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[Continued on next page]

(54) Title: DEVICES, SYSTEM AND METHODS FOR MINIMALLY INVASIVE ABDOMINAL SURGICAL PROCEDURES

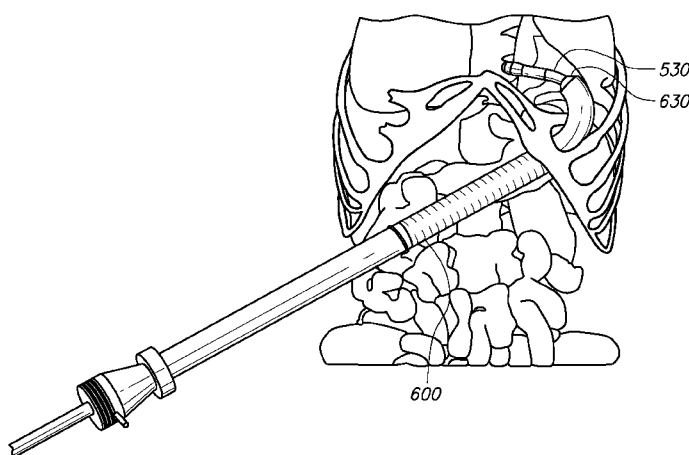


FIG. 21J

(57) Abstract: Apparatus, tools, device and methods provided for treating a patient, including: making an incision or puncture through the patient's skin; establishing an initial tract through an opening formed by the incision or puncture; inserting a guide member having a flexible distal portion and a distal tip into the initial tract and extending the initial tract to form a delivery tract leading to a target location within the patient's body; wherein said distal tip and at least a portion of a remainder of said guide member are transparent; and delivering an obturator and conduit assembly over said guide member to place a distal end of the conduit of said obturator and conduit assembly in a location at or near the target location, said obturator having been inserted into said conduit prior to delivering said assembly over said guide member such that a distal end of said obturator extends distally out of a distal opening of said conduit; wherein said obturator comprises a central lumen adapted to closely follow said guide member while sliding thereover.



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**INTERNATIONAL SEARCH REPORT**

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PCT/US2009/045536

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. A61B17/34 A61M25/00 A61F5/00

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)  
A61M A61F A61B

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 practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 052 989 A (KLINE WILLIAM MATHES) 11 October 1977 (1977-10-11)	1,2,4
Y	column 2, lines 18-37; figure 1 column 1, lines 5-11	3,5-16
Y	US 2007/078439 A1 (GRANDT AXEL [DE] ET AL) 5 April 2007 (2007-04-05) paragraphs [0053], [0080], [0086], [0121]; figures 1,6	3,6-9,12
Y	EP 0 938 871 A (ECLIPSE SURGICAL TECH [US]) 1 September 1999 (1999-09-01) paragraph [0044]	5-8,12
Y	US 5 279 551 A (JAMES GEORGE K [US]) 18 January 1994 (1994-01-18) column 2, line 25 - column 3, line 8	8
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Further documents are listed in the continuation of Box C.

See patent family annex.

\* 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 document 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.

"&" document member of the same patent family

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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2009/045536

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 382 238 A (ABRAHAMSON TIMOTHY A [US] ET AL) 17 January 1995 (1995-01-17) column 2, line 40 - column 4, line 61; figures 2,3 -----	9,10,14
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A	US 2004/102804 A1 (CHIN ALBERT K [US]) 27 May 2004 (2004-05-27) the whole document -----	1-16
A	US 2005/288622 A1 (ALBRECHT JEREMY J [US] ET AL) 29 December 2005 (2005-12-29) the whole document -----	1-16

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2009/045536

## 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 additional 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 an 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.:

see additional sheet(s)

### 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.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

## 1. claims: 1-16

A guide device configured to be inserted through an opening in the skin to form a delivery tract to a target location within the body of a patient, said guide device comprising: an elongated tube, at least a portion of which is transparent, a transparent distal tip connected to a distal end of said elongated tube and having a blunt exterior surface; wherein a proximal end of said main lumen of said elongated tube is open and communicates with said main lumen, said main lumen extending through said elongated tube; and wherein a distal portion of said elongated tube is flexible.

