(No Model.)

J. DU BOIS KIELY.

ELECTRIC MOTOR.

No. 256,706. Patented Apr. 18, 1882.

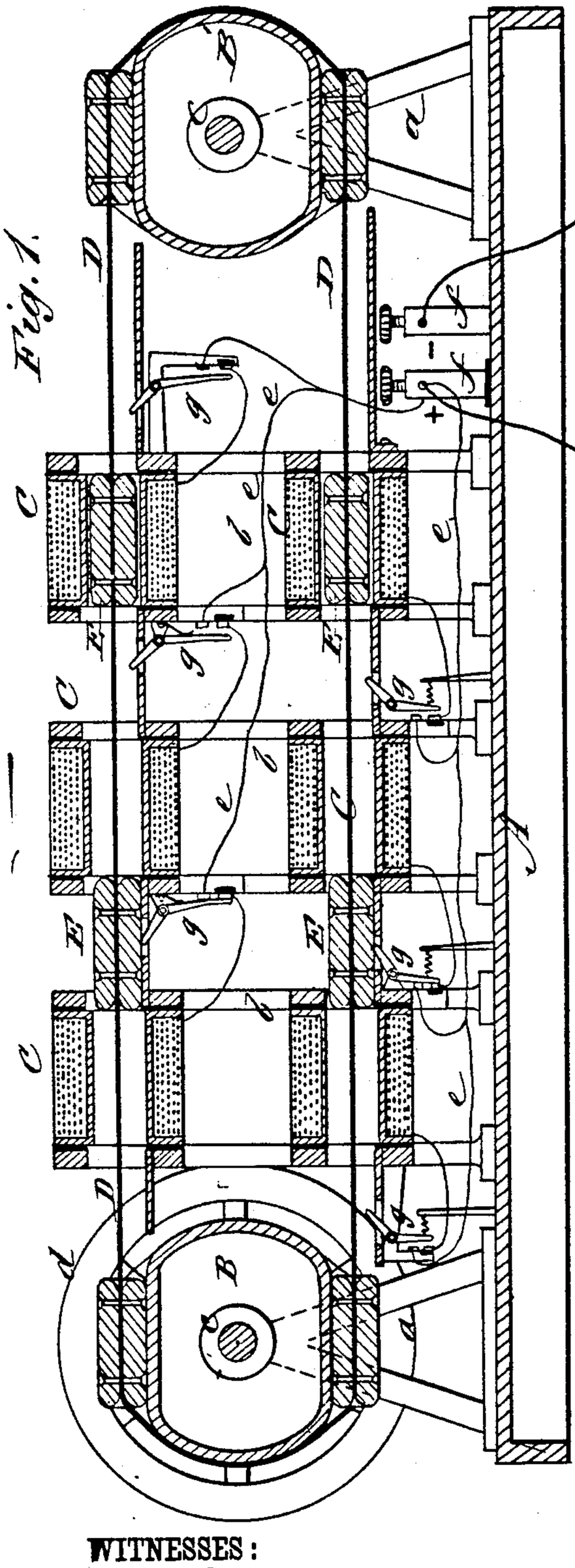

Fig. 1.

