

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 March 2004 (04.03.2004)

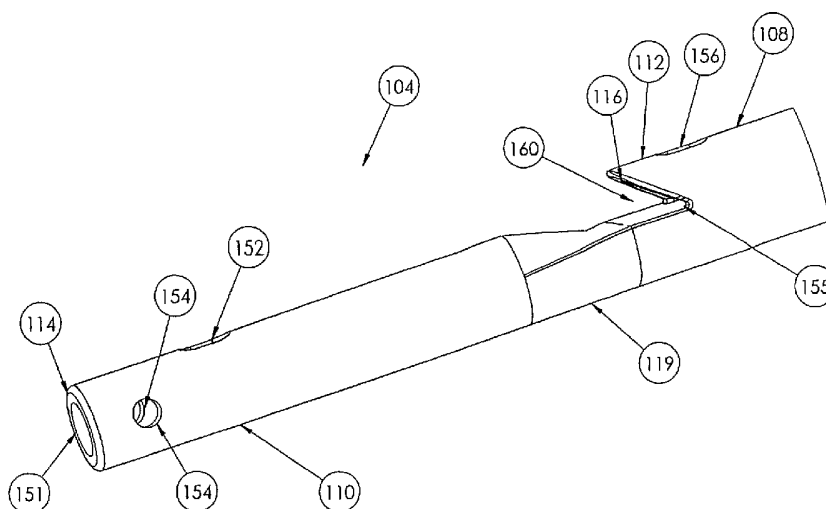
PCT

(10) International Publication Number
WO 2004/018016 A3

- (51) International Patent Classification⁷: A61M 25/00
- (21) International Application Number:
PCT/US2003/026163
- (22) International Filing Date: 21 August 2003 (21.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/405,937 23 August 2002 (23.08.2002) US
- (71) Applicant (for all designated States except US): MEDICAL COMPONENTS, INC. [US/US]; 1499 Delp Drive, Harleysville, PA 19438 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ARNOLD, Perry, W. [US/US]; RMS Lifeline, 2405 York Road Suite 100, Timonium, MD 21093 (US). GATELY, Nicholas, V. [GB/US]; 713 Brunswick Pike, Lambertville, NJ 08530 (US).
- (74) Agent: MAENNER, Joseph, E.; Monte & McGraw, P.C., P.O. Box 650, 4092 Skippack Pike, Skippack, PA 19474 (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, US, 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, 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: SHIELDED TIP CATHETER



(57) Abstract: A multi-lumen catheter assembly is disclosed. The assembly includes an elongated body (108) having a proximal end (102) and a distal end (104) and a first lumen (110) having a sidewall (118) extending between the proximal end (102) and the distal end (104), a first distal opening (151) disposed at the distal end (104), and a first guide wire opening (152) disposed proximally of the distal end (104) and co-planar with the sidewall (118). The assembly also includes a second lumen (112) connected to the sidewall (118) and extending from the proximal end (102) toward the distal end (104), proximally of the distal end (104). The second lumen (112) includes a second opening (115) extending obliquely away from the sidewall (118) distally toward the first distal opening (151) and a second guide wire opening (156) disposed proximally of the second opening (115) and in a plane generally parallel to the sidewall (118). A method of inserting the catheter into a vessel is also disclosed.

WO 2004/018016 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:
13 January 2005

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/26163

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61M 25/00
 US CL : 604/523

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. : 604/523, 43, 101.03, 264

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 6,117,153 A (LARY ET AL) 12 September 2000 (12.09.2000), entire reference.	1-11
A	US 5,438,993 A (LYNCH ET AL) 08 August 1995 (08.08.1995), entire reference.	1-11
A	US 5,472,417 A (MARTIN ET AL) 05 December 1995 (05.12.1995), entire reference.	1-11
A	US 5,312,328 A (NITA ET AL) 17 May 1994 (17.05.1994), entire reference.	1-11
A	US 6,280,423 B1 (DAVEY ET AL) 28 August 2001 (28.08.2001), entire reference.	1-11

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 28 October 2004 (28.10.2004)	Date of mailing of the international search report 19 NOV 2004
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 Matthew F DeSanto <i>A. Hurley for</i> Telephone No. 1-703-308-0858