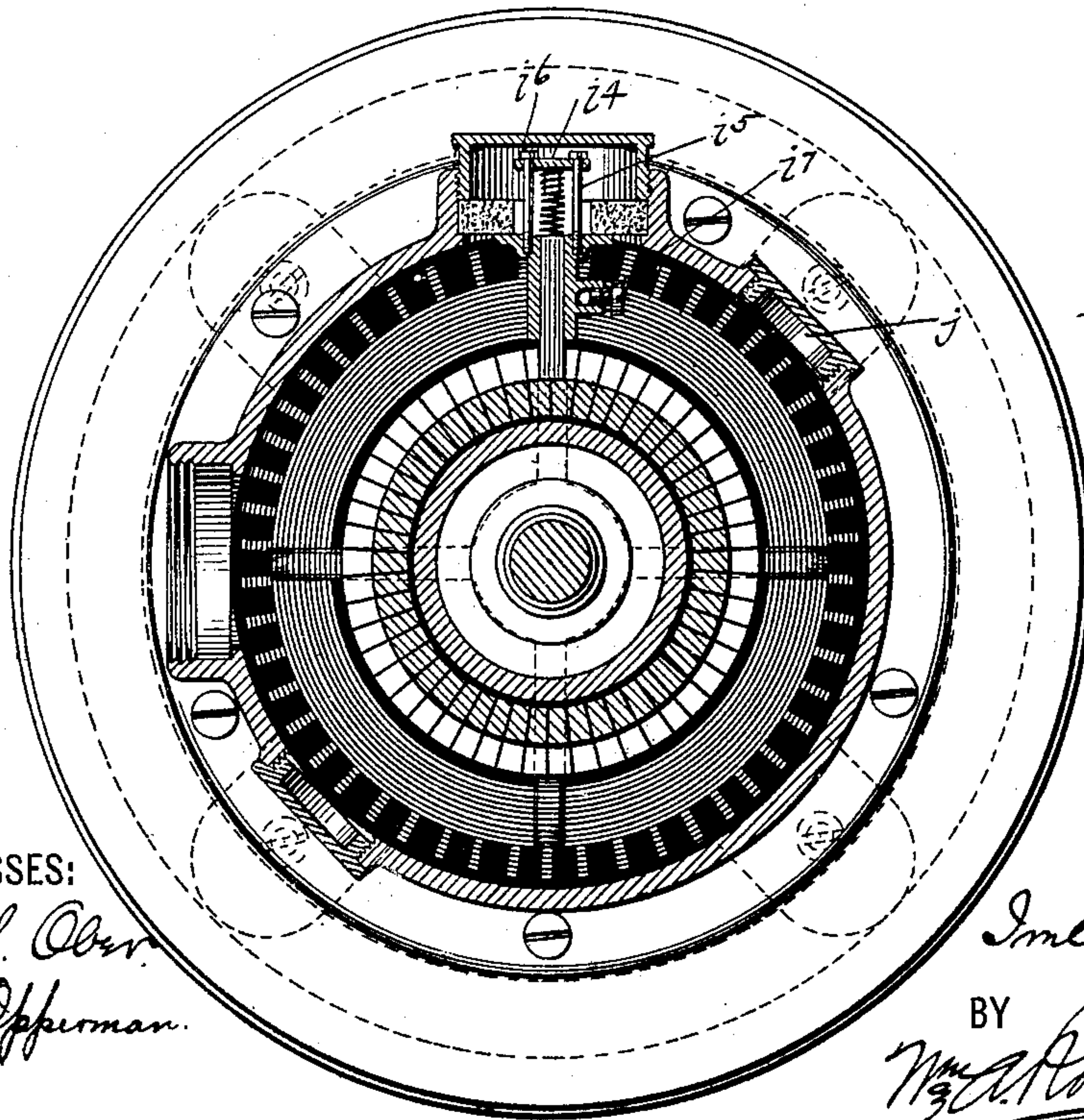
