

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
19 March 2009 (19.03.2009)

PCT

(10) International Publication Number  
**WO 2009/035571 A3**

(51) International Patent Classification:  
A61F 9/007 (2006.01)

(74) Agents: NELSON, Albin, James et al.; Schwegman, Lundberg & Woessner, PA, P.O. Box 2938, Minneapolis, Minnesota 55402 (US).

(21) International Application Number:  
PCT/US2008/010502

(22) International Filing Date:  
5 September 2008 (05.09.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/970,807 7 September 2007 (07.09.2007) US  
61/050,901 6 May 2008 (06.05.2008) 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.

(71) Applicant (for all designated States except US): QLT PLUG DELIVERY, INC [US/US]; 191 Jefferson Drive, Menlo Park, California 94025 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DE JUAN, Eugene, Jr. [US/US]; 276 Edgewood Avenue, San Francisco, California 94117 (US). BOYD, Stephen [US/US]; 23809 Hayes Avenue, Murrieta, California 92562 (US). REICH, Cary, J. [US/US]; 114 Ayala Ct., Los Gatos, California 95032 (US). CARDENAS, Christopher, V. [US/US]; 2716 Sussex Way, Redwood City, California 94061 (US). JEWELL, Tommy [US/US]; 905 Washington SE, Albuquerque, New Mexico 87108 (US). MA, Lorrie [US/US]; 1232 Arabelle Way, San Jose, California 95132 (US). NGUYEN, Tuan [US/US]; 349 Bluefield Drive, San Jose, California 95136 (US).

(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).

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:  
30 April 2009

(54) Title: LACRIMAL IMPLANT DETECTION

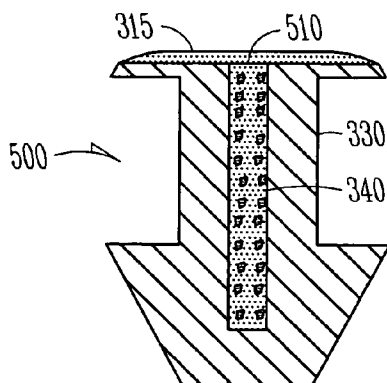


FIG. 5

(57) Abstract: This document discusses, among other things, an apparatus comprising a lacrimal implant insertable at least partially into a lacrimal punctum. The lacrimal implant comprises an implant core, and an implant body. The implant body includes a cavity sized and shaped to receive the implant core. At least one of the implant core and the implant cavity includes a detection device configured to allow automatic detection of the lacrimal implant with a separate detector device.

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/010502

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. A61F9/007

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/198453 A1 (HERRICK ROBERT S [US] HERRICK II ROBERT S [US]) 26 December 2002 (2002-12-26)	1,2,5-7, 15,27, 28,36, 49,50, 63,72, 80,89
Y	paragraphs [0043], [0176] - [0186]; claims; figures	3,4, 8-10,12, 16-23, 29,35, 37-39, 51-53, 64-71, 73-76, 81-88, 90-93
	----- -/--	

☒ 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

4 December 2008

Date of mailing of the international search report

05/03/2009

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

Serra i Verdaguer, J

## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2008/010502

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 5 163 959 A (HERRICK ROBERT S [US]) 17 November 1992 (1992-11-17)	1,2,5-7, 15,27, 28,36, 49,50, 63,72, 80,89
Y	column 13, line 46 - column 13, line 59; claims; figures	3,4, 8-10,12, 16-23, 29,35, 37-39, 51-53, 64-71, 73-76, 81-88, 90-93
X	----- US 2005/192527 A1 (GHARIB MORTEZA [US] ET AL) 1 September 2005 (2005-09-01)	1,2,5-7, 15,27, 28,36, 49,50, 63,72, 80,89
Y	paragraph [0073]	3,4, 8-10,12, 16-23, 29,35, 37-39, 51-53, 64-71, 73-76, 81-88, 90-93
Y	----- US 2005/271704 A1 (TU HOSHENG [US] ET AL) 8 December 2005 (2005-12-08)	3,4, 8-10,12, 16-23, 29,35, 37-39, 51-53, 64-71, 73-76, 81-88, 90-93
Y	the whole document	
Y	----- WO 2005/086694 A (CLARITY CORP [US]; PRITCHARD WILSON [US]; FLOWERS CEDRIC [US]; PRESCOT) 22 September 2005 (2005-09-22) abstract; claims; figures	11,13,14
Y	----- US 6 196 993 B1 (COHAN BRUCE E [US] ET AL) 6 March 2001 (2001-03-06) abstract	11,13,14

# INTERNATIONAL SEARCH REPORT

International application No.:  
PCT/US2008/010502

## 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.: 24-26, 40-48, 54-56, 77-79, 94-96, 100-102  
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:

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.:  
1-23, 27-39, 49-53, 63-76, 80-93

### 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**

Continuation of Box II.1

Claims Nos.: 24-26, 40-48, 54-56, 77-79, 94-96, 100-102

The subject-matter of claims 24-26, 40-48, 54-56, 77-79, 94-96, 100-102, discloses a method of treating an eye disorder. The method comprises the step of inserting a lacrimal implant into at least one lacrimal punctum. The International preliminary searching authority is not required to establish an opinion with regard to novelty, inventive step and industrial applicability on methods for treatment of the human body by surgery or therapy (Rule 39.1(iv)).

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-23, 27-39, 49-53, 63-76, 80-93

An apparatus comprising a lacrimal implant  
---

2. claims: 57-62, 97-99

A detection device  
---

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2008/010502

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002198453 A1	26-12-2002	US 2007135914 A1 US 2007299515 A1	14-06-2007 27-12-2007
US 5163959 A	17-11-1992	NONE	
US 2005192527 A1	01-09-2005	US 2005288619 A1 US 6981958 B1	29-12-2005 03-01-2006
US 2005271704 A1	08-12-2005	NONE	
WO 2005086694 A	22-09-2005	AU 2005220764 A1 CA 2560176 A1 EP 1744765 A2 JP 2007526094 T JP 2007526095 T US 2005220882 A1 US 2007160647 A1 WO 2005086697 A2	22-09-2005 22-09-2005 24-01-2007 13-09-2007 13-09-2007 06-10-2005 12-07-2007 22-09-2005
US 6196993 B1	06-03-2001	NONE	