

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 May 2004 (27.05.2004)

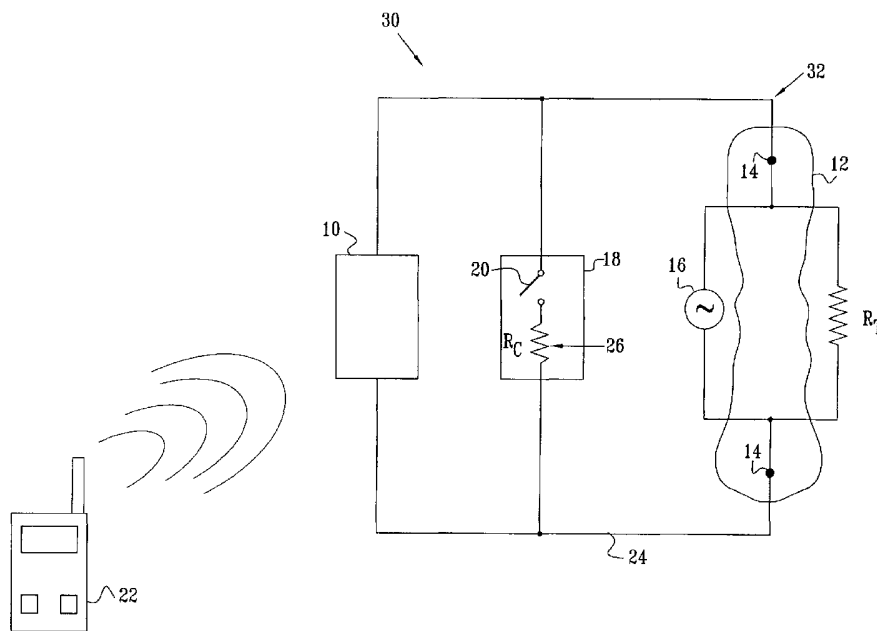
PCT

(10) International Publication Number
WO 2004/044947 A3

- (51) International Patent Classification⁷: A61H 1/02
 - (21) International Application Number: PCT/IL2003/000967
 - (22) International Filing Date: 13 November 2003 (13.11.2003)
 - (25) Filing Language: English
 - (26) Publication Language: English
 - (30) Priority Data: 60/426,182 14 November 2002 (14.11.2002) US
 - (71) Applicant (for all designated States except US): BRAINS-GATE LTD. [IL/IL]; P.O. Box 2249, 43101 Ra'anana (IL).
 - (72) Inventors; and
 - (75) Inventors/Applicants (for US only): GROSS, Yossi [IL/IL]; 10 HaNotea Street, 73160 Moshav Mazor (IL). SHALEV, Alon [IL/IL]; 9 Wingate Street, 43587 Ra'anana (IL). KEREN, Avraham [IL/IL]; 98 Tabak Street, 71908 Macabim-Reut (IL).
 - (74) Agents: SANFORD T. COLB & CO. et al.; P.O. Box 2273, 76122 Rehovot (IL).
 - (81) Designated States (national): AE, AG, AL, AM, 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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
 - (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: STIMULATION CIRCUITRY AND CONTROL OF ELECTRONIC MEDICAL DEVICE



(57) Abstract: Apparatus is provided for use with an implanted medical device (30) having two conductive elements (14) in contact with tissue (12) of a subject. The apparatus comprises a shunt (18), electrically coupled between the conductive elements (14), the shunt (18) adapted to be in a first state when the subject is exposed to a source of radiofrequency (RF) energy, and adapted to be in a second state when the subject is not exposed to the RF energy, the shunt (18) being characterized such that in the first state the shunt (18) has a first impedance, and in the second state the shunt (18) has a second impedance at least two times greater than the first impedance.

WO 2004/044947 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.

(88) Date of publication of the international search report:

7 July 2005

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL03/00967

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : A61H 1/02		
US CL : 601/2, 3, 4; 600/439; 607/45,61;		
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. : 601/2, 3, 4; 600/439; 607/45,61;		
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 5,358,514 A (US Schulman et al) 25 October 1994 (25.10.1994), column 2, line 43 - column 3, line 58; column 4, lines 11 - column 5, line 46; column 7, line 41 - column 19, line 12.	1-8, 10-27, 29-54, 56-71
X	US 5,335,657 A (TERRY, Jr. et al) 09 August 1994 (09.08.1994), column 7, line 65 - column 13, line 54.	1-8, 10-27, 29-54, 56-71
A	US 6,231,516 B1 (KEILMAN et al) 15 May 2001 (15.05.2001), entire document	9, 28, 55
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"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		Date of mailing of the international search report
21 August 2004 (21.08.2004)		01 JUN 2005
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. (703)305-3230		Authorized officer Angela Sykes <i>Shawn D. Greene for</i> Telephone No. 703-308-5181