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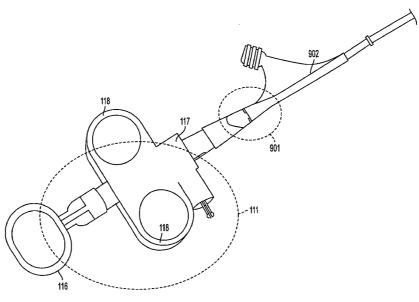
- (71) Applicant: SCIMED LIFE SYSTEMS, INC. [US/US]; One Scimed Place, Maple Grove, MN 55331-1566 (US).
- (72) Inventors: HUTCHINS, John, E.; 317 High Street, North Attleboro, MA 02760 (US). ADAMS, Mark, L.; 123 Rayburn Road, Stoughton, MA 02072 (US). CARRILLO, Oscar; P.O. Box 773, Attleboro, MA 02703-0013 (US). DONOFRIO, Martin; 404 Alex's Way, Gosport, IN 47433 (US). DURGIN, Russell, F.; 146 Knott Street, Attleboro, MA 02703 (US). GANDOLFI, Tracy; 100 Jones Road, Hopedale, MA 01747 (US). MALLABY, Mark;

Boston Scientific Corporation, Spencer Facility, 780 Brookside Drive, Spencer, IN 47460 (US). MANGANO, Mike; Domus Hirod West #203, 1-5-5 Hirod, Shibuya-ku, 150 0012 Tokyo (JP). REYNOLDS, Bob; 9 Buckhill Road, Northboro, MA 01532 (US). SWAFFAR, Scott, E.; 3700 Lauren Lane, Bloomington, IN 47404 (US).

- (74) Agent: WAR, Steven, M.; Fulbright & Jaworski LLP, Market Square, 801 Pennsylvania Avenue, NW, Washington, DC 20004-2623 (US).
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[Continued on next page]

**(54) Title:** METHOD OF AND APPARATUS FOR POSITIONING AND MAINTAINING THE POSITION OF ENDOSCOPIC INSTRUMENTS



(57) Abstract: The present invention provides an apparatus for, and a method of, accurate rotational positioning of endoscopic instruments. Accurate positioning of the instruments is accomplished through the inclusion of a steering ability within the device. After the endoscopic instrument is properly positioned the present invention may use rapid exchange technology, soft locks, and mechanical locks to maintain the position of the endoscopic instrument. Rapid exchange technology is used to minimize displacement forces present on the guidewire or catheters. Soft locks and mechanical locks resist movements caused by displacement forces. The device consists of a catheter rotationally connected to a handle with means to lock the rotational connection.



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TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

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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.

Interr 1 Application No PCT/US 02/37749

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A. CLASSI IPC 7	FICATION OF SUBJECT MATTER A61B18/14			
According to	o International Patent Classification (IPC) or to both national classi	fication and IPC		
B. FIELDS	SEARCHED			
Minimum do IPC 7	ocumentation searched (classification system followed by classific $A61B$	ation symbols)		
Documenta	tion searched other than minimum documentation to the extent the	t such documents are included	in the fields searched	
Electronic d	ata base consulted during the international search (name of data	base and, where practical, sea	arch terms used)	
EPO-In	ternal			
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT			
Category °	Citation of document, with indication, where appropriate, of the	relevant passages	Relevant to claim No.	
A	WO 00 42926 A (GEN SCIENCE & TECHNOLOGY CORP) 27 July 2000 (2000-07-27) see summary of the invention page 10, paragraph 5 -page 11, paragraph 1; figures 1,5		1,23	
Α	US 5 176 702 A (SMITH KEVIN W 5 January 1993 (1993-01-05) column 7, line 10-41; figures 4 column 9, line 54 -column 10, l figures 9A-E	1,23		
A	US 5 066 295 A (KOZAK MARK ET 19 November 1991 (1991-11-19) abstract; figure 1	1		
Α	US 6 015 381 A (OUCHI TERUO) 18 January 2000 (2000-01-18)	-/~-		
X Furti	her documents are listed in the continuation of box C.		mbers are listed in annex.	
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"A" docume consid "E" earlier of filling docume which citation "O" docume other r	ont defining the general state of the art which is not dered to be of particular relevance document but published on or after the international late ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another n or other special reason (as specified) ent referring to an oral disclosure, use, exhibition or	"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.		
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	European Patent Office, P.B. 5618 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	PAPONE, F		

