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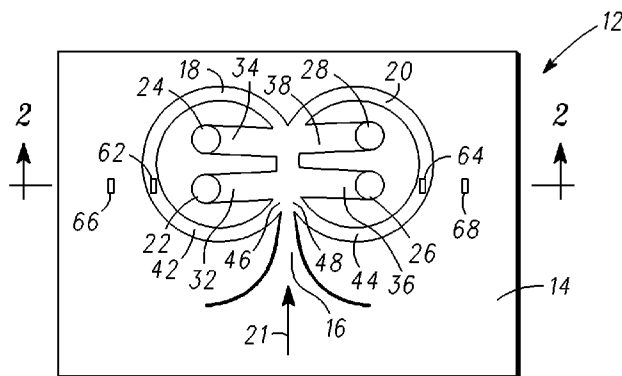
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(54) Title: CERAMIC OSCILLATION FLOW METER HAVING COFIRED PIEZORESISTIVE SENSORS



(57) Abstract: An apparatus measures the amount of fluid (21) flowing in a channel (18, 20). The apparatus has a housing (14) defining an inlet (16) for receiving the fluid (21), and first and second diversion channels (18, 20) for alternately receiving the fluid (21) from the inlet (16). A first nozzle (46) for receives the fluid (21) from the first diversion channel (18) and deflects the fluid (21) from the inlet (16) into the second diversion channel (20). A second nozzle (48) receives the fluid (21) from the second diversion channel (20) and alternately deflects the fluid (21) from the inlet (16) into the first diversion channel (18). A material (56) overlies at least one of the first and second diversion channels (18, 20) and has a sensing area that distorts due to a pressure change caused by the fluid (21).

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**INTERNATIONAL SEARCH REPORT**

International application No. PCT/US 07/65428
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<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(8) - G01F 1/20 (2007.01)                  USPC - 73/861.19                  According to International Patent Classification (IPC) or to both national classification and IPC</p>
<p><b>B. FIELDS SEARCHED</b></p> <p>Minimum documentation searched (classification system followed by classification symbols)                  IPC(8) - G01F 1/20 (2007.01)                  USPC - 73/861.19</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched                  IPC(8) - G01F 1/20 (2007.01) - see keyword below                  USPC - 73/861; 73/861.18; 73/861.19 -see keyword below</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  PubWEST(USPT,PGPB,EPAB,JPAB); Google patent; Google scholar                  Search terms - Split, diversion, feedback, channel, flow path, path, micro fluidics, fuel cell, Multiple channel, bifurcate, binary, direction, oscillation, flow meter, branch.</p>

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,949,755 A (THURSTON et al.) 21 Aug 1990 (21.08.1990) Figure 2; col. 4, ln.62-col. 5, ln. 13	1-12
Y	US 2004/0200291 A1 (DAI et al.) 14 Oct 2004 (14.10.2004) para [0005], [0018], [0020], [0021].	1-12
Y	US 6,986,649 B2 (DAI et al.) 17 Jan 2006 (17.01.2006) col. 2, ln. 17-20; col. 4, ln. 14-27; col. 5, ln. 62-67.	5 and 10

Further documents are listed in the continuation of Box C.

<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&amp;" document member of the same patent family</p>
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Date of the actual completion of the international search 18 October 2007 (18.10.2007)	Date of mailing of the international search report <b>14 FEB 2008</b>
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