#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 12 January 2006 (12.01.2006)

**PCT** 

English

# (10) International Publication Number WO 2006/004825 A3

(51) International Patent Classification: A61F 2/06 (2006.01) A61F 2/02 (2006.01) A61F 2/24 (2006.01)

(21) International Application Number:

PCT/US2005/023071

(22) International Filing Date: 30 June 2005 (30.06.2005)

(25) Filing Language:

(26) Publication Language: English

(30) Priority Data: 60/584,903

30 June 2004 (30.06.2004) US

(71) Applicant (for all designated States except US): ED-WARDS LIFESCIENCES PVT, INC. [US/US]; One Edwards Way, Irvine, CA 92614 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SPENSER, Benjamin [IL/IL]; Zamir St. 22, 38900 Caesarea (IL). BENICHOU, Netanel [IL/IL]; Nir-Etzion, 30808 D.N.

Hof-Caramel (IL). **BASH, Assaf** [IL/IL]; Haseora 1, 37808 Givat Ada (IL). **TUBISHEVITZ, Amit** [IL/IL]; Eliyahu Golomb St. 49, Herzelia (IL).

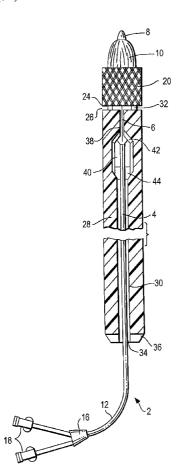
(74) Agents: CONDINO, Debra, D. et al.; Edwards Lifesciences LLC, One Edwards Way, Irvine, CA 92614 (US).

(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, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, 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,

[Continued on next page]

(54) Title: DEVICE AND METHOD FOR ASSISTING IN THE IMPLANTATION OF PROSTHETIC VALVE



(57) Abstract: A system for percutaneously introducing a prosthetic valve into a patient's vasculature comprises a balloon dilatation catheter, a prosthetic valve mounted coaxial to the dilatation balloon, and a pusher member comprising a longitudinally extending tubular member encompassing the shaft of the catheter. The distal end of the pusher member preferably corresponds to the proximal end of the stent component of the prosthetic valve. The pusher member provides enhanced longitudinal pushability for facilitating advancement of the prosthetic valve to a treatment site. The system is well-suited for advancing a prosthetic valve or other medical device through an introducer sheath having a relatively small inner diameter. The introducer sheath may be formed with a tapered proximal end portion for receiving the prosthetic valve and for reducing a diameter of the prosthetic valve during advancement therethrough.

## WO 2006/004825 A3



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

(88) Date of publication of the international search report: 13 April 2006

#### 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

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/US2005/023071

A. CLASSIFICATION OF SUBJECT MATTER A61F2/06 A61I A61F2/24 A61F2/02 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) A61F 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 Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. Category\* WO 99/47075 A (MEDICORP S.A; MARIANNE, MICKAEL) 23 September 1999 (1999-09-23) 1,6,7 Χ page 4, line 11 - page 8, last line; Α figures 1,6,7 WO 99/40964 A (MEDICORP S.A; AMOR, MAX; Χ FRID, NOUREDDINE; HENRY, MICHEL; RUFENACHT, D) 19 August 1999 (1999-08-19) 2 page 6, line 24 - page 12, line 5; figures Α US 6 302 906 B1 (GOICOECHEA GEORGE ET AL) 16 October 2001 (2001-10-16) 1,6,7 Χ column 8, line 45 - column 19, line 59; 2 Α figures -/--Further documents are listed in the continuation of Box C. See patent family annex. Special categories of cited documents: later document published after the international filing date or priority date and not in conflict with the application but "A" document defining the general state of the art which is not considered to be of particular relevance cited to understand the principle or theory underlying the invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing 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) 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 docu-"O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. "P" document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 1 5. 02. 2006 18 November 2005 Authorized officer 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 Vänttinen, H

3

## INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/023071

	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/76510 A (EDWARDS LIFESCIENCES CORPORATION) 18 October 2001 (2001-10-18) page 17, line 3 - page 19, line 21; figures 16A-16C	1
4	WO 01/97715 A (SOLEM, JAN, OTTO) 27 December 2001 (2001-12-27) abstract; figures 3-6,17-20	3-5
Ą	WO 03/094793 A (SCIMED LIFE SYSTEMS, INC) 20 November 2003 (2003-11-20) abstract; figures 9-13,18-20	3-5
A	US 2003/109924 A1 (CRIBIER ALAIN) 12 June 2003 (2003-06-12) paragraphs [0138] - [0184]; figures	1
•		
	·	
	,	
		·

3

International application No. PCT/US2005/023071

## INTERNATIONAL SEARCH REPORT

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. X Claims Nos.: 13 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 and therapy
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.
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.:  1-7
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: 1-7

System for introducing a prosthetic valve into a patient's vasculature, comprising a balloon dilatation catheter, a prosthetic valve with a stent, and a pusher member

2. claims: 8-12

A system for assisting in introduction and implantation of a stent-mounted percutaneous valve assembly, comprising a pusher member and an introducer sheath.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2005/023071

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9947075	А	23-09-1999	AU DE ES	3268499 A 69924100 D1 2239849 T3	11-10-1999 14-04-2005 01-10-2005
WO 9940964	Α	19-08-1999	AU CA DE DE ES	3241099 A 2320924 A1 69920185 D1 69920185 T2 2229732 T3	30-08-1999 19-08-1999 21-10-2004 22-09-2005 16-04-2005
US 6302906	B1	16-10-2001	NONE		
WO 0176510	A	18-10-2001	AT AU CA DE EP US	306876 T 5698501 A 2407062 A1 60114165 D1 1267753 A2 2002198594 A1 6454799 B1	15-11-2005 23-10-2001 18-10-2001 24-11-2005 02-01-2003 26-12-2002 24-09-2002
WO 0197715	A	27-12-2001	AT AU CA DE EP JP SE SE US	301443 T 6395801 A 2413849 A1 60112573 D1 1292245 A1 2003535642 T 522805 C2 0002395 A 2001056295 A1	15-08-2005 02-01-2002 27-12-2001 15-09-2005 19-03-2003 02-12-2003 09-03-2004 23-12-2001 27-12-2001
WO 03094793	Α	20-11-2003	CA EP JP US US	2482241 A1 1501448 A1 2005524487 T 2005096724 A1 2003212410 A1	20-11-2003 02-02-2005 18-08-2005 05-05-2005 13-11-2003
US 2003109924	A1	12-06-2003	US	2005203616 A1	15-09-2005