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(54) Title: DEVICES AND METHODS FOR IMPROVING VISION USING LASER PHOTOMIOSIS

(57) Abstract: Systems and methods of improving vision using an ophthalmological laser system are provided. A predetermined pattern characterized by a plurality of positions along a plurality of spatially distributed iris tissues of an eye of a patient is obtained. A laser illumination light beam is aligned in accordance with one or more of the plurality of positions along the plurality of spatially distributed iris tissues. The laser illumination light beam is delivered in the predetermined pattern to the plurality of spatially distributed iris tissues of the patient. At least a subset of the spatially distributed iris tissues is cauterized by the delivery of the laser illumination light beam in the predetermined pattern, thereby resulting in a permanent decrease in diameter of the pupil of the eye.

Figure 1
Published:
— with international search report (Art. 21(3))

(88) Date of publication of the international search report:
5 February 2015
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

<table>
<thead>
<tr>
<th>IPC(8)</th>
<th>A61 F 9/008 (2013.01)</th>
</tr>
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</table>

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)

<table>
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<tr>
<th>IPC(8)</th>
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

<table>
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<th>IPC(8)</th>
<th>A61 F 9/008, 9/01, 9/007, 9/01 (2013.01)</th>
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USPC - 606/5

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST (PGPB, USPT, EPAB, JPAB); PatBase; Google (Patents, Scholar, Web)

Search Terms: Laser, eye, vision, ophthalmological, visible, illumination, processor, computer, CPU, microprocessor, controller, memory, program, beam, pattern, position, location, spatial, predefined, preprogrammed, predetermined, property, characteristic, pulse,

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 2008/0015553 A1 (ZACHARIAS) 17 January 2008 (17.01.2008) Abstract; Fig. 2-3; Para [0067]-[0070], [0074], [0088], [0094]-[0095], [0106], [0193]</td>
<td>1-4, 20-30, 45</td>
</tr>
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<td>A</td>
<td>US 3.930.504 A (DE LA FORCADE) 06 January 1976 (06.01.1976) Abstract; Fig. 1; col 2, ln 51 to col 3, ln 3, col 4, ln 14-22</td>
<td>1-4, 20-30, 45-48</td>
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<td>A</td>
<td>US 201 1/0160622 A1 (MCAIRDLE et al.) 30 June 201 1 (30.06.201 1) Para [0061]-[0063],[0086]-[0089], [01 18]</td>
<td>46-48</td>
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</tbody>
</table>

Further documents are listed in the continuation of Box C.

| "A" | Special categories of cited documents: |
| "E" | earlier application or patent 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 |
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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 04 April 2013 (04.04.2013)

Date of mailing of the international search report 13 MAY 2013

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3281

Authorized officer: Lee W. Young

Form PCT/ISA/2.10 (second sheet) (July 2009)
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.: 5-19, 31-44  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

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

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 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.:

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.