



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 0 943 879 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
22.03.2000 Bulletin 2000/12

(51) Int. Cl.⁷: **F25B 41/06**

(43) Date of publication A2:
22.09.1999 Bulletin 1999/38

(21) Application number: **99103641.9**

(22) Date of filing: **25.02.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **20.03.1998 IT MI980200 U**

(71) Applicant: **WHIRLPOOL CORPORATION**
Benton Harbor Michigan 49022 (US)

(72) Inventors:
• **Genoni, Carlo,**
Whirlpool Europe s.r.l.
21025 Comerio (IT)
• **Maritan Marco,**
Whirlpool Europe s.r.l.
21025 Comerio (IT)

(74) Representative:
Guerri, Alessandro et al
Whirlpool Europe S.r.l.
Patent Department
Viale G. Borghi 27
21025 Comerio (VA) (IT)

(54) **Device for optimizing the flow of refrigerant fluid fed to an evaporator of a refrigeration circuit and acting as an expansion noise level reducer**

(57) A device for optimizing, within a refrigeration circuit, the flow of refrigerant fluid fed to an evaporator via an expansion member (1) and for reducing the expansion noise level comprises a body (10) constructed of porous material and positioned in correspondence with a free end (5) of said expansion member (1) along the refrigerant fluid path towards the evaporator within a containing tube (3) for said member (1) positioned at the entry to said evaporator, said body (10) containing at least a portion (7) of said free end (5) and being fixed within said tube (3).

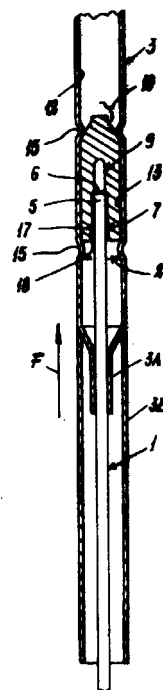


Fig. 1

EP 0 943 879 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 10 3641

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.6)
X	US 3 815 379 A (SCHERER C ET AL) 11 June 1974 (1974-06-11)	1,2,9	F25B41/06
Y	* column 3, line 4 - line 54 *	3,5-7	
A	* figures 1,3 *	4,10	
Y	--- US 5 097 866 A (SHAPIRO-BARUCH IAN M ET AL) 24 March 1992 (1992-03-24)	3,5-7	
A	* column 2, line 56 - column 3, line 25 *	8	
A	* figure 3 *	1	
A	--- PATENT ABSTRACTS OF JAPAN vol. 016, no. 293 (M-1273), 29 June 1992 (1992-06-29)		
A	-& JP 04 080576 A (MATSUSHITA REFRIG CO LTD), 13 March 1992 (1992-03-13)		
A	* abstract *		
A	--- US 3 677 300 A (KING COLIN F) 18 July 1972 (1972-07-18)	2-4	
A	* column 1, line 43 - line 54 *		F25B
A	--- US 2 576 610 A (T W KUNZOG) 27 November 1951 (1951-11-27)	6	
A	* figure 2 *		
A	--- US 5 655 387 A (FOX DALLAS C ET AL) 12 August 1997 (1997-08-12)		
A	--- PATENT ABSTRACTS OF JAPAN vol. 018, no. 650 (M-1719), 9 December 1994 (1994-12-09)		
	& JP 06 249545 A (MATSUSHITA REFRIG CO LTD), 6 September 1994 (1994-09-06)		
	* abstract *		

The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		28 January 2000	De Graaf, J.D.
<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</p> <p>& : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)

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

EP 99 10 3641

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.

28-01-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3815379 A	11-06-1974	AU 6101673 A GB 1439065 A ZA 7307641 A	10-04-1975 09-06-1976 28-08-1974
US 5097866 A	24-03-1992	NONE	
JP 04080576 A	13-03-1992	NONE	
US 3677300 A	18-07-1972	CA 926266 A DE 2035121 A FR 2076115 A GB 1307533 A JP 49037052 B NL 7010486 A	15-05-1973 22-07-1971 15-10-1971 21-02-1973 05-10-1974 19-07-1971
US 2576610 A	27-11-1951	NONE	
US 5655387 A	12-08-1997	US 5581883 A	10-12-1996
JP 06249545 A	06-09-1994	NONE	