



New connection on: : 01-12-2022 : 16:49:00 - Last disconnection on: : 01-12-2022 : 07:05:40

V 4.0.0.169(LP,U,linux) (Rev:169 Fri Mar 18 18:04:23 2022 +0100 (D202201)) (RPM D202201)

Welcome to EPOQUE Rebuild under the Production Environment

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[SS 1] ..fiepodoc

 Database: EPODOC

[EPODOC: SS 1] valve and (monocuspid or bicuspid or tricuspid) and (stent or strut)

Results in EPODOC 120

[SS 2] 1 and /IC(A61F)

Results in EPODOC 119

[SS 3] 2 and /PD<2016

Results in EPODOC 48

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[EPODOC: SS 4] 3

Results in EPODOC 48

[SS 5] ..v

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PN - [JP2015198914](#) A 20151112

PNFP - JP6560507B B2 20190814

PR - EP20140163731 20140407

AP - JP20150037703 20150227

DT - I

CT - || STSE (A)
WO2006127412 A1 20061130 [XY] (CLEVELAND CLINIC FOUNDATION [US])
[X] 1-2,4-9,11-12
* Page16 Line23 - Line26, Page11 Line1 - Line4, Page12 Line24 - Line26, Page16 Line27 - Line30, Page16 Line32 - Page17 Line2, Page16 Line12 - Line13, Page3 Line29 - Line32, Page4 Line9, Page16 Line12 - Page17 Line8, 图9 *
* Page16 Line23 - Line26, Page11 Line1 - Line4, Page12 Line24 - Line26, Page16 Line27 - Line30, Page16 Line32 - Page17 Line2, Page16 Line12 - Line13, Page3 Line29 - Line32, Page4 Line9, Page16 Line12 - Page17 Line8, 图9 *
[Y] 3,10;
JP2005523747 A 20050811 [Y]
[Y] 3,10
* 段落0016,0026, 图4 *;
WO2012018599 A1 20120209 [A] (COOK MEDICAL TECHNOLOGIES LLC [US], et al)
[A] -
* Whole Document *;
US2012290069 A1 20121115 [A] (IVANCEV KRASNODAR [GB], et al)
[A] -
* Whole Document *;
JP2005525170 A 20050825 [A]
[A] -
* Whole Document *

CCI - A61F2/07 ; A61F2/2412 ; A61F2/2418

CCA - A61F2/2475 ; A61F2220/0025 ; A61F2230/0069 ; A61F2250/0039

CI - A61B90/39 (EP, US)
- A61F2/07 (EP, US)
- A61F2/2412 (EP, US)
- A61F2/2418 (EP, US)

CA - A61B2090/3966 (EP, US)
- A61F2/2475 (EP, US)
- A61F2220/0025 (EP, US)
- A61F2230/0069 (EP, US)
- A61F2250/0039 (EP, US)

FI - A61F2/07; A61F2/24; A61L17/00; A61L31/10; A61L31/12

FT - 4C081/AC03; 4C081/AC06; 4C081/AC09; 4C081/BC02; 4C081/CA131; 4C081/CA161;
4C081/CA171; 4C081/CA211; 4C081/CA271; 4C081/CD111; 4C097/AA15; 4C097/AA27;
4C097/BB01; 4C097/CC01; 4C097/CC03; 4C097/CC12; 4C097/DD02; 4C097/DD05;
4C097/DD15; 4C097/EE02; 4C097/EE06; 4C097/EE09; 4C097/EE13; 4C097/EE18;
4C097/FF11

PA - (A)
NVT AG

TI - (A)
DEVICE FOR IMPLANTATION IN HEART OF MAMMAL

AB - (A)
PROBLEM TO BE SOLVED: To provide a device for implantation into the heart of a

mammal, intended for treating **tricuspid** regurgitation. SOLUTION: A device 10 comprises two tubular **stent** members 16 and 22 placed in the heart 50 of a human in inflated states and separated by a **stent** graft member 30 which has a functional stented **valve** member 40 for allowing unidirectional blood flow from the vena cava into the right atrium 54. The two tubular **stent** members fix the end of the device in the vena cava. The stented **valve** member is a unidirectional **valve** and prevents regurgitation of the **tricuspid valve** 60 from the right ventricle 55 to the right atrium.

