

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 June 2006 (29.06.2006)

PCT

(10) International Publication Number
WO 2006/069327 A3

- (51) International Patent Classification:
A61N 1/18 (2006.01)
- (21) International Application Number:
PCT/US2005/046826
- (22) International Filing Date:
21 December 2005 (21.12.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/639,056 21 December 2004 (21.12.2004) US
60/639,027 21 December 2004 (21.12.2004) US
60/689,606 9 June 2005 (09.06.2005) US

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): **EBR SYSTEMS, INC.** [US/US]; 686 West Maude Avenue, Suite 102, Sunnyvale, California 94085 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BRISKEN, Axel, F.** [US/US]; 764 Boar Circle, Fremont, c 94539 (US). **COWAN, Mark, W.** [US/US]; 1766 Mandan Place, Fremont, California 94539 (US). **ECHT, Debra, S.** [US/US]; 525 Eleanor Drive, Woodside, California 94062 (US). **RILEY, Richard, E.** [US/US]; 795 Stone Lane, Palo Alto, California 94303 (US).

Declaration under Rule 4.17:
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

(74) Agents: **HESLIN, James, M.** et al.; **TOWNSEND AND TOWNSEND AND CREW LLP**, Two Embarcadero Center, 8th Floor, San Francisco, California 94111-3834 (US).

Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

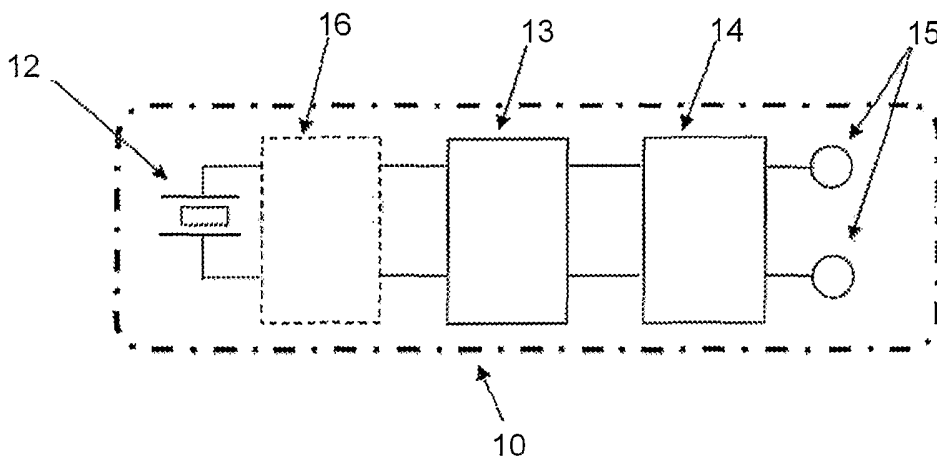
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

(88) Date of publication of the international search report:
21 December 2006

(15) Information about Correction:
Previous Correction:
see PCT Gazette No. 34/2006 of 24 August 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IMPLANTABLE TRANSDUCER DEVICES



(57) Abstract: Receiver-stimulators comprise a nearly isotropic transducer assembly, demodulator circuitry, and at least two tissue contacting electrodes. Use of near isotropic transducers allows the devices to be implanted with less concern regarding the orientation relative to an acoustic energy source. Transducers or transducer elements having relatively small sizes, typically less than 1/2 the wavelength of the acoustic source, enhance isotropy. The use of single crystal piezoelectric materials enhance sensitivity.

WO 2006/069327 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/46826

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **A61N 1/18(2006.01)**

USPC: 607/10,27,30-33,37,59-61
 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)
 U.S. : 607/10,27,30-33,37,59-61

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 practicable, 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	US 5,113,859 A (Funke) 19 May 1992 (19.05.1992), col. 13-14, lines 1-4, Figure 4.	1-28
---		-----
Y	US 5,103,129 A (Slayton et al) 07 April 1992 (07.04.1992), col. 7-8	2-3, 24-28
Y	US 6,534,895 B2 (Kadota et al) 18 March 2003 (18.03.2003), col. 8, lines 56-61	8-10
Y	US 6,707,230 B2 (Smith et al) 16 March 2004 (16.03.2004), col. 4, lines 14-25	11-12
Y	US 5,998,910 A (Park et al.) 07 December 1999 (07.12.1999), col. 2, lines 1-4	13
Y	US 5,757,104 A (Getman) 26 May 1998 (26.05.1998), col. 3, lines 1-10	14
Y	US 5,844,349 A (Oakley et al.) 01 December 1998 (01.12.1998), col. 3, lines 29-38)	15-19

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:		"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search
 19 July 2006 (19.07.2006)

Date of mailing of the international search report
 17 OCT 2006

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) 273-3201

Authorized officer
 For Robert E Pezzuto *J. Libby*
 Telephone No. 571-272-3766

INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US05/46826**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,377,166 A (Kuhn) 27 December 1994 (27.12.1994), col. 4, lines 36-45	19
Y	US 6,645,145 B1 (Dreschel et al.) 11 November 2003 (11.11.2003), col. 13, lines 50-59	20-23