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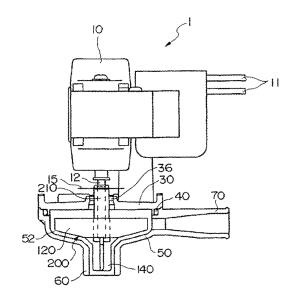
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(54) Drainage pump

(57)The invention provides a drainage pump equipped in an air conditioner having high safety by preventing water from coming into contact with a conductive output shaft of an electric motor. The drainage pump has a motor (10), rotating blades (200) coupled to an output shaft (12) of the motor (10), a case main body (50) having a pump chamber for accommodating the rotating blades (200), a lid member (30) covering an opening portion of the pump chamber (52), and a deflector board (15) provided between the lid member (30) and the motor (10). An outer peripheral groove (212) is provided in an end portion of a shaft portion (210) toward the motor (10), and the deflector board (15) is assembled by being fitted to the groove (212) in a tight contact state. Accordingly, drain water does not directly touch the conductive output shaft (12).

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number EP 09 15 8883

	DOCUMENTS CONSID						
Category	Citation of document with ir of relevant pass	ndication, where appropriate, ages		evant aim	CLASSIFICATION OF THE APPLICATION (IPC)		
Х	EP 1 030 063 A2 (FU 23 August 2000 (200 * paragraphs [0012] *	JIKOKI CORP [JP]) 10-08-23) , [0017]; figures 1,2	1-3		INV. F04D5/00 F04D13/06 F04D29/10		
Х	EP 1 647 716 A2 (FU 19 April 2006 (2006 * abstract; figure	5-04-19)	1-3				
Х		ALSACIENNE E CONST October 1960 (1960-10-05) mn 2, lines 32-36; figure 1					
Х	JP 09 053591 A (FUJ 25 February 1997 (1 * abstract; figure	.997-02-25)	1-3				
Х	FR 2 525 699 A1 (LA 28 October 1983 (19 * claim 1; figure 1	83-10-28)	1-3,	-3,6,7 TECHNICAL FIELDS SEARCHED (IPC			
Х	WO 83/00364 A1 (RIC 3 February 1983 (19 * claim 1; figure 2	83-02-03)	1-5	1-5 F04D			
Х	DE 422 024 C (GIESS SCHUETZE & CO) 24 November 1925 (1 * claim 1; figure 1	1-5	1-5				
Х		C LIQUIFLO EQUIPMENT y 1994 (1994-05-25) a *	1-5				
Α	US 3 476 396 A (BUF 4 November 1969 (19 * abstract; figure	69-11-04)	1,4,	,6			
	The present search report has	peen drawn up for all claims	\dashv				
	Place of search	Date of completion of the search			Examiner		
	Munich	29 May 2013		de	Martino, Marcello		
X : part Y : part docu A : tech O : non	ATEGORY OF CITED DOCUMENTS ioularly relevant if taken alone ioularly relevant if combined with anot unent of the same category inological background written disclosure rmediate document	T: theory or princ E: earlier patent of after the filling D: document oite L: document oite &: member of the document	locument, b late d in the app I for other re	ut publis lication easons	shed on, or		

1 EPO FORM 1503 03.82 (P04C01)

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

EP 09 15 8883

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.

29-05-2013

Patent document cited in search report		Publication date				Publication date	
EP 1030063	A2	23-08-2000	CN DE DE EP ES JP JP KR TW	1263996 69900973 69900973 1030063 2173699 4294143 2000240581 20000057773 445349	D1 T2 A2 T3 B2 A A B	23-08-2000 11-04-2002 21-11-2002 23-08-2000 16-10-2002 08-07-2009 05-09-2000 25-09-2000 11-07-2001	
EP 1647716	A2	19-04-2006	CN EP JP KR	1760553 1647716 2006112335 20060053280	A A2 A	19-04-2006 19-04-2006 27-04-2006 19-05-2006	
GB 850234	Α	05-10-1960	FR GB	1173652 850234		27-02-1959 05-10-1960	
JP 09053591 FR 2525699	A A1	25-02-1997 28-10-1983	NON	E			
WO 8300364	A1	03-02-1983	EP WO	0084540 8300364		03-08-1983 03-02-1983	
DE 422024	С	24-11-1925					
EP 0598500	A1		DE DE EP US	69307837 69307837 0598500 5308229	T2 A1	13-03-1997 05-06-1997 25-05-1994 03-05-1994	
US 3476396	Α	04-11-1969	NON	 E			

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