

(19)



(11)

EP 2 530 399 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
23.04.2014 Bulletin 2014/17

(51) Int Cl.:
F24H 4/04 (2006.01) **F24H 9/02 (2006.01)**
F24H 9/06 (2006.01)

(43) Date of publication A2:
05.12.2012 Bulletin 2012/49

(21) Application number: **12153145.3**

(22) Date of filing: **30.01.2012**

(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

(72) Inventors:
• **Fukunaga, Toshikatsu**
 Osaka 540-6207 (JP)
• **Aoyama, Shigeo**
 Chuo-ku, Osaka 540-6207 (JP)
• **Isayama, Yasuhiko**
 Chuo-ku, Osaka 540-6207 (JP)

(30) Priority: **31.05.2011 JP 2011122003**

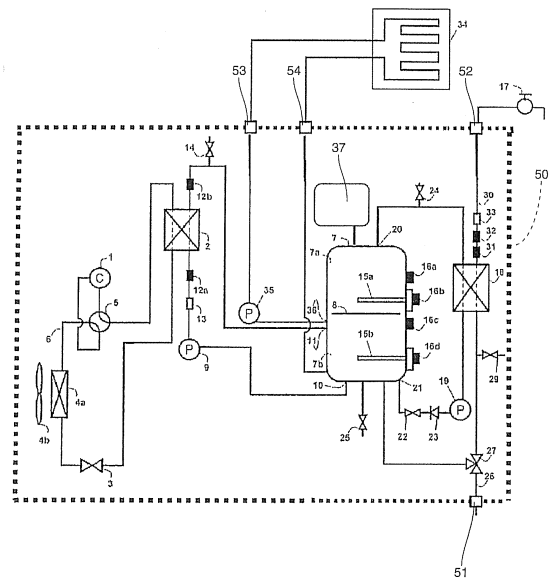
(71) Applicant: **Panasonic Corporation**
Kadoma-shi
Osaka 571-8501 (JP)

(74) Representative: **Eisenführ Speiser**
Patentanwälte Rechtsanwälte PartGmbB
Postfach 31 02 60
80102 München (DE)

(54) Heat pump hydronic heater

(57) The heat pump hydronic heater of the invention includes a heat pump circuit and a hot water tank circuit, the heat pump and the hot water tank circuit are accommodated in one casing 50, and a hermetic expansion tank 37 is connected to a hot water tank 7 and the heat pump hydronic heater can absorb expansion of water in a circulation path when hot water in a hot water tank 7 is circulated through heat a floor or supply hot water.

FIG. 1



EP 2 530 399 A3



EUROPEAN SEARCH REPORT

Application Number
EP 12 15 3145

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2011/025374 A1 (INVENTUM HOLDING B V [NL]; VAN NOORDENBURG FREDERIK CORNELIS MARIANUS) 3 March 2011 (2011-03-03) * pages 3-12; figure 1 *	1,2,4-7	INV. F24H4/04 F24H9/02 F24H9/06
Y	-----	3	
Y	GB 2 448 177 A (MEHRAFZA MOHAMMAD SAEID [IR]; MEHRAFZA MOHAMMAD REZA [IR]) 8 October 2008 (2008-10-08) * abstract; figure 3 *	3	
A	-----	1,2,4-7	
A	EP 2 116 789 A2 (MHG HEIZTECHNIK GMBH [DE]) 11 November 2009 (2009-11-11) * the whole document *	1-7	
A	DE 101 42 779 A1 (VIESSMANN WERKE KG [DE]) 27 March 2003 (2003-03-27) * paragraphs [0011] - [0022]; figures 2,5 * -----	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
			F24H
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		12 March 2014	von Mittelstaedt, A
CATEGORY OF CITED DOCUMENTS		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	
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			

1
EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 12 15 3145

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.

12-03-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2011025374 A1	03-03-2011	EP 2470842 A1 NL 2003397 C WO 2011025374 A1	04-07-2012 01-03-2011 03-03-2011
GB 2448177 A	08-10-2008	NONE	
EP 2116789 A2	11-11-2009	DE 102008023254 A1 EP 2116789 A2 EP 2116797 A2	12-11-2009 11-11-2009 11-11-2009
DE 10142779 A1	27-03-2003	NONE	

EPO FORM P 0459

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