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(54) **Vane pump**

(57) Pump with a rotor (10) comprising one or more vanes (12a, 12b, ...), wherein each vane (12a, 12b, ...) is arranged to run each in a corresponding diametrical slot (141, 142 ...) in the rotor (10), each vane (12a, 12b, ...) extends from an end edge (17a1, 17b1, ...) to the opposite end edge (17a2, 17b2 ...) substantially across the entire inner diameter ($\varnothing$) of the rotor housing, between two opposite sides of the inner wall surface (2)

for all rotation angles of the rotor (10), and wherein the cross-section of the cylindrical rotor housing (1) is non circular with a radius (R) from the center of the rotor (10) to the inner wall surface (2), increasing from a base radius (R_0) with a given rate (ΔR) per arclength counted from a top point (T) to 180 degrees-from the top point (T), and decreases with an equivalent rate continuously for the increasing arclength further to the top point (T).

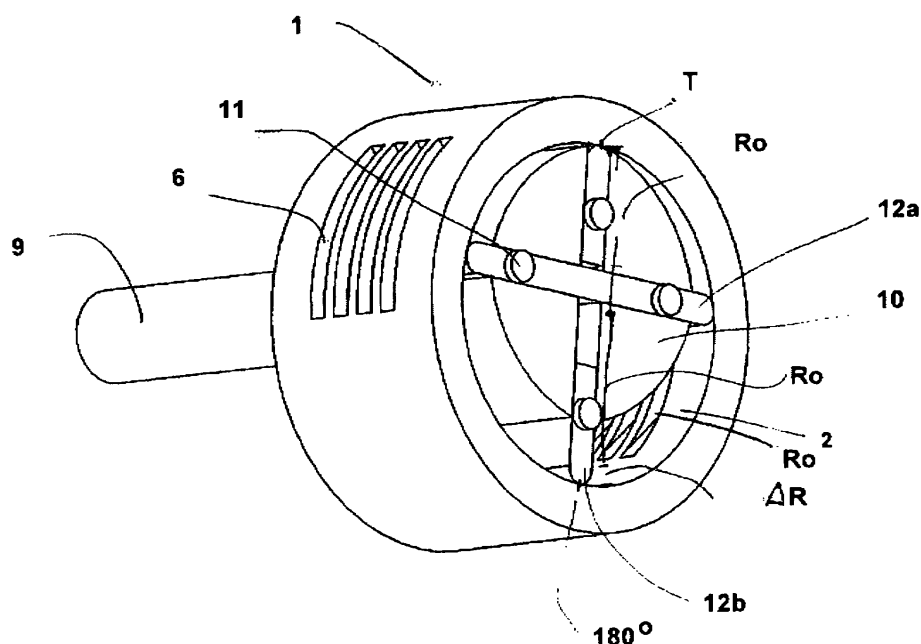


Fig. 1



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)
X	FR 1 383 047 A (RAYNAUD DENIS) 24 December 1964 (1964-12-24)	1-5,7,8,11-13	INV. F01C21/08
Y	* page 3, right-hand column, line 7 - page 4, left-hand column, line 29; figures 2,3 *	6,9,10	F01C21/10 F04C2/344
X	----- BE 434 452 A (VANDERHOVEN JACQUES, VANDERHOVEN JEAN) 30 June 1939 (1939-06-30) * figures 2,3 *	1,2,7,8,12,13	
X	----- US 1 442 198 A (HERBERT UTLEY WILLIE ET AL) 16 January 1923 (1923-01-16) * page 2, line 3 - page 3, line 127; figure 2 *	1,2,7,8,12,13	
X	----- FR 2 271 420 A1 (REYNAUD DENIS [MX]) 12 December 1975 (1975-12-12) * claims 1,5; figures 2,3 *	1,2,7,8,12,13	
Y	----- US 5 044 910 A (SAKAMAKI HIROSHI [JP] ET AL) 3 September 1991 (1991-09-03) * claim 1; figure 5 *	6,9,10	TECHNICAL FIELDS SEARCHED (IPC)
A	----- JP S58 38394 A (TOYODA AUTOMATIC LOOM WORKS) 5 March 1983 (1983-03-05) * abstract; figure 2 *	1-13	F04C F01C
A	----- US 2 495 771 A (ELLA RICHER) 31 January 1950 (1950-01-31) * the whole document *	1-13	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 June 2017	Examiner Descoubes, Pierre
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.**

EP 11 00 8326

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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12-06-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 1383047 A	24-12-1964	NONE	
BE 434452 A	30-06-1939	NONE	
US 1442198 A	16-01-1923	NONE	
FR 2271420 A1	12-12-1975	AU 8101575 A DE 2521190 A1 FR 2271420 A1 IT 1032917 B JP S50160813 A	11-11-1976 27-11-1975 12-12-1975 20-06-1979 26-12-1975
US 5044910 A	03-09-1991	US 4955985 A US 4958995 A US 4997351 A US 4997353 A US 4998867 A US 4998868 A US 5002473 A US 5011390 A US 5022842 A US 5030074 A US 5032070 A US 5033946 A US 5044910 A	11-09-1990 25-09-1990 05-03-1991 05-03-1991 12-03-1991 12-03-1991 26-03-1991 30-04-1991 11-06-1991 09-07-1991 16-07-1991 23-07-1991 03-09-1991
JP S5838394 A	05-03-1983	NONE	
US 2495771 A	31-01-1950	NONE	