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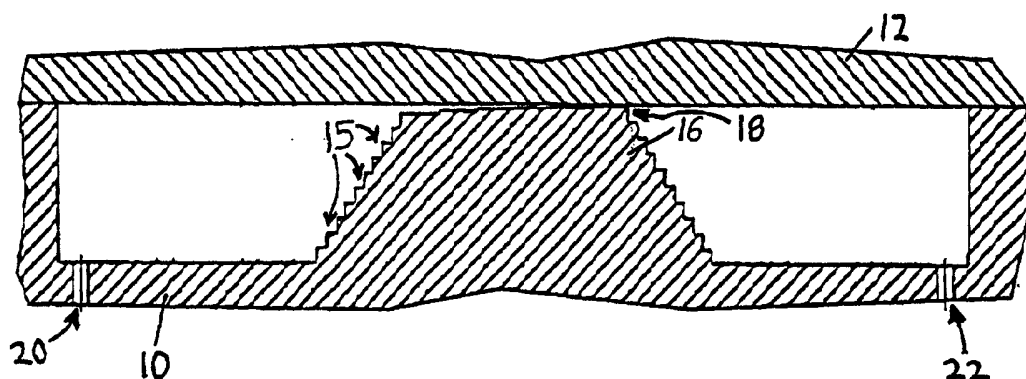
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(54) Title: MICROSTRUCTURE FOR PARTICLE AND CELL SEPARATION, IDENTIFICATION, SORTING, AND MANIPULATION



(57) Abstract: The invention relates to microscale cell separating apparatus which are able to separate cells on the basis of size of the cells, interaction of the cells with surfaces of the apparatus, or both. The apparatus comprises a stepped or sloped separation element (16) interposed between an inlet region (20) and an outlet region (22) of a void that can be filled with fluid. The void can be enclosed within a cover (12) and fluid flow through the void engages cells with the separation element. Only cells which have (or can deform to have) a characteristic dimension smaller than or equal to the distance between a step and the cover or body can pass onto or past a step. Modifications of surfaces within the apparatus can also inhibit passage of cells onto or past a step.



WO 03/008931 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/22689

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12M 1/12; C12N 5/00
 US CL : 435/2, 297.1

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. : 435/2,261, 297.1, 297.2, 288.5,287.2; 422/102,101,104; 210/649,676; 209/156

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,866,345 A (WILDING et al.) 02 February 1999 (02.02.1999), see entire document.	1-27
Y	US 6,008,040 A (DATAR) 28 December 1999 (28.12.1999), see entire document, especially Figure 4.	1-27
A	US 6,004,821 A (LEVINE et al.) 21 December 1999 (21.12.1999), see entire document.	1-27
A	US 5,728,581 A (SCHWARTZ et al.) 17 March 1998 (17.03.1998), see entire document.	1-27

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
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"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)	"&" document member of the same patent family
"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	

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