F′ and F² of opposite polarity. The armature B is carried upon a shaft *b*, and is driven in any suitable well-known manner. It is here shown as a Gramme ring wound in the usual manner; but any similar closed coil-winding might be used. The sections of the coil C of this ring are connected in the usual manner to a commutator of ordinary construction d^2, provided with two brushes H and H′ in the usual manner. Two diametrically-opposite sections of the ring are further connected to the contact-plates *d* and *d′*. The former of these is a continuous ring carried upon the shaft, and is provided with a brush H². The latter contact-plate occupies a portion only of the periphery of the commutator. It is here shown in the form of a semicircle, and is provided with two brushes H³ and H⁴, and they are at an angle of one hundred and eighty degrees from each other, and in general the organization of these plates and brushes is similar to that shown by me in the previous application above mentioned. It will be evident that if connections be established between the brushes H and H′ a continuous current will flow; and if connection be established between the brushes H³ and H⁴ and the brush H² by different conductors currents will be transmitted through these conductors alternately. These pulsatory currents may be employed for operating a reciprocating tool in the manner described by me in the application before mentioned and here illustrated by the core M, movable between the two solenoids M′ and M², which are alternately energized by currents from the brushes H³ and H⁴ and the brush H². At the same time the brushes H and H′ may furnish a continuous current that may be used for any desired purpose.

In this application I do not claim, broadly, the plan of or apparatus for operating a reciprocating tool by pulsating or rising and falling currents, nor an apparatus for supplying to one set of conductors a continuous or direct current, while at the same time alternately supplying two other sets of conductors with a pulsating current, my present invention being confined to the special form of apparatus herein shown, and specifically pointed out in the claims.

I claim as my invention—

1. A source of electric currents, consisting of a field-magnet and an armature revolving in the field of said magnet, carrying a continuous sectional coil of wire, a commutator consisting of insulated sections connected to the respective sections of the armature-coil, two contact-brushes making contact with said commutator, a collector in connection with one section of the armature-coil, a brush at all times in connection with said collector, a second collector in connection with the diametrically-opposite section of the armature-coil, and two contact-brushes alternately making

contact with said second collector, each of said brushes connected to an independent circuit, substantially as described.

2. A source of electric currents, consisting of a field-magnet and an armature revolving in the field of said magnet and carrying a continuous sectional coil of wire, a commutator consisting of insulated sections connected to the respective sections of the armature-coil, two brushes making contact with said commutator, a collector in connection with one section of the armature-coil, a brush at all times in connection with said collector, a second collector in connection with the opposite section of the armature-coil, and two contact-brushes alternately making contact with said second collector, conductors leading from the latter brushes, respectively, and two solenoids or electro-magnets, respectively connected in said conductors, and a conductor leading therefrom to the contact-brush in contact with the first-named collector.

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