### (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 17 August 2006 (17.08.2006)

### (10) International Publication Number WO 2006/086069 A3

- (51) International Patent Classification: A61F 2/06 (2006.01)
- (21) International Application Number:

PCT/US2005/045553

(22) International Filing Date:

15 December 2005 (15.12.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 11/016,269

17 December 2004 (17.12.2004)

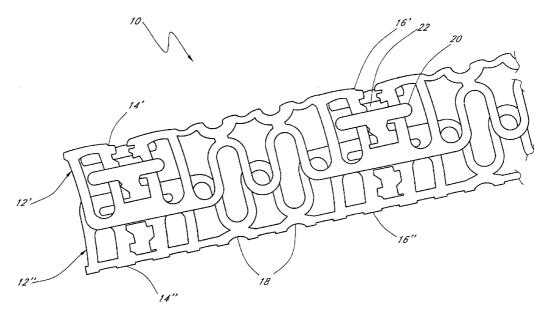
- (71) Applicant (for all designated States except US): REVA MEDICAL, INC. [US/US]; 5751 Copley Drive, Suite B, San Diego, California 92111 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SCHMID, Eric, V. [US/US]; 12248 Meadow Grass Ct., San Diego, California 92128 (US). NGUYEN, John, D. [US/US]; 14340 El Vestido St., San Diego, California 92129 (US). HOWARD, Steven, C. [US/US]; 5585 Via Bello, San Diego, California 92111 (US). PADILLA, Orlando, M. [US/US]; 24582 Via Carissa, Laguna Niguel, California 92677 (US). MORRIS, Andrew [US/US]; 7924 Valdosta Avenue, San Diego, California 92126 (US). EISELE, Robert, F. [US/US]; 909 Merlo Court, Carlsbad, California 92009 (US). DIPARI, Joseph, Anthony [US/US]; 4639 Dauer Avenue, La Mesa, California 91941 (US). MATSUURA, David, G. [US/US]; 859 Summersong Ct., Encinitas,

California 92024 (US). SIMPSON, Philip, J. [US/US]; 3185 Pioneer Place, Escondido, California 92025 (US). GILLESPIE, Walter, D. [US/US]; 1327 Pacific Beach Drive #11, San Diego, California 92109 (US). MOORE, Daniel [US/US]; 12618 Futura Street, San Diego, California 92130 (US). JACKSON, Thomas, R. [US/US]; 7135 Olivetas Avenue, La Jolla, California 92037 (US). ZELTINGER, Joan [US/US]; 230 Coneflower Street, Encinitas, California 92024 (US). ESSER, Keith, Allen [US/US]; 6196 Castleton Drive, San Diego, California 92117 (US). BRANDOM, Donald, K. [US/US]; P.O. Box 2033, Davis, California 92117 (US).

- (74) Agent: DELANEY, Karoline, A.; KNOBBE. MARTENS, OLSON & BEAR, LLP, 2040 Main Street, Fourteenth Floor, Irvine, California 92614 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): 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, 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.
- (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,

[Continued on next page]

(54) Title: SLIDE-AND-LOCK STENT



(57) Abstract: The invention relates to an expandable stent (10) comprising circumferentially adjacent modules (12). The modules (12) comprise longitudinally adjacent slide-and-lock radial elements (14, 16) which permit one-way sliding of the radial elements from a collapsed diameter to an expanded/deployed diameter, but inhibit radial recoil from the expanded diameter.



## WO 2006/086069 A3



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).

#### **Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv))

#### **Published:**

- with international search report
- (88) Date of publication of the international search report: 5 October 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.

## **INTERNATIONAL SEARCH REPORT**

International application No PCT/US2005/045553

| A. CLASSI   | FICATION OF SUBJECT MATTER A61F2/06   |  |                       |  |
|---|---|--|-----------------------|--|
|   |   |  |                       |  |
| According to  | o International Patent Classification (IPC) or to both national classific   | eation and IPC   |                       |  |
| -   | SEARCHED  | ion cumbole)   |                       |  |
| Minimum ac  | ocumentation searched (classification system followed by classificat $A61F$   | ion symbols)   |                       |  |
| Documental  | tion searched other than minimum documentation to the extent that   | such documents are included in the fields so   | earched               |  |
| Electronic d  | lata base consulted during the international search (name of data ba  | ase and, where practical, search terms used  | )                     |  |
| EPO-In  | ternal  |  |                       |  |
|   |   |  |                       |  |
| C. DOCUMI   | ENTS CONSIDERED TO BE RELEVANT  |  |                       |  |
| Category*   | Citation of document, with indication, where appropriate, of the re   | elevant passages   | Relevant to claim No. |  |
| X   | WO 02/47582 A (MD3, INC; STEINKE<br>A; KOENIG, DONALD, H)<br>20 June 2002 (2002-06-20)<br>page 1, paragraph 1 - page 24, p<br>4; figures 1-14 | 1–51   |                       |  |
| х   | WO 00/59405 A (MD3, INC) 12 October 2000 (2000-10-12) page 1, line 3 - page 13, line 28; figures 1-32   |  | 1-51                  |  |
|   |   |  |                       |  |
| Furt  | her documents are listed in the continuation of Box C.  | See patent family annex.   |                       |  |
| 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) |   | <ul> <li>*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</li> <li>*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</li> <li>*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 document is</li> </ul> |                       |  |
| '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   |   | ments, such combination being obvious to a person skilled in the art.  *&* document member of the same patent family   |                       |  |
| Date of the   | actual completion of the international search   | Date of mailing of the international sea   | irch report           |  |
| 1   | 6 March 2006  | 03/04/2006   |                       |  |
| Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2   |   | Authorized officer   |                       |  |
|   | NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016   | Skorovs, P   |                       |  |

# **INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No PCT/US2005/045553

| Patent document cited in search report | • | Publication<br>date |    | Patent family<br>member(s) | Publication<br>date |
|--|---|---------------------|----|----------------------------|---------------------|
| WO 0247582                             | Α | 20-06-2002          | AU | 3083302 A                  | 24-06-2002          |
|  |   |                     | CA | 2427270 A1                 | 20-06-2002          |
|  |   |                     | CN | 1529572 A                  | 15-09-2004          |
|  |   |                     | EΡ | 1341481 A2                 | 10-09-2003          |
|  |   |                     | JP | 2004515307 T               | 27-05-2004          |
| WO 0059405                             | Α | 12-10-2000          | AU | 769786 B2                  | 05-02-2004          |
|  |   |                     | ΑU | 3931800 A                  | 23-10-2000          |
|  |   |                     | CA | 2368659 A1                 | 12-10-2000          |
|  |   |                     | CN | 1345209 A                  | 17-04-2002          |
|  |   |                     | EP | 1168984 A1                 | 09-01-2002          |
|  |   |                     | JP | 3713438 B2                 | 09-11-2005          |
|  |   |                     | JP | 2002540841 T               | 03-12-2002          |
|  |   |                     | RU | 2234885 C2                 | 27-08-2004          |