

(19) World Intellectual Property Organization
International Bureau



PCT



(43) International Publication Date
14 May 2009 (14.05.2009)

(10) International Publication Number
WO 2009/061804 A1

(51) International Patent Classification:
F28B 11/00 (2006.01)

(74) **Agent:** HABELT, William W.; 250 South Clinton Street, Suite 300, Syracuse, New York 13202 (US).

(21) International Application Number:
PCT/US2008/082461

(22) International Filing Date: 5 November 2008 (05.11.2008)

(25) Filing Language: English

(26) **Publication Language:** English

(30) Priority Data:
61/002,604 9 November 2007 (09.11.2007) US

(71) **Applicant** (for all designated States except US): **CARRIER CORPORATION** [US/US]; One Carrier Place, Farmington, CT 06034 (US).

(72) Inventors; and

(75) **Inventors/Applicants (for US only): CHEN, Yu H.** [US/US]; 4745 Edgeworth Drive, Manlius, New York 13104 (US). **LIU, Lucy Yi.** [US/US]; 5003 Saddlebrook Drive, Fayetteville, New York 13066 (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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

(54) Title: TRANSPORT REFRIGERATION SYSTEM AND METHOD OF OPERATION

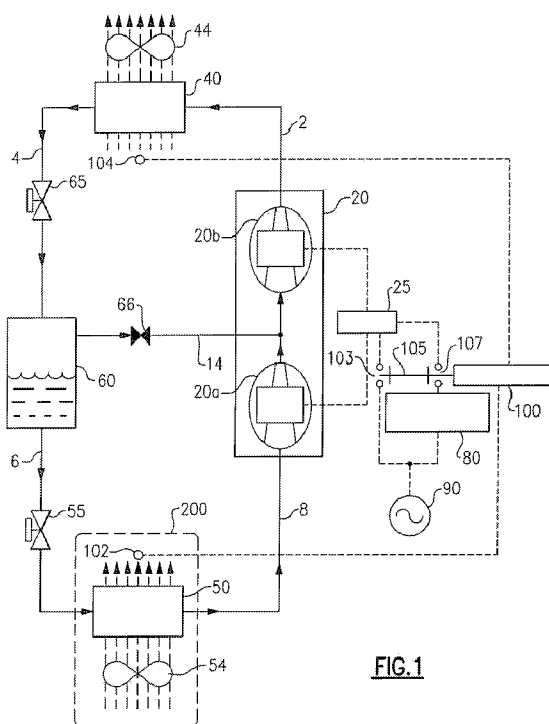


FIG. 1

(57) Abstract: A refrigeration system for a transport refrigeration unit and a method of operating the refrigeration system for cooling a temperature controlled cargo space are disclosed. The refrigeration system includes a primary refrigerant circuit including a refrigerant compression device, a motor for driving the compression device; a variable speed drive for varying the speed of operation of the compression device; and a controller operatively associated with the variable speed drive and the compression device. The controller controls the cooling capacity of the refrigeration system by selectively controlling the speed of said compression device in a first continuous run mode of operation and by selectively powering on and powering off said compression device in a first cycling mode of operation.