



- (51) International Patent Classification:
F25B 1/10 (2006.01) *F25B 6/04* (2006.01)
- (21) International Application Number:
PCT/US2012/031926
- (22) International Filing Date:
3 April 2012 (03.04.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/477,866 21 April 2011 (21.04.2011) US
- (71) Applicant (for all designated States except US): **CARRIER CORPORATION** [US/US]; One Carrier Place, Farmington, Connecticut 06034 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **HUFF, Hans-Joachim** [DE/DE]; Taunusstrasse 5, 55118 Mainz (DE).

(74) Agent: **HABELT, William W.**; 20 Church Street, 22nd Floor, Hartford, Connecticut 06103 (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, RW, 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, RW, 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,

[Continued on next page]

(54) Title: TRANSCRITICAL REFRIGERANT VAPOR SYSTEM WITH CAPACITY BOOST

(57) Abstract: A refrigerant vapor compression system and method of operation are disclosed wherein the first (30a) and second (30b) compression stages of a two stage compression device are selectively configurable in a first arrangement and a second arrangement. In the first arrangement, the first and second compression stages operate in a series refrigerant flow relationship. In the second arrangement, the first and second compression stages (30a), (30b) operate in a parallel refrigerant flow relationship.

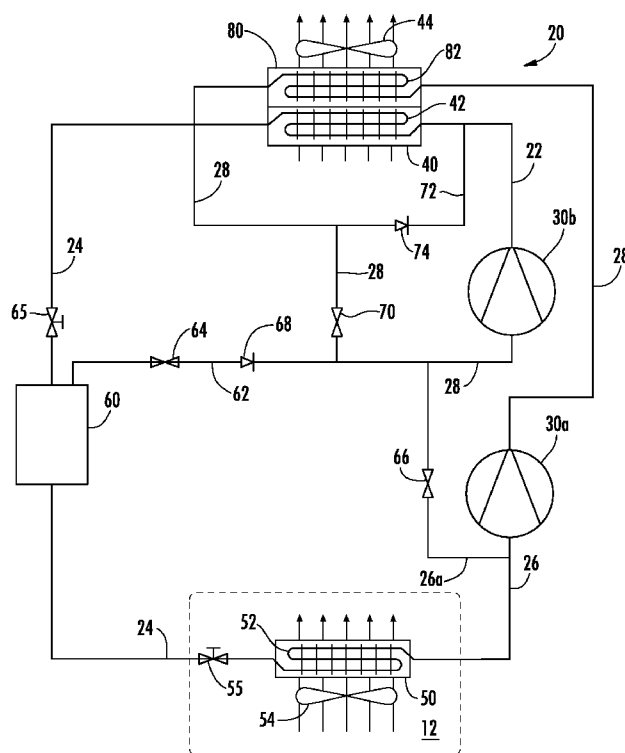


FIG. 2



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))*

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*