



- (51) **International Patent Classification:**  
C02F 1/44 (2006.01) C02F 103/08 (2006.01)  
B01D 61/02 (2006.01)
- (21) **International Application Number:**  
PCT/SE2011/050484
- (22) **International Filing Date:**  
20 April 2011 (20.04.2011)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
1050413-2 26 April 2010 (26.04.2010) SE
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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, 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, 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, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

— of inventorship (Rule 4.17(iv))

**Published:**

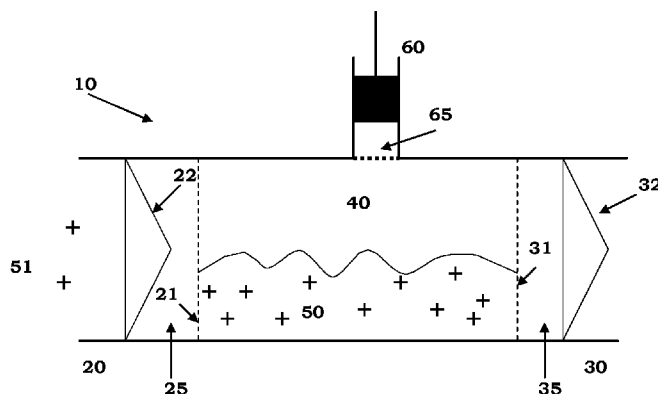
— with international search report (Art. 21(3))

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

15 December 2011

(54) **Title:** DESALINATION DEVICE

Figure 1.



(57) **Abstract:** The invention relates to desalination. The problem to be solved is that many desalination systems used today, such as reverse osmosis systems, are highly dependent on pumps of various kinds, and they result in brine that need to be removed and deposited. The invention solves these problems by a combination of forward osmosis (FO) and reverse osmosis (RO), in a device (10) with a central compartment (40) for brine, which has an FO membrane (21) at its inlet end (20) and a RO membrane (31) at its outlet end (30). The water to in the salt water to be desalinated flows by forward osmosis from the inlet, through the FO membrane and into the central compartment. The osmotic pressure thus created in the central compartment, together with an additional pressure applied by a device (60) such as a piston, is sufficient for forcing out desalted water through the RO membrane. Check valves (22, 32) control the flow direction and also make sure that the brine concentration remains.

WO 2011/136722 A3

**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/SE2011/050484

**A. CLASSIFICATION OF SUBJECT MATTER**  
**IPC: see extra sheet**  
 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)  
**IPC: B01D, C02F**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
**SE, DK, FI, NO classes as above**

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
**EPO-Internal, PAJ, WPI data, COMPENDEX**

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3617547 A (HALFF ALBERT H ET AL), 2 November 1971 (1971-11-02); column 1, line 5 - line 6; column 1, line 43 - column 2, line 44; figures 1-2	1-3, 5-14
Y	--	4
Y	US 20060011544 A1 (SHARMA SUNITY ET AL), 19 January 2006 (2006-01-19); claim 1; paragraphs [0028], [0053], [0058] --	4
A	EP 1894612 A1 (VITENS FRIESLAND), 5 March 2008 (2008-03-05); figure 1; paragraphs [0007], [0011]-[0012], [0030] --	1-14

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 <b>27-06-2011</b>	Date of mailing of the international search report <b>12-07-2011</b>
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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE2011/050484

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3423310 A (POPPER KAREL), 21 January 1969 (1969-01-21); abstract; figures --	1-14
A	US 6849184 B1 (LAMPI KEITH ET AL), 1 February 2005 (2005-02-01); whole document --	1-14
A	US 5098575 A (YAELI JOSEPH), 24 March 1992 (1992-03-24); column 3, line 15 - line 40; figure 1 --	1-14
A	WO 9718166 A2 (OSMOTEK INC), 22 May 1997 (1997-05-22); figure 3 -- -----	1-14

**Continuation of:** second sheet

**International Patent Classification (IPC)**

**C02F 1/44** (2006.01)

**B01D 61/02** (2006.01)

**C02F 103/08** (2006.01)

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Cited literature, if any, will be enclosed in paper form.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/SE2011/050484**

US	3617547 A	02/11/1971	NONE			
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