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(54) **Remote control unit**

(57) A remote control unit for use with an air conditioner has an LCD display (16) offering a choice of control functions and a master control button (14) for selecting and setting a desired function. A night light is incorporated in the display (16) and operates each time the control button (14) is pressed, but only between predetermined on and off times set by the internal clock of the unit. In another aspect of the invention, the characteristic sound of an acknowledgement signal, emitted by the air conditioner on receipt of a remote command, is dependent on the function being controlled.

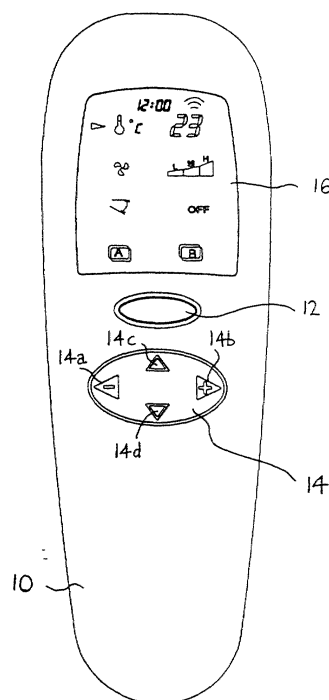


Fig. 1



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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.6)
X	US 5 590 831 A (MANSON LARRY J ET AL) 7 January 1997 (1997-01-07)	1,2,4, 8-11,19, 20 3	F24F11/00
Y	* abstract * * column 6, line 53 - column 7, line 18 * * column 15, line 13 - column 18, line 57 * * figures 3,20A-20M *		
A	---	5-7,12, 14,15	
Y	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 07, 31 July 1996 (1996-07-31) -& JP 08 065774 A (FUJITSU GENERAL LTD), 8 March 1996 (1996-03-08) * abstract * * figures 4A,4B *	3	
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 02, 30 January 1998 (1998-01-30) -& JP 09 264594 A (MITSUBISHI ELECTRIC CORP), 7 October 1997 (1997-10-07)	13	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	* abstract *	12,14,15	F24F
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 07, 31 July 1997 (1997-07-31) -& JP 09 060950 A (DAIKIN IND LTD), 4 March 1997 (1997-03-04) * abstract *	16	
X	US 5 390 206 A (REIN ALAN D ET AL) 14 February 1995 (1995-02-14)	16	
A	* abstract * * column 25, line 24 - line 32 * --- -/--	17,18	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 December 2001	Examiner 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			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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EUROPEAN SEARCH REPORT

Application Number
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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.6)
A	PATENT ABSTRACTS OF JAPAN vol. 1995, no. 07, 31 August 1995 (1995-08-31) -& JP 07 091706 A (MITSUBISHI HEAVY IND LTD), 4 April 1995 (1995-04-04) * abstract * * figures 1,2 *	11	
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 111 (M-1376), 8 March 1993 (1993-03-08) -& JP 04 297745 A (MITSUBISHI ELECTRIC CORP), 21 October 1992 (1992-10-21) * abstract *	16	
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) -& JP 09 184654 A (DAIKIN IND LTD), 15 July 1997 (1997-07-15) * abstract *	16	
A	PATENT ABSTRACTS OF JAPAN vol. 015, no. 325 (M-1148), 19 August 1991 (1991-08-19) -& JP 03 122444 A (MATSUSHITA ELECTRIC IND CO LTD), 24 May 1991 (1991-05-24) * abstract *	16	
A	PATENT ABSTRACTS OF JAPAN vol. 015, no. 303 (M-1142), 2 August 1991 (1991-08-02) -& JP 03 110339 A (DAIKIN IND LTD), 10 May 1991 (1991-05-10) * abstract *	16	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 December 2001	Examiner 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			

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-15

A remote controller for use with an air conditioning apparatus wherein a user-operable control means is shared by a plurality of functions.

2. Claims: 16-20

An air conditioning apparatus control system comprising a means for generating an audible signal whose characteristic sound depends on the function being controlled.



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Application Number
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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.6)
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 01, 30 January 1998 (1998-01-30) -& JP 09 247773 A (RINNAI CORP), 19 September 1997 (1997-09-19) * abstract *		
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) -& JP 09 182178 A (NIPPON SEIKI CO LTD), 11 July 1997 (1997-07-11) * abstract *		
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 10, 31 October 1997 (1997-10-31) -& JP 09 170802 A (TOSHIBA CORP), 30 June 1997 (1997-06-30) * abstract *		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 December 2001	Examiner 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			

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

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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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12-12-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5590831 A	07-01-1997	US 5720176 A	24-02-1998
		CN 1130746 A	11-09-1996
		JP 8242493 A	17-09-1996
		CN 1132339 A	02-10-1996
		JP 8254342 A	01-10-1996
		US 5579209 A	26-11-1996
JP 08065774 A	08-03-1996	NONE	
JP 09264594 A	07-10-1997	NONE	
JP 09060950 A	04-03-1997	NONE	
US 5390206 A	14-02-1995	AU 2693992 A	03-05-1993
		CA 2120154 A1	15-04-1993
		EP 0606335 A1	20-07-1994
		EP 0759586 A1	26-02-1997
		US 5361985 A	08-11-1994
		US 5385297 A	31-01-1995
		US 5341988 A	30-08-1994
		WO 9307549 A2	15-04-1993
JP 07091706 A	04-04-1995	NONE	
JP 04297745 A	21-10-1992	NONE	
JP 09184654 A	15-07-1997	JP 2988352 B2	13-12-1999
JP 03122444 A	24-05-1991	NONE	
JP 03110339 A	10-05-1991	NONE	
JP 09247773 A	19-09-1997	NONE	
JP 09182178 A	11-07-1997	JP 3218594 B2	15-10-2001
JP 09170802 A	30-06-1997	CN 1158967 A	10-09-1997
		KR 187769 B1	01-06-1999

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