

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 September 2004 (16.09.2004)

PCT

(10) International Publication Number
WO 2004/078026 A3

(51) International Patent Classification⁷: **A61M 25/00**

[US/US]; 126 Marvin Gardens, Summerville, SC 29483-8949 (US). **BRUSTAD, John, R.** [US/US]; 34056 Formosa Drive, Dana Point, CA 92629 (US).

(21) International Application Number:
PCT/US2004/004883

(74) Agent: **MYERS, Richard, L.**; 22872 Avenida Empresa, Rancho Santa Margarita, CA 92688 (US).

(22) International Filing Date: 18 February 2004 (18.02.2004)

(25) Filing Language: English

(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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, 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.

(26) Publication Language: English

(30) Priority Data:
10/379,461 3 March 2003 (03.03.2003) US

(71) Applicant (for all designated States except US): **APPLIED MEDICAL RESOURCES CORPORATION** [US/US]; 22872 Avenida Empresa, Rancho Santa Margarita, CA 92688 (US).

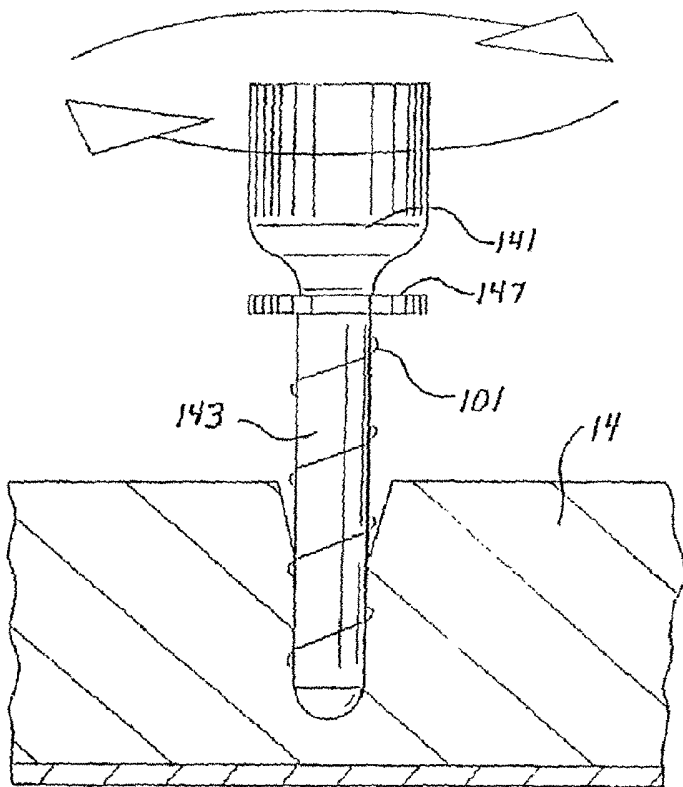
(72) Inventors; and

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

(75) Inventors/Applicants (for US only): **HART, Charles, C.**

[Continued on next page]

(54) Title: SURGICAL ACCESS APPARATUS AND METHOD



(57) Abstract: A trocar system (20) for providing access across a body wall includes a trocar (20) and an anchor (101) provided in the form of a first helix (102). The anchor (101) is adapted for placement in an operative position wherein the anchor (101) extends at least partially through the body wall. A second helix (163) formed on the trocar (20) is sized and configured to engage the first helix (102) of the anchor (101) so that rotation of the trocar (20) relative to the anchor (101) moves the second helix (163) along the first helix (102). In this manner, the trocar is drawn into the anchor (101) as it moves into the body wall. A proximal force applied to the anchor (101) resists tenting of the abdominal wall. The anchor (101) also holds the layers of the body wall together thereby resisting peritoneal separation.

WO 2004/078026 A3



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, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
19 May 2005

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.

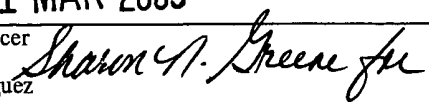
Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04883

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61M 25/00 US CL : 604/264 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. : 604/264,272,23-26,164.04,164.1,164.11,523,530,500; 600/101,114,127,129,153,156,204,208,209,201; 606/167,170,185 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) EAST (helix helical spiral coil coiled, cannula trocar)																					
C. DOCUMENTS CONSIDERED TO BE RELEVANT																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Category *</th> <th style="text-align: center;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="text-align: center;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">X</td> <td rowspan="3" style="vertical-align: top;">US 5,407,427 A (ZHU et al) 18 April 1995 (18.04.1995), figures 23-31</td> <td style="text-align: center;">1,2, 4-20</td> </tr> <tr> <td style="text-align: center;">---</td> <td style="text-align: center;">-----</td> </tr> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">3</td> </tr> </tbody> </table>	Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 5,407,427 A (ZHU et al) 18 April 1995 (18.04.1995), figures 23-31	1,2, 4-20	---	-----	Y	3	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Category *</th> <th style="text-align: center;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="text-align: center;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">X</td> <td rowspan="3" style="vertical-align: top;">US 5,407,427 A (ZHU et al) 18 April 1995 (18.04.1995), figures 23-31</td> <td style="text-align: center;">1,2, 4-20</td> </tr> <tr> <td style="text-align: center;">---</td> <td style="text-align: center;">-----</td> </tr> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">3</td> </tr> </tbody> </table>	Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 5,407,427 A (ZHU et al) 18 April 1995 (18.04.1995), figures 23-31	1,2, 4-20	---	-----	Y	3
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																			
X	US 5,407,427 A (ZHU et al) 18 April 1995 (18.04.1995), figures 23-31	1,2, 4-20																			
---		-----																			
Y		3																			
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																			
X	US 5,407,427 A (ZHU et al) 18 April 1995 (18.04.1995), figures 23-31	1,2, 4-20																			
---		-----																			
Y		3																			
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> * Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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 means "P" document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 50%; vertical-align: top;"> "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 "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 being obvious to a person skilled in the art "&" document member of the same patent family </td> </tr> </table>		* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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 means "P" document published prior to the international filing date but later than the priority date claimed	"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 "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 being obvious to a person skilled in the art "&" document member of the same patent family																		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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 means "P" document published prior to the international filing date but later than the priority date claimed	"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 "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 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 02 March 2005 (02.03.2005)	Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em; font-weight: bold;">31 MAR 2005</div>																				
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 <div style="text-align: center;">  Cris L. Rodriguez </div> Telephone No. 571-272-4964																				