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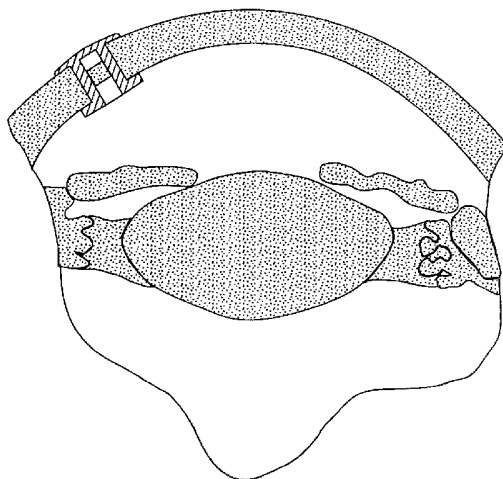
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[Continued on next page]

(54) Title: INSERTION TOOL FOR OCULAR IMPLANT



(57) Abstract: An insertion tool (20) containing an elastomeric band (50), ejection pin (43) and cartridge assembly (40) for holding a transcornea shunt (10) during insertion procedures. The proximal flange (12) of the shunt is gently held in a visible position within an adjustable opening in the elastomeric band at the distal end of the ejection pin. A slide mechanism is provided along the exterior surface of the insertion tool to drive the cartridge assembly which applies tension to the elastomeric band, increasing the opening diameter securing the shunt and allowing gentle release of the shunt when desired. Alternative embodiments of the insertion tool utilize severable fibers, a transparent split-mylar sheet or diaphragm, a cantilever fork, a collet assembly or an elastomeric grip collet to gently hold and release the shunt during insertion.

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**Declaration under Rule 4.17:**

- *of inventorship (Rule 4.17(iv)) for US only*

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*
- *with a declaration as to non-prejudicial disclosures or exceptions to lack of novelty*

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

10 March 2005

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see PCT Gazette No. 03/2005 of 20 January 2005, Section II

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INTERNATIONAL SEARCH REPORT

Intern al Application No
PCT/US2004/016223

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61F9/00 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)
IPC 7 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.
Y A	US 6 527 780 B1 (WALLACE RAYMOND G ET AL) 4 March 2003 (2003-03-04) column 2, line 18 - column 2, line 38 column 3, line 31 - column 4, line 13; figures 1-3,8,9,11 -----	1,13,16, 25 14,27,31
Y A	WO 01/50943 A (BECTION DICKINSON CO ; COTE DANA (US); PIERCE ROBERT (US); STOY VLADIMI) 19 July 2001 (2001-07-19) cited in the application page 5, paragraph 3 page 16, paragraph 3 - page 18, paragraph 2 page 19, paragraph 2 - page 20, paragraph 1; figures 4,6A-D,7AB ----- -/--	1,13,16, 25 2,11,21, 23,27

☒ 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)
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- *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

18 January 2005

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INTERNATIONAL SEARCH REPORT

Inter
ial Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 968 296 A (RITCH ROBERT ET AL) 6 November 1990 (1990-11-06) column 5, line 25 - column 6, line 38; figures 4A-D -----	1,2,13, 15-17,26
A	WO 96/36377 A (OPTONOL LTD ; WERNER MARY C (US)) 21 November 1996 (1996-11-21) page 1, line 4 - page 1, line 7 page 6, line 1 - page 6, line 30 page 12, line 11 - page 14, line 8; figures 8,9 -----	1,2,13, 26
A	US 5 626 558 A (SUSON JOHN) 6 May 1997 (1997-05-06) column 7, line 42 - column 7, line 52; figure 3 -----	25,26
A	US 6 344 047 B1 (EAGLE VISION) 5 February 2002 (2002-02-05) column 4, line 51 - column 5, line 53 column 7, line 24 - column 7, line 31; figures 2,3,5,6 -----	1,2,16, 22,27, 29,33

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/016223

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.: 36-38
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery. In particular the steps "positioning said implant within an implant location" and "releasing said proximal portion of said implant" of claim 36 are highly invasive and have to be carried out by an ophthalmologist-surgeon.
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.:

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: 1-26

Implant insertion tool comprising a releasable cartridge and a slidably mounted cartridge positioning mechanism

2. claims: 27-35

insertion cartridge for use with implants comprising a cylindrical cartridge body , an ejection pin and an elastomeric band for securing a shunt against the ejection pin

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US2004/016223

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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