

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 November 2006 (02.11.2006)

PCT

(10) International Publication Number
WO 2006/116039 A3

(51) International Patent Classification:

G01N 35/00 (2006.01) G01N 21/00 (2006.01)
G01N 33/50 (2006.01) G01N 33/48 (2006.01)

(21) International Application Number:

PCT/US2006/015023

(22) International Filing Date: 21 April 2006 (21.04.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/673,468 21 April 2005 (21.04.2005) US

(71) Applicant (for all designated States except US):
CELERUS DIAGNOSTICS, INC. [US/US]; 6950
Hollister Ave., Suite 104, Goleta, CA 93117 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ERICKSON, Page A.** [US/US]; 7090 Scripps Crescent Street, Goleta, CA 93117 (US). **EVERMAN, Michael R.** [US/US]; 3822 Crescent Drive, Santa Barbara, CA 93110 (US). **BELL, Michael S.** [US/US]; 113 Las Ondas, Santa Barbara, CA 93109 (US). **EDBERG, Kevin S.** [US/US]; 5278 Louisiana Place, Santa Barbara, CA 93111 (US). **BOTKE, Matthew M.** [US/US]; 2511 Bonmark Dr., Ojai, CA

93023 (US). **SAWATZKY, Brian D.** [US/US]; 4742 Calle Camarada, Santa Barbara, CA 93110 (US).

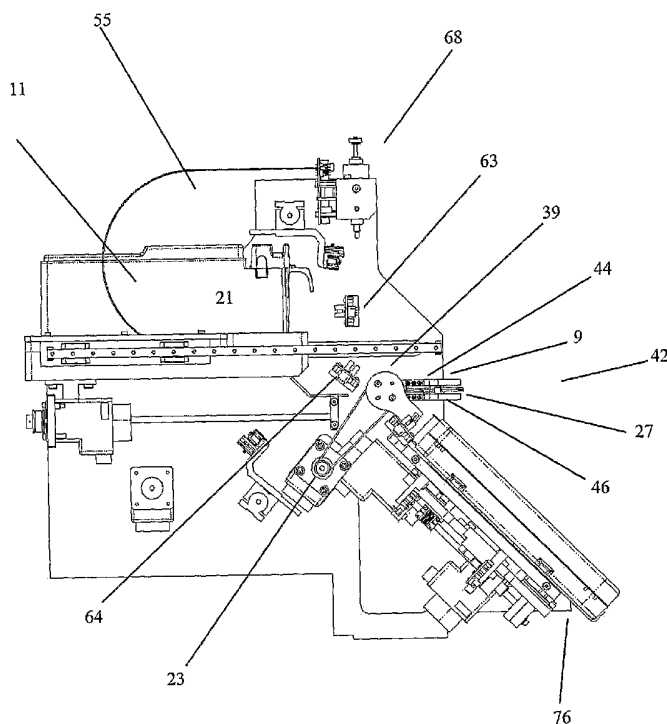
(74) Agents: **SANTANGELO, Luke** et al.; SANTANGELO LAW OFFICES, P.C., 125 South Howes, Third Floor, Fort Collins, CO 80521 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR AUTOMATED RAPID IMMUNOHISTOCHEMISTRY



(57) Abstract: A sample processing system that may be configured to achieve parallel or coincidental sample processing such as histochemical processing may involve a plurality of samples arranged for coincidental movement perhaps by use of angular microscopic slide movements to cause processing activity that may include repeated elimination and reapplication of a fluidic substance perhaps through the action of capillary motion in order to refresh a microenvironment adjacent to a sample such as a biopsy or other such sample. Snap in antibody and other substances may be included to ease operator actions and to permit location specific substance applications perhaps by including single container multiple chamber multiple fluidic substance magazines, linearly disposed multiple substance source, and primary antibody cartridges. Through refreshing of a microenvironment, depletion of the microenvironment is avoided and the time necessary for slide processing may be dramatically shortened from a more common 60 to 120 minutes to perhaps less than 15 minutes so as to permit use of such a system in an intraoperative or surgical environment such as recommended by the College of American Pathologists intraoperative guidelines or the like. Patients may thus avoid a need to be

subjected to an additional surgical procedure when lab results become available to see if tumors or the like were fully removed in a prior procedure.



Published:

— with international search report

(88) Date of publication of the international search report:

18 January 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/15023

A. CLASSIFICATION OF SUBJECT MATTER IPC: G01N 35/00(2006.01),33/50(2006.01),21/00(2006.01),33/48(2006.01) USPC: 436/43,46,54,63;422/56,58,62,67,68.1,79 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. : 436/43, 46, 54, 63; 422/56, 58, 62, 67, 68.1, 79, 99, 100, 102, 104 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.
A, P	US 2005/0281711 A1 (TESTA et al.) 22 December 2005	1, 7, 99, 105, 143
A	US 2004/0037739 A1 (MCNEELY et al.) 26 February 2004	1, 7, 99, 105, 143
A	US 2003/0091477 A1 (PAUL et al.) 15 May 2003	1, 7, 99, 105, 143
A	US 6,432,720 B2 (CHOW) 13 August 2002	1, 7, 99, 105, 143
A	US 6,132,685 A (KERSCO et. al.) 17 October 2000	1, 7, 99, 105, 143
A	US 5,436,129 A (STAPLETON) 25 July 1995	1, 7, 99, 105, 143
A	US 5,482,830 A (BOGART et al) 09 January 1996	1, 7, 99, 105, 143
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input 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 application or patent 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 28 September 2006 (28.09.2006)		Date of mailing of the international search report 31 OCT 2006
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Brian R. Gordon Telephone No. (571) 272-1700 Jacqueline A. Whitfield Special Project Asst. <i>JW</i>

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/15023

Continuation of B. FIELDS SEARCHED Item 3:

East

Keywords:

biochemical, biological, memvory, hing\$3, aborbent, absorb, membrane, filter, sequence, slide, snap\$5, data, information, detect\$4, measur\$4 analy\$5, sens\$4, pathology, mix\$4, incubat\$4 shim, protocol, capillary