2/48 © EPODOC / EPO

- PN - [CN104970901](#) A 20151014
- PNFP - CN104970901B B 20181002
- PR - EP20140163731 20140407
- AP - CN201510154584 20150402
- DT - I
- CT - || STSE (A)
[US2004206363](#) A1 20041021 [A] (MCCARTHY PATRICK M [US], et al)
 [A] 1-11
 * 全文 *;
[US2007233228](#) A1 20071004 [A] (EBERHARDT CAROL ELSA [US], et al)
 [A] 1-11
 * 全文 *;
[US2007244494](#) A1 20071018 [A] (DOWNING STEPHEN W [US])
 [A] 1-11
 * 全文 *;
[WO2007121028](#) A3 20081127 [A] (UNIV COLUMBIA [US], et al)
 [A] 1-11
 * 全文 *;
[WO2012018599](#) A1 20120209 [Y] (COOK MEDICAL TECHNOLOGIES LLC [US], et al)
 [Y] 1-11
 * 权利要求1、10, 说明书第3页第1行-第11页第6行以及附图1-3 *;
[US2012290069](#) A1 20121115 [Y] (IVANCEV KRASNODAR [GB], et al)
 [Y] 1-11
 * 说明书第47-54段以及附图1-5 *;
[CN102869318](#) A 20130109 [A] (4TECH SA)
 [A] 1-11
 * 全文 *
- CCI - [A61F2/07](#) ; [A61F2/2412](#) ; [A61F2/2418](#)
- CCA - [A61F2/2475](#) ; [A61F2220/0025](#) ; [A61F2230/0069](#) ; [A61F2250/0039](#)
- CI - A61B90/39 (EP, US)
 - A61F2/07 (EP, US)
 - A61F2/2412 (EP, US)
 - A61F2/2418 (EP, US)
- CA - A61B2090/3966 (EP, US)
 - A61F2/2475 (EP, US)
 - A61F2220/0025 (EP, US)
 - A61F2230/0069 (EP, US)

- A61F2250/0039 (EP, US)
 PA - (A)
 NVT AG
 TI - (A)
 Device for implantation in heart of mammal
 AB - (A)
 The present invention relates to a device for implantation into the heart of a mammal, and is intended for treating **tricuspid** regurgitation. The device comprises two tubular **stent** members separated by a **stent** graft member which has a functional stented **valve** member attached thereto allowing unidirectional blood flow from the vena cava into the right atrium.

3/48 © EPODOC / EPO

PN - [US2015282958](#) A1 20151008
 PNFP - US10028821 B2 20180724
 PR - EP20140163731 20140407
 AP - US201514678376 20150403
 DT - **
 CT - || R141 (A1)
 [US2012290069](#) A1 20121115 [] (IVANCEV KRASNODAR [GB], et al);
 [US5725572](#) A 19980310 [] (LAM SHARON S [US], et al);
 [US2007233228](#) A1 20071004 [] (EBERHARDT CAROL ELSA [US], et al);
 [US7244444](#) B2 20070717 [] (BATES BRIAN L [US]);
 [US6131266](#) A 20001017 [] (SAUNDERS RICHARD J [US]);
 [US2002198585](#) A1 20021226 [] (WISSELINK WILLEM [US]);
 [US2005251251](#) A1 20051110 [] (CRIBIER ALAIN [FR])
 - || STSE (B2)
 [US5725572](#) A 19980310 [] (LAM SHARON S [US], et al);
 [US6131266](#) A 20001017 [] (SAUNDERS RICHARD J [US]);
 [US7244444](#) B2 20070717 [] (BATES BRIAN L [US]);
 [US2002198585](#) A1 20021226 [] (WISSELINK WILLEM [US]);
 [US2005251251](#) A1 20051110 [] (CRIBIER ALAIN [FR]);
 [US2007233228](#) A1 20071004 [] (EBERHARDT CAROL ELSA [US], et al);
 [US2012290069](#) A1 20121115 [] (IVANCEV KRASNODAR [GB], et al)
 CCI - [A61F2/07](#) ; [A61F2/2412](#) ; [A61F2/2418](#)
 CCA - [A61F2/2475](#) ; [A61F2220/0025](#) ; [A61F2230/0069](#) ; [A61F2250/0039](#)
 CI - A61B90/39 (EP, US)
 - A61F2/07 (EP, US)
 - A61F2/2412 (EP, US)
 - A61F2/2418 (EP, US)
 CA - A61B2090/3966 (EP, US)
 - A61F2/2475 (EP, US)
 - A61F2220/0025 (EP, US)
 - A61F2230/0069 (EP, US)
 - A61F2250/0039 (EP, US)

