



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

(21) International Application Number:
PCT/IB2015/000929

(22) International Filing Date:
25 February 2015 (25.02.2015)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
102014102721.3 28 February 2014 (28.02.2014) DE
14/204,293 11 March 2014 (11.03.2014) US

(71) Applicant: **HIGHLIFE SAS** [FR/FR]; 31 Rue Saint-Augustin, F-75002 Paris (FR).

(72) Inventors: **BÖRTLEIN, Georg**; c/o Highlife SAS, 31 Rue Saint-Augustin, F-75002 Paris (FR). **NASR, Malek**; c/o Highlife SAS, 31 Rue Saint-Augustin, F-75002 Paris (FR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

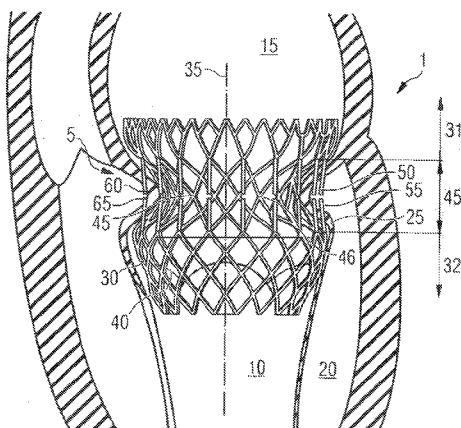
Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:
26 November 2015

(54) Title: TRANSCATHETER VALVE PROSTHESIS

FIG 1



(57) Abstract: A system for implanting a heart valve (1) includes a radially self-expandable tubular body (30) having an inflow end and an outflow end and a preformed groove (45) disposed at an outer surface of the tubular body between the inflow end and the outflow end. The preformed groove extends at least partially around the tubular body and has a circumferential opening facing radially outward of the tubular body. A valve (40) is disposed within and is attached to the tubular body, and an elongate outer member is configured to form a loop encircling the preformed groove so as to guide portion of native valve leaflets and/or chords into the preformed groove. The outflow end of the tubular body includes a frustoconical shape that slopes radially outward from the preformed groove toward the outflow end when the outflow end but not the inflow end has been released from a delivery catheter.

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2015/000929

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61F2/24

ADD.

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

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 practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 10 2011 054172 A1 (HIGHLIFE SAS [FR]) 14 March 2013 (2013-03-14) paragraphs [0004], [0021], [0049]; figures 1-8	1-4
X	----- WO 2013/037519 A1 (HIGHLIFE SAS [FR]; BOERTLEIN GEORG [FR]; NASR MALEK [FR]) 21 March 2013 (2013-03-21) the whole document	1-5
X,P	----- US 2014/277410 A1 (BÖRTLEIN GEORG [FR] ET AL) 18 September 2014 (2014-09-18) the whole document	1-5
	----- -/-	



Further documents are listed in the continuation of Box C.



See patent family 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 application or patent but published on or after the international 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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing 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

24 August 2015

Date of mailing of the international search report

08/09/2015

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Steiner, Bronwen

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2015/000929

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013/114214 A2 (ORFORD HOLDINGS SA [CH]; SPENCE PAUL A [US]; TOMPKINS LANDON H [US]) 8 August 2013 (2013-08-08) paragraphs [0021] - [0037], [0105] - [0128], [0211] - [0216]; figures 1A-1K,34H,34I -----	1,3,4
A	US 2008/071361 A1 (TUVAL YOSI [IL] ET AL) 20 March 2008 (2008-03-20) paragraph [0573] - paragraph [0618]; figures 5A-8C -----	1-5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2015/000929

Box No. 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.: 6-11
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 No. 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:

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 fees, this Authority did not invite payment of additional fees.
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.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2015/000929

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 102011054172 A1	14-03-2013	DE 102011054172 A1	14-03-2013
		JP 2014530026 A	17-11-2014
WO 2013037519 A1	21-03-2013	AU 2012307772 A1	27-03-2014
		CA 2848251 A1	21-03-2013
		CN 103917194 A	09-07-2014
		EP 2755602 A1	23-07-2014
		US 2014214157 A1	31-07-2014
		WO 2013037519 A1	21-03-2013
US 2014277410 A1	18-09-2014	US 2014277409 A1	18-09-2014
		US 2014277410 A1	18-09-2014
		US 2014277412 A1	18-09-2014
WO 2013114214 A2	08-08-2013	AU 2013213888 A1	14-08-2014
		CA 2863169 A1	08-08-2013
		CN 104220027 A	17-12-2014
		EP 2809263 A2	10-12-2014
		JP 2015509023 A	26-03-2015
		US 2014379074 A1	25-12-2014
		WO 2013114214 A2	08-08-2013
US 2008071361 A1	20-03-2008	AU 2007298481 A1	27-03-2008
		CA 2663957 A1	27-03-2008
		EP 2068767 A2	17-06-2009
		US 2008071361 A1	20-03-2008
		US 2008071362 A1	20-03-2008
		US 2008071363 A1	20-03-2008
		US 2008071366 A1	20-03-2008
		US 2008071368 A1	20-03-2008
		US 2008071369 A1	20-03-2008
		US 2010131054 A1	27-05-2010
		US 2010137979 A1	03-06-2010
		US 2011288634 A1	24-11-2011
		US 2012046741 A1	23-02-2012
		US 2012046742 A1	23-02-2012
		US 2012101570 A1	26-04-2012
		US 2012185039 A1	19-07-2012
		US 2015005875 A1	01-01-2015
		WO 2008035337 A2	27-03-2008