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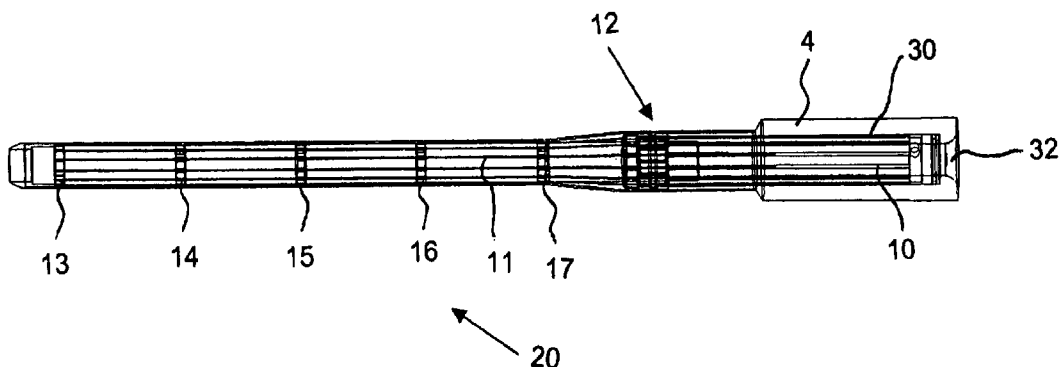
(43) International Publication Date
13 September 2007 (13.09.2007)

PCT

(10) International Publication Number
WO 2007/103239 A3

- (51) International Patent Classification:
A61M 29/00 (2006.01)
 - (21) International Application Number:
PCT/US2007/005478
 - (22) International Filing Date: 2 March 2007 (02.03.2007)
 - (25) Filing Language: English
 - (26) Publication Language: English
 - (30) Priority Data:
11/367,607 2 March 2006 (02.03.2006) US
 - (71) Applicant (for all designated States except US): **KMS DEVELOPMENT LLC** [US/US]; 7290 S.W. 42nd Street, Miami, FL 33155 (US).
 - (72) Inventors: **SMITH, Kevin**; 750 Arvida Parkway, Coral Gables, FL 33156 (US). **DEVILLE, Derek**; 5730 S.W. 34 Street, Miami, FL 33155 (US). **KLINE, Korey**; 7028 S.W. 65th Avenue, Miami, FL 33143 (US). **PALMER, Matthew**; 12790 S.W. 64th Court, Miami, FL 33156 (US).
 - (74) Agents: **GREENBERG, Laurence, A.** et al.; Lerner Greenberg Steiner LLP, P.O. Box 2480, Hollywood, FL 33022-2480 (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, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, 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, MT, 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).
- Published:**
— with international search report
- (88) Date of publication of the international search report:
20 March 2008

(54) Title: VARIABLY FLEXIBLE INSERTION DEVICE AND METHOD FOR VARIABLY FLEXING AN INSERTION DEVICE



(57) Abstract: A variably flexible insertion device (1) includes a hollow body (4, 6, 7, 30, 35, 36) having a proximal end (2) with an entrance (32) for receiving an instrument (38) and a distal end (3) with a tip (7) for protrusion of the instrument (38). A device (5) transitions the hollow body (4, 6, 7, 30, 35, 36) between a relatively flexible condition and a relatively stiff condition. Tendons (11) within the hollow body (4, 6, 7, 30, 35, 36) maintain the hollow body (4, 6, 7, 30, 35, 36) in the relatively flexible and relatively stiff conditions. A method for variably flexing an insertion device for receiving an instrument includes providing a hollow body having inner and outer sleeves defining a space therebetween in which tendons are disposed. Suction is applied to create a vacuum in the space for frictionally locking the tendons in place between the sleeves in a relatively stiff condition of the hollow body. The vacuum is relieved to release the tendons in a relatively flexible condition of the hollow body.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/05478

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61M 29/00 (2007.10)

USPC - 606/191

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(8) - A61M 25/10, 29/00; A61B 1/005, 1/008 (2007.10)

USPC - 128/4; 600/141, 146; 606/191, 194

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)

PatBase

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,858,005 B2 (OHLIN et al) 22 February 2005 (22.02.2005) entire document	1, 3, 6-8, 10, 17-18
Y		2, 4-5, 9, 11-16, 19-36
Y	US 5,337,733 A (BAUERFEIND et al) 16 August 1994 (16.08.1994) entire document	2, 4-5, 11-16, 19-25, 27, 32-36
Y	US 2003/0135198 A1 (BERHOW et al) 17 July 2003 (17.07.2003) entire document	9, 21, 31, 36
Y	WO 2005/048814 A2 (VAN LUE) 02 June 2005 (02.06.2005) entire document	11
Y	US 6,375,654 B1 (MCINTYRE) 23 April 2002 (23.04.2002) entire document	15-16
Y	US 5,259,366 A (REYDEL et al) 09 November 1993 (09.11.1993) entire document	26-36

 Further documents are listed in the continuation of Box C.

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"&" document member of the same patent family

Date of the actual completion of the international search

21 November 2007

Date of mailing of the international search report

17 DEC 2007

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. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774