

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 August 2003 (28.08.2003)

PCT

(10) International Publication Number
WO 2003/070284 A3

(51) International Patent Classification⁷: A61B 18/18

(21) International Application Number:
PCT/US2003/004679

(22) International Filing Date: 13 February 2003 (13.02.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/078,828 19 February 2002 (19.02.2002) US

(71) Applicant: CONSORTIUM SERVICE MANAGEMENT GROUP, INC. [US/US]; 701 North Tower, 500 N. Shoreline, Corpus Christi, TX 78471 (US).

(72) Inventors: PATON, Boris, E.; 41A Chkalova Str., Apt. 26, None Kiev (UA). LEBEDEV, Vladimir, K.; 7/10 Lutheranskaya Str., Apt. 15, None Kiev (UA). LEBEDEV, Alexei, V.; 7/10 Lutheranskaya Str., Apt. 15, None Kiev (UA). IVANOVA, Olga, N.; 25 Schorsa Str., Apt. 6, None Kiev (UA). ZAKHARASH, Mykhailo, P.; 14

Bekhterevskiy Str., Apt. 21, None Kiev (UA). FURMANOV, Yuri, A.; 42/1 Bld. 12 Prospekt Nauky, Apt. 15, None Kiev (UA). MASALOV, Yurii, A.; 1/28 Filatova Str., Apt. 30, None Kiev (UA).

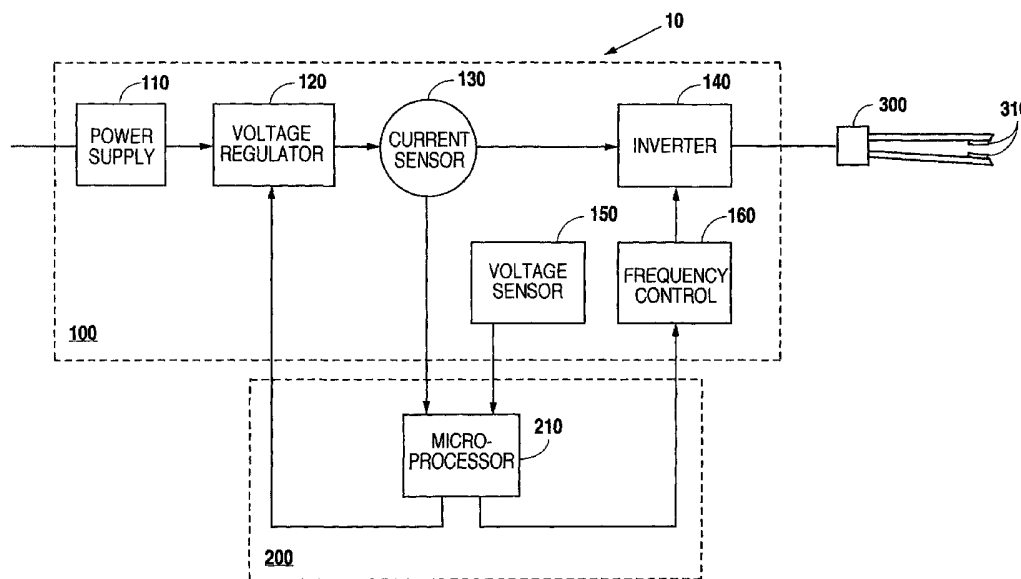
(74) Agent: HANOR, Charles, W.; Gunn, Lee & Hanor, P.C., Suite 1500, 700 N. St. Mary's Street, San Antonio, TX 78205 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (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, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR CONTROL OF TISSUE WELDING



(57) Abstract: A system and method for welding of biological tissue by applying an RF voltage during a first stage to electrodes (310) of a tissue welding tool (300); monitoring tissue impedance, and determining a minimum tissue impedance value during the first stage; determining relative tissue impedance; detecting when the relative tissue impedance reaches a predetermined relative tissue impedance value and starting a second stage; calculating the duration of the second stage as a function of the duration of the first stage; and applying the RF voltage during the second stage to the electrodes (310) of the tissue welding tool (300).

WO 2003/070284 A3

**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (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, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

— with international search report

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

8 April 2004

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/04679

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 18/18

US CL : 606/41

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. : 606/41,49

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.
A	US 6,228,080 B1 (GINES) 08 May 2001 (08.05.2001), see abstract and column 5 - column 9.	1-103
A	US 6,083,223 A (BAKER) 04 July 2000 (04.07.2000), see abstract and column 3 - column 11.	1-103
A	US 6,033,399 A (GINES) 07 March 2000 (07.03.2000), see abstract and column 5 - column 10.	1-103
A	US 5,817,093 A (WILLIAMSON, IV et al.) 06 October 1998 (06.10.1998), see abstract and column 7 - column 17	1-103

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	"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

19 May 2003 (19.05.2003)

Date of mailing of the international search report

09 SEP 2003

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Linda Dvorak *Diane Kussele for*

Telephone No. (703) 308-0994