

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
16 February 2006 (16.02.2006)

PCT

(10) International Publication Number
WO 2006/016366 A3

(51) International Patent Classification:

A61B 3/12 (2006.01) A61B 3/00 (2006.01)
A61B 3/14 (2006.01)

(21) International Application Number:

PCT/IL2005/000869

(22) International Filing Date: 11 August 2005 (11.08.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/600,810 12 August 2004 (12.08.2004) US

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(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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, 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).

Declaration under Rule 4.17:

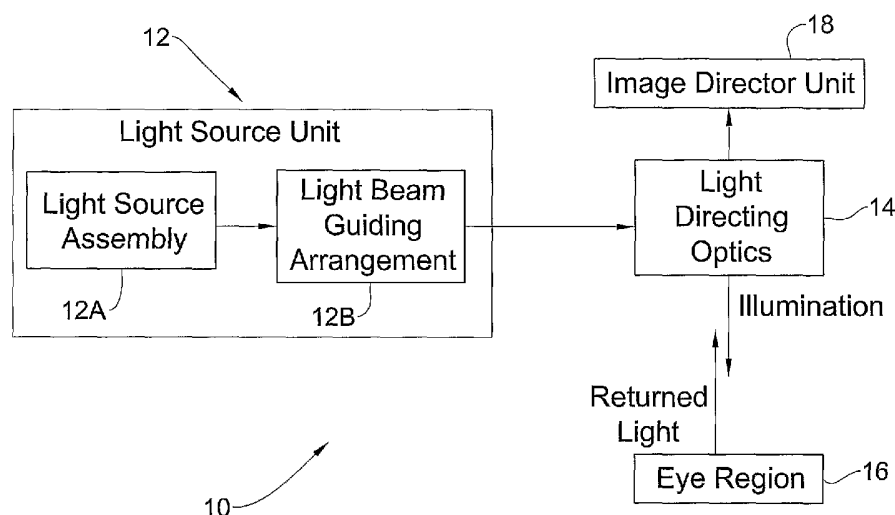
— of inventorship (Rule 4.17(iv))

Published:

— with international search report

[Continued on next page]

(54) Title: INTEGRATED RETINAL IMAGER AND METHOD



(57) **Abstract:** A system and method are presented for use in imaging the patient's retina. A light source unit is provided including a light emitting diode (LED) arrangement comprising multiple LEDs of different wavelength ranges. A light guide arrangement is used with the LEDs arrangement and is configured for coupling light from the LEDs and providing output light beams of a desired shape. The illuminating light is directed towards a region on the retina, and light returned from the illuminated region is collected and directed to an image detector unit. The invention enables the use of LED light at high intensity as required in the eye retina imaging, while maintaining the required high-quality imaging. Also, the invention provides for simultaneous or quasi-simultaneous as well as high-speed imaging in FA and ICG imaging procedures, thereby satisfying a long felt need in ophthalmology. Also, the invention provides for automated illumination or light exposure control to optimize overall light exposure to the patient eye and best acquired image quality in terms of brightness, contrast and image signal-to-noise ratio.



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— *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:

4 May 2006

INTERNATIONAL SEARCH REPORT

PCT/IL2005/000869

A. CLASSIFICATION OF SUBJECT MATTER

A61B3/12 A61B3/14 A61B3/00

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)

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 142 629 A (ADEL ET AL) 7 November 2000 (2000-11-07) column 7, line 66 - column 10, line 2 column 11, lines 28-39 -----	1,2,4,6, 7,14-17, 24,26, 32,59, 60,62, 63,71, 72,75



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 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

29 November 2005

Date of mailing of the international search report

22.03.2006

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INTERNATIONAL SEARCH REPORT

PCT/IL2005/000869

Box 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 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 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.:

1-76

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ 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: 1-76

System for retina imaging comprising a light source with LED, light coupling and fibre optics; light source alone; method of illuminating the retina using such a light source.

2. claim: 77

Light source for imaging system comprising rotatable means for selecting one of two LED units for combining light from another LED unit

3. claims: 78-79,85

Retina imaging system and method with two cameras, one operable in pulse mode and the other in continuous mode.

4. claims: 80-84

Light source for retina imaging system comprising LEDs suitable for FA and ICG modes.

INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
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			EP	1107688 A1	20-06-2001
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			WO	0012001 A1	09-03-2000
