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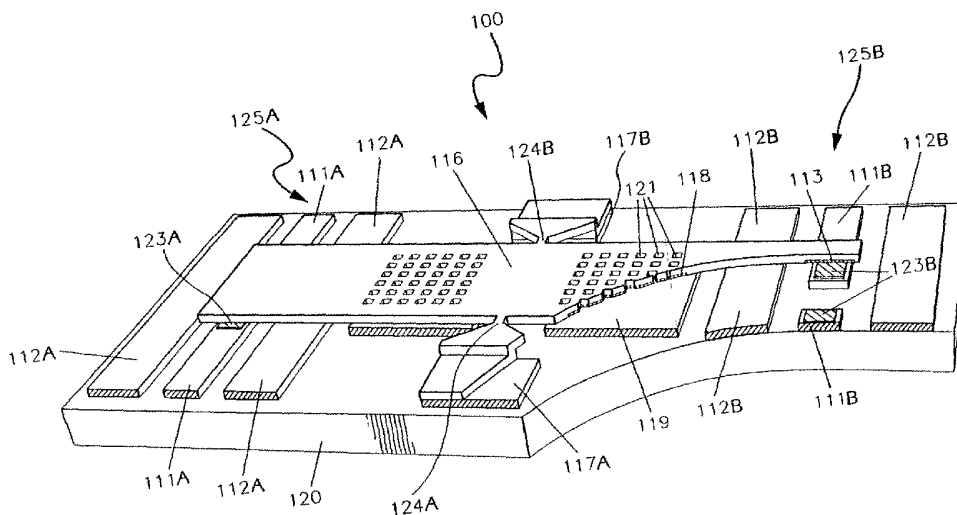
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(54) Title: AN ELECTROMECHANICAL SWITCH AND METHOD OF FABRICATION



(57) Abstract: A micro-electro-mechanical (MEM) switch (100) formed on a substrate (120) allows switching of various types of electrical conductor structures. The switch (100) contains a tilting cantilever arm (116), which tilts around central points of attachment (117A, 117B). At least two conducting electrodes (123A, 123B) on the cantilever arm (116) and the substrate (120) air gap capacitors, which when electrically charged provide electrostatic attraction forces that cause the cantilever arm (116) to deflect and tilt until conducting electrodes (123A, 123B) near the tips of the cantilever arm (116) make electrical contact with fixed electrodes (111A, 111B) on the underlying substrate (120). The air gap capacitors on either side of the cantilever (116) points allow the switch (100) to be driven into both ON and OFF states. Holes (121) in the cantilever arm near the air gap capacitors allow air within the gap to escape, thereby reducing damping and increasing the mechanical bandwidth of the switch.



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INTERNATIONAL SEARCH REPORT

International application No.

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**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : H01H 57/00; H02N 1/00  
 US CL : 200/181; 335/78, 80; 257/414, 421

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. : 200/181; 335/78, 80; 257/414, 421

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)  
 none

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,127,744 A (STREETER et al.) 03 October 2000 (03.10.2000), see entire document.	1-53
Y	US 5,051,643 A (DWORSKY et al.) 24 September 1991 (24.09.1991), see entire document.	1-53
Y	US 4,570,139 A (KROLL) 11 February 1986 (11.02.1986), see entire document.	1-53

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents:

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- "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
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