(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 8 April 2004 (08.04.2004)

PCT

(10) International Publication Number $WO\ 2004/028399\ A3$

(51) International Patent Classification⁷: A61F 2/06

(21) International Application Number:

PCT/US2003/020496

(22) International Filing Date: 30 June 2003 (30.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(**30**) Priority Data: 60/392,667

28 June 2002 (28.06.2002) US

(71) Applicants: COOK INCORPORATED [US/US]; 750 North Daniel's Way, P.O. Box 489, Bloomington, IN 47402-0489 (US). WILLIAM A. COOK AUSTRALIA PTY. LTD. [AU/AU]; 12 Electronics Street, Brisbane Technology Park, Eight Mile Plains, Brisbane, QLD 4113 (AU). WILLIAM COOK EUROPE ApS [DK/DK]; Sandet 6, DK-4632 Bjaeverskov (DK).

(72) Inventors: HARTLEY, David, Ernest; 2 View Street, Subiaco, Western Australia 6008 (AU). HUFFER, Leigh, Anthony; 117-21 Kingfisher Road, Greenbank, Queensland 4113 (AU).

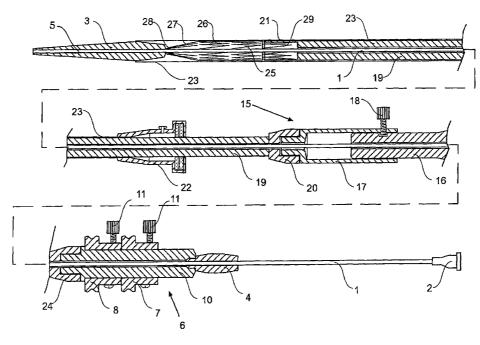
- (74) Agent: GODLEWSKI, Richard, J.; P.O. Box 2269, Bloomington, IN 47402-2269 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, 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, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

[Continued on next page]

(54) Title: THORACIC DEPLOYMENT DEVICE



(57) Abstract: A stent graft deployment device adapted for release of a distal end (29) of a stent graft (25) before the proximal end (27) of the stent graft (25). The arrangement (15) allows movement of at least part of the deployment catheter (23) independently of movement of a proximal end release mechanism has a fixed handle (16) associated with a trigger wire release mechanism (6) and a sliding handle (17) to which the deployment catheter and a capsule (21) are fixed. The sliding handle (17) is mounted on the fixed handle (16) and can slide longitudinally with respect to the fixed handle (16).

WO 2004/028399 A3



 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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.

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

19 August 2004

nal Application No PCT/US 03/20496

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61F2/06

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) $IPC\ 7\ A61F$

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

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Χ	DE 299 19 625 U (LINDENBERG HELMUT) 5 January 2000 (2000-01-05)	1,6
Α	figures 1-4	15–17
X	US 5 415 664 A (PINCHUK LEONARD) 16 May 1995 (1995-05-16) column 3, line 16-63; figures 11,11A,11B	1
P,X	WO 03/101346 A (COOK WILLIAM A AUSTRALIA ;COOK INC (US)) 11 December 2003 (2003-12-11)	1-4,6-10
Α	the whole document	15-28
P,X	WO 03/071987 A (SCIMED LIFE SYSTEMS INC) 4 September 2003 (2003-09-04) figure 2B	1,2
	<u>-/</u>	

Further documents are listed in the continuation of box C.	χ 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 'E' earlier document but published on or after the international filling 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 filling 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
Date of the actual completion of the international search 8 June 2004	Date of mailing of the international search report 1 7. 06. 20U4
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 Newman, B

Int Application No PC1/US 03/20496

		PC1/US 03/20496
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages	Dolonosti alaim Na
Category °	Citation of document, with indication, where appropriate, or the relevant passages	Relevant to claim No.
Y	WO 98/53761 A (HARTLEY DAVID ;COOK WILLIAM A AUSTRALIA (AU); LAWRENCE BROWN MICHA) 3 December 1998 (1998-12-03)	21,27,28
A	the whole document	1–14
Х	US 6 346 118 B1 (BAKER STEVE G ET AL) 12 February 2002 (2002-02-12)	15-20,22
Υ	the whole document	21,27,28
Х	EP 0 637 454 A (ENDOVASCULAR TECH INC) 8 February 1995 (1995-02-08) the whole document	15–17
X	US 6 355 060 B1 (GLYNN BRIAN ET AL) 12 March 2002 (2002-03-12) column 3, line 48 -column 4, line 23; figures 2-10 column 7, line 23 - line 45	15,16,23

national application No. PCT/US 03/20496

Box i Observa	tions where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This International S	earch Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
Claims No because the control of the control o	s.: ney relate to subject matter not required to be searched by this Authority, namely:
Claims No because the an extent to an e	s.: ney relate to parts of the International Application that do not comply with the prescribed requirements to such that no meaningful International Search can be carried out, specifically:
3. Claims No because the	s.: ney are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observa	tions where unity of invention is lacking (Continuation of item 2 of first sheet)
This International S	earching Authority found multiple inventions in this international application, as follows:
see ad	ditional sheet
1. X As all requesearchable	nired additional search fees were timely pald by the applicant, this International Search Report covers all e claims.
2. As all sear of any add	chable claims could be searched without effort justifying an additional fee, this Authority did not invite payment litional fee.
3. As only so covers onl	me of the required additional search fees were timely paid by the applicant, this International Search Report y those claims for which fees were paid, specifically claims Nos.:
4. No require restricted t	d additional search fees were timely paid by the applicant. Consequently, this International Search Report is to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on Protes	The additional search fees were accompanied by the applicant's protest. X 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 - 14

