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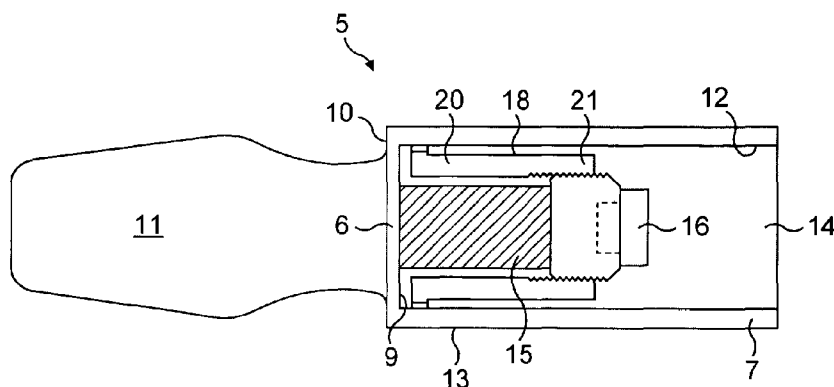


FIG. 1

(57) Abstract: The invention describes a vibrating tine level detection device, and a method of forming the same, which is particularly suitable for operation in environments subject to rapid temperature change. A piezoelectric stack (15), which generates vibration of the tine (11), is located within a cage (18). The cage (18) is, in turn, located within a hollow body (14) defined by a diaphragm (6), from which the tines extend, and a wall section (7). The cage (18) is attached to the inside surface of the wall section (7), adjacent to the junction between the wall section (7) and the diaphragm (6). As a consequence, the ability of the cage (18) to maintain a substantially constant compression on the piezoelectric stack (15) is substantially unaffected by thermal expansion or contraction of the wall section (7).



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/001262

A. CLASSIFICATION OF SUBJECT MATTER

INV. G01F23/296 G01N9/00 G01N11/16

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)

G01F G01N

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 810 423 A (GRIESHABER VEGA KG [DE]) 3 December 1997 (1997-12-03) column 12, line 12 - column 15, line 40; figures 7,9	1-4,7-14
X	WO 2006/005660 A (ENDRESS & HAUSER GMBH & CO KG [DE]; LOPATIN SERGEJ [DE]; KUHN JUTTA []) 19 January 2006 (2006-01-19) figures 2,5	1-4,6-8, 10-14
X	US 2003/010114 A1 (GETMAN IGOR [DE] ET AL) 16 January 2003 (2003-01-16) cited in the application column 4, line 24 - column 5, line 39; figures 1-3	1-14



Further documents are listed in the continuation of Box C.



See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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WO 2006005660	A	19-01-2006	DE 102004033311 A1	26-01-2006
US 2003010114	A1	16-01-2003	DE 10129556 A1	09-01-2003