

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 May 2006 (18.05.2006)

PCT

(10) International Publication Number
WO 2006/050856 A1

- (51) **International Patent Classification:**
A47J 31/00 (2006.01) A47J 31/56 (2006.01)
- (21) **International Application Number:**
PCT/EP2005/011810
- (22) **International Filing Date:**
4 November 2005 (04.11.2005)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
10/983,671 9 November 2004 (09.11.2004) US
- (71) **Applicant (for all designated States except US):** NESTEC S.A. [CH/CH]; Ave Nestlé 55, CH-1800 Vevey (CH).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** HU, Ruguo [CN/CN]; 217 Ha Mi Road, Shanghai 1500 (CN). WALTERS, Megan [US/US]; 100 New Chalet Drive, Mohegan Lake, NY 10547 (US).
- (74) **Agent:** BORNE, Patrice; Avenue Nestlé 55, CH-1800 Vevey (CH).

(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.

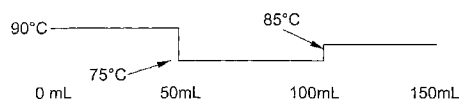
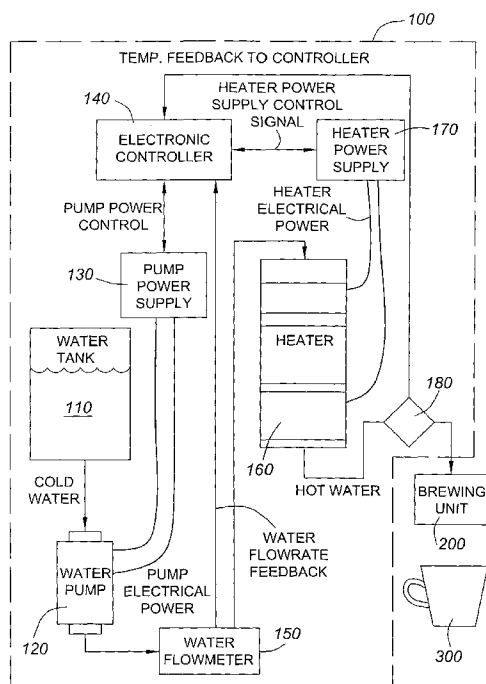
(84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, 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).

Declarations under Rule 4.17:

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

[Continued on next page]

(54) **Title:** METHOD AND APPRATUS FOR OPTIMIZING VARIABLE LIQUID TEMPERATURES



(57) **Abstract:** A method, apparatus (100), and related beverage profiles for on-demand heating of liquid used for beverage dispensing where such heating is dynamically variable according to the applicable profile. The apparatus (100) includes a heating unit (160), electronic controller (140), and sensing devices (150, 180). A water tank (110) supplies the heating unit (160) via a water pump (120) controlled by the controller (140) that also controls the heating unit. Feedback control loops provide control data to the controller (140) to optimize liquid temperatures for a given beverage type in accordance with predetermined profiles.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report*

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.