

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 December 2009 (30.12.2009)

(10) International Publication Number
WO 2009/158723 A3

- (51) International Patent Classification:
A61F 2/14 (2006.01) A61F 9/011 (2006.01)
- (21) International Application Number:
PCT/US2009/049117
- (22) International Filing Date:
29 June 2009 (29.06.2009)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/076,592 27 June 2008 (27.06.2008) US
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- (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, CL, 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, PE, 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, MK, 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).

- Published:
- 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))
- with information concerning one or more priority claims considered void (Rule 26bis.2(d))
- (88) Date of publication of the international search report:
15 April 2010

(54) Title: INTRACORNEAL INLAY, SYSTEM, AND METHOD

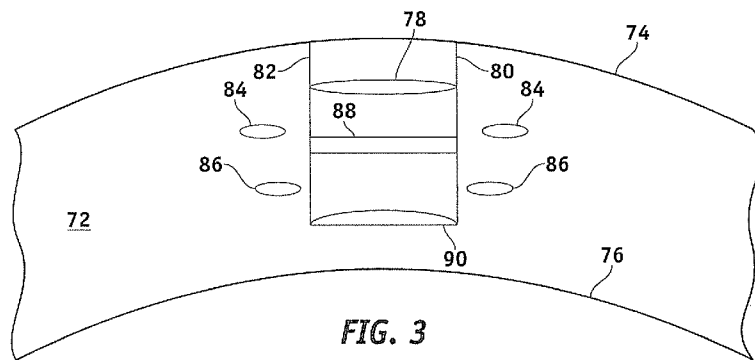


FIG. 3

(57) Abstract: Method and system (10, 70) for modifying a refractive profile associated with an eye having a recipient cornea. The method includes incising a sub-surface portion of a cadaver cornea with a femtosecond laser, removing the portion from the cadaver cornea, sculpting at least one of an anterior and posterior surface of the portion to form a corneal tissue implant having a pre-determined refractive profile based on a refractive profile of the eye, registering the implant with a recipient bed to align the implant with an optical axis of the recipient cornea and stabilize the implant in a recipient bed. The system (10, 70) includes a laser assembly (14, 16, 20, 26) operable to output a pulsed laser beam and a controller (22) coupled to the laser assembly. The controller directs the laser assembly to incise a corneal tissue inlay from a donor cornea, form a recipient bed in the recipient cornea, register the inlay with the bed, determine a position of the inlay, and determine a position change for the inlay based on the position of the inlay to align the refractive profile of the inlay with the refractive profile of the eye.



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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/049117

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61F2/14 A61F9/011

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)
A61F

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	WO 2006/011011 A1 (20 10 PERFECT VISION OPTISCHE [DE]) 2 February 2006 (2006-02-02)	10
A	page 2, line 29 - page 6, line 13 page 7, lines 2-27 page 8, lines 26-28 page 10, line 31 - page 11, line 25 page 12, lines 2-8; claims 1,5,15,17,20; figures 1-3,4A/B page 1, lines 2-8	11-15
A	----- WO 2008/030699 A2 (INTRALASE CORP [US]; KURTZ RONALD M [US]; JUHASZ TIBOR [US]; SARAYBA M) 13 March 2008 (2008-03-13) paragraphs [0004], [0005], [0023]; claim 23 ----- -/--	10-11, 13-15,20

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	"&" 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 22 February 2010	Date of mailing of the international search report 26/02/2010
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 Merté, Birgit

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/049117

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 94/09849 A1 (SWINGER CASIMIR A [US]; LAI SHUI T [US]) 11 May 1994 (1994-05-11) page 28, line 21 - page 29, line 4 page 36, line 6 - page 37, line 3 page 42, lines 8-18 page 43, line 20 - page 45, line 25; claim 8; figures 2,3,5,16,17,24	10-15, 18,20
X	US 2006/100612 A1 (VAN DER HEYD GERD [DE] ET AL) 11 May 2006 (2006-05-11)	10
A	paragraphs [0035], [0041], [0044], [0055] - [0057]; claims 10,14; figure 7	11,13-20
A	US 2007/208325 A1 (KURTZ RONALD M [US]) 6 September 2007 (2007-09-06) paragraphs [0023] - [0026]; claim 3; figures 2A/B,7	10-12, 16-19
A	WO 2008/060810 A2 (ILIAKIS BERNARDINO [US] ET AL) 22 May 2008 (2008-05-22) page 18, line 20 - page 20, line 30; claims 1,4-9,14; figure 6B	10-13,20
A	WO 93/08878 A1 (SWINGER CASIMIR A [US]) 13 May 1993 (1993-05-13) claims 6,7	10,20
A	US 5 312 428 A (AMERICAN CYANAMID CO [US]) 17 May 1994 (1994-05-17) column 5, line 43 - column 6, line 13	10,20
A	US 5 549 632 A (LAI SHUI T [US]) 27 August 1996 (1996-08-27) cited in the application column 10, lines 41-52	13-14
X,P	WO 2008/131888 A1 (ZEISS CARL MEDITEC AG [DE]) 6 November 2008 (2008-11-06) the whole document	10-15

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 1-9

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery The independent claim 1 comprises the invasive step stabilizing the corneal tissue implant in the recipient bed which is clearly a surgical step in a surgical keratoprosthesis procedure carried out by an ophthalmologist.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/049117

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.: 1-9
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
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:

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.:
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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/049117

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 2006011011	A1	02-02-2006	CA 2573407 A1 EP 1768629 A1 JP 2008506492 T US 2006020259 A1	02-02-2006 04-04-2007 06-03-2008 26-01-2006
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