



ABSTRACT OF THE DISCLOSURE

A motor is formed in such structure that a rotor of permanent magnet, equally divided in the circumferential direction and magnetized in alternately different poles, is formed in a cylindrical shape, that a first coil, the rotor, and a second coil are located in order in the axial direction, that first outside and first inside poles excited by the first coil are opposed to outside and inside peripheral surfaces of the rotor, and that second outside and second inside poles excited by the second coil are opposed to the outside and inside peripheral surfaces of the rotor, wherein yokes forming the first and second inside poles of this motor are formed so that a cross section thereof in a direction perpendicular to the axis of the rotor has alternately formed regions with a large outside dimension and with a small outside dimension, thereby being formed in the shape with good workability. In addition, the working of a yoke for forming the outside poles is also made easy.