- PA - (A1 B2)
NVT AG [CH]
- TI - (A1)
DEVICE FOR IMPLANTATION IN THE HEART OF A MAMMAL
- (B2)
Device for implantation in the heart of a mammal
- AB - (A1)
A device for implantation into the heart of a mammal and a method for treating **tricuspid** regurgitation using the device. The device comprises two tubular **stent** members separated by a **stent** graft member which has a functional stented **valve** member attached thereto allowing unidirectional blood flow from the vena cava into the right atrium.
- (B2)
A device for implantation into the heart of a mammal and a method for treating **tricuspid** regurgitation using the device. The device includes two tubular **stent** members separated by a **stent** graft member which has a functional stented **valve** member attached thereto allowing unidirectional blood flow from the vena cava into the right atrium.

4/48 © EPODOC / EPO

- PN - [US2015073544](#) A1 20150312
- PR - US201261606599P 20120305; US201314382783 20130305; WO2013US29034 20130305
- AP - US201314382783 20130305
- DT - **
- CT - || R141 (A1)
[US2013197622](#) A1 20130801 [] (MITRA ASHISH SUDHIR [AU], et al)
- CCI - [A61F2/2418](#) ; [A61L31/10](#) ; [A61L31/145](#)
- CCA - [A61F2/2409](#) ; [A61F2210/0061](#) ; [A61F2230/0013](#) ; [A61F2250/0069](#) ; [A61L2420/06](#)
- CLC - [A61L31/10](#) , [C08L33/04](#) , INV
- [A61L31/10](#) , [C08L71/02](#) , INV
- CI - A61F2/2418 (EP, US)
- A61L31/10 (EP, US)
- A61L31/145 (EP, US)
- CA - A61F2/2409 (EP, US)
- A61F2210/0061 (EP, US)
- A61F2230/0013 (EP, US)
- A61F2250/0069 (EP, US)
- A61L2420/06 (EP, US)
- CL - A61L31/10, C08L33/04, INV (EP, US)
- A61L31/10, C08L71/02, INV (EP, US)
- PA - UNIV PENNSYLVANIA [US]; PHILADELPHIA CHILDREN HOSPITAL [US]
- TI - SUPERABSORBENT COATED STENTS FOR VASCULAR REDUCTION AND FOR ANCHORING **VALVE** REPLACEMENTS
- AB - A **stent**-based vascular reducer platform adapted for percutaneous delivery to and anchoring in a pulmonary or **tricuspid valve** annulus and a valved-**stent** prosthetic

device adapted to be percutaneously delivered to the pulmonary or **tricuspid valve** annulus for mounting in the vascular reducer platform. The vascular reducer platform includes an at least partially self-expanding **stent** and a cuff made of an absorbent material disposed at least partially circumferentially around the outer and inner surfaces of the **stent**. Upon placement at an implantation site such as the pulmonary or **tricuspid valve** annulus, the absorbent material expands by absorption of a fluid to substantially adhere and seal the **stent** at the implantation site. Preferably, the cuff expansion is delayed for a time sufficient to permit positioning of the **stent** at the implantation site. The **stent** and cuff may also be used as a space-reducer for venous insufficiency, aortic aneurysms, and hydroureter treatment.

