



(51) International Patent Classification:  
A61B 1/32 (2006.01)

(21) International Application Number:  
PCT/US2011/041691

(22) International Filing Date:  
23 June 2011 (23.06.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
61/358,548 25 June 2010 (25.06.2010) US

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(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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,  
SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,  
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,  
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,  
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments (Rule 48.2(h))

[Continued on next page]

(54) Title: SINGLE PORT LAPAROSCOPIC ACCESS WITH Laterally Spaced Virtual Insertion Points

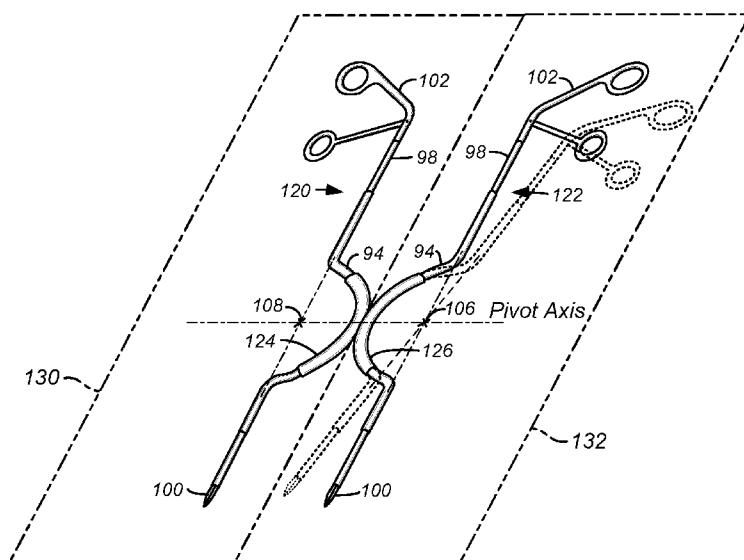


FIG. 14A

(57) Abstract: A system for performing single port laparoscopic procedures includes a transcutaneous seal and a plurality of tools. The tools comprise a substantially rigid tubular seal having a core which is translatably and rotatably disposed in the sleeve. The handle at the proximal end of the tool controls an end effector at the distal end of the tool. The sleeves of the tools are locked in the transcutaneous seals so that they remain in a fixed geometric relationship which prevents the tools from interfering with each other during laparoscopic procedures.



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

29 March 2012

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/41691

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61B 1/32 (2012.01)

USPC - 600/204

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)

IPC8 : A61B 1/32 (2012.01)

USPC : 600/204

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC8 : A61B17/00, 17/94 (2012.01)

USPC : 600/184, 201, 205, 210, 219, 114; 606/205

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(PGPB,USPT,EPAB,JPAB), Google: laparoscopic, bowden, wire, cable, control, flexible, bend, , forceps, effector, tool, curve, s shape, c shape, sleeve, cannula, trocar, rigid, stiff

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/0049966 A1 (BONADIO et al) 1 March 2007 (01.03.2007) see especially para [0117], [0118], [0124], [0127], [0130], [0133], [0143]-[0149], fig 1, 3a-c, 6, 10, 16a-b, 17, 22	1-15, 18-19
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Y		16, 17, 20-25
Y	US 2006/0089532 A1 (TARTAGLIA et al) 27 April 2006 (27.04.2006) see especially para [0019], [0074], [0076], fig 9a-c, 11a-c	16, 17, 20, 21
Y	US 5,454,787 A (LUNDQUIST) 3 October 1995 (03.10.1995) see especially col 3, ln 63 to col 4, ln 35, figs 1, 3, 4	22
Y	US 2010/0130826 A1 (PISKUN) 27 May 2010 (27.05.2010) see especially para [0046], [0048], [0056], fig 2A, 4A	23-25
Y	US 2009/0326462 A1 (WINGARDNER III et al) 31 December 2009 (31.12.2009) see especially para [0015], [0016], fig 1	25
A	US 2007/0299387 A1 (WILLIAMS et al) 27 December 2007 (27.12.2007) see whole document	1-25
A	US 2007/0208312 A1 (NORTON et al) 6 September 2007 (06.09.2007) see whole document	1-25

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


\* 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 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

17 January 2012 (17.01.2012)

Date of mailing of the international search report

02 FEB 2012

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

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PCT OSP: 571-272-7774

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/41691

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
--- see continuation sheet ---

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-25

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/41691

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-25; directed to a laparoscopic tool comprising a rigid, curved sleeve.

Group II: Claims 26-34; directed to a laparoscopic system comprising first and second tools.

Group III: Claims 35-40; directed to a transcutaneous seal comprising a shapeable tube.

The inventions listed as Groups I - III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of Group I is a rigid, curved sleeve, which is not present in Groups II or III. The special technical feature of Group II is a second tool, which is not present in Groups I or III. The special technical feature of Group III is a shapeable tube, which is not present in Groups I or II.

The sole element of commonality between groups I-III is that of a first tube having a central passage for removably receiving a laparoscopic tool, which is known in the prior art (ref. US 2005/0277946 A1 to Greenhalgh; Fig. 2; Abstract--"An access port for use in laparoscopic surgery is disclosed. The port includes a duct...a surgical tool inserted through the duct...insertion and removal of the tool through the duct").

The sole element of commonality between groups I and II is that of a first tool having a proximal handle segment, a middle segment, and a distal effector segment, with a handle at the proximal end of the tool, wherein the handle can extend, retract, and rotate the tool within the sleeve or seal, which is known in the prior art (ref. US 5,222,973 A to Sharpe et al.; Fig. 1; col 2, ln 28-31--"The control handle 14 is grasped by the surgeon and the anterior section 11 is inserted into the body cavity through a suitable port. In use, the surgeon operates the control handle 14 to manipulate the forceps jaw set 12.").

The sole element of commonality between groups II and III is that of a transcutaneous seal, which is known in the prior art (ref. US 2005/0277946 A1 to Greenhalgh; Fig. 2; Abstract--"An access port for use in laparoscopic surgery is disclosed. The port includes a duct having a one-way valve and a tubular seal.").

Accordingly, unity of invention is lacking under PCT Rule 13.1.