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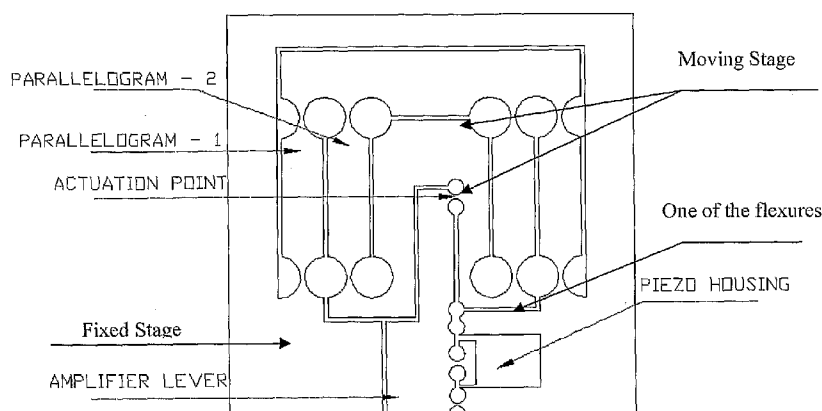
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(54) Title: AN APPARATUS FOR MOVING AN OBJECT IN NANOMETER AND METHOD THEREOF



(57) Abstract: The nanopositioner that consists of two parallelograms is formed in inverted manner to each other. The amplification lever from the actuator point actuates the second parallelogram, which comes from the first one. The lever and the second parallelogram are connected by means of flexural hinges. This entire system is a monolithic structure as shown in figure 5. When the actuator expands, the actuator lever actuates the second parallelogram at the center or middle of its column length. This causes the displacement of both the parallelograms. Since the two parallelograms are perpendicular to each other, perpendicular deflection is reduced. Actuating at the center of the parallelogram length with amplification lever reduces the arcuate motion and linear displacement of the moving stage is obtained in the nanopositioner.

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## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC <sup>8</sup> : <b>B23Q 1/34</b> (2006.01); <b>G12B 5/00</b> (2006.01) 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) IPC <sup>8</sup> : B23Q, G01B, G12B		
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) EPODOC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,467,761 B1 (Amatucci et al.) 22 October 2002 (22.10.2002) <i>Whole document</i>	1-18
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A	JP 2312148 A (Shimadzu Corp) 27 December 1990 (27.12.1990) <i>Fig. 1-3</i>	1-18
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A	US 4,559,717 A (Scire et al.) 24 December 1985 (24.12.1985) <i>Fig. 1-3</i>	1-18
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 "E" earlier application or patent but published on or after the international filing date "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) "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 "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 "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 "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 "&" document member of the same patent family		
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Name and mailing address of the ISA/ AT <b>Austrian Patent Office</b> Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24 / 535		Authorized officer <b>NIMMERRICHTER R.</b> Telephone No. +43 / 1 / 534 24 / 314

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 54150161 A (Kogyo Gijutsuin) 26 November 1979 (26.11.1979) <i>Fig. 4</i>  -----	1, 2, 10, 18

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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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JP	A	54150161A2		none			
US	A	4559717	1985-12-24	none			
US	B1	6467761	2002-10-22	US	A1	2003051331	2003-03-20
				US	A1	2003033703	2003-02-20
				US	A1	2003029012	2003-02-13
				US	B1	6484602	2002-11-26