5/48 © EPODOC / EPO

PN - [US2014135910](#) A1 20140515

PNFP - US9504570 B2 20161129

PR - US201414159251 20140120; US201213453906 20120423; US20100891522 20100927; US20080324293 20081126; US20060519645 20060911; US20050716012P 20050909

AP - US201414159251 20140120

DT - **

CT - || R141 (A1)
[US7018406](#) B2 00000000 [];
[US2005075662](#) A1 00000000 [];
[US2005197694](#) A1 00000000 [];
[US2014379006](#) A1 00000000 []

- || STSE (B2)
[US7018406](#) B2 00000000 [];
[US2005075662](#) A1 00000000 [];
[US2005197694](#) A1 00000000 [];
[US2014379006](#) A1 00000000 []

CCI - [A61F2/2445](#) ; [A61F2/2454](#) ; [A61F2/82](#)

CCA - [A61F2210/0004](#) ; [A61F2210/0014](#) ; [A61F2220/0016](#) ; [A61F2230/0004](#)

CI - A61F2/2445 (EP, US)
A61F2/2454 (EP, US)
A61F2/82 (EP, US)

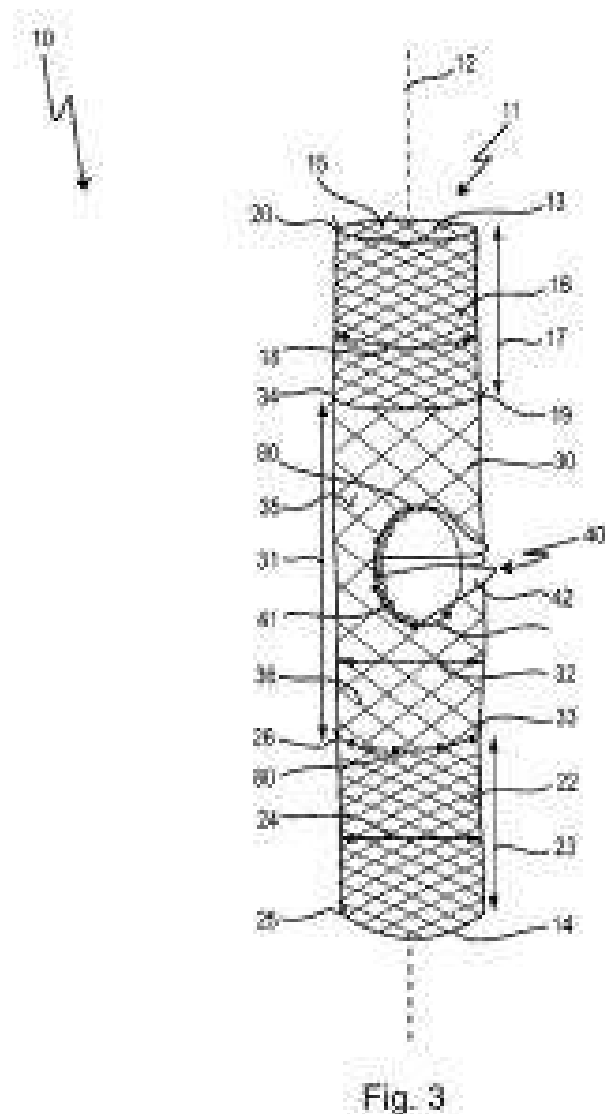
CA - A61F2/2442 (US)
A61F2/246 (US)
A61F2/2478 (US)
A61F2/2487 (US)
A61F2002/8483 (US)
A61F2210/0004 (EP, US)
A61F2210/0014 (EP, US)
A61F2220/0016 (EP, US)
A61F2230/0004 (EP, US)

PA - (A1 B2)
EDWARDS LIFESCIENCES CORP [US]

- TI - (A1)
DEVICE AND METHOD FOR RESHAPING **TRICUSPID VALVE ANNULUS**
- (B2)
Device and method for reshaping **tricuspid valve** annulus
- AB - (A1 B2)
A device for reshaping the **tricuspid valve** comprises a **stent** that is deployed in the right ventricular outflow tract (RVOT) adjacent to the **tricuspid valve** and expanded to a size sufficient to reduce the annular diameter or size of the **tricuspid valve**, thereby improving coaptation of the leaflets and reducing regurgitation. Embodiments of the device are deliverable percutaneously.

