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

## (19) World Intellectual Property Organization

International Bureau



## 

(43) International Publication Date 4 September 2008 (04.09.2008)

PCT

# (10) International Publication Number WO 2008/106541 A3

(51) International Patent Classification: *A61B 1/00* (2006.01)

(21) International Application Number:

PCT/US2008/055172

(22) International Filing Date:

27 February 2008 (27.02.2008)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/891,881

27 February 2007 (27.02.2007) U

(71) Applicant (for all designated States except US):

CARNEGIE MELLON UNIVERSITY [US/US];
5000 Forbes Avenue, Pittsburgh, Pennsylvania 15213
(US).

(72) Inventors; and

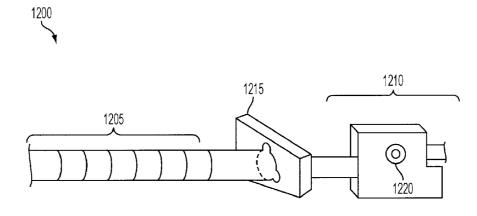
(75) Inventors/Applicants (for US only): ZUBIATE, Brett [US/US]; 1600 Robin Court, Pittsburgh, Pennsylvania 15237 (US). DEGANI, Amir [US/US]; 5535 Hobart Street, Pittsburgh, Pennsylvania 15217 (US). CHOSET,

**Howie** [US/US]; 102 Meadow Heights Drive, Pittsburgh, Pennsylvania 15215 (US).

- (74) Agent: SINGER, James M.; Pepper Hamilton LLP, One Mellon Center, 500 Grant Street, Pittsburgh, PA 15219 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, ME, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, 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: SYSTEM FOR RELEASABLY ATTACHING A DISPOSABLE DEVICE TO A DURABLE DEVICE



**FIG. 12A** 

(57) Abstract: A system for releasably attaching a steerable disposable multi-linked device to a durable device may include a disposable portion and a durable portion. The disposable portion may include a connecting member connected to the disposable portion and the durable portion and a steerable multi-linked device. The steerable multi-linked device may include a first link, a plurality of intermediate links, a second link movably coupled to a second one of the intermediate links, and a cable which passes through the first link and intermediate links and extends beyond a first end of the first link. A first one of the intermediate links may be movably coupled to the first link. The durable portion may include an axial member which defines an opening therethrough and a feeder mechanism.



### 

Published:

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

16 O

— with international search report

### INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/55172

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61B 1/00 (2008.04) USPC - 600/136			
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): A61B 1/00 (2008.04) USPC: 600/136			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 600/101,114,132,136-144,149			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Electronic Databases Searched: PubWEST(USPT,PGPB,EPAB,JPAB); Google Patents, Google, WIPO database Search terms: Disposable, steerable, flexible, segmented, disposable segment, tethered endoscope, sheath, screw, feeder mechanism, links, axial, detach from housing, mounted, base, steerable device, disposable endoscope, etc.			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
Y	US 2006/0058582 A1 (Maahs et al.) 16 March 2006 (16.03.2006), para [0009]; para [0037]-[0040]; para [0048].		1-10
Y	US 7,087,013 B2 (Belson et al.) 08 August 2006 (08.08.2006), col 5, ln 43-47; col 6, ln 35-46; col 9, ln 1-3, 10-15; col 13, ln 4-9.		1-10
Y	US 6,960,163 B2 (Ewers et al.) 01 November 2005 (01.11.2005), col 26, ln 22-26; col 28, ln 61-67; col 30, ln 23-39.		7-10
Further documents are listed in the continuation of Box C.			
* Special categories of cited documents:  "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 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		"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	
		Date of mailing of the international search report	
29 July 2008 (29.07.2008)		01 AUG 2008	
	nailing address of the ISA/US	Authorized officer:	
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450		Lee W. Young PCT Helpdesk: 571-272-4300	
Facsimile No. 571-273-3201 PCT OSP: 571-272-7774			

Form PCT/ISA/210 (second sheet) (April 2007)