Inter I Application No
PCT/US 02/37749

C.(Continue	C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT						
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.					
Α	US 6 235 026 B1 (SMITH KEVIN W) 22 May 2001 (2001-05-22)						

International application No. PCT/US 02/37749

X 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. X Claims Nos.: 12-22,37 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				
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.				
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.:				
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.:  1-11, 23-36				
Remark on Protest  The additional search fees were accompanied by the applicant's protest.  No protest accompanied the payment of additional search fees.				

International Application No. PCT/US 02/37749

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. Claims: 1-11,23-36,

an apparatus consisting of a handle with a rotating catheter and a locking mechanism  $\,$ 

2. Claims: 38-41

an apparatus consisting of a handle with a rotating catheter and a thinned exterior wall.

Information on patent family members

International Application No
PCT/US 02/37749

Patent document sited in search report		Publication date		Patent family member(s)	Publication date
WO 0042926	Α	27-07-2000	US WO	6352539 B1 0042926 A1	05-03-2002 27-07-2000
 US 5176702	Α	05-01-1993	US	5192298 A	09-03-1993
			US	5171258 A	15-12-1992 15-02-1998
			AT	162382 T 655528 B2	22-12-1994
			AU	3283193 A	12-08-1993
			AU AU	3605893 A	03-09-1993
			CA	2088869 A1	07-08-1993
			DE	69316401 D1	26-02-1998
			DĒ	69316401 T2	27-08-1998
			EP	0555103 A1	11-08-1993
			IL	104591 A	14-11-1996
			JP	2573781 B2	22-01-1997 25-01-1994
			JP	6014874 A 9315673 A1	19-08-1993
			WO AU	647349 B2	17-03-1994
			AU	1404492 A	08-10-1992
			CA	2065089 C	07-02-1995
			DE	69222216 D1	23-10-1997
			DE	69222216 T2	19-03-1998
			EP	0507622 A1	07-10-1992
			IL	101493 A	31-10-1995 22-01-1997
			JP	2573771 B2	16-04-1993
			JP US	5091974 A 5507297 A	16-04-1996
			US	5443480 A	22-08-1995
			US	5396900 A	14-03-1995
			ÜS	5395386 A	07-03-1995
			US	5392789 A	28-02-1995
			US	5439478 A	08-08-1995
			US	6041679 A	28-03-2000 20-04-1993
			US	5203785 A	02-11-1993
			US US	5258004 A 5215101 A	01-06-1993
			US	5269804 A	14-12-1993
			US	5170800 A	15-12-1992
			ÜS	5174300 A	29-12-1992
			US	5331971 A	26-07-1994
			US	5241968 A	07-09-1993
			US	5320636 A	14-06-1994 15-03-1994
			US	5293878 A	15-03-1994
			AU AU	655327 B2 2715292 A	22-04-1993
			CA	2080994 A1	22-04-1993
			EP	0542437 A1	19-05-1993
			ΪĹ	103484 A	08-12-199
			JР	2573777 B2	22-01-1997
			JP	6054802 A	01-03-199
US 5066295	Α	19-11-1991	CA	1290216 A1	08-10-199
UO CO1 F 201	A	18-01-2000	JP	10192286 A	28-07-1998
115 6015381	- •		DE	19801518 A1	23-07-1998
US 6015381					70 07 100
02 6012381			DK GB	5098 A 2321193 A ,B	18-07-1998 22-07-1998

Information on patent family members

Internation Application No
PCT/US 02/37749

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6235026 B	1 22-05-2001	CA 2345419 A1 EP 1135079 A1 JP 2003506135 T WO 0110321 A1 US 6517539 B1	15-02-2001 26-09-2001 18-02-2003 15-02-2001 11-02-2003