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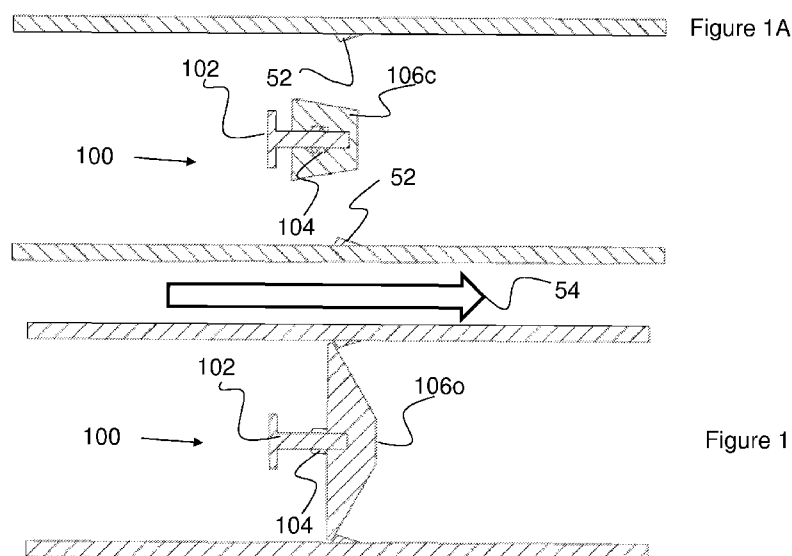
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(54) Title: AN IMPLATABLE PROSTHETIC VALVE CONTROLLABLE WITH A PIEZOELECTRIC MEMS ACTUATOR



(57) Abstract: The present invention relates to prosthetic valve that is controllable with a piezoelectric actuator and in particular to a prosthetic valve that may be implanted within a support structure at an implantation site therein providing a controllable passageway about the implantation site.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2012/051336

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.
A	WO 2006/106511 A2 (YEDA RES & DEV [IL]; MOR RESEARCH APPLIC LTD [IL]; LEVIN BORIS [IL]; L) 12 October 2006 (2006-10-12) page 7, line 1 - page 8, line 8 figures 1-3	1-29
A	----- US 2009/259093 A1 (BHAT NIKHIL D [US] ET AL) 15 October 2009 (2009-10-15) paragraphs [0009] - [0051]; figures 2A-4	1-29
A	----- US 2009/112155 A1 (ZHAO MITCH [US] ET AL) 30 April 2009 (2009-04-30) paragraphs [0024], [0026]; figures 2A-D	1-29



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

7 August 2012

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2012/051336

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006106511	A2	12-10-2006	CA 2602726 A1 12-10-2006
			EP 1874227 A2 09-01-2008
			US 2009105812 A1 23-04-2009
			WO 2006106511 A2 12-10-2006

US 2009259093	A1	15-10-2009	NONE

US 2009112155	A1	30-04-2009	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2012/051336

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.: 38-40
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.:
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.:

1-29

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: 1-29

Implantable prosthetic valve assembly, with a piezoelectric actuator and a valve regulator with a plunger or skirt

2. claims: 30-37

auxiliary device for (external) communication
