(11) **EP 1 816 415 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: **24.11.2010 Bulletin 2010/47**

(51) Int Cl.: F25B 7/00 (2006.01)

F25B 25/00 (2006.01)

(43) Date of publication A2: **08.08.2007 Bulletin 2007/32**

(21) Application number: 07002617.4

(22) Date of filing: 07.02.2007

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated Extension States:

AL BA HR MK RS

(30) Priority: 07.02.2006 DK 200600173

(71) Applicant: Birton A/S 8260 Viby J (DK)

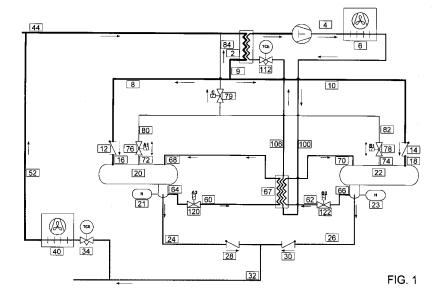
(72) Inventor: Johansen, Bent 8220 Brabrand (DK)

(74) Representative: Nielsen, Leif et al Patrade A/S Fredens Torv 3A 8000 Aarhus C (DK)

(54) Refrigerating system using "free energy" for circulating liquid re-frigerant by pressure

(57) The invention relates to a cascade refrigerating system comprising a primary refrigerating system (4) operating with a first refrigerant, which primary refrigerating system (4) comprises compressor means, connected to condensing means, where the primary refrigerating system (4) further comprises heat exchanging means (2), where heat is exchanged from a secondary refrigerating system, which secondary refrigerating system comprises pumping means arranged to supply refrigerant to evaporating means (40) and the secondary refrigerating system comprises at least two pumping vessels (20,22) con-

nected through respective check valves (12,14,28,30) which pumping vessels (20,22) are connected to at least one heat exchanger (67), in which refrigerant is evaporated to generate high pressure, which high pressure is led to the top of one of the pumping vessels (20,22) for supplying refrigerant with high pressure towards the evaporation means (40). The purpose of the invention is to provide an energy efficient refrigerating system that is suitable for refrigerant circulation with reduced energy consumption for circulating refrigerant in refrigerating systems.





EUROPEAN SEARCH REPORT

Application Number EP 07 00 2617

DOCUMENTS CONSIDERED TO BE RELEVANT Cotation of document with indication, where appropriate, Rele			Relevant	CLASSIFICATION OF THE
Category	of relevant passa		to claim	APPLICATION (IPC)
X	EP 1 536 190 A1 (BI 1 June 2005 (2005-0 * paragraph [0019] figures 1,2 *		1-9	INV. F25B7/00 F25B25/00
X	figures 1-38 * * column 1, line 7 figures 5,7,10,12,1 * column 9, line 43 * column 24, line 5 * column 27, line 5	3-01-08) 3 - column 78, line 12; - column 1, line 11;	1-9	
X	15 February 2002 (2	YORITSU REINETSU KK) 002-02-15) - paragraph [0024];	1-9	TECHNICAL FIELDS SEARCHED (IPC) F25B
	The present search report has b	·		
Place of search Munich		Date of completion of the search 13 October 2010	Szi	lagyi, Barnabas

EPO FORM 1503 03.82 (P04C01)

2

- 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

- I : theory or principle underlying the invention
 E : earlier patent document, but published on, or after the filling date
 D : document cited in the application
 L : document oited for other reasons
- & : member of the same patent family, corresponding document

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

EP 07 00 2617

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.

13-10-2010

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