

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 May 2003 (01.05.2003)

PCT

(10) International Publication Number
WO 03/034905 A3

(51) International Patent Classification⁷: A61B 1/04, 1/00

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(21) International Application Number: PCT/US02/33336

(22) International Filing Date: 18 October 2002 (18.10.2002)

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(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/042,126 19 October 2001 (19.10.2001) US

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

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

US 10/042,126 (CIP)
Filed on 19 October 2001 (19.10.2001)

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

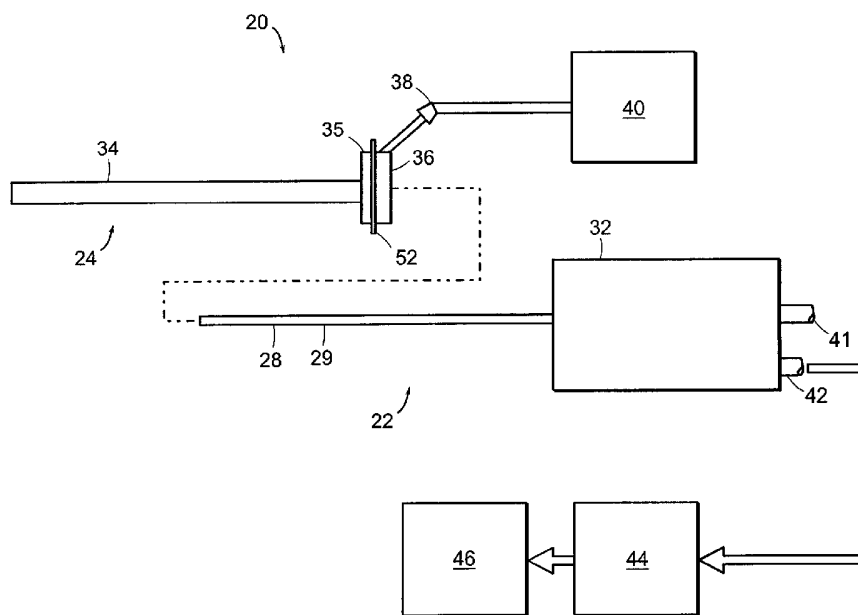
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[Continued on next page]

(54) Title: MINIATURE ENDOSCOPE WITH IMAGING FIBER SYSTEM



(57) Abstract: An endoscope has a fiber optic waveguide that transmits an image from a distal end to a proximal end, the waveguide having an outer diameter of less than 3 mm. A lens system is positioned at the distal end of the fiber optic waveguide. An imaging device is optically coupled to the proximal end of fiber optic waveguide. A disposable sheath extends about the fiber optic waveguide to provide a sterile barrier, and in a preferred embodiment the sheath includes an illumination channel. In a preferred embodiment, the lens system has a first lens element, a second lens element and an aperture stop.



WO 03/034905 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*

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.

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

5 June 2003

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/33336

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61B1/04 A61B1/00

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)

IPC 7 A61B

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	WO 99 35960 A (UNIV FLORIDA) 22 July 1999 (1999-07-22) page 6, line 29 -page 9, line 1 page 13, line 9 - line 31 ---	1,6,7, 10,11, 15,18, 21,23-25
X	US 4 921 326 A (WILD VICTOR F ET AL) 1 May 1990 (1990-05-01) column 3, line 8 -column 4, line 60 --- -/--	1,6, 10-12, 25,28, 29,31, 34,39

Further documents are listed in the continuation of box C.

Patent family members are listed in 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

9 April 2003

Date of mailing of the international search report

15/04/2003

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/33336

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ROL P ET AL: "OPTICAL PROPERTIES OF MINIATURIZED ENDOSCOPES FOR OPHTHALMIC USE" OPTICAL ENGINEERING, SOC. OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS. BELLINGHAM, US, vol. 34, no. 7, 1 July 1995 (1995-07-01), pages 2070-2076, XP000517073 ISSN: 0091-3286	1,5-10, 25
A	page 2070, paragraph 1 -page 2075, paragraph 4	11,12, 14,21, 24, 27-29, 36-39
Y	WO 01 22866 A (LABOMBARD DENIS ;MAY ERIC (US); REMIJAN PAUL (US); VISIONSCOPE INC) 5 April 2001 (2001-04-05)	1,5-10, 25
A	page 14, line 16 -page 15, line 16; figure 22	15,16, 18,19, 23,24, 34,37-39
A	WO 01 19235 A (LABOMBARD DENIS ;REMIJAN PAUL (US); VISIONSCOPE INC (US)) 22 March 2001 (2001-03-22) page 5, line 10 -page 6, line 4 page 11, line 9 - line 35	1,2,6,7, 9,10,15, 40

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 3,4,27

Present claims 3 and 27 define the endoscope and the method in terms of results to be achieved without any indication to which means are necessary as to how the result may be obtained. The claims only define that the lens should couple light such that the NA varies as a function of angle (which angle). Consequently, it is not clear which features restrict the claims contrary to Article 6 PCT.

The features of claim 4 lack support by the description and is not clear how the fibres are to be arranged or used within the waveguide. Consequently, this lack of clarity renders a meaningful search to these claims impossible.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 02/33336

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: **3, 4, 27**
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:
see FURTHER INFORMATION sheet PCT/ISA/210

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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

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 fee, this Authority did not invite payment of any additional fee.

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.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/33336

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