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(54) Title: CONICAL HYDRODYNAMIC BEARING WITH TWO INDEPENDENT CIRCULATION PATHS

(57) Abstract

A hydrodynamic bearing having a fixed central shaft (108) carrying first and second conical bearings (104, 106) separated by a central circular shaft portion of the shaft and lubricated by first and second circulation paths (101, 102) circulating through a central reservoir (120) in the shaft. The first and second conical bearings taper outwardly from the central shaft. Further, the hydrodynamic bearing includes a sleeve (110) which rotates relative to the fixed shaft, the sleeve includes a first concave bearing surface (113) rotatably overlying a convex surface of the first conical bearing and forming a first gap in the first circulation path. The sleeve further includes a second concave bearing surface (115) rotatably overlying a convex surface of the second conical bearing and forming a first gap in the second circulation path. The reservoir contains lubricating fluid which communicates with the first and second convex bearings through second and third bores extending from the reservoir toward the radially extending surfaces.

