

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 September 2006 (08.09.2006)

PCT

(10) International Publication Number
WO 2006/093646 A3

(51) International Patent Classification:

F25B 27/00 (2006.01) *F28D 7/10* (2006.01)
F25B 17/00 (2006.01) *F24D 11/02* (2006.01)

(21) International Application Number:

PCT/US2006/004549

(22) International Filing Date: 9 February 2006 (09.02.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/068,413 28 February 2005 (28.02.2005) US

(71) Applicant (for all designated States except US): **CARRIER CORPORATION** [US/US]; A CORPORATION OF THE STATE OF DELAWARE, 1 Carrier Place, Farmington, CT 06034 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SIENEL, Tobias** [US/US]; 22 Bayberry Drive, East Hampton, MA 01027 (US). **ZHANG, Lili** [CN/US]; 130 Nutmeg Lane, Apt. 216, East Hartford, CT 06118 (US). **PONDICQ-CAS-SOU, Nicolas** [FR/FR]; 63 Bis Rue Henon, F-69004 Lyon (FR).

(74) Agent: **DELACRUZ, Cedric, G.**; CARRIER CORPORATION, One Carrier Place, Farmington, CT 06034 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

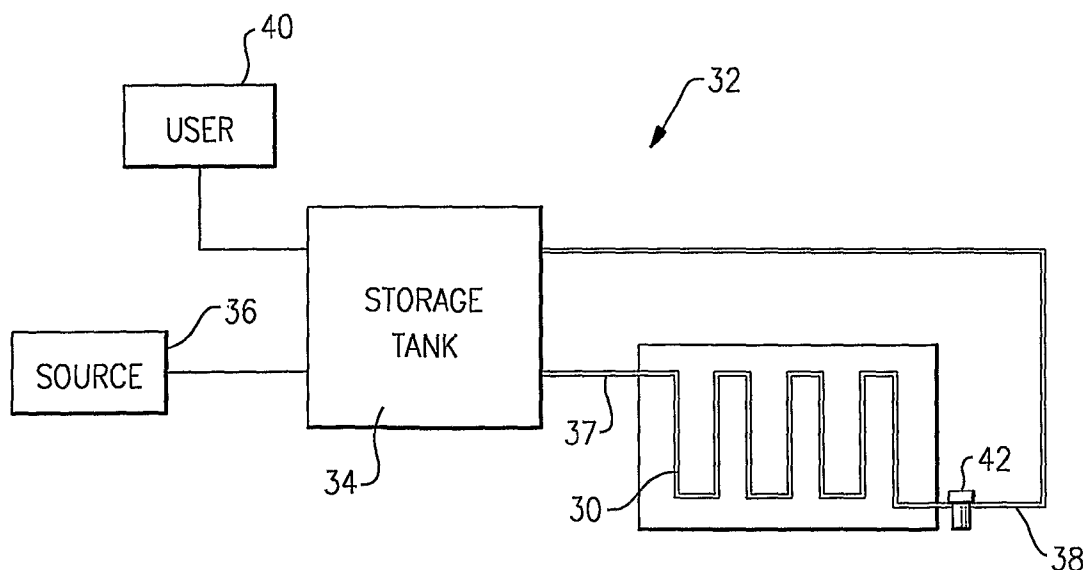
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, 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
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: TRANSCRITICAL HEAT PUMP WATER HEATER WITH DRAINAGE



(57) Abstract: A water heater is provided by a refrigerant cycle, in which the gas cooler is utilized to heat the water. A drain is incorporated into a water circuit for draining all of the water outwardly of the circuit when the system is shut down. In a preferred embodiment, a water outlet of the gas cooler is at the vertically lowermost portion of the water circuit. A drain valve is placed in this vertically lowermost location such that the water can be easily drained.

WO 2006/093646 A3



(88) Date of publication of the international search report:

24 May 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.