

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 August 2005 (11.08.2005)

PCT

(10) International Publication Number
WO 2005/072081 A3

(51) International Patent Classification:
A61B 17/70 (2006.01)

(21) International Application Number:
PCT/US2004/036640

(22) International Filing Date:
4 November 2004 (04.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/518,580 8 November 2003 (08.11.2003) US
10/868,075 15 June 2004 (15.06.2004) US

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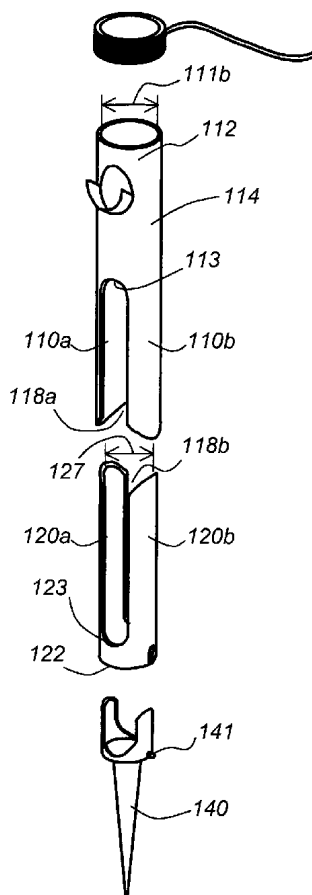
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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
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MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, 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,
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, LU, 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).

[Continued on next page]

(54) Title: METHODS AND DEVICES FOR IMPROVING PERCUTANEOUS ACCESS IN MINIMALLY INVASIVE SURGERIES



(57) Abstract: A device for use as a portal in percutaneous minimally invasive surgery performed within a patient's body cavity includes a first elongated hollow tube (94a) having a length adjusted with a self-contained mechanism. The first elongated tube (94a) includes an inner hollow tube (120) and an outer hollow tube (110) and the inner tube (120) is adapted to slide within the outer tube (110) thereby providing the self-contained length adjusting mechanism. This length-adjustment feature is advantageous for percutaneous access surgery in any body cavity. Two or more elongated tubes with adjustable lengths can be placed into two or more adjacent body cavities, respectively. Paths are opened within the tissue areas between the two or more body cavities, and are used to transfer devices and tools between the adjacent body cavities. This system of two or more elongated tubes with adjustable lengths is particularly advantageous in percutaneous minimally invasive spinal surgeries, and provides the benefits of minimizing long incisions, recovery time and post-operative complications.

WO 2005/072081 A3



Published:

— *with international search report*

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

2 April 2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/36640

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **A61B 17/70** (2006.01)

USPC: 606/61

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. : 606/61,99

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.
X	US 7,306,603 B2 (Boehm Jr. et al) 11 December 2007 (11.12.2007), entire document.	49-54,57-61,64-65
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Y		55,56,62,63

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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Date of the actual completion of the international search

26 March 2008 (26.03.2008)

Date of mailing of the international search report

04 APR 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
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