

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 August 2005 (11.08.2005)

PCT

(10) International Publication Number
WO 2005/072815 A3

(51) International Patent Classification⁷: A61M 39/22,
39/24, 25/00

(21) International Application Number:
PCT/US2005/000760

(22) International Filing Date: 14 January 2005 (14.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/768,571 29 January 2004 (29.01.2004) US

(71) Applicant (for all designated States except US): BOSTON
SCIENTIFIC SCIMED, INC. [US/US]; One Scimed
Place, Maple Grove, Minnesota 55311-1566 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): WEAVER, Karla
[US/US]; 56 Jodie Road, Framingham, Massachusetts
01702 (US). DICARLO, Paul [US/US]; 10 STARRETT
AVENUE, MIDDLEBORO, MA 02346 (US).

(74) Agents: KAPLUN, Oleg, F. et al.; 150 Broadway, Suite
702, New York, NY 10038 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

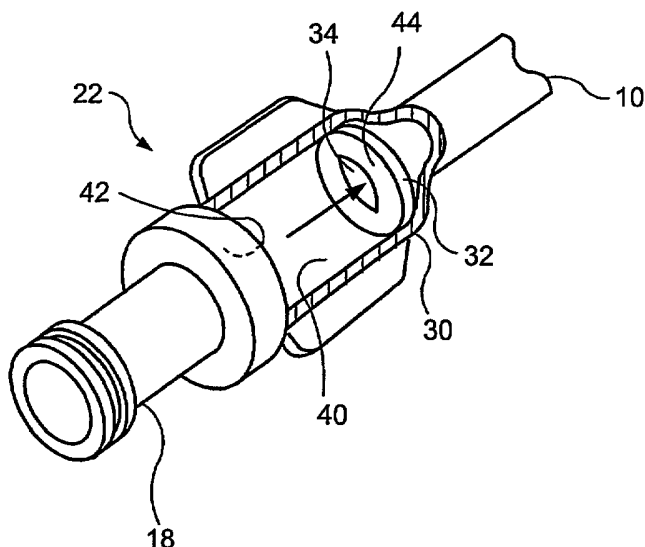
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
EG, 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, MZ, NA, NI, NO, NZ, OM,
PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA,
ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ,

[Continued on next page]

(54) Title: PRESSURE ACTIVATED SAFETY VALVE WITH ANTI-ADHERENT COATING



(57) Abstract: A pressure activated valve comprises a valve housing defining a lumen for receiving bodily fluids therein and a flexible membrane disposed in the valve housing. The flexible membrane includes a slit extending therethrough so that the flexible membrane may be moved between an open and a closed configuration based on fluid pressure within the lumen. A nonthrombogenic coating may be formed on fluid contacting surfaces of the flexible membrane.

WO 2005/072815 A3



NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

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:

29 September 2005

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/US2005/000760

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61M39/22 A61M39/24 A61M25/00

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)
IPC 7 A61M

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.
Y	WO 97/23255 A (B.BRAUN CELSA; NADAL, GUY) 3 July 1997 (1997-07-03) page 6, line 26 - page 10, line 20; figures	1-6,8, 10-17
X	WO 97/26931 A (STINGER, FLORENCE) 31 July 1997 (1997-07-31) page 10, lines 2-4	10,14
Y	page 12, last paragraph - page 13, paragraph 2; figures	1-4,6,8, 10-17
Y	US 6 152 909 A (BAGAOISAN ET AL) 28 November 2000 (2000-11-28) column 13, paragraph 2	5
	----- -/--	

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 27 April 2005	Date of mailing of the international search report 20.07.2005
---	---

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 Vänttinen, H
--	---

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/000760

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 6 306 124 B1 (JONES MICHAEL L ET AL) 23 October 2001 (2001-10-23) column 3, last paragraph - column 4, paragraph 2 page 12, paragraph 1; figures 1,8 -----	1-4,6,8, 10-17
X	US 4 447 237 A (FRISCH ET AL) 8 May 1984 (1984-05-08)	14
Y	column 3, last paragraph - column 4, paragraph 1 column 12, paragraph 2; figures -----	1-4,6,8, 10-17
A	WO 92/06732 A (STRATO MEDICAL CORPORATION) 30 April 1992 (1992-04-30) abstract; claims; figures -----	1,3,4, 10,11, 13-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/000760

