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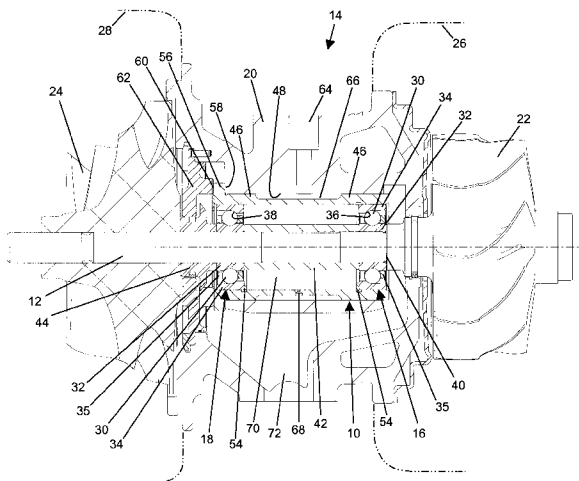
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(54) Title: FLOATING BEARING CARTRIDGE FOR A TURBOCHARGER SHAFT



(57) Abstract: A bearing system for use in high speed rotating machinery, such as a turbocharger (14), wherein a shaft (12) is rotatably supported by a floating bearing cartridge (10) having axially spaced angular contact bearings (16, 18) each with a set of bearing balls (30) supported between inner and outer races (32, 34). The bearing cartridge includes an inner spacer sleeve (42) for axially spacing the inner bearing races, and a rotationally floating outer sleeve (46) having a pair of radially inwardly open grooves (52) for removably receiving snap-type retaining rings (54) which engage and axially space the outer bearing races. The axial dimension of the inner spacer sleeve is elongated slightly relative to an axial dimension defined between outboard faces of the installed retaining rings, thereby slightly unloading the sets of bearing balls from their respective outer bearing races. Such slight axial unloading enhances smooth-running operation with minimal bearing wear, while accommodating transient loads during operation.



WO 2008/011400 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **F16C 19/18(2006.01)**

 USPC: 384/504
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 384/504, 512, 99; 417/407

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7,025,579 B2 (Woollenweber et al.) 11 April 2006 (11.04.2006).	1-20
A	US 6,877,901 B2 (Woollenweber) 12 April 2005 (12.04.2005).	1-20
A	US 6,739,845 (Woollenweber) 25 May 2004 (25.05.2004).	1-20
A	US 6,443,624 B1 (Knepper et al.) 03 September 2002 (03.09.2002).	1-20

Further documents are listed in the continuation of Box C. See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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