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— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

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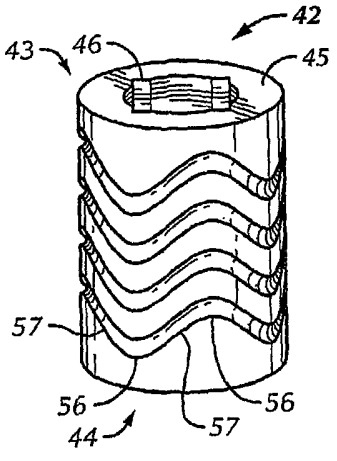
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SLEEVE PISTON FLUID MOTOR



(57) Abstract: *The* present invention is a cylindrical linear fluid motor (10) comprising a plurality of reciprocating rotary piston sleeve (42) intermediate an inner coaxial hollow drive shaft (20) and an outer cylindrical housing (30). Rotating disc valves (71) at both ends of the sleeve piston (42) control the sequential flow of high-pressure and low-pressure fluid through ports in both the drive shaft (20) and housing (30). High-pressure fluid acts on one end of the sleeve piston causing the piston to travel laterally along the drive shaft, with an inner set of roller balls (25) in linear raceways (24,46) ensuring no rotation between each piston and the drive shaft. The linear motion simultaneously affects exhausting of low-pressure fluid at the other end of the piston. Outer balls (50) are seated in the housing and a sinusoidal circumferential raceway (48) of each piston, to affect rotation in the piston from the lateral motion. As a piston reaches the limit of its linear travel the rotating disc valve (71) on one end closes inlet ports (15) and opens exhaust ports (17), while another rotating disc valve closes exhaust ports (17) and opens inlet ports (15) at the other end, causing the high-pressure fluid to reverse the piston's lateral direction of movement. The multiple pistons of a motor are rotationally sequenced to create consistent power production throughout 360-degree rotation, of the pistons.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04915

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F03C 2/08

US CL : 175/107,57; 418/206.9,1,104

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 175/107,57; 418/206.9,1,104

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

None

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,882,979 A (WEYER) 28 November 1989 (28/11/1989), see esp. Fig. 5.	17,18,20 and 21
A	US 6,179,574 B1 (YIE) 30 January 2001 (30/01/2001), see entire document.	1-21

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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Continuation of B. FIELDS SEARCHED Item 3:
East
search terms: drive adj shaft, piston adj sleeve. inlet and outlet and valve