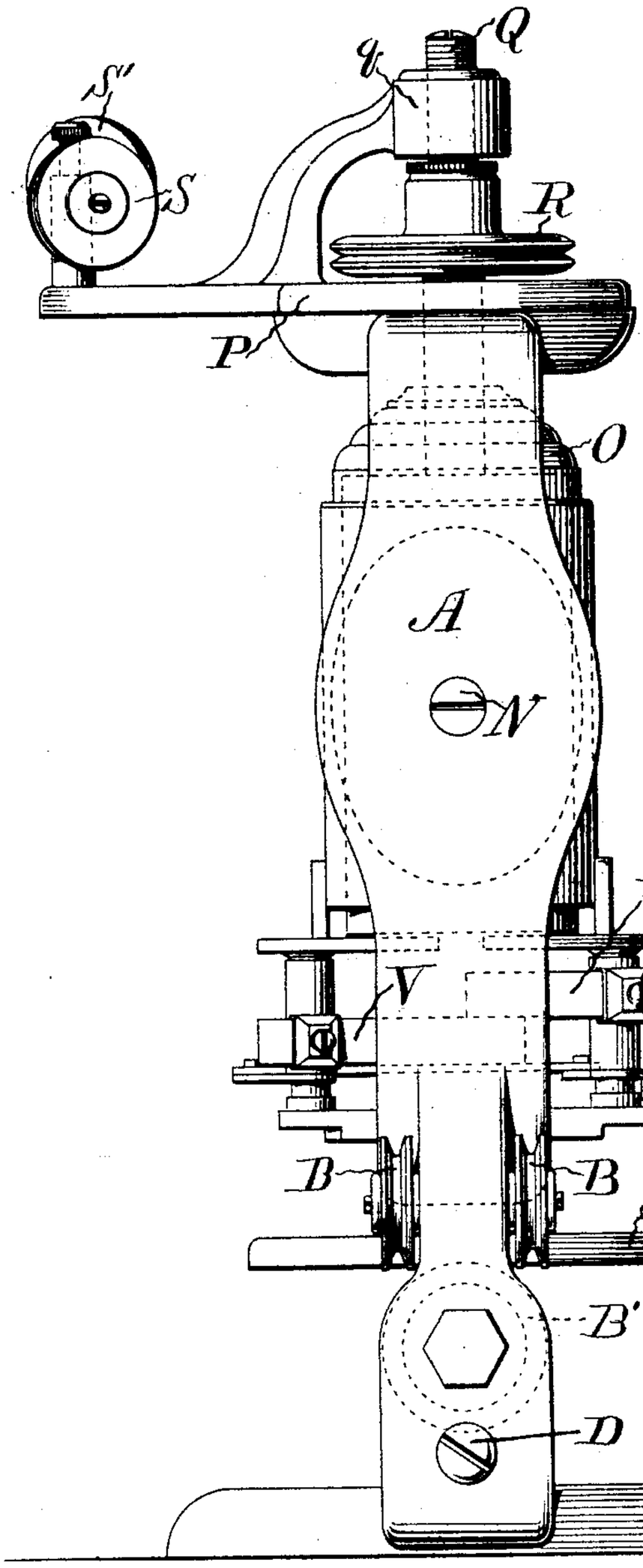
(No Model.) 3 Sheets—Sheet 1.

C. DORIOT.

ELECTRIC MOTOR.

No. 515,488. Patented Feb. 27, 1894.

FIG. 1.



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(No Model.) 3 Sheets—Sheet 2.

C. DORIOT.

ELECTRIC MOTOR.

