

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 August 2003 (07.08.2003)

PCT

(10) International Publication Number
WO 03/064871 A1

(51) International Patent Classification⁷: **F16C 17/10**,
17/26, 33/10, G11B 19/20

San Jose, CA 95148 (US). **LEUTHOLD, Hans**; 1238
Escalona Drive, Santa Cruz, CA 95060 (US).

(21) International Application Number: PCT/US03/02899

(74) Agents: **SHERIDAN, James, A.**; Moser, Patterson &
sheridan, L.L.P., 350 Cambridge Avenue, Suite 250, Palo
Alto, CA 94306 et al. (US).

(22) International Filing Date: 31 January 2003 (31.01.2003)

(25) Filing Language: English

(81) Designated States (*national*): CN, DE, GB, JP, KR, SG.

(26) Publication Language: English

Published:
— with international search report
— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

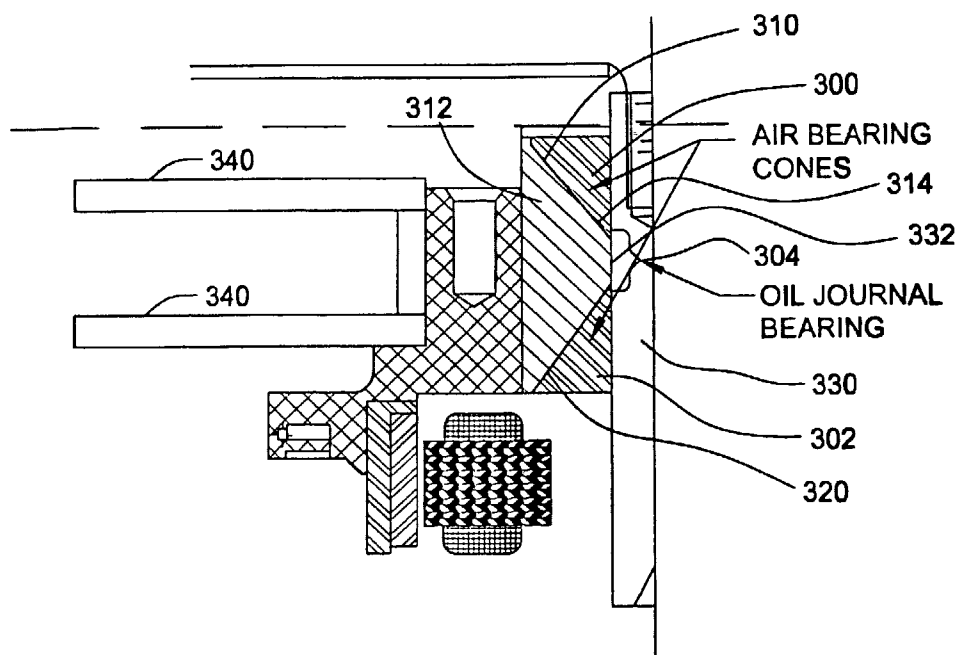
(30) Priority Data:
60/353,927 31 January 2002 (31.01.2002) US
10/186,477 28 June 2002 (28.06.2002) US

(71) Applicant: **SEAGATE TECHNOLOGY, L.L.C.**
[US/US]; 920 Disc Drive, Scotts Valley, CA 95067-0360
(US).

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(72) Inventors: **KENNEDY, Michael, David**; 15093 Big
Basin Highway, Boulder Creek, CA 95006 (US). **RAH-**
MAN, Mohamed, Mizanur; 2906 Vineyard Park Drive,

(54) Title: HYBRID SPINDLE BEARING



(57) **Abstract:** A bearing system in which an axially stiff narrow gap fluid dynamic gas bearing. As an example two fluid dynamic bearings are provided spaced apart along a shaft, one of the bearings comprising a fluid dynamic bearing (304), the other (300, 302) comprising an air bearing. The fluid dynamic bearing has a larger gap, while the air bearing has a relatively small gap. The overall working surface area of the air bearing may be twice as much or more than the working surface area of the fluid bearing.



WO 03/064871 A1