



(51) International Patent Classification:

B01D 61/02 (2006.01) *B01D 65/00* (2006.01)
C02F 1/44 (2006.01) *B01D 35/00* (2006.01)

(21) International Application Number:

PCT/IB2009/054377

(22) International Filing Date:

6 October 2009 (06.10.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/246,657 7 October 2008 (07.10.2008) US

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(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, 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.

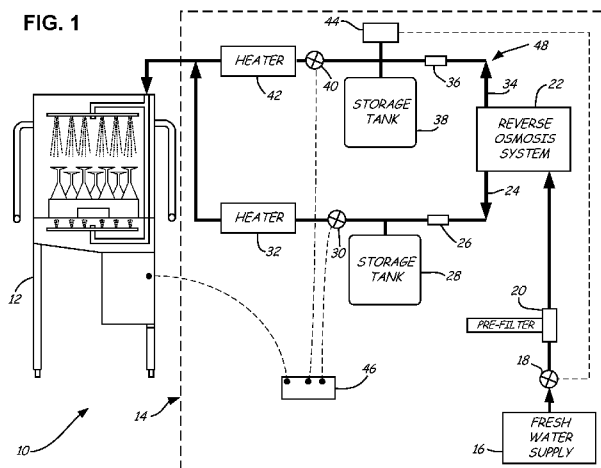
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, 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))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report: 8 July 2010

(54) Title: ZERO WASTE REVERSE OSMOSIS SYSTEM AND DOWNSTREAM RINSING



(57) Abstract: A system for regulating a reverse osmosis system to obtain zero wastewater includes a fresh water supply, a reverse osmosis apparatus, a concentrate storage tank and a permeate storage tank, a concentrate solenoid valve and a permeate solenoid valve, a permeate heater, an institutional dishmachine and a control system. The reverse osmosis apparatus filters water from the fresh water supply into a concentrate rinse stream and a permeate rinse stream. The concentrate storage tank and the permeate storage tank are downstream of the reverse osmosis apparatus and receiving the concentrate rinse stream and the permeate rinse stream, respectively. The concentrate solenoid valve and the permeate solenoid valve control the flow of the concentrate rinse stream and the permeate rinse stream, respectively, from their respective storage tank. The permeate heater heats the permeate rinse stream to a predetermined temperature. The institutional dishmachine successively receives the concentrate rinse stream and the permeate rinse stream during a rinse cycle of the institutional dishmachine. The control system is operatively connected to the concentrate solenoid valve and the permeate solenoid valve and control flow of the rinse streams into the institutional dishmachine.



A. CLASSIFICATION OF SUBJECT MATTER*B01D 61/02(2006.01)i, C02F 1/44(2006.01)i, B01D 65/00(2006.01)i, B01D 35/00(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B01D 61/02; A47L 15/42; B01D 17/12; B01D 35/00; B01D 61/06; B01D 61/10; B01D 61/12; C02F 1/32; D06F 39/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords:reverse osmosis, dishmachine, rinse, stream, water, dishware

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6074551 A1 (JONES; LARRY T. et al.) 13 June 2000 See claims 1-19 and figure 1	1-22
A	US 5520816 A1 (KUEPPER; THEODORE A.) 28 May 1996 See abstract and claims 1-12, figure 1	1-22
A	US 5976363 A1 (MONROE; JERRY et al.) 02 November 1999 See abstract and claim 1	1-22
A	KR 10-2007-0074069 A (JUN, JANG BONG) 12 July 2007 See abstract and claim 1, figure 1	1-22
A	KR 10-2007-0011513 A (THE PROCTER & GAMBLE COMPANY) 24 January 2007 See abstract and claims 1-21	1-22

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

12 MAY 2010 (12.05.2010)

Date of mailing of the international search report

13 MAY 2010 (13.05.2010)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

HA, SEUNG KYU

Telephone No. 82-42-481-8116



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/IB2009/054377

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