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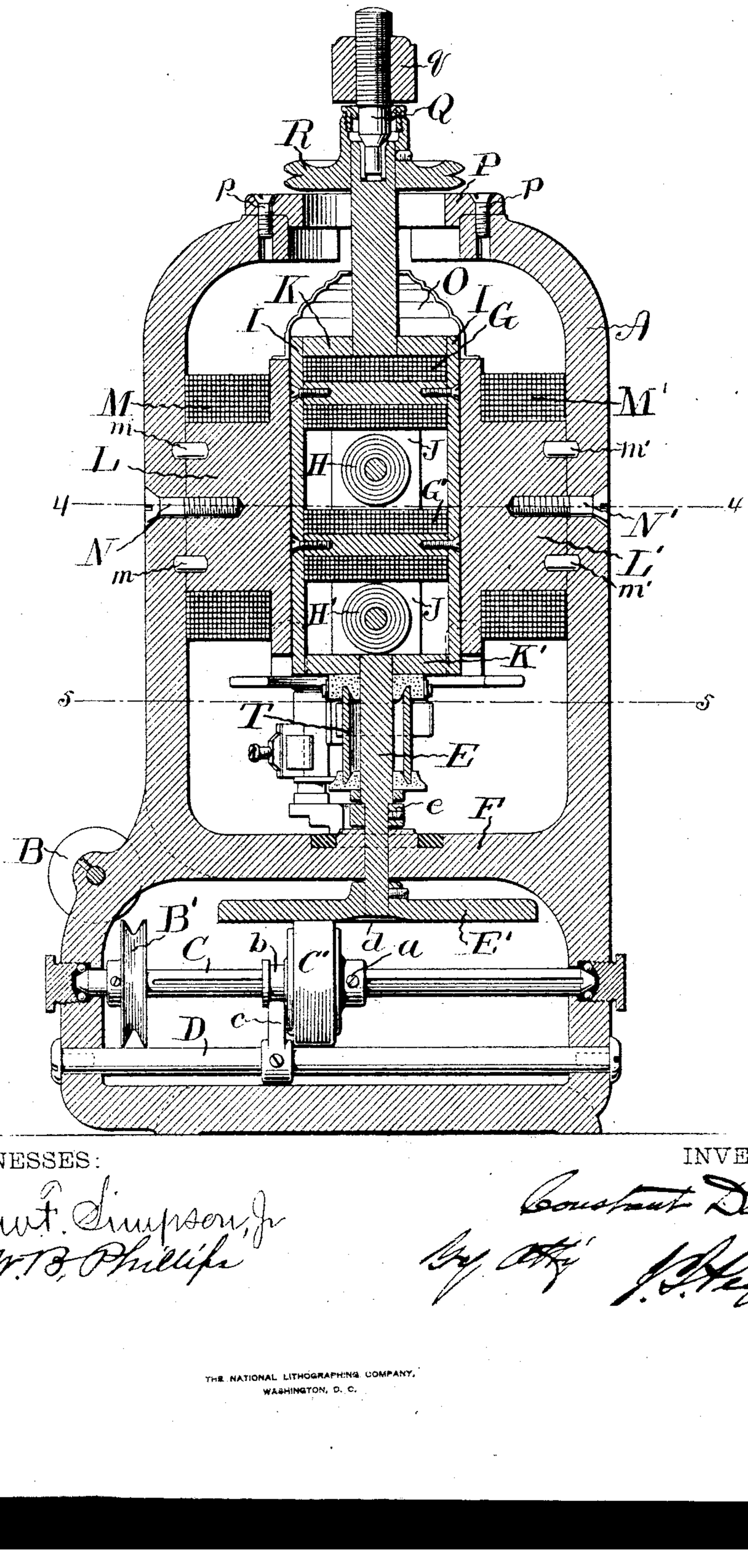
FIG. 2.



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(No Model.) 3 Sheets—Sheet 3.

C. DORIOT.

ELECTRIC MOTOR.

No. 515,488. Patented Feb. 27, 1894.

FIG. 3.