Box 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 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 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.:

1-17

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: 1-17

Pressure activated valve having a nonthrombogenic coating on fluid contacting surfaces or a catheter having such a valve

2. claims: 18-21

Pressure activated valve having a plurality of flexible members stacked on one another

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/000760

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9723255	A	03-07-1997	FR 2742665 A1	27-06-1997
			EP 0810891 A1	10-12-1997
			WO 9723255 A1	03-07-1997
			US 5984903 A	16-11-1999

WO 9726931	A	31-07-1997	US 5634913 A	03-06-1997
			AU 708891 B2	12-08-1999
			AU 1573897 A	20-08-1997
			CA 2244225 A1	31-07-1997
			CN 1213319 A	07-04-1999
			EP 0876172 A1	11-11-1998
			JP 2000504246 T	11-04-2000
			WO 9726931 A1	31-07-1997

US 6152909	A	28-11-2000	US 5833644 A	10-11-1998
			AU 6347798 A	22-09-1998
			EP 1011775 A1	28-06-2000
			WO 9839047 A1	11-09-1998
			US 6398773 B1	04-06-2002
			AU 6450198 A	22-09-1998
			WO 9838930 A1	11-09-1998
			US 6849068 B1	01-02-2005
			US 2002035347 A1	21-03-2002
			AU 6688398 A	22-09-1998
			CA 2322876 A1	11-09-1998
			US 2002062119 A1	23-05-2002
			US 6135991 A	24-10-2000
			WO 9838929 A1	11-09-1998
			US 2003055398 A1	20-03-2003
			US 2003009146 A1	09-01-2003
			US 6652480 B1	25-11-2003
			US 6454741 B1	24-09-2002
			AT 262945 T	15-04-2004
			AT 285812 T	15-01-2005
			AU 3071797 A	09-12-1997
			AU 3071897 A	09-12-1997
			AU 3132097 A	09-12-1997
			CA 2255684 A1	27-11-1997
			CA 2256401 A1	27-11-1997
			DE 69728390 D1	06-05-2004
			DE 69728390 T2	10-03-2005
			DE 69732104 D1	03-02-2005
			EP 0904125 A2	31-03-1999
			EP 0901392 A2	17-03-1999
			EP 0906135 A2	07-04-1999
			JP 2001508670 T	03-07-2001
JP 2001517970 T	09-10-2001			
JP 2000511082 T	29-08-2000			
US 2002133117 A1	19-09-2002			
US 2002052638 A1	02-05-2002			
US 6312407 B1	06-11-2001			
US 2002091407 A1	11-07-2002			
US 6355014 B1	12-03-2002			
US 6544276 B1	08-04-2003			
WO 9744082 A2	27-11-1997			
WO 9744084 A2	27-11-1997			
WO 9744085 A2	27-11-1997			
US 6464816 B1	15-10-2002			

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/000760

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6152909	A	US 6325777 B1	04-12-2001
		US 6325778 B1	04-12-2001
		US 2004015150 A1	22-01-2004

US 6306124	B1	23-10-2001	US 6254588 B1
			US 5843050 A
			AU 1051897 A
			CA 2234706 A1
			EP 0861100 A1
			JP 2000500366 T
			WO 9717998 A1

US 4447237	A	08-05-1984	JP 58168333 U

WO 9206732	A	30-04-1992	US 5156600 A
			AT 127027 T
			AU 653973 B2
			AU 8911691 A
			CA 2091561 A1
			DE 9190142 U1
			DE 69112632 D1
			DE 69112632 T2
			DK 552313 T3
			EP 0552313 A1
			ES 2076744 T3
			GR 3017489 T3
			JP 7108320 B
			JP 5505966 T
			WO 9206732 A1
