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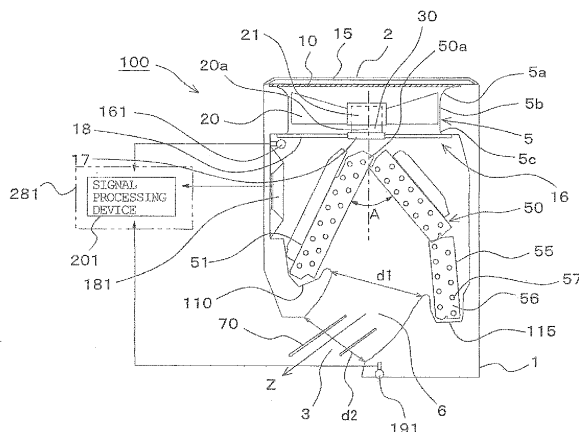
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(54) Indoor unit of air-conditioning apparatus and air-conditioning apparatus

(57) An indoor unit includes: a casing (1) formed with a suction port (2) and a blow-out port (3); a plurality of fans (20) provided in parallel in the casing (1); a heat exchanger (50) provided on the downstream side of the fans (20) and on the upstream side of the blow-out port (3); a horizontal wind direction control vane (80) provided at the blow-out port (3) to control the horizontal direction of an airflow blown out from the blow-out port (3); a vertical wind direction control vane (70) provided at the blow-out port (3) to control the vertical direction of the airflow blown out from the blow-out port (3); and an infrared ray human detection sensor (410) configured to detect the position of a person present in a room, and air volumes, the orientation of the horizontal wind direction control vane, and the orientation of the vertical wind direction control vane (70) of the fans (20) are each controlled according to results of detection by the infrared ray sensor (410) .

FIG. 1





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 (IPC)
Y	JP 2005 003244 A (DAIKIN IND LTD) 6 January 2005 (2005-01-06) * paragraph [0018] - paragraph [0025]; figures 5,6 *	1-6	INV. F24F1/00 F24F11/00 F24F13/14
Y	US 5 899 807 A (KIM YOUNG-MAN [KR] ET AL) 4 May 1999 (1999-05-04) * column 4, line 26 - column 31, line 33; figures 1-15 *	1-6	
A	JP 2004 150731 A (DAIKIN IND LTD) 27 May 2004 (2004-05-27) * the whole document *	1-6	
A	DE 202 16 099 U1 (REICHEL TIMMER INGBUERO GMBH [DE]) 4 March 2004 (2004-03-04) * abstract; figures *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F24F
Place of search		Date of completion of the search	Examiner
Munich		14 August 2017	González-Granda, C
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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5 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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14-08-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2005003244 A	06-01-2005	NONE	
US 5899807 A	04-05-1999	CN 1176366 A ID 18743 A IT RM970499 A1 JP H10103742 A TW 342439 B US 5899807 A	18-03-1998 07-05-1998 08-02-1999 21-04-1998 11-10-1998 04-05-1999
JP 2004150731 A	27-05-2004	AU 2003280659 A1 JP 2004150731 A WO 2004044498 A1	03-06-2004 27-05-2004 27-05-2004
DE 20216099 U1	04-03-2004	AT 299263 T DE 20216099 U1 EP 1411303 A1	15-07-2005 04-03-2004 21-04-2004