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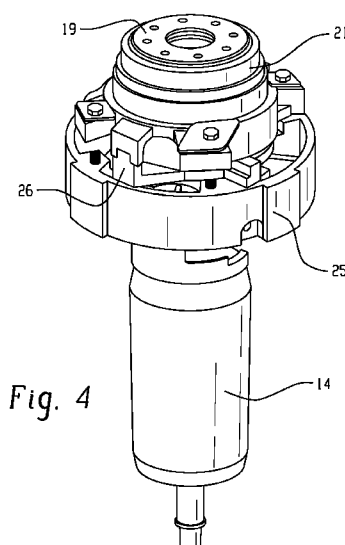
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DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
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ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
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(54) Title: COMPRESSORS INCLUDING POLYMERIC COMPONENTS



(57) Abstract: Improvements in compressor manufacture are achieved by utilizing polymeric components which retain at least 90% of their dimensions after being exposed to a mixture of refrigerants and/or lubricants for 30 days at 60°C. Polymeric materials include (i) polyetherimides, (ii) polyphenylene sulfides, (iii) polyketones, (iv) polysulfones, (v) liquid crystal polymers, and (vi) combinations thereof.





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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

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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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 214 512 A (OTSUKA KAGAKU KK [JP]) 6 September 1989 (1989-09-06)	1-11,17, 18,24-29
Y	page 3, line 17 - page 4, line 14 page 6, line 12 - page 7, line 1 claims 1,7 figures 1,2	15,16
X	----- JP H05 245966 A (SUZUKI SOGYO KK) 24 September 1993 (1993-09-24)	1-4,6,7, 10-13, 17,18, 24-27,29
Y	abstract figures 1-5 ----- -/-	15,16



Further documents are listed in the continuation of Box C.



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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 980 752 A2 (EMERSON CLIMATE TECHNOLOGIES [US]) 15 October 2008 (2008-10-15)	1-4, 6-13, 18, 20, 21, 24-29
Y	paragraphs [0007], [23.29], [0032] claims 1-3, 12, 13, 18, 19, 20 figures 1-7	15, 16
X	----- EP 1 701 039 A1 (DAIKIN IND LTD [JP]) 13 September 2006 (2006-09-13)	1-4, 6-8, 10-13, 18, 20, 21, 24-27, 29
Y	paragraphs [0008] - [0018], [0051] - [0053], [0056] - [0063] figures 3-9C	15, 16
Y	----- US 6 006 542 A (TOJO KENJI [JP] ET AL) 28 December 1999 (1999-12-28)	15
A	column 2, line 2 - column 9	1
Y	----- DE 10 2008 024307 A1 (DENSO CORP [JP]) 15 January 2009 (2009-01-15)	16
A	paragraph [0058] -----	1, 15

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/US2013/034260

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2214512 A	06-09-1989	GB 2214512 A	06-09-1989
		JP S63301258 A	08-12-1988
		US 5131827 A	21-07-1992
		WO 8809356 A1	01-12-1988

JP H05245966 A	24-09-1993	NONE	

EP 1980752 A2	15-10-2008	EP 1980752 A2	15-10-2008
		US 2008247895 A1	09-10-2008

EP 1701039 A1	13-09-2006	AT 428054 T	15-04-2009
		CN 1898472 A	17-01-2007
		EP 1701039 A1	13-09-2006
		ES 2325269 T3	31-08-2009
		JP 2005155568 A	16-06-2005
		US 2007104604 A1	10-05-2007
		WO 2005059366 A1	30-06-2005

US 6006542 A	28-12-1999	CN 1210948 A	17-03-1999
		JP 3627467 B2	09-03-2005
		JP H1182348 A	26-03-1999
		MY 127931 A	29-12-2006
		US 6006542 A	28-12-1999
		US 6055827 A	02-05-2000
		US 6286334 B1	11-09-2001

DE 102008024307 A1	15-01-2009	DE 102008024307 A1	15-01-2009
		JP 4737141 B2	27-07-2011
		JP 2008286148 A	27-11-2008
		US 2009280018 A1	12-11-2009
