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Declaration under Rule 4.17:

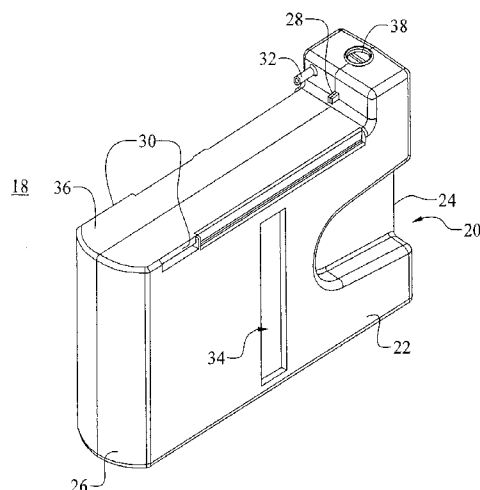
— *as to the identity of the inventor (Rule 4.17(i))*

Published:

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(54) Title: OPTHALMIC SURGICAL CASSETTE AND SYSTEM



(57) Abstract: A cassette (74) for use with an ophthalmic surgical pump (16) for collecting aspirant fluid and tissue from a patient's eye includes a rigid walled container (18) having an interior volume (42). At least one tapered alignment slot (20) is formed in a side wall of the container (18) and extends from a back wall (24) towards a front wall (26). An irrigation and aspiration manifold base (50) is removably attached to the container (18). An aspiration path (46) is formed within the container (18) for receiving the aspiration fluid and the tissue from the eye and directing the flow of fluid towards a front half of the container (18) before the fluid and tissue collects within a majority of the interior volume (42) of the container (18). A fluid level indicator (34) is formed on a wall (22) of the container (18), such that an associated photo-detector (86) of the pump (16) may determine a level of fluid in the container (18).

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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/070471

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61M1/00

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)

A61M

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	WO 93/17729 A (ALCON SURGICAL INC [US]) 16 September 1993 (1993-09-16) figures 1-3,6 page 1, lines 1-11 page 8, line 5 - page 9, line 10 page 9, lines 36,37 page 10, lines 5-16 page 13, lines 25-29	1-9, 11-13
Y	US 5 282 787 A (WORTRICH THEODORE S [US]) 1 February 1994 (1994-02-01) figures 1-4 column 4, lines 17-37 column 6, lines 27-47 ----- -/--	1-9, 11-13

☒ 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

12 November 2007

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INTERNATIONAL SEARCH REPORT

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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.
Y	WO 96/05873 A (KINETIC CONCEPTS INC [US]; MEDISCUS PROD LTD [GB]; LINA CESAR Z [US];) 29 February 1996 (1996-02-29) page 6, lines 1-12 page 7, lines 7-12 page 9, lines 11-24 page 11, lines 23-25 figures 1,3,5,6,6a -----	1-9, 11-13
Y	US 4 773 897 A (SCHELLER GREGG [US] ET AL) 27 September 1988 (1988-09-27) cited in the application figures 1-8 column 4, line 19 - column 5, line 5 column 5, lines 25-43 column 6, lines 33-52 -----	1-9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/070471

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 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.:

see additional sheet(s)

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: 1-13

cassette for use in ophthalmic surgery comprising a rigid walled container and at least one alignment slot formed in a side wall of the container

2. claims: 14-19

cassette for use in ophthalmic surgery comprising a rigid walled container and an irrigation and aspiration manifold base removeably attached to the container

3. claims: 20-21

cassette for use in ophthalmic surgery comprising a rigid walled container and an aspiration path formed within the container and directing the flow of fluid towards a front half of the container

4. claims: 22-29

an ophthalmic surgical pump system and a cassette for such a system; the cassette comprising a rigid walled container and a fluid level indicator formed on the wall of the container

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/070471

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9317729	A	16-09-1993	NONE
US 5282787	A	01-02-1994	NONE
WO 9605873	A	29-02-1996	AT 270561 T 15-07-2004
		AT 172377 T 15-11-1998	
		AT 226838 T 15-11-2002	
		AU 698477 B2 29-10-1998	
		AU 3349995 A 14-03-1996	
		DE 69505545 D1 26-11-1998	
		DE 69505545 T2 11-03-1999	
		DE 69528716 D1 05-12-2002	
		DE 69528716 T2 20-03-2003	
		DE 69533244 D1 12-08-2004	
		DE 69533244 T2 14-06-2006	
		DK 777504 T3 28-06-1999	
		DK 0853950 T3 25-11-2002	
		EP 0777504 A1 11-06-1997	
		ES 2223977 T3 01-03-2005	
		ES 2186085 T3 01-05-2003	
		JP 10504484 T 06-05-1998	
		JP 3687794 B2 24-08-2005	
		PT 1219311 T 30-11-2004	
		PT 853950 T 31-03-2003	
		ZA 9506968 A 29-03-1996	
US 4773897	A	27-09-1988	NONE