

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 March 2009 (05.03.2009)

PCT

(10) International Publication Number
WO 2009/029604 A3

(51) International Patent Classification:

A61B 1/045 (2006.01) G02B 23/24 (2006.01)
A61B 1/04 (2006.01) G02B 23/10 (2006.01)
G02B 26/08 (2006.01)

(21) International Application Number:

PCT/US2008/074273

(22) International Filing Date: 26 August 2008 (26.08.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

11/845,457 27 August 2007 (27.08.2007) US

(71) Applicant (for all designated States except US):
ETHICON ENDO-SURGERY, INC [US/US]; 4545
Creek Road, Cincinnati, Ohio 45242 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DUNKI-JACOBS,
Robert J. [US/US]; 4600 Wesley Court, Mason, Ohio
45040 (US). WEIR, Michael P. [US/US]; 6510 Ed-
wardsville Road, Blanchester, Ohio 45107 (US).

(74) Agents: JOHNSON, Philip S. et al.; One Johnson & John-
son Plaza, New Brunswick, NJ 08933 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE,
EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID,
IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK,
LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW,
MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL,
NO, 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: POSITION TRACKING AND CONTROL FOR A SCANNING ASSEMBLY

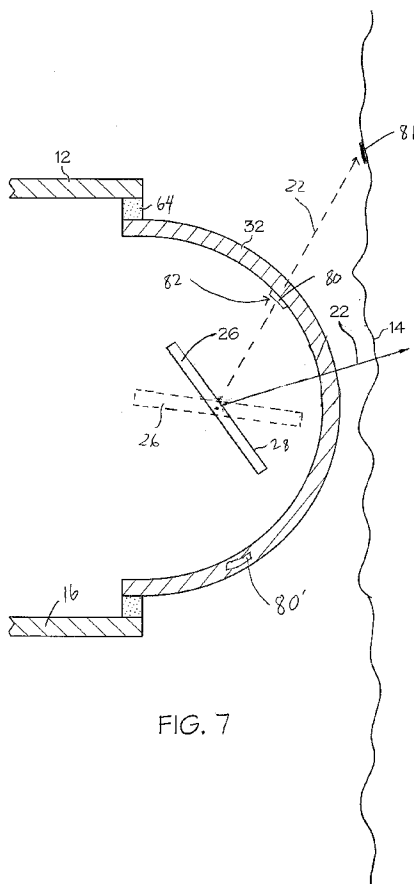


FIG. 7

(57) Abstract: A scanned beam imaging system including a radiation source configured to provide a beam of radiation, a movable element configured to direct the beam of radiation onto a scanned area, and a collector configured to receive radiation returned from the scanned area. The imaging system further includes a housing that houses the movable element therein and a reference mark coupled to or received in the housing. The reference mark is positioned such that at least part of the radiation from the radiation source is directable at the reference mark.

WO 2009/029604 A3



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
14 May 2009

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/074273

A. CLASSIFICATION OF SUBJECT MATTER
 INV. A61B1/045 A61B1/04 G02B26/08 G02B23/24 G02B23/10

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)
 A61B G02B

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 5 218 195 A (HAKAMATA KAZUO [JP]) 8 June 1993 (1993-06-08)	1-6, 9-11, 14, 15, 19, 22
A	column 6 - column 7; figures 2,3 column 12 - column 13	7, 13
X	WO 01/10322 A (VISX INC [US]; HOFFER RICHARD A [US]) 15 February 2001 (2001-02-15) the whole document	1, 22
X	WO 99/58930 A (METACREATIONS CORP [US]) 18 November 1999 (1999-11-18) page 7, line 29 page 12, line 33	1, 12
	----- -/-- -----	

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	*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
E earlier document but published on or after the international filing date	*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
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)	*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.
O document referring to an oral disclosure, use, exhibition or other means	*Z* document member of the same patent family
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 12 December 2008	Date of mailing of the international search report 10/03/2009
---	--

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Anscombe, Marcel
--	--

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/074273

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/113059 A1 (KAWANO YOSHIHIRO [US] ET AL) 17 June 2004 (2004-06-17) paragraphs [0065], [0066]; figure 16 -----	1
X	US 2005/020877 A1 (ISHIHARA YASUSHIGE [JP] ET AL) 27 January 2005 (2005-01-27) paragraphs [0097], [0107], [0112]; figures 9,14 -----	1-3, 8-11,14, 16-21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/074273

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 allsearchable 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.:

see annex

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: 1-22

directed to a scanned beam imaging system with potential special technical features concerning a reference mark, whose general inventive concept appears to be to provide detection of the dynamics of a moveable element (page 8, lines 19 - page 9, line 26; page 12, line 13 - 15; page 11, line 16) or for aiding generating an image of an area (e.g. image normalisation data, page 10, line 3; page 11, line 26 - page 12, line 12).

2. claims: 23-27

directed to a micromechanical system with potential special technical feature of offset means, whose general inventive concept appears to be to provide a predetermined starting position for the micromechanical element to avoid having to rely on coincidental perturbations (description, page 13, lines 20-31).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2008/074273

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
US 5218195	A	08-06-1993	NONE	
WO 0110322	A	15-02-2001	AT 375770 T AU 6626600 A CA 2391741 A1 DE 60036808 T2 EP 1211996 A1 JP 2003524473 T MX PA02001346 A US 2002077622 A1	15-11-2007 05-03-2001 15-02-2001 22-01-2009 12-06-2002 19-08-2003 22-07-2002 20-06-2002
WO 9958930	A	18-11-1999	AU 3991799 A	29-11-1999
US 2004113059	A1	17-06-2004	EP 1431795 A1 JP 2004199063 A	23-06-2004 15-07-2004
US 2005020877	A1	27-01-2005	US 2006261263 A1	23-11-2006