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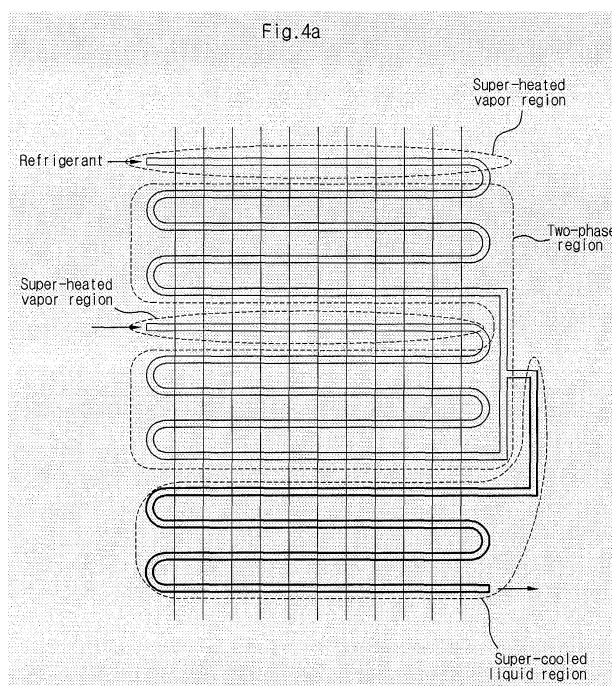
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(54) **Condenser**

(57) A condenser where a refrigerant introduced from a compressor is coexisting in super-heated vapor, two-phase and super-cooled liquid states combines a

plurality of refrigerant paths within at least one of super-heated vapor and two-phase regions to output the refrigerant to the super-cooled liquid region, and provides a proper percentage of the super-cooled liquid region.





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Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 04 07 7385

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	JP 10 009714 A (HITACHI LTD; HITACHI SHIMIZU ENG KK) 16 January 1998 (1998-01-16) * abstract * * figure 1 *	1-10	INV. F25B39/04
X	FR 2 754 886 A (VALEO THERMIQUE MOTEUR [FR]) 24 April 1998 (1998-04-24) * figure 4 * * page 8, line 12 - line 31 *	1-10	
X	US 5 224 358 A (YAMANAKA YASUSHI [JP] ET AL) 6 July 1993 (1993-07-06) * figures 1,2,10 *	1-10	
X	EP 0 374 895 A (THERMAL WAERME KAELE KLIMA [DE]) 27 June 1990 (1990-06-27) * figures 5,6 *	1-10	
X	JP 10 141884 A (DAIKIN IND LTD) 29 May 1998 (1998-05-29) * abstract * * figures 1-6 *	1,9	TECHNICAL FIELDS SEARCHED (IPC) F25B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 14 November 2007	Examiner Dezso, Gabor
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)

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

EP 04 07 7385

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  
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14-11-2007

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
JP 10009714	A	16-01-1998	NONE		
FR 2754886	A	24-04-1998	NONE		
US 5224358	A	06-07-1993	US	RE36408 E	30-11-1999
EP 0374895	A	27-06-1990	DE	3843305 A1	28-06-1990
JP 10141884	A	29-05-1998	JP	3185687 B2	11-07-2001