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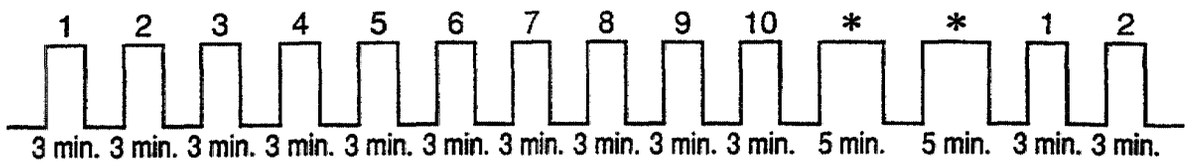
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(54) Air conditioner

(57) In order to stabilize room temperature by adjusting heating capability, intermittent operation of a compressor 1 is performed with operation time of compressor 1 temporarily made longer at a prescribed timing, so that determination as to whether outdoor heat exchanger 5 is frosted or not can be made with high accuracy. Therefore, idle defrosting operation is prevented and defrosting operation is performed without fail when necessary. Therefore, heating efficiency is improved.

FIG.5



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X A	US 4 474 813 A (NERI RUDOLPH O ET AL) 2 October 1984 (1984-10-02) * abstract * * column 3, line 3 - line 26 * * figure 2 *	1,2 3,6,8	F24F11/00 F25B47/02
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 04, 30 April 1999 (1999-04-30) -& JP 11 023112 A (SAMSUNG ELECTRON CO LTD), 26 January 1999 (1999-01-26) * abstract * -& US 5 931 009 A (SAMSUNG ELECTRONICS CO.) 3 August 1999 (1999-08-03)	1	
A	EP 0 505 315 A (CARRIER CORP) 23 September 1992 (1992-09-23) * figure 3 *	7	
A	EP 0 840 071 A (TOKYO SHIBAURA ELECTRIC CO) 6 May 1998 (1998-05-06)		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	JP 57 184859 A (HITACHI LTD) 13 November 1982 (1982-11-13)		F25B F25D F24F
A	EP 0 676 602 A (DAIKIN IND LTD) 11 October 1995 (1995-10-11)		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	8 February 2002	De Graaf, J.D.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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08-02-2002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4474813 A	02-10-1984	NONE	
JP 11023112 A	26-01-1999	KR 225640 B1	15-10-1999
		US 5931009 A	03-08-1999
EP 0505315 A	23-09-1992	US 5257506 A	02-11-1993
		DE 69212356 D1	29-08-1996
		DE 69212356 T2	30-01-1997
		EP 0505315 A1	23-09-1992
		ES 2092079 T3	16-11-1996
EP 0840071 A	06-05-1998	JP 10132358 A	22-05-1998
		CN 1181484 A	13-05-1998
		EP 0840071 A2	06-05-1998
		KR 263664 B1	01-08-2000
JP 57184859 A	13-11-1982	NONE	
EP 0676602 A	11-10-1995	JP 7120121 A	12-05-1995
		AU 669460 B2	06-06-1996
		AU 7950294 A	22-05-1995
		EP 0676602 A1	11-10-1995
		US 5689964 A	25-11-1997
		CN 1116000 A	31-01-1996
		WO 9512098 A1	04-05-1995

EPO FORM P0459

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