6/48 © EPODOC / EPO

- PN - [EP2929860](#) A1 20151014
- PNFP - EP2929860 B1 20170628
- PR - EP20140163731 20140407
- AP - EP20140163731 20140407
- DT - *; Rep
- CT - || STSE (A1)
[WO2012018599](#) A1 20120209
[AD] (COOK MEDICAL TECHNOLOGIES LLC [US], et al)
[AD] 1-12
* page 7, line 11 - page 8, line 32; figure - *;
[US2007244494](#) A1 20071018
[A] (DOWNING STEPHEN W [US])
[A] 1-11
* paragraphs [0013] , [0044]; figure - *;
[EP2522306](#) A1 20121114
[A] (COOK MEDICAL TECHNOLOGIES LLC [US])
[A] 1
* figure -; claim 1 *;
[WO2007121028](#) A2 20071025
[A] (UNIV COLUMBIA [US], et al)
[A] 1
* paragraph [0048]; figure 4 *
- CCI - [A61F2/07](#) ; [A61F2/2412](#) ;
[A61F2/2418](#)
- CCA - [A61F2/2475](#) ; [A61F2220/0025](#) ;
[A61F2230/0069](#) ;
[A61F2250/0039](#)
- CI - A61B90/39 (EP, US)
- A61F2/07 (EP, US)
- A61F2/2412 (EP, US)



	- A61F2/2418 (EP, US)
CA	- A61B2090/3966 (EP, US) - A61F2/2475 (EP, US) - A61F2220/0025 (EP, US) - A61F2230/0069 (EP, US) - A61F2250/0039 (EP, US)
PA	- (A1 B1) NVT AG [CH]
TI	- (A1 B1) Device for implantation in the heart of a mammal
AB	- (A1) The present invention relates to a device for implantation into the heart of a mammal, and is intended for treating tricuspid regurgitation. The device comprises two tubular stent members separated by a stent graft member which has a functional stented valve member attached thereto allowing unidirectional blood flow from the vena cava into the right atrium.

7/48 © EPODOC / EPO

PN	- WO2014166939 A1 20141016
PR	- EP20130305461 20130409
AP	- WO2014EP57031 20140408
DT	- **
CT	- [EP] ISR (A1) US2011288632 A1 20111124 [XI] (WHITE JENNIFER K [US]) [X] 1-3,5,6,8,9,12-14 * paragraphs [0039] - [0054] - [060] - [0061] - [064] , [081] - [0085]; figures 1, 3-4, 7, 13 * [I] 4; US2009132035 A1 20090521 [XI] (ROTH ALEX T [US], et al) [X] 1-3,5-14 * paragraphs [0181] - [0182] - [0217] - [0230] - [0256] , [0262] , [0285]; figures 1A-1B, 12A-16J, 24A-24B, C27 * [I] 4; US2012310328 A1 20121206 [X] (OLSON CHRISTOPHER [US], et al) [X] 1,8,9,14 * paragraphs [0009] , [107]; figure 21 *; US2010331972 A1 20101230 [X] (PINTOR RAFAEL [US], et al) [X] 1,8,9,14

