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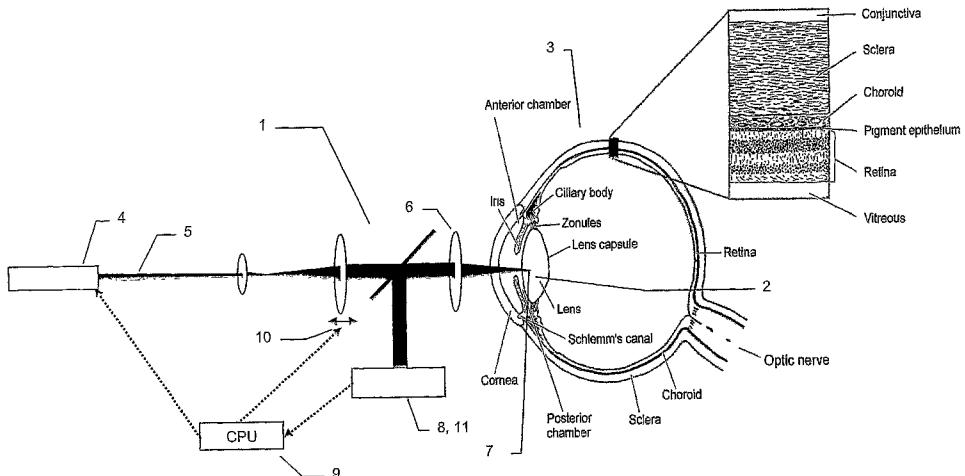
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(54) Title: APPARATUS FOR NON OR MINIMALLY DISRUPTIVE PHOTOMANIPULATION OF AN EYE



(57) Abstract: The invention relates to a method and a system for non- or minimally disruptive photomanipulation of the lens and/or its constituents collectively or selectively of an animal or human eye, comprising focusing a treatment laser beam into a selected part of the lens and/or its constituents collectively or selectively where treatment is intended to occur, pulsing of said treatment laser beam, scanning the beam over at least a part of the lens, measuring one or more types of radiation from the said selected part and utilizing this measurement to decide to stop the said treatment laser beam or to adjust at least one of the parameters: focus, intensity, wavelength, pulse length, repetition frequency, pulse train length, scan velocity, size of scanned volume, scan repetitions, and scan pattern of said treatment laser beam.

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# INTERNATIONAL SEARCH REPORT

international application No  
PCT/DK2007/000495

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. 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)  
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*	Classification of document with indication, where appropriate, of the relevant passages	Relevant to claim No
X	WO 93/25166 A (SUMMIT TECHNOLOGY INC [US]) 23 December 1993 (1993-12-23) pages 19-21, lines 10-6; claim 1; figures 1,3 -----	93,97, 176,180
X	EP 0 412 789 A (SUMMIT TECHNOLOGY INC [US]) 13 February 1991 (1991-02-13) column 7, line 45 - column 8, line 1; claim 1; figure 1 -----	93,97, 176,180
X	EP 1 231 496 A (ZEISS CARL [DE]; ZEISS STIFTUNG [DE] CARL ZEISS AG [DE]) 14 August 2002 (2002-08-14)  paragraphs [0016] - [0034]; claim 1 -----	93,94, 97,98, 176-178, 180
A	EP 1 396 244 A (NIDEK KK [JP]; TELANDRO ALAIN [FR]) 10 March 2004 (2004-03-10) the whole document -----	93-160, 176-180



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

'V' 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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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/DK2007/000495

### 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 1-92  
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**

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  D Claims Nos  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 64(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  U As all required additional search fees were timely paid by the applicant this international search report covers allsearchable claims

2  I As all searchable claims could be searched without effort justifying an additional fees this Authority did not invite payment of additional fees

3  I As only some of the required additional search fees were timely paid by the applicant this international search report covers Qnlylv Inhoospe BlAalimms foorr Wihirchh leSs Werre pailrd Sipeetlincaalluy Qaaimmss NoRs

4  I y 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 annex**

#### Remark on Protest

I The additional search fees were accompanied by the applicant's protest and where applicable the payment of a protest fee

I 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

I 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 : 93-160, 176-180

A system comprising :

- a) a treatment laser system
- b) focusing means for focusing said treatment laser beam into a selected part of the lens and/or its constituents collectively or selectively where treatment is intended to occur
- c) means for pulsing of said treatment laser beam;
- d) means for measuring one or more types of radiation from the said selected part;
- e) means for processing the said one or more type of radiation from the said selected part
- f) means for adjusting, based on at least part of the output of the means for processing, at least one of the parameters for the said treatment laser beam: focus, intensity wavelength, pulse length, repetition frequency, and pulse train length of said treatment laser beam.

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2 . claims: 161-164

A system for mechanically immobilizing the living eye during treatment comprising means for mechanical contact with the surface of the eye and/or means for the mechanical contact lens mounted on said eye.

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3 . claims: 165-169

System of tracking the movement of the eye comprising means for imaging the eye on at least one light detector.

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4 . claims: 170-173

System for monitoring the orientation of an eye in space comprising means for monitoring the surface or anterior part of the eye and means for monitoring the fundus and means for calculating the orientation of the eye in space.

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5 . claims: 174-175

System for conditioning the eye comprising means for applying at least one of the following : heat, cold and magnetic field.

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**INTERNATIONAL SEARCH REPORT**International application No  
**PCT/DK2007/000495**

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
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EP 1396244	<b>A</b>	10-03-2004	<b>JP</b>	2004148074 A		27-05-2004
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