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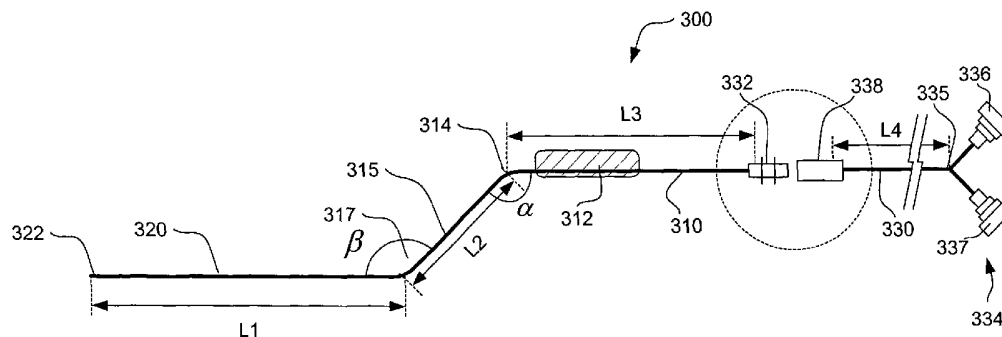
PCT

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10/328,349 23 December 2002 (23.12.2002) US
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- 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
- (88) Date of publication of the international search report:  
23 September 2004

[Continued on next page]

(54) Title: INTRODUCER SHEATH



(57) Abstract: A variety of devices for use in accessing the subarachnoid space are described. In several embodiments an introducer sheath (300) is disclosed having three main sections, a distal portion (320), an intermediate portion (315), and a proximal portion (310). The distal portion and intermediate portion form a first bend (317), and the intermediate portion and the proximal portion form a second bend (312), giving the overall device a general L-shape, S-shape, C-shape, or a three dimensional Z-shape. Apparatuses for attaching an introducer sheath to the skin of a patient are also discussed, as are methods for using, shaping and sizing an introducer sheath.

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*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 03/34845

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 A61M25/06</p> <p>According to International Patent Classification (IPC) or to both national classification and IPC</p>																	
<p><b>B. FIELDS SEARCHED</b></p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC 7 A61M A61B</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ</p>																	
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category °</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 5 445 625 A (VODA JAN) 29 August 1995 (1995-08-29)</td> <td>1-7, 9-16,19, 20, 23-25, 36-43, 47-53, 56-58, 80,82-85</td> </tr> <tr> <td>Y</td> <td>column 14, line 64 - column 15, line 48; figures 5a,5b,6a,6b column 18, lines 3-64; figure 7</td> <td>44-46</td> </tr> <tr> <td>Y</td> <td>US 5 833 632 A (DAVIS CLARK ET AL) 10 November 1998 (1998-11-10) column 2, lines 42-55</td> <td>44-46</td> </tr> <tr> <td></td> <td style="text-align: center;">----- -/-- -----</td> <td></td> </tr> </tbody> </table>			Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 5 445 625 A (VODA JAN) 29 August 1995 (1995-08-29)	1-7, 9-16,19, 20, 23-25, 36-43, 47-53, 56-58, 80,82-85	Y	column 14, line 64 - column 15, line 48; figures 5a,5b,6a,6b column 18, lines 3-64; figure 7	44-46	Y	US 5 833 632 A (DAVIS CLARK ET AL) 10 November 1998 (1998-11-10) column 2, lines 42-55	44-46		----- -/-- -----	
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<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.      <input checked="" type="checkbox"/> Patent family members are listed in annex.</p>																	
<p>° Special categories of cited documents :</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"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</p> <p>"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</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p>																	
<p>Date of the actual completion of the international search</p> <p>15 April 2004</p>		<p>Date of mailing of the international search report</p> <p>04. 08. 2004</p>															
<p>Name and mailing address of the ISA</p> <p>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</p>		<p>Authorized officer</p> <p>Rosenblatt, T</p>															

## INTERNATIONAL SEARCH REPORT

 International Application No  
 PCT/US 03/34845

## 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 6 080 140 A (MATHUR ATUL ET AL) 27 June 2000 (2000-06-27)  column 2, line 62 - column 3, line 13 column 18, lines 3-64 column 4, line 41 - column 5, line 10; figure 3  -----	1-7, 9-16,19, 20, 23-25, 36-43, 48-51, 56-58, 80,82-85
X	US 4 973 305 A (GOLTZER DAVID) 27 November 1990 (1990-11-27) column 3, line 54 - column 4, line 65; figures 1,3-6  -----	80,82-84
X	US 5 830 188 A (ABOULEISH EZZAT I) 3 November 1998 (1998-11-03) column 4, line 28 - column 5, line 39; figures 1b,5,6  -----	80,82-84
X	US 2002/091356 A1 (HEINEMANN MARK-HEIN ET AL) 11 July 2002 (2002-07-11) paragraphs [0060], [0061], [0064]; figures 10b,11c  -----	80,82-84

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/US 03/34845

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			WO 0059419 A1	12-10-2000
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 03/34845

## 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.: 59-79, 92-105  
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.:  
1-25, 35-53, 56-58, 80, 82-85

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

Continuation of Box I.1

Claims Nos.: 59-79,92-105

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-25,35-53,56-58,80,82-85

introducer sheath with at least first and second sections adapted to be disposed in interspace of a person  
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2. claims: 81,26-34

attachment apparatus and introducer sheath comprising such apparatus  
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3. claims: 86-91,54,55

medical device comprising an elongate member and a transducer disposed near the member's distal end  
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