* paragraphs [0108] , [0112]; figures 5A-5E *

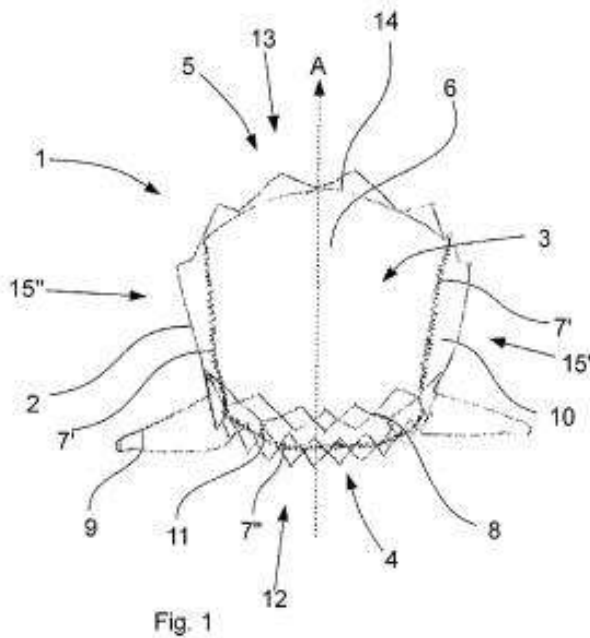
- CCI - [A61F2/2412](#) ; [A61F2/2418](#)
- CCA - [A61F2002/0081](#) ; [A61F2220/0008](#) ; [A61F2230/0006](#) ; [A61F2230/0023](#) ;
[A61F2230/0054](#) ; [A61F2230/0056](#) ; [A61F2230/0058](#) ; [A61F2250/0014](#) ;
[A61F2250/0021](#) ; [A61F2250/0026](#) ; [A61F2250/0036](#)
- CI - A61F2/0077 (US)
- A61F2/2412 (EP, US)
- A61F2/2418 (EP, US)
- A61F2/844 (US)
- A61F2/848 (US)
- CA - A61F2002/0081 (EP, US)
- A61F2/04 (US)
- A61F2/82 (US)
- A61F2220/0008 (EP, US)
- A61F2230/0006 (EP, US)
- A61F2230/0023 (EP, US)
- A61F2230/0054 (EP, US)
- A61F2230/0056 (EP, US)
- A61F2230/0058 (EP, US)
- A61F2250/0014 (EP, US)
- A61F2250/0021 (EP, US)
- A61F2250/0026 (EP, US)
- A61F2250/0036 (EP, US)
- PA - EPYGON SASU [FR]
- TI - EXPANDABLE **STENT-VALVE** AND METHOD FOR MANUFACTURING A **STENT**
- AB - An expandable **stent-valve** (1), having a **stent** component (2) and a **valve** component (3), preferably an aortic **valve** component, a mitral **valve** component or a **tricuspid valve** component, wherein the **stent** component (2) comprises an outer surface (10, 11, 23) area structured in a manner such that the surface (10, 11, 23) area has a higher coefficient of friction between the outer surface (10, 11, 23) and a duct wall than an untreated surface area of the **stent** component (2), said surface area preferably being structured with micro-incisions (12) or micro-grooves.

PN - [EP2918248](#) A1 20150916
 PR - EP20140305355 20140311
 AP - EP20140305355 20140311
 DT - *; Rep
 CT - || STSE (A1)
 [WO2008144476](#) A1 20081127
 [XI] (COOK INC [US], et al)
 [X] 1,3,6-8,12
 * paragraphs [0007] , [0008] ,
 [0035] , [0040] , [0052] , [0 53] ,
 [0070] , [0073] , [0075]; figures
 2,5 *
 [I] 4,5,14-17;
 [WO2009052340](#) A1 20090423
 [X] (COOK INC [US], et al)
 [X] 1,9-11,18
 * paragraphs [0070] , [0077] ,
 [0078] , [103]; figure 3 *;
 [WO2012040643](#) A2 20120329
 [XI] (COLIBRI HEART VALVE LLC
 [US], et al)
 [X] 1,13
 * page 11, paragraph 3 *
 * page 13, paragraph 3 *
 * figures 1A, 1F *
 [I] 2;
 [US5258023](#) A 19931102
 [X] (REGER VINCENT A [US])
 [X] 1
 * column 7, line 19 - line 31 *
 * column 7, line 62 - line 65 *
 * column 11, line 46 - line 55 *
 * column 12, line 15 - line 58 *
 * column 13, line 9 - line 20 *
 * figures 1, 10, 14 *

