

ABSTRACT OF THE DISCLOSURE

VERTICAL HYDRODYNAMIC BEARING APPARATUS

A rotary shaft (3) is inserted in a bearing bore (2A) of a sleeve (2) with lubricant (5) stored therebetween. Upper and lower groove patterns (31, 32; 2B, 2C), spaced in a vertical direction for cooperatively generating a dynamic pressure when the rotary shaft rotates in the bearing bore, are formed on at least one of an outside surface of the rotary shaft and an inside surface of the bearing bore. The rotary shaft has a recessed portion in a region located between the upper and lower groove patterns for storing the lubricant therein. The recessed portion is asymmetrically tapered (3A, 3A') so that the lubricant stored in the recessed portion is chiefly circulated to the upper groove pattern (31, 2B) against a gravity acting thereon when the rotary shaft rotates in the bearing bore, whereby the upper and lower groove patterns are uniformly lubricated.

Figure 1.