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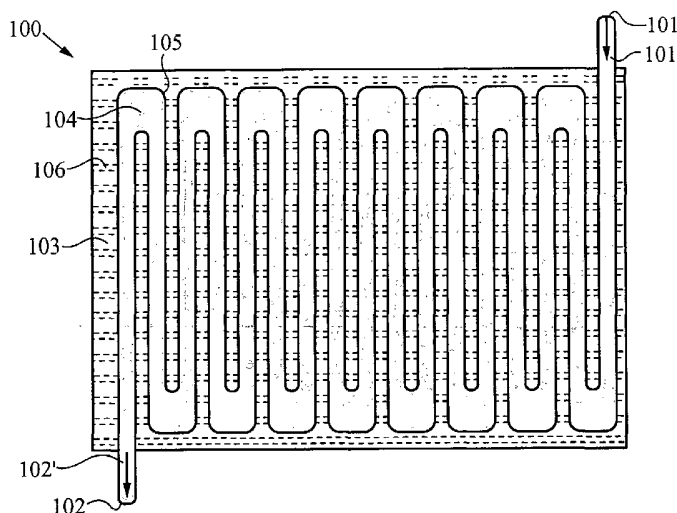
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[Continued on next page]

(54) Title: CHANNELED FLAT PLATE FIN HEAT EXCHANGE SYSTEM, DEVICE AND METHOD



(57) Abstract: A device, method, and system for a fluid cooled channeled heat exchange device is disclosed. The fluid cooled channeled heat exchange device utilizes fluid circulated through a channel heat exchanger for high heat dissipation and transfer area per unit volume. The device comprises a highly thermally conductive material, preferably with less than 200 W/m-K. The preferred channel heat exchanger comprises two coupled flat plates (103 and 103') and a plurality of fins (106) coupled to the flat plates. At least one of the plates preferably to receive flow of a fluid in a heated state. The fluid preferably carries heat from a heat source (such as a CPU, for example). Specially, at least one of the plates preferably comprises a plurality of condenser channels (104) configured to receive, to condense, and to cool the fluid in the heated state. The fluid in a cooler state is preferably carried from the device to the heat source, thereby cooling the heat source.

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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : F28D 15/00
 US CL : 165/80.4, 104.19, 104.21, 104.33; 361/699, 700; 257/714-716; 174/15.1
 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)
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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)
 EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 2003/0062149 A1 (GOODSON et al.) 03 April 2003, entire patent.	1,2, 9-12, 19-31, 33, 34 and 47-71
Y	US 5,310,440 A (ZINGHER) 10 May 1994, entire patent.	14-18, 54 and 55
Y	US 5,978,220 A (FREY et al) 02 November 1999, entire patent.	13 and 32
Y	US 6,167,948 B1 (THOMAS) 02 January 2001, entire patent.	1-71
Y	US 6,034,872 A (CHRYSLER et al.) 07 March 2000, entire patent.	1-71
Y,P	US 6,606,251 B1 (KENNY, JR. et al.) 12 August 2003, entire patent.	1-71
Y,P	US 6,536,516 B2 (DAVIES et al) 25 March 2003, entire patent.	1-71
Y	US 4,574,876 A (AID) 11 March 1986, entire patent.	1-71
Y	US 2,039,593 A (HUBBUCH et al) 05 May 1936, entire patent.	1-71

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

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means		
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PCT/US03/35432**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,316,077 A (REICHARD) 31 May 1994 (31.05.1994), entire patent.	1, 9-20, 27-34, 47 48
Y	US 4,450,472 A (TUCKERMAN et al) 22 May 1984 (22.05.1984), column 3, lines 63 through column 4, line 2)	63, 65, 66, 68 and 70-71.