 CCI - [A61F2/2412](#) ; [A61F2/2418](#)
 CCA - [A61F2210/0014](#) ;
 [A61F2220/0075](#) ;
 [A61F2230/0034](#)

 CI - A61F2/2412 (EP, CN, US)
 A61F2/2418 (EP, CN, US)
 A61F2/2466 (CN)

 CA - A61F2210/0014 (EP, US)
 A61F2210/0057 (US)
 A61F2220/0075 (EP, CN, US)
 A61F2230/0008 (US)
 A61F2230/0034 (EP, CN, US)



- A61F2250/0006 (US)
- A61F2250/001 (US)
- A61F2250/0029 (US)
- A61F2250/0036 (US)
- A61F2250/0037 (US)
- A61F2250/0039 (US)
- A61F2250/0069 (US)
- A61F2250/0098 (US)
- PA - EPYGON SASU [FR]
- TI - An expandable **stent-valve** and a delivery device
- AB - An expandable, preferably a self-expandable, **stent-valve** (1), preferably a mitral, a **tricuspid**, a pulmonary or an aortic **stent valve**, comprising a **stent** component (2) and a **valve** component (3). The **stent** component (2) comprises an inflow end (4) and an outflow end (5) and a wall between the inflow (4) and the outflow end (5). The **valve** component (3) comprises at least one leaflet (6), preferably only one leaflet (6). The at least one leaflet (6) is attached or attachable to the **stent** component (2) with the periphery of the at least one leaflet (6) along a fixation line (7', 7''). The fixation line (7', 7'') of the at least one leaflet (6) is at least partially inclined with respect to a plane perpendicular to a flow direction (A) through the **stent-valve** (1).

9/48 © EPODOC / EPO

- PN - [RU2012121499](#) A 20131127
- PNFP - RU2508918 C2 20140310
- PR - RU20120121499 20120524
- AP - RU20120121499 20120524
- DT - I
- CT - || STSE (C2)
[RU2350300](#) C1 00000000 [];
[RU2007117482](#) A 00000000 [];

[US2011319988](#) A1 00000000 [];
[US2010185277](#) A1 00000000 [];
[US2010241221](#) A1 00000000 [];
[US7691144](#) B2 00000000 [];
[US2011098802](#) A1 00000000 [];
[US2008015687](#) A1 00000000 [];
[US2010070029](#) A1 00000000 [];
[WO2009045338](#) A1 00000000 []

CTNP - || STSE (C2)
 [] - Орловский П.И. и др. Искусственные клапаны сердца, ОЛМА МЕДИАГРУПП. - М., 2007с.150-158.

CCI - [A61F2/2412](#)

CCA - [A61F2/2409](#)

CI - A61F2/2412 (EP)

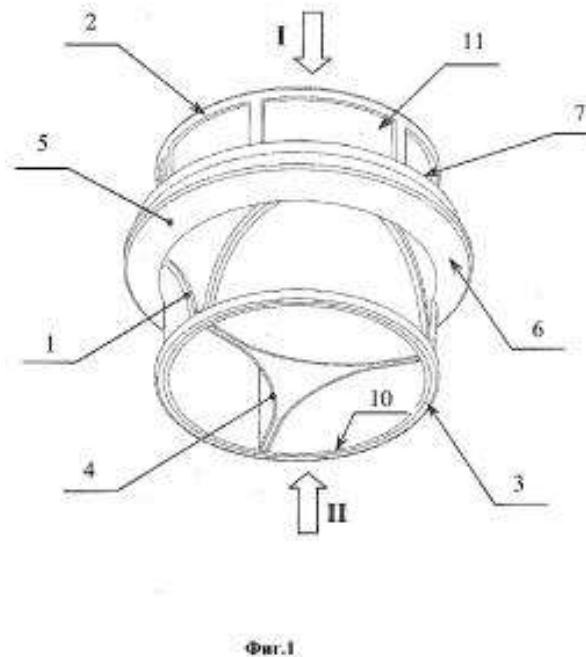
CA - A61F2/2409 (EP)

PA - (C2)
 NPP MEDINZH AOZT [RU]

