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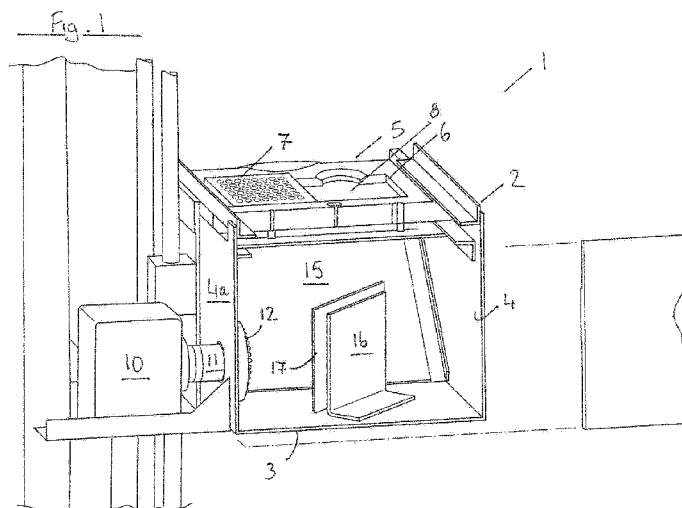
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5 December 2013

(54) Title: A FLUORESCENCE MICROTITRE PLATE READER



(57) Abstract: A fluorescence microtitre plate reader comprises a plate reader body (2) having a base (3), top (5) and sidewalls (4), the top of the plate reader comprising at least one seat (6) dimensioned for receipt of a microtitre plate (7), the at least one seat defining an aperture (8) in the top of the plate that substantially corresponds to a base of the plate. The plate reader also includes means for illuminating wells of a microtitre plate with light from beneath the plate having an excitation wavelength, and a camera (10) and lens (11) assembly for capturing light emitted by the wells of the microtitre plate and generating a digital image, in which regions of light intensity of the image correspond to wells of the microtitre plate. An optical system is disposed within the plate reader body for expanding the distance to image plane of light, the optical system comprising a first mirror (15) disposed to receive light from the wells of the microtitre plate and reflect the light to second mirror (16) which is disposed to reflect incident light to the camera lens. The means for illuminating the wells of the microtitre plate comprises a ring light (12) that embraces the camera and lens assembly.



INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N21/64
ADD.

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 G06T

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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 985 225 B2 (BECHEM MARTIN [DE] ET AL) 10 January 2006 (2006-01-10) column 3, line 13 - line 20 column 5, line 34 - line 40 column 5, line 46 - line 52 column 6, line 18 - line 29 figure 3	1-27,33
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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

"E" earlier application or patent but published on or after the international filing date

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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

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"&" document member of the same patent family

Date of the actual completion of the international search

30 September 2013

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Name and mailing address of the ISA/

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D'Alessandro, Davide

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2013/056846

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/178370 A1 (OLDHAM MARK F [US] ET AL) 16 September 2004 (2004-09-16) figures 2,3 paragraphs [0021], [0022], [0023] -----	1-15,31, 32
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Y	US 6 563 653 B2 (RAMM PETER [CA] ET AL) 13 May 2003 (2003-05-13) column 6, line 60 - line 62 column 9, line 5 - line 57 figures 1,6 -----	1-27,29, 30,37, 44-53
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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.
Y	G.L. PETTIPHER: "Review: The direct epifluorescent filter technique", REVIEW: THE DIRECT EPIFLUORESCENT FILTER TECHNIQUE, vol. 21, 1986, pages 535-546, XP002713865, DOI: 10.1111/j.1365-2621.1986.tb00392.x page 536 - page 538 table 1 page 540, last paragraph - page 541, paragraph 2 -----	51

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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.:

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: 1-15

A microtitre plate reader with folding mirrors and a ring light

2. claims: 16-53

Systems and methods for detecting fluorescence intensity from a plurality of wells of a microtitre plate.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2013/056846

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International application No

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