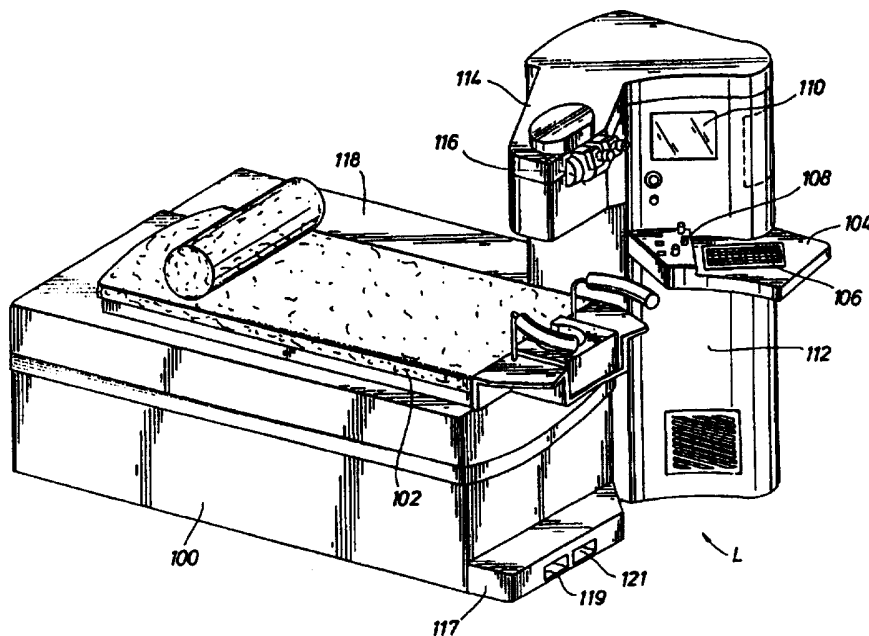




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁶ : A61F 9/00</p>	<p>A3</p>	<p>(11) International Publication Number: WO 97/46184 (43) International Publication Date: 11 December 1997 (11.12.97)</p>
<p>(21) International Application Number: PCT/EP97/02722 (22) International Filing Date: 26 May 1997 (26.05.97) (30) Priority Data: 08/656,856 30 May 1996 (30.05.96) US (71) Applicant (for all designated States except US): CHIRON/TECHNOLAS GMBH OPHTHALMOLOGISCHE SYSTEME [DE/DE]; Max-Planck-Strasse 6, D-86609 Dornach (DE). (72) Inventor; and (75) Inventor/Applicant (for US only): HOHLA, Kristian [DE/DE]; Brunnstein Strasse 10, D-85591 Vaterstetten (DE). (74) Agent: VOSSIUS & PARTNER; Siebertstrasse 4, D-81675 Munich (DE).</p>	<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 29 January 1998 (29.01.98)</p>	

(54) Title: EXCIMER LASER EYE SURGERY SYSTEM



(57) Abstract

A compact excimer laser system is provided that includes argon fluoride laser gas, electronics, and laser head all compactly arranged such that the patient's bed can rotate over all of these components. This allows the patient's bed to be rotated for easy egress of the patient without striking the head against an optical extension through which the excimer laser is fired onto the patient's eye. Further, an automated lamellar keratoplasty system is incorporated into the electronics and components of the laser system so that laser *in situ* keratomileusis can be easily performed.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 97/02722

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 A61F9/00				
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) IPC 6 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)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	WO 95 27534 A (SUMMIT) 19 October 1995 see page 13, line 6 - line 20; figure 1 ---	1-6		
A	DE 37 37 410 A (HAAG) 11 May 1989 see column 10, paragraph 2; figure 5 ---	1,3,4,7, 8,16		
A	EP 0 257 836 A (L'ESPERANCE) 2 March 1988 ---			
A	WO 90 09141 A (PHOENIX) 23 August 1990 see abstract; figures 1-6 ---	9		
A	US 5 496 339 A (KOEPNICK) 5 March 1996 see abstract; claim 24 ---	9		
A	US 4 903 695 A (WARNER) 27 February 1990 see the whole document ---	9		
-/--				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.				
<input checked="" type="checkbox"/> Patent family members are listed in annex.				
* Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;"> "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 </td> <td style="width: 50%; border: none; vertical-align: top;"> "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 </td> </tr> </table>			"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
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Date of the actual completion of the international search <p style="text-align: center; font-size: 1.2em;">1 December 1997</p>	Date of mailing of the international search report <p style="text-align: center; font-size: 1.2em;">08.12.97</p>			
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <p style="text-align: center; font-size: 1.2em;">Barton, S</p>			

3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 97/02722

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 680 677 A (GAILLARD) 5 March 1993 see page 2, line 4 - page 3, line 17; figures 1,2 see page 1, line 26	14-16, 19
A	US 4 973 330 A (AZEMA) 27 November 1990 see column 8, line 64	14

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 97/ 02722

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims: 1-8 Laser eye surgery system with rotating bed
2. Claims: 9-13 Laser eye surgery system with integrated automated lamellar keroplasty system
3. Claims: 14-19 Compact Laser surgery system

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/02722

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