(19) World Intellectual Property Organization

International Bureau



(10) International Publication Number WO 2011/062790 A3

(43) International Publication Date 26 May 2011 (26.05.2011)

(51) International Patent Classification: A47L 15/24 (2006.01)

(21) International Application Number:

PCT/US2010/055767

(22) International Filing Date:

8 November 2010 (08.11.2010)

(25) Filing Language:

English

(26) Publication Language:

English

US

(30) Priority Data:

12/621,200 18 November 2009 (18.11.2009)

- (71) Applicant (for all designated States except US): PRE-MARK FEG L.L.C. [US/US]; 1300 Market Street, Suite 504, Wilmington, DE 19801 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): PADTBERG,
 Klaus [DE/DE]; 3600 West Lake Avenue, Glenview, IL
 60026 (US). BONDAROWICZ, Frank, A. [US/US];
 3600 West Lake Avenue, Glenview, IL 60026 (US).
 VARACINS, Alan, J. [US/US]; 3600 West Lake Avenue, Glenview, IL 60026 (US).

[DE/DE]; 3600 West Lake Avenue, Glenview, IL 60026 (US).

- (74) Agents: NIEBERDING, Michael, J. et al.; Thompson Hine LLP, P.O.Box 8801, Dayton, OH 45401-8801 (US).
- (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, 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).

[Continued on next page]

(54) Title: METHOD FOR OPERATING A WARE WASHER AND WARE WASHER

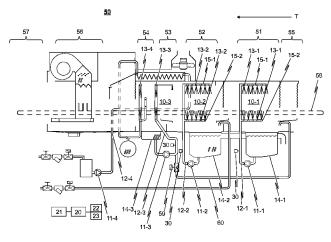


Fig. 1

(57) Abstract: The invention relates to a ware washer (40, 50) and to a method for operating a ware washer (40, 50) which is designed as a programmable machine (40) or as a conveyor ware washer (50) and which has at least one pump (11, 11-1, 11-2, 11-3, 11-4, 11-5, 11-6), at least one line system (12, 12-1, 12-2, 12-3, 12-4, 12-5, 12-6) connected to the pump (11, 11-1, 11-2, 11-3, 11-4, 11-5, 11-6), and at least one nozzle system connected to the line system (12, 12-1, 12-2, 12-3, 12-4, 12-5, 12-6) and having at least one nozzle (13, 13-1, 13-2, 13-3, 13-4, 13-5, 13-6, 13-7), a liquid being supplied at least intermittently to the at least one nozzle (13, 13-1, 13-2, 13-3, 13-4, 13-5, 13-6, 13-7) via the line system (12, 12-1, 12-2, 12-3, 12-4, 12-5, 12-6). Furthermore, a sensor device (30, 30', 30") connected to a control device (20) is provided for detecting a profile of the volumetric flow rate (Q_1) of the liquid in the line system (12, 12-1, 12-2, 12-3, 12-4, 12-5, 12-6) and for comparing the detected flow rate profile (Q_1) with a predetermined flow rate profile (Q_2). In order to achieve the situation where potential deviations of the flow rate can be ascertained and automatically reacted to correspondingly, according to the invention the control device (20) is designed, in the event of a deviation of the detected flow rate profile (Q_1) from the predetermined flow rate profile (Q_3), automatically either to carry out a regulating action on the operation of the ware washer (40, 50) as a function of the size and the time gradient of a difference between the



Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- the earlier application (Rule 4.17(iii))
- 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))
- as to the applicant's entitlement to claim the priority of (88) Date of publication of the international search report: 4 August 2011

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

INTERNATIONAL SEARCH REPORT

International application No PCT/US2010/055767

a. classification of subject matter INV. A47L15/46

ADD.

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)

A47L D06F

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT						
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.				
Χ	US 5 408 716 A (DAUSCH MARK E [US] ET AL) 25 April 1995 (1995-04-25)	1,3-5				
Υ	column 4, line 42 - column 5, line 28 column 7, lines 20-34; figures	2,6				
X	DE 10 2007 014386 A1 (SCOTSMAN BEVERAGE SYSTEMS GMBH [DE]) 2 October 2008 (2008-10-02) paragraphs [0002], [0007] - [0010], [0013], [0016]; figures	1,3-5				
Y	WO 2009/117256 A2 (PREMARK FEG LLC [US]; BERNER DIETRICH [DE]; DISCH HARALD [DE]; HUBNER) 24 September 2009 (2009-09-24) pages 7-8; figures	2,6				
	,					

X Further documents are listed in the continuation of Box C.	X See patent family annex.		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search	Date of mailing of the international search report		
19 May 2011	30/05/2011		
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Lopez Vega, Javier		

1

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2010/055767

C(Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 522 251 A2 (BHT HYGIENETECHNIK GMBH [DE]) 13 April 2005 (2005-04-13) paragraph [0025]	1
A	EP 1 744 248 A1 (WRAP SPA [IT]) 17 January 2007 (2007-01-17) paragraphs [0018], [0033] - [0035]	1
A	EP 0 569 733 A1 (LICENTIA GMBH [DE]) 18 November 1993 (1993-11-18) columns 3,4	1

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2010/055767

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5408716	A	25-04-1995	NONE	
DE 102007014386	A1	02-10-2008	NONE	
WO 2009117256	A2	24-09-2009	CA 2717568 A1 CN 101977699 A DE 102008014921 A1 EP 2252414 A2 US 2011005551 A1	24-09-2009 16-02-2011 24-09-2009 24-11-2010 13-01-2011
EP 1522251	A2	13-04-2005	AT 493058 T DE 10347835 A1	15-01-2011 12-05-2005
EP 1744248	A1	17-01-2007	NONE	
EP 0569733	A1	18-11-1993	DE 4215574 A1	18-11-1993