

(No Model.)

M. BACON.
ELECTRIC MOTOR.

No. 294,717.

Patented Mar. 4, 1884.

FIG. 1.

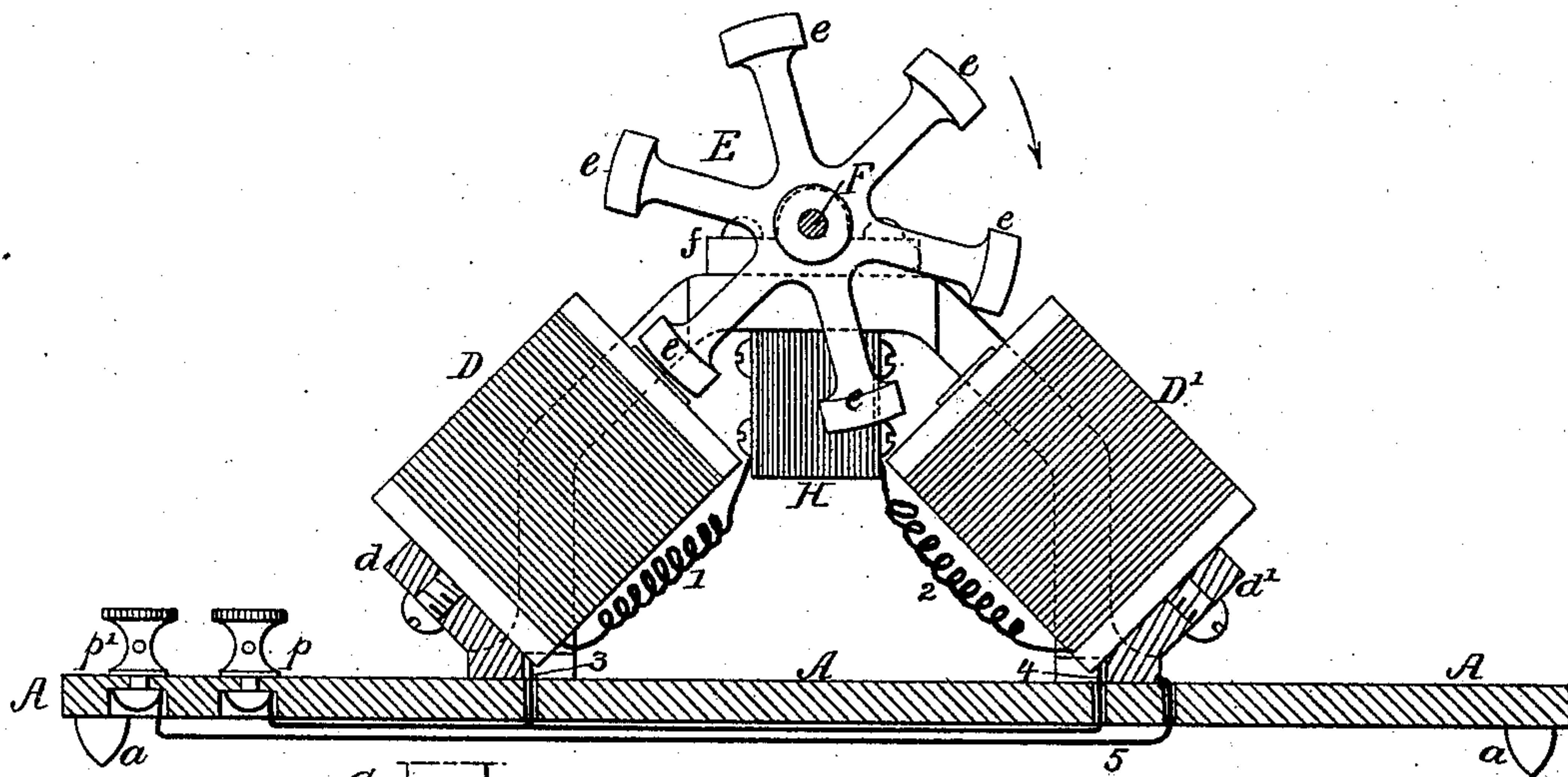


FIG. 2.

