

through the ring (Fig. 3) one turn after another, so as the whole face of the core is covered and the two ends fastened together, this would make a continuous coiled insulated conductor. The commutator should have as many bars in it as there is complete turns on the core. Each turn is taped with a piece of wire called a lead, at the commutator end of the core, and connected to the bar, whose length is about in line with the plane of that turn to which the lead is connected, then the brush contacts with the commutator will

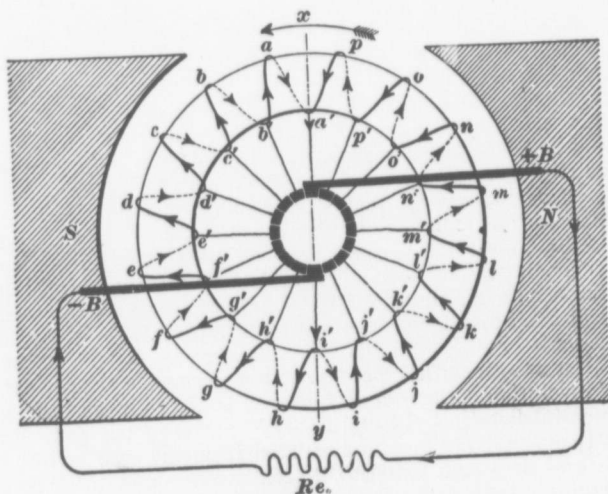


FIG. 3

be diametrically opposite each other, this diameter should be at right angles to the lines of force in the field. The winding so far as the flow of current is concerned will be divided in two halves, one half on either side of the diameter through the proper points of brush contacts with the commutator. The direction of rotation and lines of force in the field is the same as in the other cases. If the core is rotated there will be an E. M. F. generated in all the parts of this winding passing across the outside of the core. The E. M. F. in each outside conductor passing down in front of the south pole tends to act toward the positive brush, and the E. M. F. in all the conductors passing upward in front of the north pole also tends to act toward the positive brush, thus one-half of the winding is connected in parallel with the other to the positive and negative