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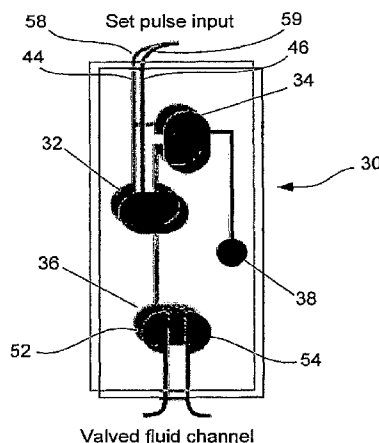
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(54) Title: MULTIPLEXED LATCHING VALVES FOR MICROFLUIDIC DEVICES AND PROCESSORS



(57) Abstract: Membrane valves and latching valve structures for microfluidic devices are provided. A demultiplexer can be used to address the latching valve structures. The membrane valves and latching valve structures may be used to form pneumatic logic circuits, including processors.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/07381

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: **F16K 11/22**( 2006.01)

USPC: 137/597,907

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. : 137/597, 907

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

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

EAST search terms: logic, vacuum, diaphragm, membrane

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,775,371 A (PAN et al.) 07 July 1998 (07.07.1998), column 1, line 30 to column 9, line 4.	16-21 ----- 1-16
X --- Y	US 6,802,342 B2 (FERNANDES et al) 12 October 2004 (12.10.2004), column 1, line 14 to column 29, line 22.	17-21 ----- 1-15
Y	US 3,433,257 A (JENSEN) 18 March 1969 (18.03.1969), column 1, line 20 to column 4, line 70.	1-15



Further documents are listed in the continuation of Box C.



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* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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