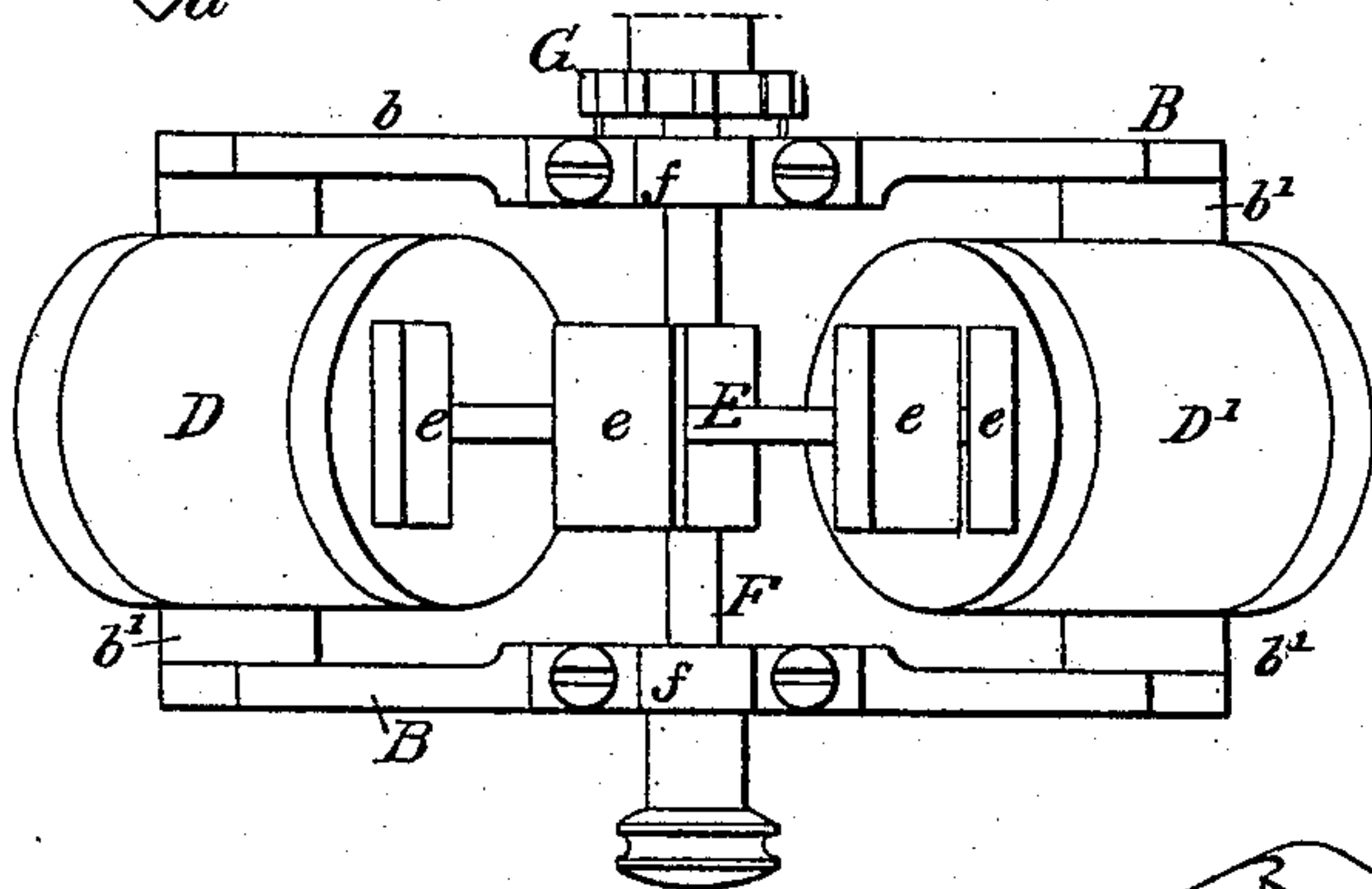


FIG. 4.