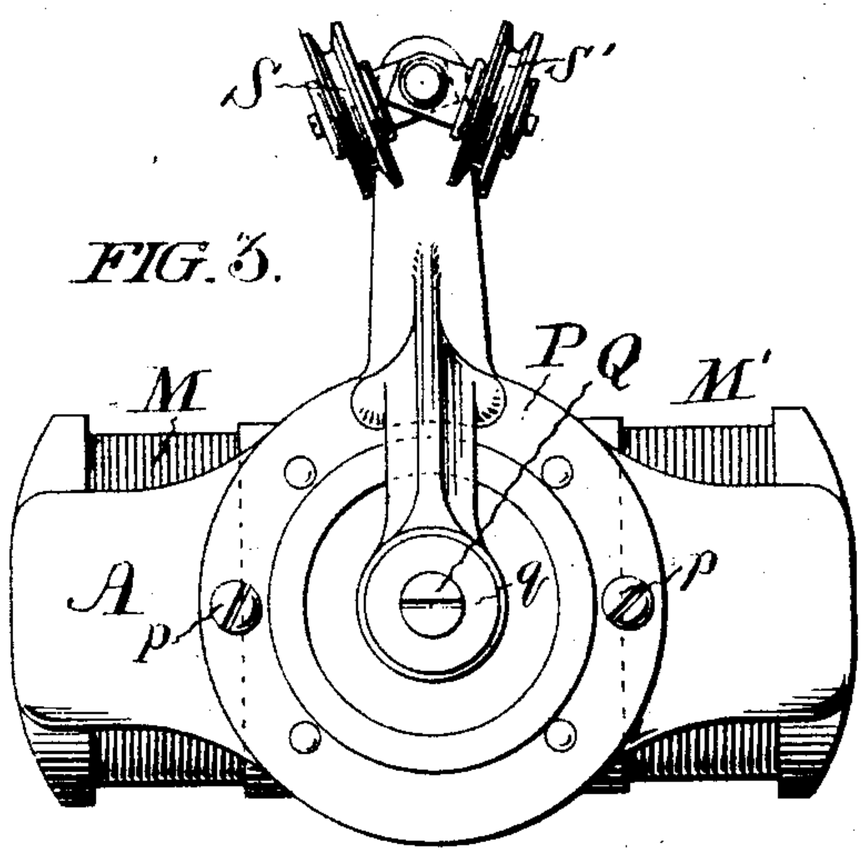


FIG. 4.

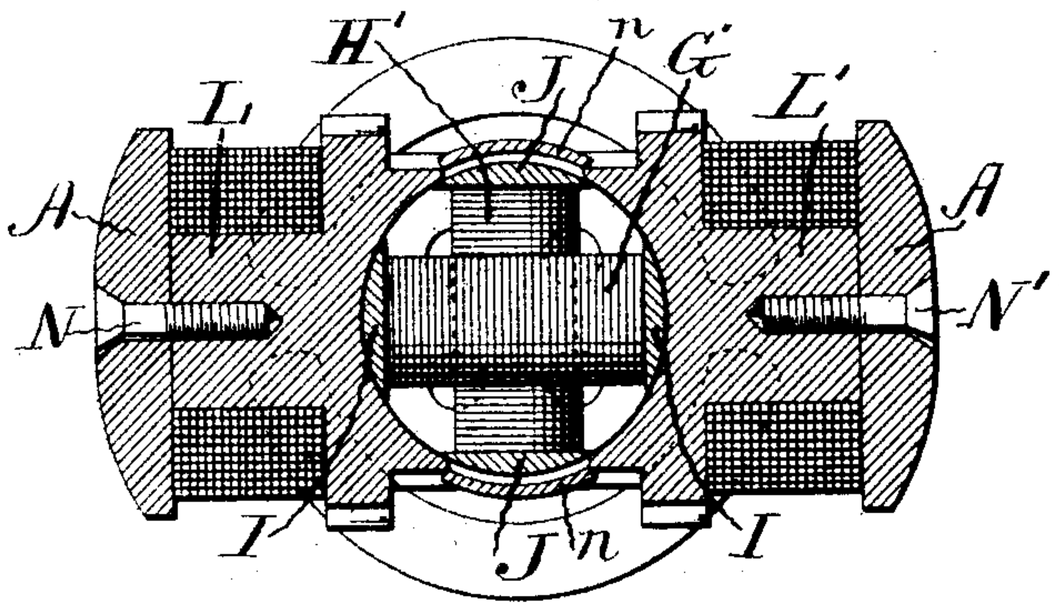
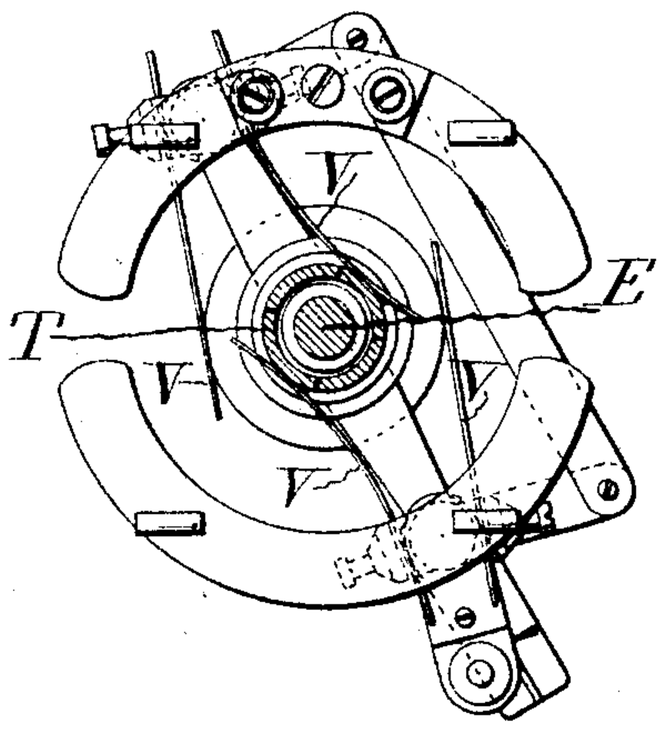


FIG. 5.



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UNITED STATES PATENT OFFICE.