A deployment device for a stent. The device is arranged to release a distal end of the stent before a proximal end. There is a release mechanism on the catheter associated with each end of the stent. Part of the catheter including the distal release mechanism can be moved independently of the proximal end release mechanism.

2. Claims: 15 - 28

A deployment catheter for a stent comprising: a proximal and distal end, a sheath, a nose cone dilator, a distal retention arrangement for the stent, a sliding and a fixed handle.

Ir al Application No PCT/US 03/20496

P	atent document		Publication		Patent family	01700	Publication
cite	d in search report		date		member(s)		date
DE	29919625	U	05-01-2000	DE	29919625	U1	05-01-2000
US	5415664	Α	16-05-1995	AT CA DE DK EP ES JP PT WO	210479 2185886 69524584 69524584 752896 0752896 2169755 3184735 8299455 752896 9526775	A1 D1 T2 T3 A1 T3 B2 A	15-12-2001 12-10-1995 24-01-2002 18-07-2002 11-03-2002 15-01-1997 16-07-2002 09-07-2001 19-11-1996 28-06-2002 12-10-1995
WO	03101346	A	11-12-2003	WO WO US US	03101518 03101346 2003225446 2003233140	A1 A1	11-12-2003 11-12-2003 04-12-2003 18-12-2003
WO	03071987	A	04-09-2003	US WO	2003163189 03071987		28-08-2003 04-09-2003
WO	9853761	Α	03-12-1998	AU AU WO CA EP JP	736368 7513298 9853761 2283782 1014888 2001526574	A A1 A1 A1	26-07-2001 30-12-1998 03-12-1998 03-12-1998 05-07-2000 18-12-2001
US	6346118	B1	12-02-2002	US UU AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	5693083 2002091439 704204 4684796 2207596 0797415 2002503114 9618361 186223 671910 6474794 697083 7425396 9816898 2125258 2241034 2300743 69421466 69421466 69421466 0637454 0945152 7059802 6210434 2003158597 5749920 6540778 5782909 5957973	A1 B2 A1 A1 BA A1 B1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1	02-12-1997 11-07-2002 15-04-1999 03-07-1996 20-06-1996 01-10-1997 29-01-2002 20-06-1996 15-11-1999 12-09-1996 16-03-1995 24-09-1998 13-02-1997 09-09-1999 06-02-1995 06-02-1995 06-02-1995 06-02-1995 09-12-1999 10-02-2000 08-02-1995 29-09-1999 07-03-1995 03-04-2001 21-08-2003 12-05-1998 01-04-2003 21-07-1998 28-09-1999

Ini nal Application No PCT/US 03/20496

	T	Г		03/20490
Patent document cited in search report	Publication date	Patent family member(s)	<i>'</i>	Publication date
EP 0637454 A	08-02-1995	AT 18622 AU 67193 AU 647479 AU 69708 AU 742539 AU 981689 CA 212529 CA 224103 CA 230074 DE 6942146 EP 063749 EP 094519 JP 705980 US 621043 US 569308 US 574999 US 654073 US 578299 US 634613	0 B2 04 A 03 B2 06 A 08 A 08 A 13 A1 13 A1 15 A1 15 A1 16 B1 17 A 18 B1 18 B1 19 A 19 A 19 A	15-11-1999 12-09-1996 16-03-1995 24-09-1998 13-02-1997 09-09-1999 06-02-1995 06-02-1995 06-02-1995 09-12-1999 10-02-2000 08-02-1995 29-09-1999 07-03-1995 03-04-2001 02-12-1997 21-08-2003 12-05-1998 01-04-2003 21-07-1998 28-09-1999 12-02-2002
US 6355060 B1	. 12-03-2002	US 602476 US 568349 DE 6951456 DE 6951456 EP 069646 EP 094896 EP 094336 JP 817356 US 612666 US 63502 US 582406 DE 2952216 DE 6951826 DE 6951826 DE 6951846 DE 6951846 EP 06863 EP 079266 EP 101046 JP 805216	51 A 39 D1 39 T2 47 A2 46 A1 D2 A2 48 A 35 A 75 D1 75 D1 75 D1 75 D2 79 A2 27 A2 20 A2	15-02-2000 04-11-1997 24-02-2000 14-09-2000 14-02-1996 13-10-1999 22-09-1999 09-07-1996 03-10-2000 26-02-2002 20-10-1998 09-12-1999 14-09-2000 15-03-2001 21-09-2000 29-03-2001 13-12-1995 03-09-1997 21-06-2000 27-02-1996