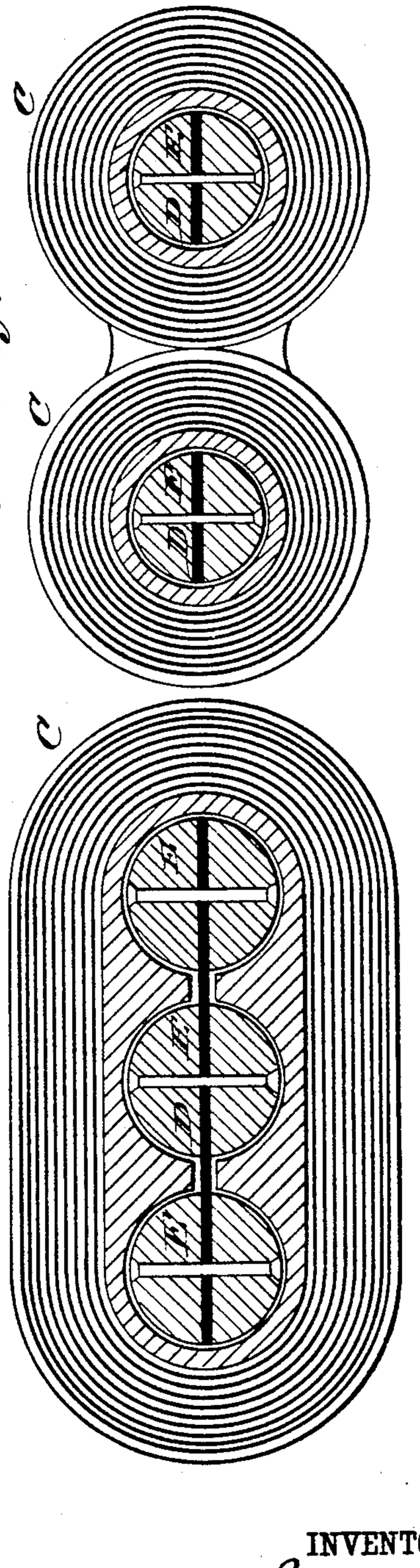

Fig. 2.

WITNESSES:

C. Neveux

C. Sedgwick

INVENTOR:

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EXAMINER

210/14

UNITED STATES PATENT OFFICE.

JOHN DU BOIS KIELY, OF TORONTO, ONTARIO, CANADA.

ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 256,706, dated April 18, 1882.

Application filed October 12, 1881. (No model.) Patented in Canada November 25, 1881.

To all whom it may concern:

Be it known that I, JOHN DU BOIS KIELY, of Toronto, in the Province of Ontario, Dominion of Canada, have invented a new and useful Improvement in Electro-Magnetic Motors, of which the following is a full, clear, and exact specification.

Electro-magnetic motors in which the vibration or reciprocation of armatures is utilized for power are well known.

The object of my invention is to avoid the loss of power resulting from the rapid reversals of the direction of movement.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of the improved magnetic motor. Fig. 2 is a transverse section through one magnet, and in larger size. Fig. 3 is a transverse section of a magnet in modified form.

The frame of the machine may be of any suitable construction. As shown it consists of a bed, A, supporting at its ends pillow-blocks or stands *a*, on which the belt-rollers B B′ are mounted, and *b b* are stands supporting tubular core-magnets C, that are arranged in two horizontal lines.

D is an endless belt of non-conducting material, extending around the rollers B and through the magnets, and having cylindrical armatures E, attached upon it at regular intervals. The armatures are slightly longer than the distance between the magnets, and the spaces between the armatures are twice their length. This arrangement is preferable in order that the magnets may be compactly placed, but is not essential. The belt-rollers are fast on shafts *c c*, one of which carries also a balance-wheel, *d*. The rollers are flattened on two opposite sides to receive the armatures and prevent slipping.

The magnets may be single axial magnets, or they may be in pairs, placed side by side, as shown in Fig. 3, and separate belts with armatures used; or the magnets may be of compound tubular core form, as shown in Fig. 2, and a single belt with separate armatures used, as there shown. I do not limit myself in these respects.

The several magnets are connected by wires *e*, through the stands *b* and base A, with binding-posts *f*, which are to be connected in circuit with a dynamo-machine or other generator, and the post to which the wires *e* connect is insulated from base A. Each magnet is provided with a circuit-closer consisting of a lever, *g*, one end of which projects into the path of the armature, so that when pressed down by the advancing armature the lever closes the circuit to the magnet next in advance. This occurs when the armature has passed the point of maximum attraction in one magnet and broken the circuit by its rear end clearing the lever.

With this construction the armature-belt is moved by a draft acting continuously in one direction of the armatures, thus avoiding sudden changes of direction and utilizing the momentum.

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

The combination, with armatures arranged at intervals on a non-conducting belt and magnets fixed at intervals on one or both sides of the belt, of the lever circuit-closers *g*, one of whose arms serves to make and break the circuit for each magnet and the other to project in the path of the armatures for being operated, as described.

JOHN DU BOIS KIELY.

Witnesses:

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