

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 June 2004 (17.06.2004)

PCT

(10) International Publication Number
WO 2004/050541 A3

(51) International Patent Classification⁷: **B67D 1/08**, 1/08

SG8 5BX (GB). **HALKET, Andrew, R. B.** [GB/GB]; 17 Fennec Close, Cherry Hinton, Cambridge CB1 9GG (GB).

(21) International Application Number:

PCT/IB2003/005403

(81) **Designated States (national)**: 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:

25 November 2003 (25.11.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0227923.0 29 November 2002 (29.11.2002) GB
0227926.3 29 November 2002 (29.11.2002) GB

(84) **Designated States (regional)**: ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) **Applicant (for all designated States except US)**: **INTER-BREW S.A.** [BE/BE]; Vaarstraat 94, B- 3000 Leuven (BE).

(72) **Inventors; and**

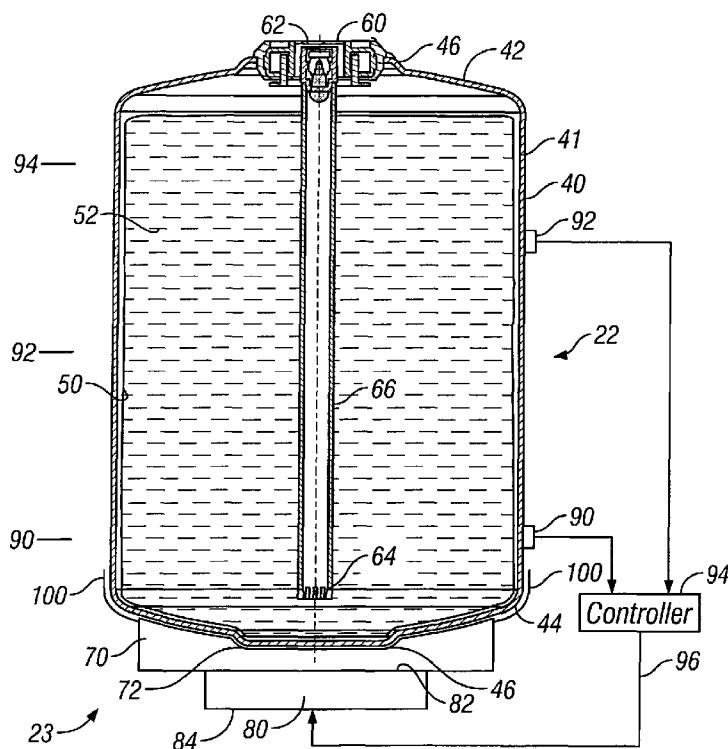
(75) **Inventors/Applicants (for US only)**: **WAUTERS, Albert** [BE/BE]; Admiraalhof 24, B- 9070 Destelbergen (BE). **DONKER, Hans** [NL/NL]; Jungfrau 18, NL- 5624 NL Eindhoven (NL). **ANDERSON, Ian** [GB/GB]; 19 Silver Street, Burwell, Cambridge CB5 0EF (GB). **DUFFY, Edward, P.** [GB/GB]; 61 Green Drift, Royston, Herts

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**: COOLING SYSTEM FOR A BEVERAGE DISPENSING APPARATUS



(57) **Abstract**: A beer or like alcohol beverage dispensing apparatus has a keg for containing the beverage. A keg dispensing device is connected through a top portion of the keg and extends to a bottom portion of the keg to draw the beverage from the keg adjacent the bottom portion. The apparatus has a cooling plate in heat transfer contacting relation with the bottom of the keg and also has a Peltier thermoelectric device connected to the cooling plate so as to extract heat from the cooling plate and thereby extract heat from the keg. The cooling apparatus has a first temperature sensor, mounted in heat sensing relation with a bottom portion of the keg and a second temperature sensor mounted in heat sensing relation with an upper portion of the keg. A controller controls the cooling apparatus in response to the first and second temperature sensors so as to control the operation of the cooling apparatus to extract heat from the bottom portion of the keg to lower and maintain the temperature of the beverage contained in the keg to a desired beverage serving temperature. The keg may comprise either steel, stainless steel or copper so as to provide a stratified cooling effect or may comprise aluminum so as to initially cool the beverage in the container in a more homogeneous manner.



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

19 August 2004

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.