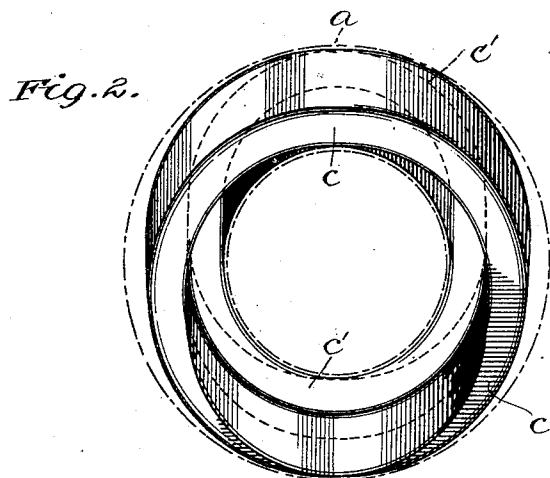
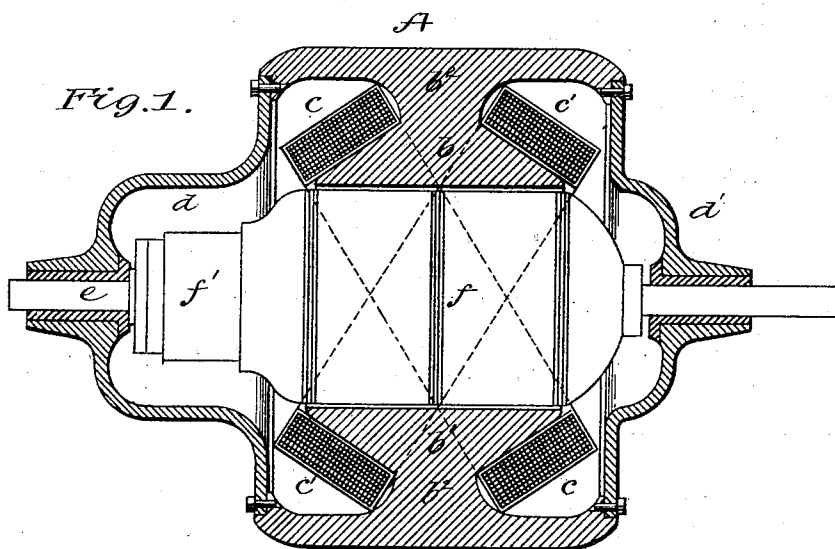


(No Model.)

I. E. STOREY.
ELECTRIC MOTOR.

No. 548,401.

Patented Oct. 22, 1895.



WITNESSES:

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ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 548,401, dated October 22, 1895.

Application filed January 28, 1893. Serial No. 460,069. (No model.)

To all whom it may concern:

Be it known that I, IMLE E. STOREY, a citizen of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Electric Motors, of which the following is a full, clear, and exact description.

My invention relates to electric motors, the object being to produce a construction which shall be compact and symmetrical in shape and efficient in operation.

The invention has particular reference to the field-magnet, which consists of a ring or cylinder having two T-shaped pole-pieces projecting inward from the middle portion, in combination with two coils, which are located inside of the ring, cross each other, and embrace the diagonally-opposite horns of the two pole-pieces. In such an arrangement one entire pole-piece will be of one polarity, while the other will be of the opposite polarity.

I will now describe my invention in detail with reference to the accompanying drawings, in which—

Figure 1 is a section of the machine on a plane coincident with the armature-shaft; and Fig. 2 is a perspective view of the two field-magnet coils, illustrating their relative positions in the machine.

The field-magnet core of the machine, which is represented by A, has the general shape of a ring, cylinder, or zone of a sphere, the last-mentioned shape being indicated by the dotted lines *a*. This ring is preferably constructed in one piece, so that its magnetic resistance will be the minimum. On the interior wall of this core and at points about midway between its ends or edges two polar projections *b b'* are formed. They are located diametrically opposite each other and each is connected with the main core by a contracted web or stem *b²*. The pole itself stands across the end of this stem and is elongated in the direction of the length of the core. The inner faces of these poles are curved to form the armature-space and are parallel to the axis of the armature. *c* and *c'* respectively represent the two field-magnet coils.

Each of them embraces both pole-pieces, but they are inclined at an angle to each other or occupy intersecting planes and one is entirely inclosed by the other, so that one of them embraces two diagonally-opposite horns, while the other embraces the other two diagonally-opposite horns. With this arrangement it is possible to pass a current through the coils in such directions that one entire pole-piece will be of one polarity, while the other will be of the opposite polarity. This would not be possible if the coils were parallel to each other and embraced diametrically-opposite horns.

I propose to close the ends of the core in with heads *d d'* of any suitable material and place the bearings of the armature-shaft *e* in these heads. The armature is represented by *f* and the commutator by *f'*.

It is obvious that this construction is as well adapted for dynamos as for motors, and it is to be understood that the claims herein made are intended to cover dynamos as well as motors, and that the word "motor" is synonymous with "dynamo." The coils may with advantage in compactness be made elliptical, as shown in Fig. 2, so that the longest diameter of the outer coil will be coincident with the shortest diameter of the inner coil.

Having thus described my invention, I claim—

1. An electric motor having two field magnet coils and a rotary armature, one of said coils surrounding the other and both coils surrounding the armature, substantially as described.

2. An electric motor having two field magnet coils located in oblique intersecting planes, as set forth.

3. An electric motor having two field magnet coils located in oblique intersecting planes, in combination with an armature surrounded by both of said coils, substantially as described.

4. An electric motor having two field magnet coils located in oblique intersecting planes, one of said coils being bodily surrounded by the other, substantially as described.

5. An electric motor having two field mag-

net coils located in oblique intersecting planes, one of said coils being bodily surrounded by the other in combination with an armature surrounded by both of said coils, substantially as described.

5 6. An electric motor having two pole pieces and two field magnet coils, said coils surrounding the pole pieces and occupying oblique intersecting planes, substantially as described.

10 7. An electric motor having two pole pieces and two field magnet coils, said coils surrounding the pole pieces and occupying oblique intersecting planes in combination with
15 an armature surrounded by said coils, substantially as described.

8. An electric motor having two pole pieces and two field magnet coils, both coils surrounding both pole pieces and one coil being
20 surrounded by the other, substantially as described.

9. An electric motor having two field magnet pole pieces and two field magnet coils surrounding the same, and an armature and
25 armature shaft surrounded by said coils, both

coils standing oblique to the shaft, substantially as described.

10. An electric motor having a field magnet consisting of a ring, cylinder, or other endless body of magnetic material, provided with pole pieces projecting inward from its interior walls, in combination with two field magnet coils, both of which embrace said pole pieces and act conjointly upon them to establish a positive polarity in one and a negative polarity in the other substantially as described.

11. In an electric motor, a field magnet having two pole pieces facing each other, each having two horns and being substantially T shaped, in combination with two field magnet
40 coils crossing each other and embracing the diagonally opposite horns of the pole pieces, substantially as described.

In testimony whereof I subscribe my signature in presence of two witnesses.

IMLE E. STOREY.

Witnesses:

FRANK S. OBER,
W. A. OPPERMAN.