



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
04.07.2001 Bulletin 2001/27

(51) Int Cl.7: **F24F 1/00**, F25B 41/00,
F25B 45/00

(43) Date of publication A2:
04.10.2000 Bulletin 2000/40

(21) Application number: **00106822.0**

(22) Date of filing: **30.03.2000**

(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: **01.04.1999 JP 9457699**

(71) Applicant: **MATSUSHITA ELECTRIC INDUSTRIAL
CO., LTD.**
Kadoma-shi, Osaka 571-8501 (JP)

(72) Inventors:
• **Sato, Shigehiro**
Kusatsu-shi, Shiga 525-0045 (JP)
• **Motegi, Hitoshi**
Kusatsu-shi, Shiga 525-0057 (JP)

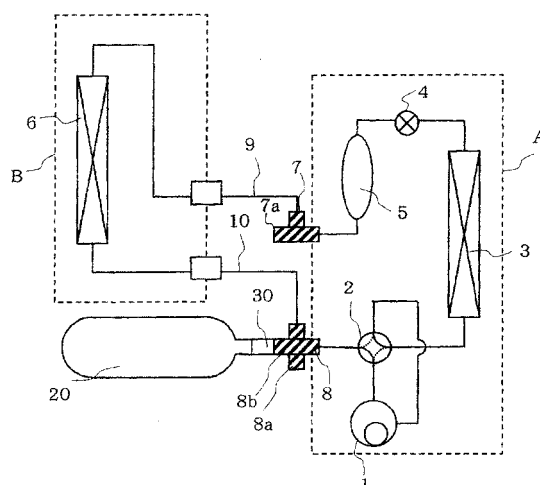
• **Watanabe, Yukio,**
Rm 1108,Co-op Nomura Kyoto Minami
kyoto-shi, Kyoto 601-8037 (JP)
• **Numoto,Hironao**
Otsu-shi, Shiga 520-2101 (JP)
• **Takeuchi, Hiroyuki**
Otsu-shi, Shiga 520-2264 (JP)
• **Nakatsuno, Eiji**
Otsu-shi, Shiga 520-2276 (JP)

(74) Representative: **Körfer, Thomas, Dipl.-Phys. et al**
Mitscherlich & Partner,
Patent- und Rechtsanwälte,
Sonnenstrasse 33
80331 München (DE)

(54) **Connecting apparatus for installing air conditioner**

(57) A connecting apparatus for installing an air conditioner comprises a first connecting port connected to a refrigerant charge port of a pipe connecting valve body provided in an outdoor unit of the air conditioner, and a second connecting port connected to a replacing gas charging container for installing the air conditioner, replacing gas in the replacing gas charging container being allowed to flow from the refrigerant charge port, wherein the first connecting port includes a first connecting portion capable of being connected to the refrigerant charge port, the second connecting port includes a second connecting portion capable of being connected to the replacing gas charging container, the refrigerant charge port is opened by connecting the first connecting port and the refrigerant charge port to each other by the first connecting portion, and the refrigerant charge port is opened by connecting the second connecting portion and the replacing gas charging container to each other by the second connecting portion. With this structure, after air in the indoor unit heat exchanger or the connecting pipe is once replaced by the replacing gas, the replacing gas can easily be collected.

FIG. 1





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 10 6822

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)
Y,D	US 5 718 119 A (NAKAJIMA KEIZO ET AL) 17 February 1998 (1998-02-17) * column 6, line 50 - column 7, line 10 * * figures 9,10 *	1-3,7-16	F24F1/00 F25B41/00 F25B45/00
A	---	5	
Y	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 07, 31 August 1995 (1995-08-31) -& JP 07 103620 A (NIPPON PISTON RING CO LTD;OTHERS: 03), 18 April 1995 (1995-04-18) * abstract *	1-3,7-16	
A	---	4,6	
E	US 5 010 743 A (HALE PHILLIP L) 30 April 1991 (1991-04-30) * column 3, line 58 - line 60 *		
E	---	1-3,7-16	
E	EP 1 041 348 A (MATSUSHITA ELECTRIC IND CO LTD) 4 October 2000 (2000-10-04) * paragraph [0033] - paragraph [0035] * * paragraph [0052] - paragraph [0059] *		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
E	---	1-3,7-16	F25B
P,X	EP 1 041 349 A (MATSUSHITA ELECTRIC IND CO LTD) 4 October 2000 (2000-10-04) * paragraph [0112] - paragraph [0126] * * figures 1,2,4,11,12,14 *		
P,X	---	1,3	
A	EP 0 962 728 A (MATSUSHITA ELECTRIC IND CO LTD) 8 December 1999 (1999-12-08) * abstract * * figure 16 *		
A	---		
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 09, 31 July 1998 (1998-07-31) -& JP 10 110844 A (KYOEI SANGYO KK), 28 April 1998 (1998-04-28) * abstract *		

	-/--		
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		10 May 2001	De Graaf, J.D.
CATEGORY OF CITED DOCUMENTS			
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		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	

EPO FORM 1503 03/02 (P04/C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 10 6822

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)
A	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 12, 26 December 1996 (1996-12-26) -& JP 08 219598 A (PACIFIC IND CO LTD), 30 August 1996 (1996-08-30) * abstract *		
A	JP 56 124867 A (YOKOHAMA AEROQUIP) 30 September 1981 (1981-09-30)		
A	US 2 518 299 A (D T FERNANDEZ) 8 August 1950 (1950-08-08)		
A	US 4 069 686 A (HOELMAN WALTER A) 24 January 1978 (1978-01-24)		
A	US 4 332 273 A (BOYCE HAROLD L) 1 June 1982 (1982-06-01)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 May 2001	Examiner De Graaf, J.D.
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			

EPO FORM 1503 03/82 (P04C01)

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

EP 00 10 6822

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.

10-05-2001

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5718119	A	17-02-1998	JP 9292168 A	11-11-1997
JP 07103620	A	18-04-1995	NONE	
US 5010743	A	30-04-1991	NONE	
EP 1041348	A	04-10-2000	JP 2000283610 A JP 2000292038 A	13-10-2000 20-10-2000
EP 1041349	A	04-10-2000	JP 2000292036 A JP 2000292032 A JP 2001004253 A JP 2001012828 A	20-10-2000 20-10-2000 12-01-2001 19-01-2001
EP 0962728	A	08-12-1999	JP 11173709 A CN 1247599 T WO 9931445 A	02-07-1999 15-03-2000 24-06-1999
JP 10110844	A	28-04-1998	NONE	
JP 08219598	A	30-08-1996	NONE	
JP 56124867	A	30-09-1981	NONE	
US 2518299	A	08-08-1950	NONE	
US 4069686	A	24-01-1978	NONE	
US 4332273	A	01-06-1982	NONE	