(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 562 424 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
13.03.2013 Bulletin 2013/11

(43) Date of publication A2:
27.02.2013 Bulletin 2013/09

(21) Application number: **12382344.5**

(22) Date of filing: **07.09.2012**

(51) Int Cl.:
F04D 15/00 *(2006.01)*

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(71) Applicant: **Gidelmar, S.A.**
Montevideo (UY)

(72) Inventor: **Bica Caffera, Gabriel Alejandro**
Montevideo (UY)

(74) Representative: **Temino Ceniceros, Ignacio**
Calle Amador de los Rios 1-1°
28010 Madrid (ES)

(54) **Method and equipment for controlling a multipoint fluid distribution system**

(57) It comprises taking pressure measurements in a point previous to the consumption points by means of a piece of control equipment and performing the following steps in sequence:
a) acquiring a successive series of supply pressure values (Pi) measured in said previous point;
b) varying the pump rotating speed in response to a pressure variation detected in said previous point;
c) detecting that at least two of said pressure values (P_{i1}), (P_{i2}) measured in said previous point change (increase or decrease) and obtaining a curve of demand (10) by calculating the coefficients of a known mathematical function descriptive of said curve of demand, making said coefficient calculations from said measured pressure values (P_{i1}), (P_{i2}) and of corresponding calculated flow rate values;
d) determining a consumption point (12) by intersecting the curve of demand with the y-axis and
e) adopting a pump rotating speed providing a pump set-point pressure, depending on said consumption point (12) determined in step d),
restarting steps b) to e) in the event of another pressure variation in the demand.

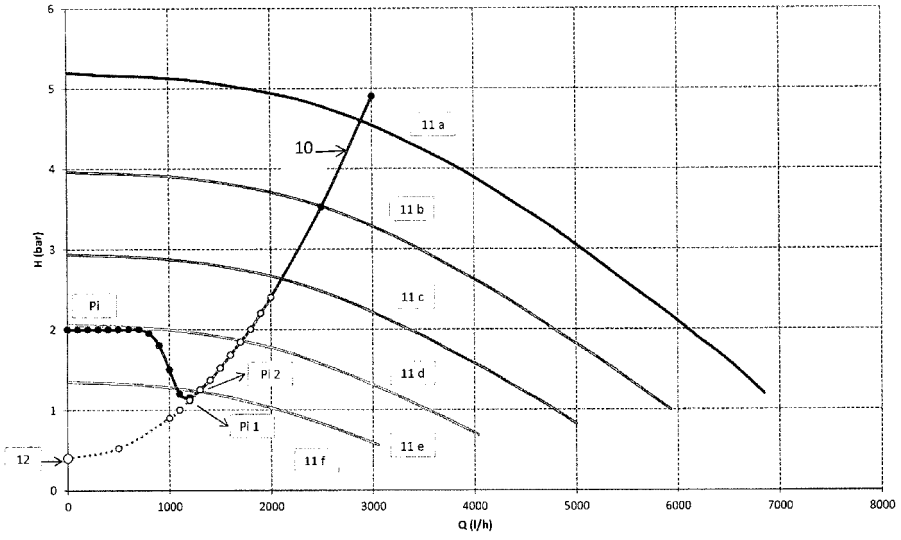

FIG. 1

EP 2 562 424 A3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2344

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	US 5 540 555 A (CORSO ANTHONY B [US] ET AL) 30 July 1996 (1996-07-30) * column 5, line 16 - column 6, line 36; figure 2 *	1,3,6,7, 11,15	INV. F04D15/00
A	DE 42 43 118 A1 (CONTINENTAL AG [DE]) 23 June 1994 (1994-06-23) * column 7, line 26 - line 49 * * column 9, line 21 - line 66; figures 1b, 2 *	1,7,15	
A	US 6 234 759 B1 (HENNEL EWALD [DE] ET AL) 22 May 2001 (2001-05-22) * column 2, line 36 - column 3, line 47; figures 1,2 *	1,7,15	
A	JP 62 093498 A (HITACHI LTD) 28 April 1987 (1987-04-28) * abstract; figures 1,6,8 *	1,7,11, 15	
A	US 2003/039556 A1 (SACHER MANFRED [AT]) 27 February 2003 (2003-02-27) * paragraph [0011] - paragraph [0023]; figures 1,2 *	1-3,11, 15	TECHNICAL FIELDS SEARCHED (IPC) F04D E03B F17D G05D B67D
A,D	US 6 464 464 B2 (SABINI EUGENE P [US] ET AL) 15 October 2002 (2002-10-15) * column 4, line 14 - line 42; figure 1 *	1,2,12, 15	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	1 February 2013	Di Giorgio, F

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 12 38 2344

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-02-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5540555 A	30-07-1996	NONE	
DE 4243118 A1	23-06-1994	NONE	
US 6234759 B1	22-05-2001	AT 208916 T	15-11-2001
		CA 2277380 A1	16-01-2000
		DE 19831997 A1	20-01-2000
		DK 973082 T3	25-03-2002
		EP 0973082 A1	19-01-2000
		ES 2168159 T3	01-06-2002
		PT 973082 E	29-04-2002
		RU 2224172 C2	20-02-2004
		TR 9901666 A2	22-05-2000
		US 6234759 B1	22-05-2001
JP 62093498 A	28-04-1987	NONE	
US 2003039556 A1	27-02-2003	AT 273533 T	15-08-2004
		CA 2396634 A1	22-02-2003
		DE 50103236 D1	16-09-2004
		DK 1286240 T3	13-12-2004
		EP 1286240 A1	26-02-2003
		ES 2227112 T3	01-04-2005
		US 2003039556 A1	27-02-2003
US 6464464 B2	15-10-2002	AT 291176 T	15-04-2005
		AU 2043900 A	09-10-2000
		BR 9917229 A	26-12-2001
		CA 2366368 A1	28-09-2000
		CN 1352733 A	05-06-2002
		DE 69924301 D1	21-04-2005
		DE 69924301 T2	13-04-2006
		EP 1171714 A1	16-01-2002
		MX PA01009536 A	19-08-2003
		TW I225908 B	01-01-2005
		TW M253699 U	21-12-2004
		US 2001041139 A1	15-11-2001
		US 2003091443 A1	15-05-2003
		WO 0057063 A1	28-09-2000

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82