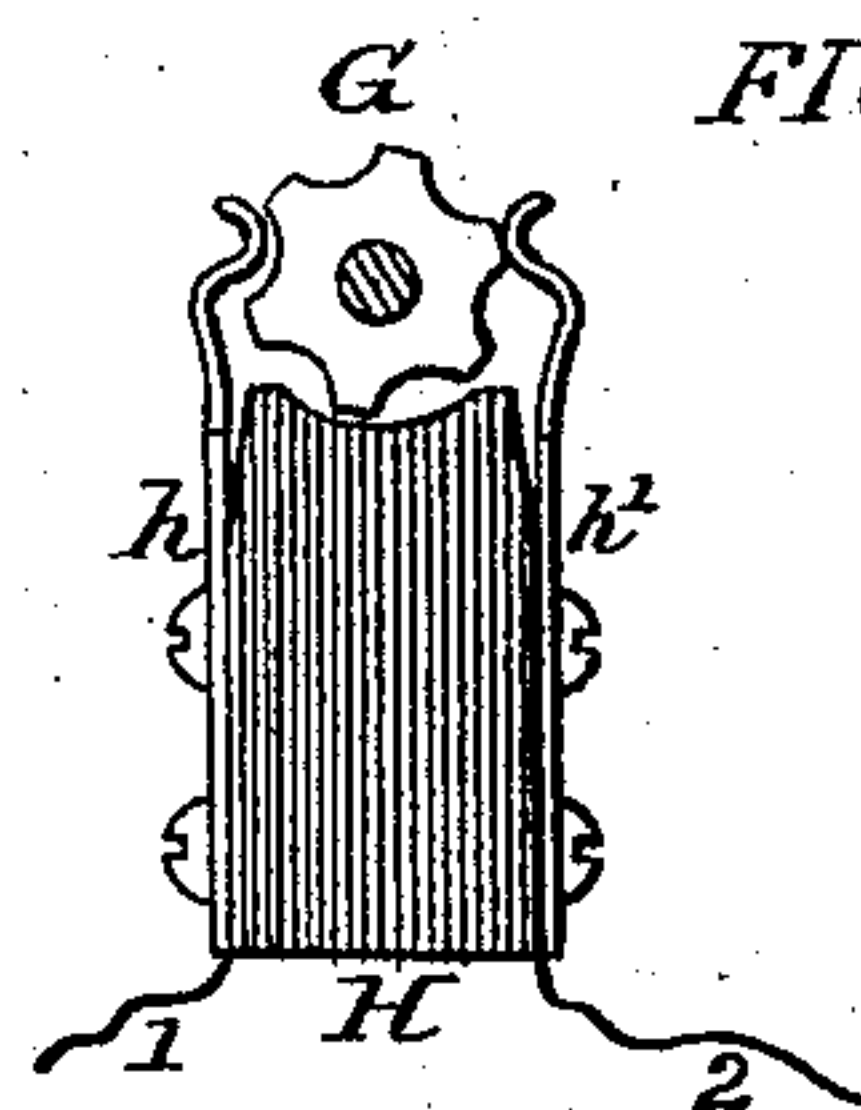
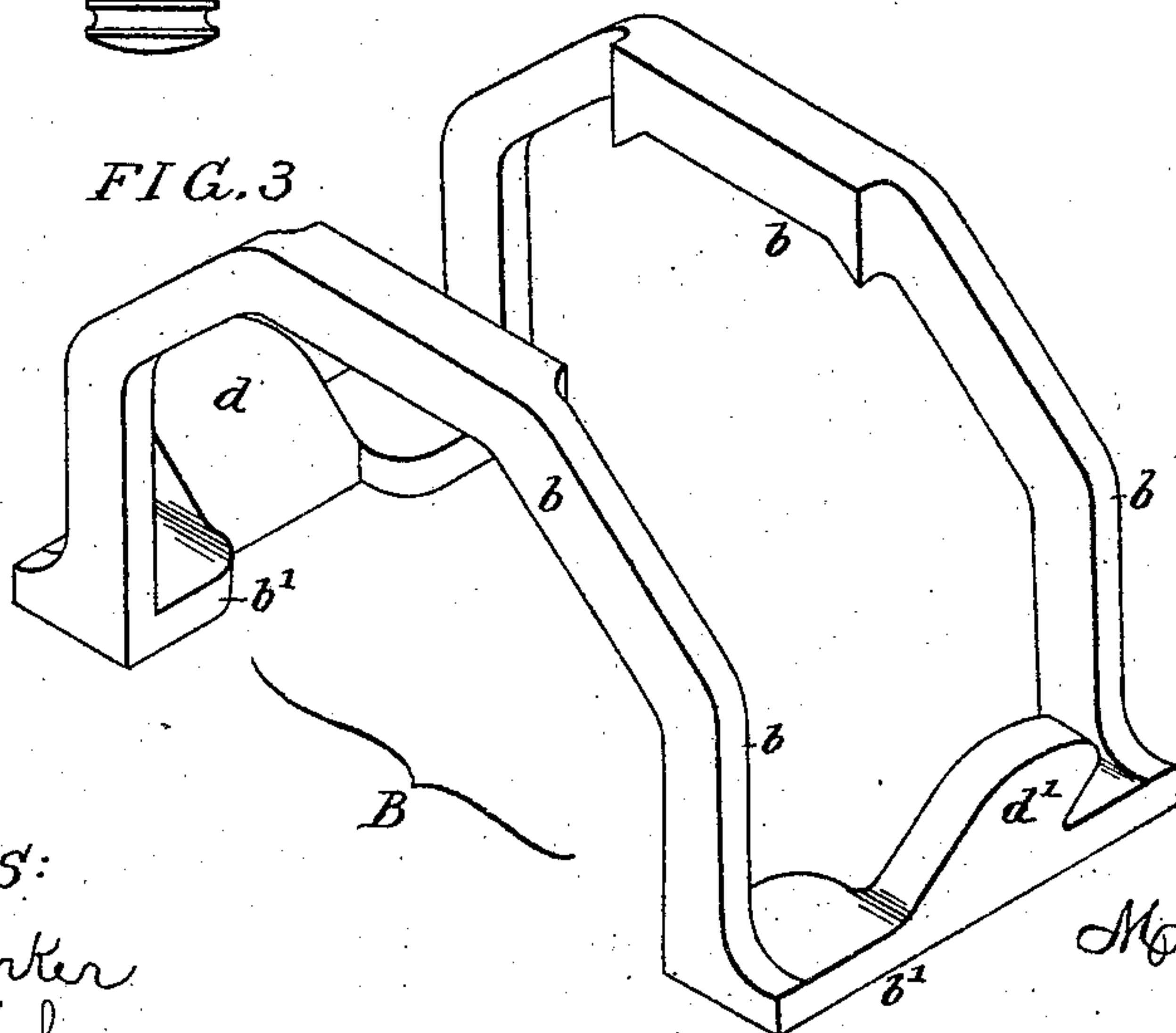


