

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 December 2001 (06.12.2001)

PCT

(10) International Publication Number
WO 01/91653 A3

(51) International Patent Classification⁷: A61B 17/34

US 09/580,721 (CON)

(21) International Application Number: PCT/US01/14476

Filed on 30 May 2000 (30.05.2000)

(22) International Filing Date: 3 May 2001 (03.05.2001)

US 09/580,693 (CON)

Filed on 30 May 2000 (30.05.2000)

(25) Filing Language: English

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(26) Publication Language: English

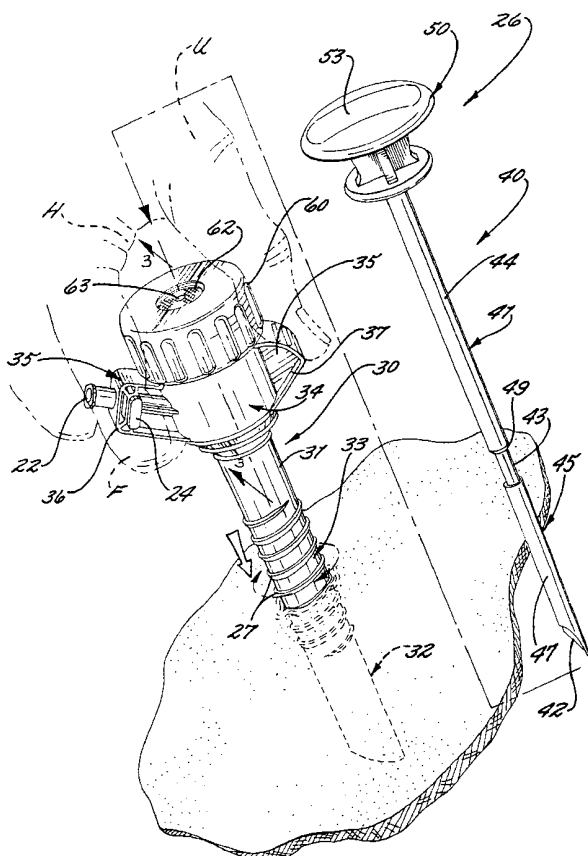
(30) Priority Data:
09/580.615 30 May 2000 (30.05.2000) US
09/580.616 30 May 2000 (30.05.2000) US
09/580.721 30 May 2000 (30.05.2000) US
09/580.693 30 May 2000 (30.05.2000) US

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(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:
US 09/580.616 (CON)
Filed on 30 May 2000 (30.05.2000)

[Continued on next page]

(54) Title: TROCAR SYSTEM



(57) Abstract: A trocar system and associated methods are provided. The trocar system (20) preferably has a cannula (30) having an elongate cannula body (31). The cannula body (31) includes medial (33) and distal (32) portions thereof having a first diameter and a proximal portion (34) thereof connected to the medial portion (33) and having a second diameter. The second diameter is preferably larger or greater than the first diameter. A cannula body end housing (60) is readily detachably connected to the proximal portion (34) of the cannula body (31) for housing at least one valve therein. First and second trocar valves (62, 66) are positioned within the cannula body end housing (60) and each having an opening (63, 67) in a medial portion thereof. The first valve (62) is preferably positioned proximal of the second valve (66). A pair of finger grips (35) are each connected to and extending outwardly from the proximal portion (34) of the cannula body (31) for gripping the cannula (30) with the fingers (F) of a hand (H) of a user (U). A trocar (40) or other instrument is positioned within the cannula body (31).



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

(81) **Designated States (national):** AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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

(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

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

16 May 2002

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.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/14476

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61B17/34

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 7 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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 617 924 A (ETHICON, INC.) 5 October 1994 (1994-10-05) abstract; figures column 7, line 46-50 ----	1-3, 5, 9-13, 15, 20
X	US 4 601 710 A (MOLL) 22 July 1986 (1986-07-22) abstract; figures column 3, line 18-22 ----	1-3, 5, 9-13, 15, 20
X	US 5 980 493 A (SMITH ET AL.) 9 November 1999 (1999-11-09) abstract; figures column 10, line 26-51 ----	1-5, 10-15, 20
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Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"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 document but published on or after the international filing date	"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
"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)	"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.
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 6 March 2002	Date of mailing of the international search report 13.03.02
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Giménez Burgos, R
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/14476

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 792 112 A (HART ET AL.) 11 August 1998 (1998-08-11) abstract; figures column 5, line 21 -column 6, line 50 ---	1,8,11, 20
A	US 5 496 289 A (WENSTROM, JR.) 5 March 1996 (1996-03-05) the whole document ---	1,11,20
X	US 5 662 615 A (BLAKE, III) 2 September 1997 (1997-09-02) abstract; figures ---	21-23, 25, 27-33, 35,37-39
X	US 5 584 850 A (HART ET AL.) 17 December 1996 (1996-12-17) abstract; figures ---	21-23, 25-27, 30-33, 35-37
X	WO 98 53865 A (UNITED STATES SURGICAL CORPORATION) 3 December 1998 (1998-12-03) abstract; figures page 8, line 24 -page 10, line 11 ---	21-24, 30-34
X	US 5 613 954 A (NELSON ET AL.) 25 March 1997 (1997-03-25) abstract; figures 3-5 column 3, line 25 -column 4, line 14 ---	21-23, 30-33
X	WO 94 04082 A (MICROSURGICAL EQUIPMENT LTD.) 3 March 1994 (1994-03-03) the whole document ---	40-51
A	DE 91 01 109 U (EFFNER GMBH) 27 February 1992 (1992-02-27) figures -----	40-51

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/14476

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: 52
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
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 II Observations where unity of invention is lacking (Continuation of item 2 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 fee, this Authority did not invite payment of any additional fee.
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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 1-20

Cannula having finger gripping means

2. Claims: 21-39

Valve system for cannula assembly

3. Claims: 40-51

Trocar having an automatically retractable safety shield

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/14476

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