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Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR IMPROVED OPHTHALMIC IMAGING

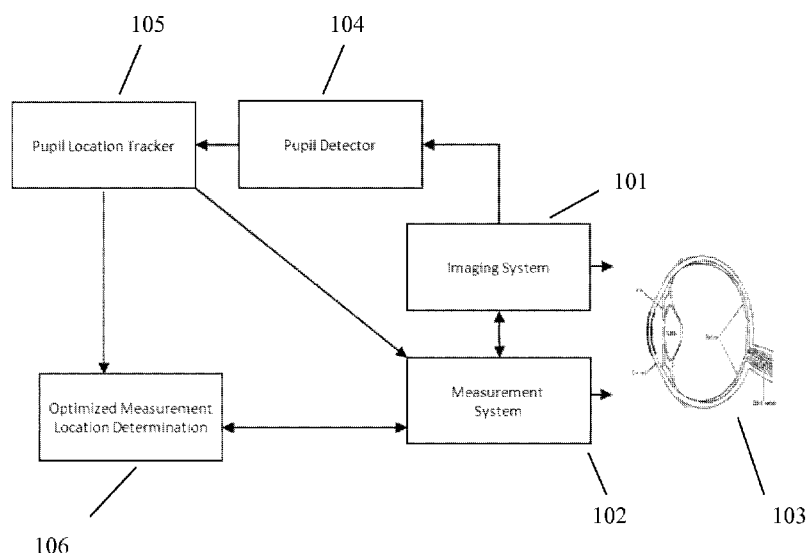


FIG. 1

(57) Abstract: Systems and methods for improving ophthalmic imaging by correlating the location of a measurement on the pupil of the eye with a quality of the measurement and further controlling subsequent measurements based on the quality are presented. Aspects of the invention include obtaining optical coherence tomography (OCT) measurements through cataracts or other media opacities, obtaining B-scans with minimized tilt, and automated OCT data acquisition of select structures in the eye. Embodiments of the invention directed towards imaging tissues with angle dependent layer contrast and mapping the size and location of cataracts in the eye are also described.

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17 January 2013

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/057756

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B3/12 A61B3/15 A61B3/10
ADD. A61B3/11 A61B3/113

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 practicable, 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	WO 2009/120543 A1 (DOHENY EYE INST [US]; WALSH ALEXANDER C [US]; UPDIKE PAUL G [US]; SADD) 1 October 2009 (2009-10-01) abstract paragraph [0078] - paragraph [0080] paragraph [0142] paragraph [0150] - paragraph [0169] figures 17A-18C ----- -/--	1-19, 37-41



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

"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

12 November 2012

Date of mailing of the international search report

27/11/2012

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/057756

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BRANDON J LUJAN ET AL: "Revealing Henle's Fiber Layer Using Spectral Domain Optical Coherence Tomography", INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE, ASSOCIATION FOR RESEARCH IN VISION AND OPHTHALMOLOGY, US, vol. 52, no. 3, 1 March 2011 (2011-03-01), pages 1486-1492, XP002658343, ISSN: 0146-0404 the whole document	6,7,39
X	----- WO 98/22016 A2 (VELDE FRANS J VAN DE [US]) 28 May 1998 (1998-05-28) page 30 figure 1 -----	20-27, 42-48

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/057756

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.:

1-27, 37-48
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: 1-19, 37-41

A method and a device to obtain ophthalmic measurement data

2. claims: 20-27, 42-48

A method of collecting image data of an eye of a patient using an ophthalmic imaging system

3. claims: 28-32

An method and device for choosing the angle of incidence of an OCT scanner

4. claims: 33-36

An ophthalmic diagnostic system for obtaining measurement data at a precise location on a pupil of the eye

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/057756

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009120543 A1	01-10-2009	TW 200940026 A WO 2009120543 A1	01-10-2009 01-10-2009
WO 9822016 A2	28-05-1998	EP 0973432 A2 US 5923399 A US 5943117 A WO 9822016 A2	26-01-2000 13-07-1999 24-08-1999 28-05-1998