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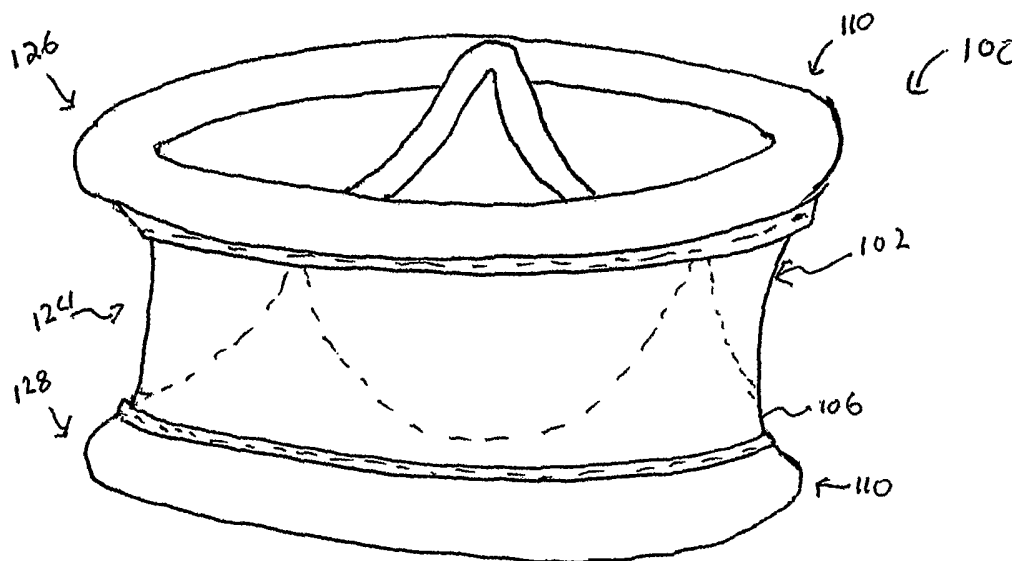
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60/605,204	27 August 2004 (27.08.2004)	US
60/610,269	16 September 2004 (16.09.2004)	US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, 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, 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.
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(54) Title: UNSTENTED HEART VALVE WITH FORMED IN PLACE SUPPORT STRUCTURE



(57) Abstract: An implantable prosthetic valve (100) has an in situ formable support structure. The valve comprises a prosthetic valve (104), having a base and at least one flow occluder. A first flexible component is incapable of retaining the valve at a functional site in the arterial vasculature. The first component (126) extends proximally of the base of the valve. A second flexible component (128) is incapable of retaining the valve at a functional site in the arterial vasculature. The second component extends distally of the base of the valve. At least one rigidity component (300) combines with at least one of the first and second flexible components to impart sufficient rigidity to the first or second components to retain the valve at the site.

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

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

**(88) Date of publication of the international search report:**  
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— *with international search report*

*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

Intern	pplication No
PCT/US2005/015617	

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 A61F2/24

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 554 185 A (BLOCK ET AL) 10 September 1996 (1996-09-10) cited in the application	19
Y	column 1, line 56 - line 61 column 3, line 47 - line 52 column 5, line 28 - column 6, line 1 figures 1,1a,4a-4c	1-8, 21-27
Y	WO 00/41652 A (LETAC, BRICE) 20 July 2000 (2000-07-20) page 7, line 29 - line 33 figures 3,4	1-8, 21-27
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Further documents are listed in the continuation of box C.

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 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

20 October 2005

Date of mailing of the international search report

31/10/2005

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

Intern

Application No

PCT/US2005/015617

## 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 6 007 575 A (SAMUELS ET AL) 28 December 1999 (1999-12-28) figure 7 column 2, line 28 - line 29 column 5, line 17 - line 28 -----	1-8, 19, 21-27
A	US 4 592 340 A (BOYLES ET AL) 3 June 1986 (1986-06-03) figure 2 -----	1-8, 19, 21-27
A	US 2003/023303 A1 (PALMAZ JULIO C ET AL) 30 January 2003 (2003-01-30) figures 13,14 -----	1-8, 19, 21-27
A	US 4 183 102 A (GUISET, JACQUES) 15 January 1980 (1980-01-15) figures 6,9 -----	1-8, 19, 21-27

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2005/015617

## 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.  Claims Nos.: 9-18 20  
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 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 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.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern	Application No
PCT/US2005/015617	

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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