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(54) Title: AUTOMATIC LOADING OF SAMPLE TUBES FOR CLINICAL ANALYZER

(57) Abstract: A module for staging sample tubes and mixing the samples contained in the sample tubes for an automated clinical analyzer. In one embodiment, this module comprises a mixing drum, which is capable of mixing the contents of a sample tube in an end-over-end manner. The mixing drum is capable of mixing samples in the sample tubes without separating the solid components of the sample, e.g., red blood cells from the liquid components of the sample, e.g., plasma. A device for elevating the sample tube in the sample tube carrier can be used to enable the cap of the sample tube to be punctured by a piercing element in a piercing assembly. After the cap of the sample tube is punctured, a probe for aspirating the sample from said sample tube can obtain the sample in the receptacle of the sample tube through a bore in the piercing element. The piercing assembly can include a resiliently biased element for ejecting the sample tube from the piercing assembly.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/086779

A. CLASSIFICATION OF SUBJECT MATTER INV. G01N35/02		
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) 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	US 2007/189926 A1 (LE COMTE ROGER [FR]) 16 August 2007 (2007-08-16) paragraphs [0068] - [0070] paragraph [0089]; figures 1,9 -----	1-19
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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 document 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		
Date of the actual completion of the international search 15 May 2009		Date of mailing of the international search report 07/08/2009
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3

INTERNATIONAL SEARCH REPORT

International application No
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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.
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A	US 4 609 017 A (COULTER WALLACE H [US] ET AL) 2 September 1986 (1986-09-02) column 6, line 12 - column 8, line 31; figures 1-4 -----	1
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A	US 2006/093519 A1 (EAST RICHARD C [US]) 4 May 2006 (2006-05-04) figure 13 -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/086779

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-19

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-19

System for providing samples to an analyser comprising a staging and mixing module comprising a track, a drive wheel and a mixing drum.

2. claims: 20-22

A carrier for sample tubes having i.e an opening in its base.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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