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61/556,536 7 November 2011 (07.11.2011) US(71) Applicant: ELENZA, INC. [US/US]; 5238 Valley-
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DO, DZ, EC, EE, EG, ES, FI, GB, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ,
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(54) Title: METHODS AND APPARATUS FOR DETECTING ACCOMMODATIVE TRIGGERS

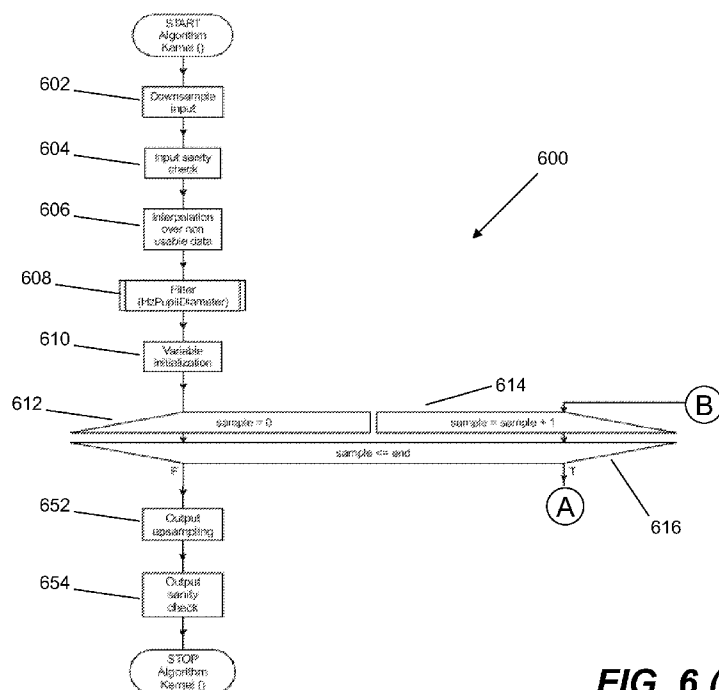


FIG. 6 (I)

(57) Abstract: An intraocular implant includes a sensor that, when implanted the eye, detects a physiological change (e.g., change in pupil diameter) associated with an accommodative trigger and emits a signal representing the detected change. A processor coupled to the implant senses and interprets the signal based on one or more thresholds representing the patient's pupillary response to changes in object distance and/or ambient light level. If the processor determines that the signal represents an accommodative trigger, it actuates an electro-active optical element, such as a pixelated liquid-crystal cell, to change the eye's effective optical power and/or depth of field.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 12/61115

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61F 2/16 (2012.01)

USPC - 623/6.22

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)

USPC: 623/6.22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8): A61F2/00, 2/02, 2/14

USPC: 623/4.1, 6.11, 6.17, 6.37; 250/201.2, 559.38; 356/3, 4.01

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

PatBase and Google: ocular, intraocular, ophthalmology, retina, eye, implant, prosthesis, optical, lens, corneal, inlay, onlay, pupil, size, diameter, radius, accommodation, presbyopia, photosensor, photodetector, sensor, light, optic, electroactive, filter, causal, slew, processor, CPU, microprocessor, unit, central, memory, stored, hard drive, d

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7,964,833 B2 (Holladay) 21 June 2011 (21.06.2011), entire document, especially col 5, ln 34 to col 5, ln 67; col 6, ln 29-58; col 7, ln 39-56; col 8, ln 17-25; col 9, ln 49-64; col 13, ln 65 to col 14, ln 9	1-4, 6-11, 16-23, 25 and 27-29
Y		5, 12, 15, 24, 26 and 32
X	US 2011/0071505 A1 (Rickard et al) 24 March 2011 (24.03.2011), entire document, especially par [0021]-[0040]	1, 13, 15-16 and 30
X	US 2005/0113744 A1 (Donoghue et al) 26 May 2005 (26.05.2005), entire document, especially para [0040]-[0048]	1, 14, 16 and 31
Y	US 5,141,304 A (Ichihashi) 25 August 1992 (25.08.1992), entire document, especially col 4, ln 2, ln 52-61; col 7, ln 18-32	5, 24 and 32
Y	US 7,290,875 B2 (Blum et al) 06 November 2007 (06.11.2007), entire document, especially col 6, ln 10-41	12
Y	WO 2006/050171 A2 (Blum et al) 11 May 2006 (11.05.2006), entire document, especially para [0069]	15 and 26
A	US 7,926,940 B2 (Blum et al) 19 April 2011 (19.04.2011), entire document, especially col 6, ln 25 to col 8, ln 35	1-32
A	US 6,638,304 B2 (Azar) 28 October 2003 (28.10.2003), entire document, especially col 4, ln 25 to col 7, ln 7	1-32



Further documents are listed in the continuation of Box C.



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"A" document defining the general state of the art which is not considered to be of particular relevance

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"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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International 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 7,744,215 B2 (Blum et al) 29 June 2010 (29.06.2010), entire document, especially col 5, ln 25 to col 7, ln 45	1-32