CONSTANT DORIOT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE S. S. WHITE DENTAL MANUFACTURING COMPANY, OF SAME PLACE.

ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 515,488, dated February 27, 1894.

Application filed March 11, 1893. Serial No. 465,599. (No model.)

To all whom it may concern:

Be it known that I, CONSTANT DORIOT, a citizen of the Republic of France, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Motors, of which the following is a specification.

My invention relates to certain improvements, as hereinafter specifically claimed, in electric motors, whereby an efficient and economically constructed motor is provided.

In the accompanying drawings Figure 1 is a view in elevation. Fig. 2 is a view mainly in vertical central section, parts being shown in elevation. Fig. 3 is a plan view. Fig. 4 is a view partly in plan and partly in horizontal section on the line 4 of Fig. 2. Fig. 5 is a view partly in plan and partly in horizontal section on the line 5 of Fig. 2.

The motor frame A is made of metal in a single casting, with the base portion thereof projecting at one side so as to support belt guide pulleys B B in position such that a suitable driving belt may pass upward clear of the frame, to actuate the desired mechanism. A rotating shaft C suitably mounted in the base is provided with a pulley B′ for imparting motion to the driving belt. This shaft is provided with a longitudinal groove for receiving the end of a screw *a* secured in the hub of a friction wheel C′, so as to prevent the turning of the wheel independently of the shaft while permitting the wheel to be slid along the shaft. This wheel may be slid along the shaft by any suitable means. As shown the hub of the wheel has an annular groove *b* engaged by an arm *c* adapted to be slid along its guide rod D, and secured in its adjusted position by a set screw.

The vertical armature shaft E of the motor has its lower bearing in a cross piece F of the frame and is provided at its lower end with a horizontally revolving frictional driving wheel E′ actuating the wheel C′ upon which it is pressed by the weight of the armature. This driving wheel is provided with a central recess *d* so that when the sliding wheel is moved directly beneath or in line with the armature shaft it is out of contact with the driving wheel and ceases to be actuated thereby. A collar *e* secured to the armature shaft by a set screw bears upon the cross piece F of the frame when the sliding wheel is out of operation opposite the recess *d* of the driving wheel, and thus upholds the armature.

The armature coils are shown as four in number, two of which, G G′ are parallel with each other, and the other two H H′ also parallel with each other, are arranged cross wise or at right angles to the coils G G′, the coil H being between the coils G G′, and the coil H′ beneath the coil G′. The cores of the pair of coils G G′ are united to their pole pieces I I by screws and the cores of the pair of coils H H′ are similarly connected to their pole pieces J J. Upper and lower disks K K′ are connected with the pole pieces I, I, J, J, and the armature shaft in suitable way.

The pole pieces L L′ of the field coils M M′ are made separate from the motor frame to which they are secured by dowel pins *m m*, *m′ m′*, and screws N N′. A cover O of non-magnetic metal or other suitable material surrounding the armature shaft and covering the upper end of the armature, is provided with downwardly projecting arms *n n* inclosing the spaces between the pole pieces of the field coils, thus effectually inclosing the coils of the armature. At the upper end of the motor frame there is attached by screws *p p* a bracket P of non-magnetic metal, as brass. An adjustable bearing pin Q having screw threaded engagement with the overhanging arm *q* of the bracket enters a socket in the upper end of the armature shaft and serves as a bearing therefor.

A belt driving wheel R is secured to the upper end of the armature shaft, and two belt guide pulleys S, S′ are suitably mounted upon the bracket P, one of these guide pulleys being set slightly higher than the other to permit of the crossing of the belt, as will readily be understood.

The commutator T and its brushes V by which the direction of rotation of the motor may be reversed, are the same as in United States Letters Patent granted to me September 18, 1888, No. 389,796.

It will of course be understood that the field

coils and the armature coils and the commutator brushes have suitable electrical connection.

The operation of the motor will be readily understood. It will be seen that the armature and field coils are so constructed that they may be quickly wound in a lathe; that the motor frame being cast in one piece is economically produced; and that the weight of the armature insures sufficient frictional contact between the horizontally rotating driving wheel and the wheel actuated thereby to insure proper action.

I claim as my invention—

1. The combination with the motor frame having the base portion projecting at one side, of the belt guide pulleys mounted on said projecting portion, substantially as and for the purpose set forth.

2. The combination of the motor armature, its shaft, the horizontally rotating frictional driving wheel, the sliding wheel upon which the said driving wheel is pressed by the weight of the armature, the rotating shaft upon which the sliding wheel is mounted, and the pulley on said shaft, substantially as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name.

CONSTANT DORIOT.

Witnesses:
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GEORGE P. MORGAN.