FIG. 3.



WITNESSES:

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by his Attys
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UNITED STATES PATENT OFFICE.

MURRAY BACON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
NOVELTY ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 294,717, dated March 4, 1884.

Application filed December 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, MURRAY BACON, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented
5 Improvements in Electric Motors, of which the following is a specification.

The object of my invention is to construct a cheap and simple electric motor, intended
10 mainly as a toy for amusement, and this object I attain as more fully described hereinafter.

In the accompanying drawings, Figure 1 is a vertical section of the motor. Fig. 2 is a
15 plan view of the same. Fig. 3 is a perspective view of the casting for the frame, and Fig. 4 is a view of the commutator.

A is a base, of wood or other non-conducting material, mounted on suitable feet, *a*, and on this is secured the frame B, carrying the
20 electro-magnets D D'—two in the present instance—and provided with bearings *f f* for the axis F of the armature E.

The construction of this frame B will be more readily understood on reference to the
25 perspective view, Fig. 3, of the casting therefor. This consists of two arched side pieces, *b b*, connected at their ends by cross-pieces *b' b'*, which are to rest on the base, and these cross-pieces are provided with lugs *d d'*,
30 set at such an angle that the axial line of each electro-magnet, when secured thereto, will be on a line radiating from the center of the axis of the armature, as shown in Fig. 1. The upper central portions of the arched
35 side pieces, *b b*, are preferably flattened to receive the bearing-blocks *f f* for the axis of the armature E. The latter is provided in the present instance with six pole-pieces, *e e*, on as many radiating arms or spokes; but
40 the form of the armature and the number of its poles may be varied, the construction preferably being such as shown in the drawings—that is, with the poles so arranged in reference to the poles of the electro-magnets D D' that when one pole of the armature comes
45 opposite the pole of one of the magnets, D, another pole of the armature will be approach-

ing the pole of the other magnet, D'. On the shaft of the armature is mounted, preferably outside the frame, the commutator G,
50 Fig. 4, which may be of any suitable construction, but with contact-surfaces equal in number to the poles of the armature. To the side frame adjacent to the commutator is secured the insulating-block H, carrying
55 the two spring contact fingers or brushes *h h'*, which are so arranged that the contact-surfaces of the commutator will touch first one and then the other. These brushes may be adjustable, if desired. To the brushes *h h'*
60 are connected terminals 1 2 of the coils D D', while the other terminals, 3 4, of the coils are connected together and to the binding-post *p*. The metal frame is in connection, through the wire 5, with the other post, *p'*, so
65 that when these posts are connected up in an electrical circuit, with the parts in the positions shown in Figs. 1 and 4, the circuit will be from the post *p'*, through the metal frame, shaft F, commutator G, brush *h'*, and elec-
70 tro-magnet D', to the post *p*, while the electro-magnet D will be out of circuit. The armature being started in the direction of the arrow, Fig. 1, the magnet D' will exercise an attractive influence on the approaching pole
75 of the armature, while the magnet D will then have no effect—or, owing to induction, a repelling effect—on the receding pole of the armature until the approaching pole of the armature comes opposite the pole of the mag-
80 net D', when the latter will have been cut out of circuit by the commutator and the magnet D thrown in, so that the latter will then have an attractive influence on the pole which the momentum of the armature is moving to-
85 ward it, and so on continuously as long as the motor is in circuit.

A double motor may be made by using two frames set opposite each other; and, if desired, the armature may be wrapped so as to
90 augment the power of the motor.

I claim as my invention—

1. The herein-described frame for electric motors, consisting of the arched side pieces

with connecting cross-pieces at their ends, having inclined lugs, as and for the purpose set forth.

5 2. The combination of the frame, consisting of the arched side pieces, connecting cross-pieces, and inclined lugs, with an armature mounted in bearings on the side pieces, and electro-magnets secured to said inclined lugs, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MURRAY BACON.

Witnesses:

JOHN E. PARKER,
HUBERT HOWSON.