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- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

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[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR HARVESTING TARGET PARTICLES OF A SUSPENSION

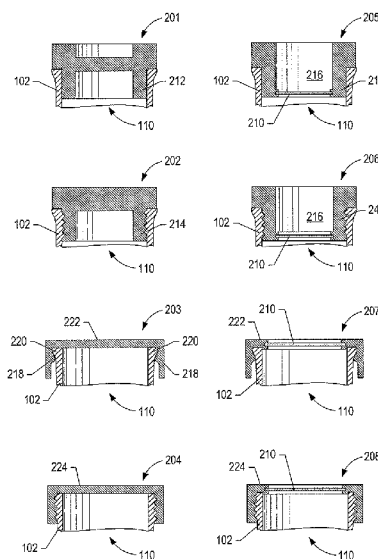


FIG. 2

(57) Abstract: Tube and float systems and methods for isolating, enumerating, and harvesting target materials of a suspension are described. In one aspect, a tube and float system includes a filter embedded in a tube cap. The filter enables the passage of fluids but prevents the passage of the target materials. The tube and float system can be used to isolate and enumerate the target materials by centrifuging the tube and float system with the suspension to trap the target materials between the float and inner wall of the tube. Fluids above and below the float are poured off and a second fluid can be introduced to the tube to re-suspend the trapped target material. The second fluid can be poured through the filter in the cap to trap the target material against the filter. The target material can be enumerated and analyzed.



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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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29 November 2012

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2012/025113****A. CLASSIFICATION OF SUBJECT MATTER***A61M 1/02(2006.01)i, B04B 7/08(2006.01)i, B04B 1/00(2006.01)i, C12M 1/10(2006.01)i, C12M 1/24(2006.01)i*

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)

A61M 1/02; B01D 17/038; A01N 1/02; G01N 1/28; B01D 21/26; C12M 1/24; C12N 5/078; B01D 21/34; B01D 17/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models  
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: harvesting, suspension, target material, float, tube, centrifuge, blood, tumor

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010-0317106 A1 (LEVINE, R. A. et al.) 16 December 2010 See paragraph [0006]; claim 1; and figures 1 and 25.	1-15
A	US 2010-0140182 A1 (CHAPMAN, J. R. et al.) 10 June 2010 See the whole document.	1-15
A	US 05560830 A (COLEMAN, C. M. et al.) 01 October 1996 See the whole document.	1-15
A	US 2008-0131868 A1 (HAUBERT, T. et al.) 05 June 2008 See the whole document.	1-15
PA	US 2011-0097816 A1 (GOODWIN, P. C.) 28 April 2011 See the whole document.	1-15

 Further documents are listed in the continuation of Box C. 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

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"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

"&amp;" document member of the same patent family

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/025113**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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