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## 2. claims: 17-21

An assembly for providing access to a target location within the body of a patient, said assembly comprising: a guide member comprising an elongated tube, at least a portion of which is transparent and at least a portion of which is rigid, or rigidified by receiving a stiffening member therein, and a transparent distal tip closing a distal end of a main lumen of said elongated tube and having a blunt exterior surface, a proximal end of said main lumen of said elongated tube being open; a conduit having a length sufficient to extend from said target location, at a distal end of said conduit, through an opening in the body such that a proximal end of said conduit extends out of the body, at least a portion of said conduit being flexible, said conduit configured to allow at least one device or tool to be delivered therethrough; and an obturator having a length greater than an length of said conduit, said obturator being flexible and configured to be inserted through said conduit, a distal end portion of said obturator configured to extend distally of a distal end of said conduit and seat against said distal end, said obturator further comprising a central obturator lumen, said central obturator lumen configured to closely follow over said guide member, so that, when inserted into said conduit, said obturator and said conduit form an obturator and conduit assembly and when said obturator and conduit assembly is passed into the body over said guide member, said distal end portion of said obturator, together with said guide member substantially prevents bodily fluids and tissues from entering said conduit.

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## 3. claims: 22-30

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

An obturator that is configured to be placed in a conduit and used to deliver the conduit over a guide member, said obturator comprising: a distal end portion, a proximal end portion and an elongate main body portion extending between said distal end portion and said proximal end portion; a central lumen extending through said distal end portion, said main body portion and said proximal end portion and dimensioned to allow said obturator to be passed over the guide member, said distal end portion and said central lumen at said distal end portion being configured and dimensioned to form a close fit with the guide member to prevent tissues or other obstructions from entering between said obturator and the guide member; wherein said distal end portion and said proximal end portion are rigid; wherein said main body portion comprises rigid links; and wherein said rigid links are articulatable in three dimensions relative to one another.

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## 4. claims: 31-38

A conduit configured to be installed on an obturator and inserted over a guide member to extend distally far past an opening in a patient through which the conduit is inserted, said conduit comprising: a distal end portion, a proximal end portion and an elongated main body extending between said proximal and distal end portions; a central lumen extending through said conduit and configured and dimensioned to receive the obturator therethrough, wherein said central lumen, at least a distal end thereof is dimensioned to form a close fit with the obturator, wherein said proximal end portion comprises a slot extending in a longitudinal direction; wherein said proximal end portion comprises substantially stiff portions that are pivotable away a longitudinal axis of the main body and away from said slot and wherein at least a distal portion of said main body is flexible and wherein at least a distal portion of said flexible main body portion is coil-reinforced.

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## 5. claims: 39-46

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

An assembly for delivering a conduit far past an opening in a patient through which the conduit is inserted, said assembly comprising: a conduit having a distal end portion, a proximal end portion, an elongate main body extending between said proximal and distal end portions, and a central lumen extending through said conduit, wherein the proximal end portion comprises a slot extending in a longitudinal direction and the distal end portion of the main body is coil-reinforced; an obturator having a distal end portion, a proximal end portion, an elongate main body portion extending between said distal end portion and said proximal end portion and a central lumen extending through said distal end portion, said main body portion and said proximal end portion and dimensioned to allow said obturator to be passed over a guide member; wherein said central lumen of said conduit is configured and dimensioned to receive said obturator therein, and wherein at said obturator, when installed in said conduit, contacts a wall of said central lumen of said conduit at at least said proximal and distal end portions of said conduit.

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/045536

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4052989	A	11-10-1977	NONE
US 2007078439	A1	05-04-2007	NONE
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