



(43) International Publication Date
16 February 2012 (16.02.2012)

- (51) International Patent Classification:
F25D 17/08 (2006.01) H05K 7/20 (2006.01)
G06F 1/20 (2006.01)
- (21) International Application Number:
PCT/US2011/047772
- (22) International Filing Date:
15 August 2011 (15.08.2011)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
12/856,533 13 August 2010 (13.08.2010) US
- (71) Applicant (for all designated States except US): AMERICAN POWER CONVERSION CORPORATION [US/US]; 134 Fairgrounds Road, West Kingston, RI 02892 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): COORS, Lex [NL/NL]; Prins Constantijnstraat 4, NL-4797 HE Willemstad (NL).
- (74) Agents: CLARK, Thomas J. et al.; Gilman, Clark & Hunter LLC, 176 Federal Street, 4th Floor, Boston, MA 02110 (US).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, 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, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, 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.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:
5 July 2012

(54) Title: SINGLE RACK COLD AIR CONTAINMENT

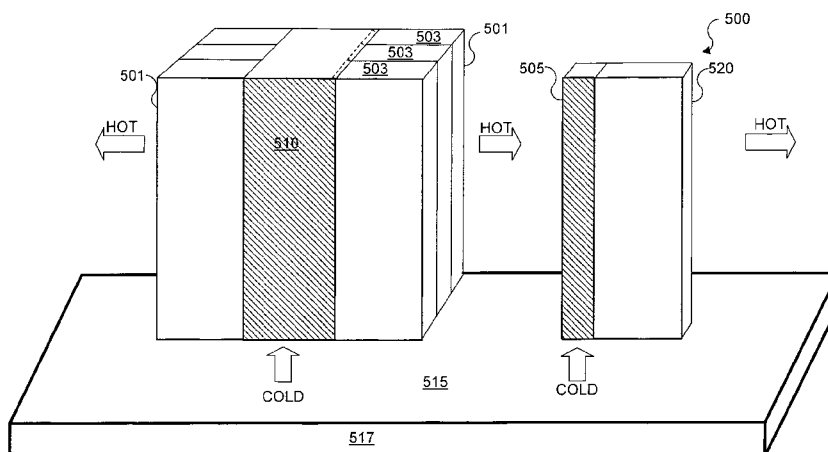


FIG. 5

(57) Abstract: A system for cooling rack mounted equipment includes: a rack configured to house rack mounted equipment, the rack providing a front port bordered by a top and two sides; and a cold-air duct separable from and attached to the rack about the top and two sides, the duct being configured to be in fluid communication with a region adjacent to the duct to receive air from the region, the duct includes: a front member; side members coupled to the front member; and an end member configured to selectively allow the passage of air through the end component from the region into the duct; where the duct is attached to the rack to form a substantially airtight seal between the rack and the duct.



A. CLASSIFICATION OF SUBJECT MATTER***F25D 17/08(2006.01)i, G06F 1/20(2006.01)i, H05K 7/20(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)

F25D 17/08; H05K 7/20; F25D 17/06; H05K 5/00

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: rack, cooling, data center

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6668565 B1 (JOHNSON, RICHARD J. et al.) 30 December 2003 See column4 line 8- column7 line 47 and figures 1,5	1-19
A	US 6672955 B2 (CHARRON, FREDERIC) 06 January 2004 See column 2 line 42- column line 54 and figures 1-3	1-19
A	US 2007-0064389 A1 (LEWIS II, RICHARD EVANS. et al) 22 March 2007 See the abstract and figures 1-3	1-19

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

26 MARCH 2012 (26.03.2012)

Date of mailing of the international search report

28 MARCH 2012 (28.03.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 189 Cheongsu-ro,
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KANG, Jung Seok

Telephone No. 82-42-481-5410



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/047772

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6668565 B1	30.12.2003	US 2004-0129005 A1	08.07.2004
		US 2005-0159098 A1	21.07.2005
		US 2007-0072536 A1	29.03.2007
		US 6880349 B2	19.04.2005
		US 7140193 B2	28.11.2006
US 6672955 B2	06.01.2004	US 2003-0050003 A1	13.03.2003
US 2007-0064389 A1	22.03.2007	US 07542287 B2	02.06.2009
		US 07804685 B2	28.09.2010
		US 07952869 B2	31.05.2011
		US 08040673 B2	18.10.2011
		US 08107238 B2	31.01.2012
		US 2007-0064389 A1	22.03.2007
		US 2007-0064391 A1	22.03.2007
		US 2009-0190307 A1	30.07.2009
		US 2009-0239461 A1	24.09.2009
		US 2010-0061059 A1	11.03.2010
		WO 2010-028384 A2	11.03.2010
		WO 2010-028384 A3	11.03.2010