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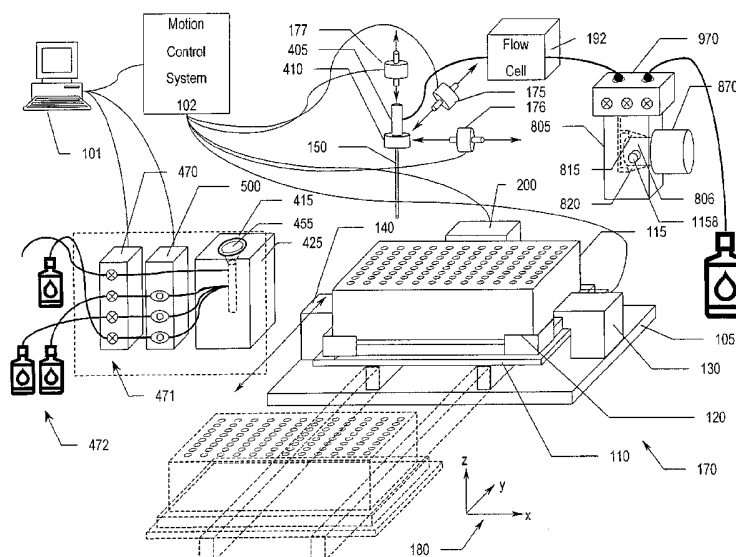
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(54) Title: IMPROVED ASSAY SYSTEMS AND COMPONENTS



(57) Abstract: Assay systems and components, and methods of using same. The assay system preferably includes one or more of the following components: i) an apparatus (110) for retaining/positioning an assay plate (115); ii) a device (200) for detecting proper alignment of an assay plate (115); iii) an apparatus for training a probe (150) to locate and aspirate reagents and/or one or more samples; iv) a fluid handling device (400) for aspirating reagents; v) an apparatus for detecting the presence/absence of a reagent comprising a fluid handling manifold (425) having both a transparent light path (523) and a fluid conduit (505) defined therein and vi) a positive displacement pump (805) having a pump chamber improved to contain one or more of: bypass means; cleanout means; and/or gas and sediment removal means (820, 815).

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/19690

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01N 21/00
US CL : 422/63

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. : 422/63,65,67,82.05,82.07,99,100,102; 436/43,47,49,54,164,166,174,180

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/66269-A1 (MARQUISS et al) 09 November 2000; pages 19-25, 33-48 and 82-87	1-8,13,19,25,32-37,40-52,66-70,77-80
Y, P	US 6,499,366 B1 (MEADOWS et al) 31 December 2002, columns 4-7 and Figures 2, 3, 5 and 6.	1-8,13,19,44-52,77
Y	US 6,132,685 A (KERCSO et al) 17 October 2000, columns 9, 10, 12 and 13.	19,25,32,44-57,77-80
Y	US 5,108,703 A (PFOST et al) 28 April 1992, columns 12-22	1-3,20,32-52,78-80
A, P	US 6,594,432 B2 (CHEN et al) 15 July 2003, entire document.	
A	US 5,952,240 A (FEYGIN et al) 14 September 1999, entire document.	
A	US 6,395,231 B1 (KRAEMER et al) 28 May 2002, entire document.	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	
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INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

EAST search on: stack\$3, dispens\$4, aspirat\$3, optic\$3, workstation, microplate, microwell, sample plate, sample well, microtiter