

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



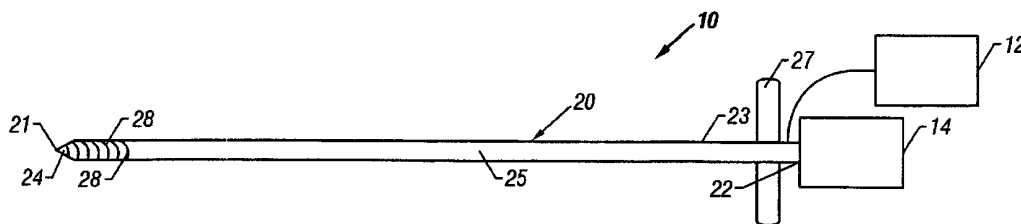
(43) International Publication Date  
9 August 2001 (09.08.2001)

PCT

(10) International Publication Number  
**WO 01/57655 A3**

- (51) International Patent Classification<sup>7</sup>: **A61B 18/14**
- (21) International Application Number: PCT/US01/03539
- (22) International Filing Date: 1 February 2001 (01.02.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/179,959 3 February 2000 (03.02.2000) US
- (71) Applicant: **BAYLOR COLLEGE OF MEDICINE**  
[US/US]; Texas Medical Center, One Baylor Plaza, Suite 106A, Houston, TX 77030 (US).
- (72) Inventor: **HEGGENESS, Michael, H.**; 4540 Oleander, Bellaire, TX 77401 (US).
- (74) Agent: **MATHENY, Anthony, F.**; Andrews & Kurth L.L.P., 600 Travis, Suite 4200, Houston, TX 77002 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report
- (88) Date of publication of the international search report:  
25 April 2002
- 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: METHODS AND DEVICES FOR INTRAOSSEOUS NERVE ABLATION



(57) Abstract: The invention relates to surgical devices, and in particular, ablating probes for ablating, or severing, intraosseous nerves. The ablating probes are used to ablate or sever the pathway of intraosseous nerves after the ablating probe contacts, or is positioned in close proximity to, the intraosseous nerve. Access to the intraosseous nerve may be provided by the ablating probe or another instrument. The invention is also directed to a surgical system for ablating intraosseous nerves that comprises at least one nerve ablating device, e.g., the ablating probes of the invention, and at least one sleeve through which the ablating probe is passed to contact the intraosseous nerve, or the area in close proximity to the intraosseous nerve, thereby facilitating ablation of the intraosseous nerve. Methods of ablating intraosseous nerves are also disclosed.

WO 01/57655 A3

# INTERNATIONAL SEARCH REPORT

Inventor's Application No  
PCT/US 01/03539

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B18/14

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)

IPC 7 A61B

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 practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 433 739 A (SLUIJTER MENNO E ET AL) 18 July 1995 (1995-07-18) abstract; figures 1,7 ---	1, 13
A	US 5 700 262 A (ACOSTA GEORGE M ET AL) 23 December 1997 (1997-12-23) abstract; figure 1 ---	1, 13
A	US 4 907 589 A (COSMAN ERIC R) 13 March 1990 (1990-03-13) abstract; figure 1 ---	1, 13
A	US 5 941 876 A (WRUBLEWSKI THOMAS A ET AL) 24 August 1999 (1999-08-24) abstract; figure 4 ---	1, 13
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

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

\*E\* earlier document 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

\*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.

\*G\* document member of the same patent family

Date of the actual completion of the international search

19 July 2001

Date of mailing of the international search report

26/07/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Papone, F

## INTERNATIONAL SEARCH REPORT

Inventor's Name  
PCT/US 01/03539

## 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 5 697 927 A (IMRAN MIR A ET AL) 16 December 1997 (1997-12-16) abstract; figure 1 -----	8

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/03539

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5433739 A	18-07-1995	US 5571147 A	05-11-1996
US 5700262 A	23-12-1997	NONE	
US 4907589 A	13-03-1990	NONE	
US 5941876 A	24-08-1999	AU 2201197 A	01-10-1997
		WO 9733523 A	18-09-1997
US 5697927 A	16-12-1997	US 5348554 A	20-09-1994
		US 5545161 A	13-08-1996
		AU 673015 B	24-10-1996
		AU 5201993 A	16-06-1994
		CA 2110309 A	02-06-1994
		EP 0608609 A	03-08-1994
		JP 2562861 B	11-12-1996
		JP 6254103 A	13-09-1994
		US 5423811 A	13-06-1995
		US 5658278 A	19-08-1997