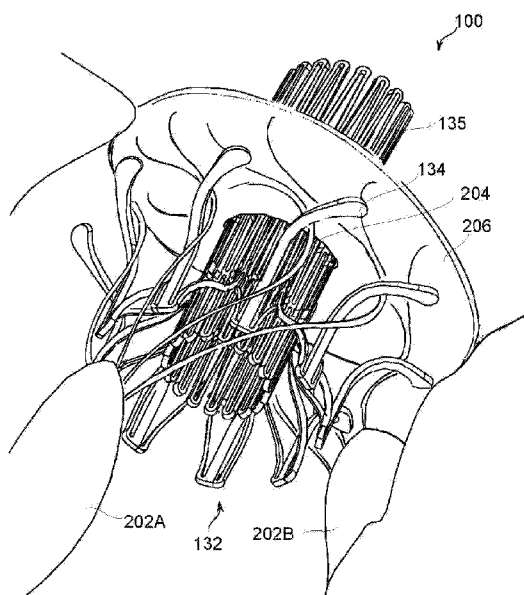




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[Continued on next page]

(54) Title: PROSTHETIC MITRAL VALVE



(57) Abstract: A prosthetic mitral valve (100) with a frame comprises at least one arm (134) shaped to deploy among a region of chordae tendineae of the native mitral valve to deflect these chords in order to pull the native valve leaflets around the frame to avoid paravalvular leaks. The frame may be made from two parts that are connected by sutures. The prosthetic valve may be deployed by a catheter comprising a deployment clamp attached to the valve frame where the deployment clamp is actuable to induce rotation of the frame.



Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

Published:

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

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

17 April 2014

INTERNATIONAL SEARCH REPORT

International application No

PCT/IL2013/050432

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012/022640 A1 (GROSS YOSSI [IL] ET AL) 26 January 2012 (2012-01-26) sentences 1795-196,202-216,228,244-251, paragraph 188; figures 1-2,4,10-11 -----	1-35
X	US 2012/101571 A1 (THAMBAR SUKU [AU] ET AL) 26 April 2012 (2012-04-26) paragraphs [0090] - [0129]; figures 1-23 -----	1-35
X	US 2009/192586 A1 (TABOR CHARLES [US] ET AL) 30 July 2009 (2009-07-30) paragraphs [0028], [0029], [0033], [0034], [0054]; figures 14-16 -----	36-42 37 43,44
X	US 2010/049313 A1 (ALON DAVID [US] ET AL) 25 February 2010 (2010-02-25) paragraphs [0116], [0135]; figures 13,26,27,35,36 -----	36,38-40 37 43,44
	-/-	



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

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"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

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26/02/2014

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No

PCT/IL2013/050432

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2007/050020 A1 (SPENCE PAUL A [US]) 1 March 2007 (2007-03-01) the whole document	1-35
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IL2013/050432

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2013/050432

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.: 45-47
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:

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 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.:
1-44
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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-35

A prosthetic mitral valve with a frame comprising at least one arm to deploy among the chordae tendineae.

2. claims: 36-44

A catheter deployment system for a prosthetic mitral valve comprising a prosthetic valve and a deployment clamp attached to a prosthetic heart valve, where the deployment clamp is rotatable.

3. claim: 48

A valve frame for a prosthetic mitral valve with two metal parts covered by a polymer insert and connected by suture.