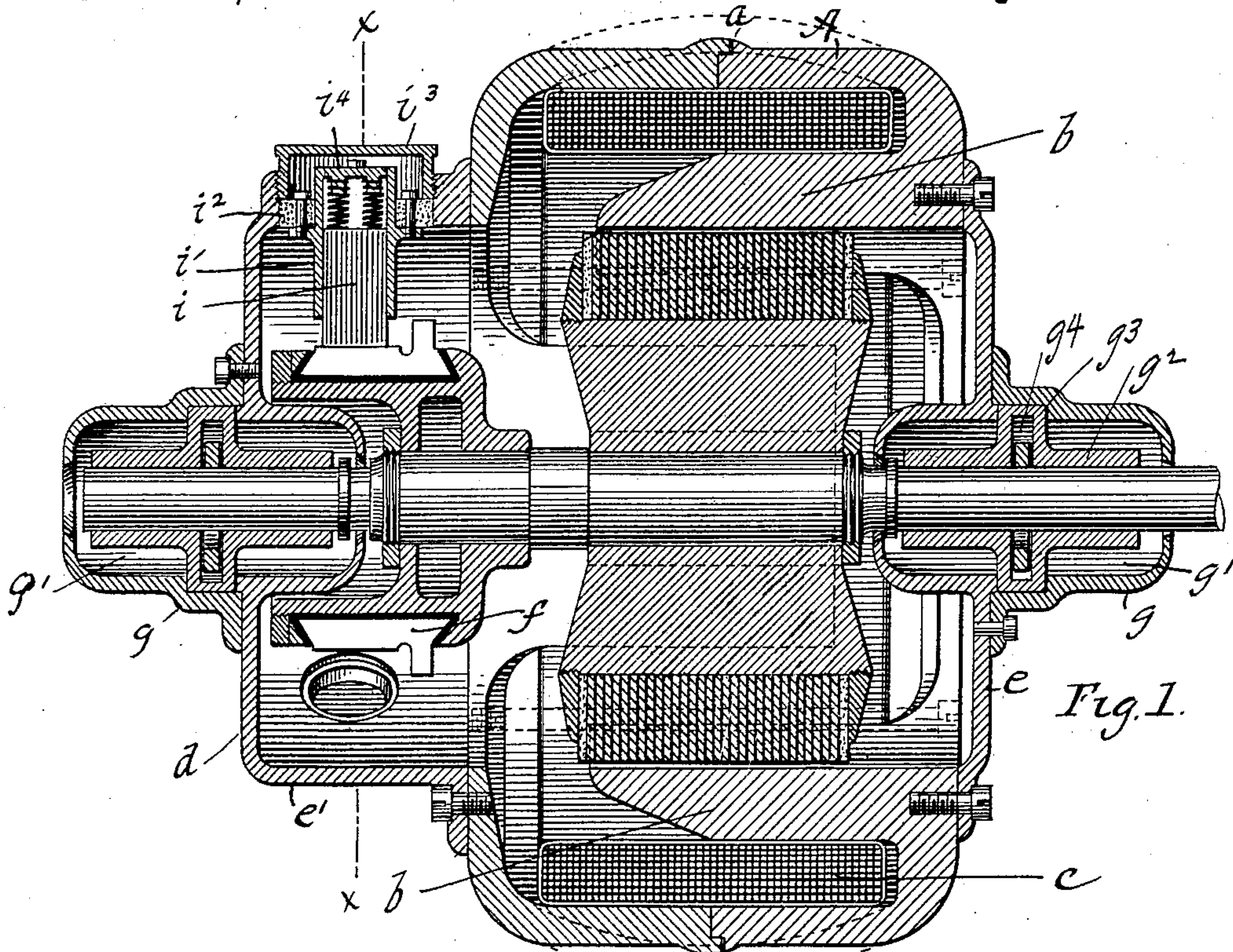


