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- (71) **Applicant:** UNITED TECHNOLOGIES CORPORATION [US/US]; 1 Financial Plaza, Hartford, CT 06101 (US).
- (72) **Inventors:** RIBAROV, Lubomir, A.; 9 Eastview Street, West Hartford, CT 06107 (US). VEILLEUX, Leo, J., Jr.; 133 Main Street, Wethersfield, CT 06109 (US). ELDER, James, S., Jr.; 946 Strong Rd., South Windsor, CT 06074 (US).
- (74) **Agents:** JONES, Joshua, L. et al.; Edwards Wildman Palmer LLP, P.O. Box 55874, Boston, MA 02205 (US).
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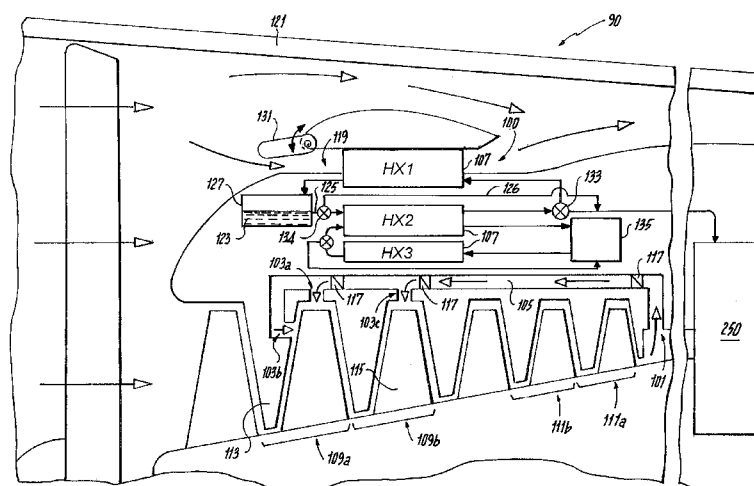
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) **Title:** ADAPTIVE TURBOMACHINE COOLING SYSTEM**Fig. 1**

- (57) **Abstract:** In accordance with at least one aspect of this disclosure, a turbomachine cooling system includes a first low pressure port disposed in a low pressure portion of a turbomachine and a first high pressure port disposed in a high pressure portion of the turbomachine and in selective fluid communication with the first low pressure port via a cooling channel. The high pressure portion of the turbomachine is configured for a higher compression than the low pressure portion of the turbomachine where the first low pressure port is disposed. The cooling system can include a heat exchanger system disposed in the cooling channel such that a flow traveling from the first high pressure port to the first low pressure port is cooled by the heat exchanger system before traveling through the first low pressure port into the low pressure portion of the turbomachine.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/066357**A. CLASSIFICATION OF SUBJECT MATTER****F02C 7/18(2006.01)i, F01D 25/12(2006.01)i**

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)

F02C 7/18; F02C 7/143; F02C 7/10; F04D 29/58; F02C 7/22; F25B 27/00; F02C 9/08; F02C 6/00; F01D 25/12

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & keywords: turbomachine, cooling, heat exchanger, valve, pressure and air

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0193812 A1 (KIRZHNER, JOSEPH) 06 August 2009 See abstract, paragraphs [0011]-[0017], claims 1-4 and figures 1-4.	1-20
A	US 2010-0024383 A1 (CHANDRABOSE et al.) 04 February 2010 See abstract, paragraphs [0012]-[0017] claims 9-12 and figures 1, 2.	1-20
A	US 4041697 A (COFFINBERRY et al.) 16 August 1977 See abstract, column 4, line 29-column 7, line 52, claims 1-9 and figures 1-3.	1-20
A	US 2008-0304958 A1 (NORRIS et al.) 11 December 2008 See abstract, paragraphs [0011]-[0013], claims 1-6 and figures 1, 2.	1-20
A	US 2011-0173983 A1 (PINSON et al.) 21 July 2011 See abstract, paragraphs [0019]-[0025], claim 1 and figures 1-10.	1-20



Further documents are listed in the continuation of Box C.



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"&" document member of the same patent family

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International Application Division
Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan City, 302-701,
Republic of Korea

Facsimile No. +82-42-472-7140

Authorized officer

LEE, Hun Gil

Telephone No. +82-42-481-8525



INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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