(No Model.)

I. E. STOREY.
ELECTRIC MOTOR.

No. 557,714.

Patented Apr. 7, 1896.



WITNESSES:
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STOREY ELECTRIC DRILL AND POWER COMPANY, OF COLORADO.

ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 557,714, dated April 7, 1896.

Application filed January 28, 1893. Serial No. 460,071. (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 provide a motor which shall be compact and symmetrical in form and in which all the parts are housed in and thoroughly protected.

My invention consists of the construction hereinafter described and claimed.

In the drawings, Figure 1 represents a section of the motor, and Fig. 2 represents a section taken on the line $x x$ of Fig. 1.

The invention relates especially to a multipolar motor having a single field-magnet coil. The magnetic circuit is in the form of a ring, cylinder, or partial sphere, having its ends closed in by heads.

Referring to the drawings by letter, A represents a ring, cylinder, sphere, or other endless form of magnetic material made in two parts and separated on a plane at right angles to its axis, the joint being shown in the drawings at a . The pole-pieces, which are represented by b , are formed upon or attached to this ring or cylinder, which I will call the "shell," and the machine shown is provided with four such pole-pieces, standing ninety degrees apart and extending inward from the opposite edges of the shell, parallel to the axis thereof. Two of these pole-pieces are therefore connected with each edge of the shell diametrically opposite each other. An annular space is left between the interior wall of the shell and the pole-pieces for the reception of a single field-magnet coil of wire c , which coil embraces all the pole-pieces and stands at right angles to the axis of the shell, and the pole-pieces which project inward from the opposite edges of the shell overlap each other to the extent of the length of the armature. When a current of electricity is passed through the field-magnet coil, the two poles connected to one edge of the shell will be of one polarity, while the two connected with the other edge will be of the opposite

polarity. By making the shell in two parts and setting the coil at right angles to the shaft I am able to make a multipolar field-magnet.

The openings at the ends of the shell, which are bounded by the edges of the pole-pieces, are closed by heads d and e , respectively, the former being a circular plate with an elongated flange e' , to form an inner chamber for the commutator f , which is mounted on the armature-shaft. These circular plates carry the journal-boxes for the armature-shaft, and the box carried by the plate d extends into the chamber formed in the end of the commutator for that purpose. A portion of the box is formed on the plate itself, while the other portion is a cup g fitted thereto. These two parts together form a chamber g' for free oil. The shaft-bearing proper consists of a sleeve g^2 , extending nearly the entire length of the chamber g' and having a central enlargement or flange g^3 , which is held in the walls of the box, as shown, and contains an annular chamber g^4 surrounding the shaft. The shaft carries a loose oil-ring of ordinary construction and operation, which is located in the annular chamber g^4 . The brushes are supported in the flange e' and they bear at right angles upon the surface of the commutator. The brush itself is represented by i and it is held in a rectangular holder i' , which is secured to the disk i^2 , of fiber or similar material. This disk fits into a circular opening in the flange e' and is held in place by a screw-cap i^3 . The rectangular holder has a loose plate i^4 , which is free to slide upon guide-rods i^5 , and may be moved toward and away from the brush by the nuts i^6 . Between this plate and the end of the brush two coiled springs are located which exert a pressure upon the end of the brush. The line-wire is connected to the brush by a post i^7 , attached to the side of the brush-holder. This post is accessible through an opening j in the flange e' . In Fig. 2 only one brush-holder is illustrated, but the opening for the other is shown.

In case the machine is made in the shape of a sphere, with diametrically opposite segments removed, the outer shell will take the form indicated by the dotted lines in Fig. 1, and the outer surface of the field-magnet coil

may also be curved in a similar manner and fill the entire space between the pole-pieces and the shell.

Having thus described my invention, I
5 claim—

In an electric motor, the combination with an inclosing shell provided with an opening, of a disk or plate of insulating material fitting into the opening and supporting a brush-

holder, and a removable cap adapted to cover the opening, substantially as described.

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

IMLE E. STOREY.

Witnesses:

WM. A. ROSENBAUM,
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