TI - (C2)
 FLEXIBLEATRIOVENTRICULAR **VALVE** PROSTHESIS

AB - (C2)
 FIELD: medicine.SUBSTANCE: group of inventions refers to medical equipment and may be used in cardiac surgery to replace damaged natural mitral and **tricuspid** valves. A prosthesis comprises a **stent** 1 with a base 2, facing the forward blood flow 1, and an apex 3 facing the reverse blood flow II, flexible petals 4 made of a biological or polymeric material, forming a blocking element, a cuff 5 having a seating surface 6 contacting with the cardiac tissues, and an outer surface 7 contacting with the blood flow. The prosthesis is provided with a ring shell 8 end faces of which are connected respectively with the base 2 and the apex 3 of the **stent** 1; an inner side surface of the shell 8 comprises the petals 4 forming a gap to be filled with blood between the side surface of the shell 8 and the surfaces of the petals 4 in the closed position. An outer side surface of the shell 8 is circumferentially sealed to the cuff 5. The cuff 5 is secured approximately midway the side surface of the shell 8 in the prosthesis for the intraannular position of the implantation. For the supraannular position of the implantation, the cuff 5 is secured approximately at the apex 3 of the **stent** 1.EFFECT: inventions provide a lower risk of patient's injuries.4 cl, 4 dwg

PN - [WO2013176583](#) A2 20131128
 PNFP - WO2013176583 A3 20140227
 PR - RU20120121499 20120524
 AP - WO2013RU00423 20130523
 DT - *: Rep
 CT - |RU| ISR (A3)
 [US2011319988](#) A1 00000000
 [Y] (A VALON MEDICAL, LTD. ET AL.);
 [RU2355361](#) C2 00000000
 [Y] (ZAKRYTOE AKTSIONERNOE
 OBSHESTVO "NEOKOR");
 [US2008015687](#) A1 00000000
 [Y] (DIRECT FLOW MEDICAL, INC.)
 CCI - [A61F2/2412](#)
 CCA - [A61F2/2409](#)
 CI - A61F2/2412 (EP)
 CA - A61F2/2409 (EP)
 PA - (A2 A3)
 ZAKRYTOE AKTSIONERNOE
 OBSHESTVO NAUSCHNO PROIZV
 PREDPR MEDENG [RU]
 TI - (A2 A3)
 FLEXIBLE ATRIOVENTRICULAR
 HEART **VALVE** PROSTHESIS
 AB - (A2 A3)
 The invention relates to medical
 technology and can be used in
 cardiac surgery to replace
 damaged natural mitral
 and **tricuspid** valves of a human
 heart. The proposed invention
 aims to reduce the risk of damage
 to the ventricular myocardium
 during implantation of a
 heart **valve** prosthesis, to reduce
 the risk of harm to a patient
 during the reimplantation of a
 biological prosthesis, and to
 extend the operating life of a
 heart **valve** prosthesis. The
 reduction in the risk of harm to a
 patient is achieved by decreasing
 the dimensions of the
 interposition of a prosthesis in a
 ventricle. The heart **valve**
 prosthesis contains a **stent** (1)
 made of metal and having a base



(2) facing the forward blood flow (I), a top (3) facing the reverse blood flow (II), a blocking element in the form of flexible leaflets (4) made of xenopericardium, a cuff (5) having a mounting surface (6) which comes into contact with heart tissue (III), and an external surface (7) which comes into contact with the blood flow (II). The prosthesis is equipped with an annular sheath (8), the base (9) of which is hermetically connected to the base (2) of the **stent** (1), part of the lateral external surface (11) of the sheath (8) is hermetically connected along the perimeter thereof to the cuff (5), and the leaflets (4) are affixed to the lateral internal surface (10) of the sheath (8).

PN - [WO2013134214](#) A1 20130912

PR - US201261606599P 20120305

AP - WO2013US29034 20130305

DT - *; Rep

CT - |US| ISR (A1)
[US2001003796](#) A1 20010614
[A] (YANG DACHUAN [US], et al);
[US2003014104](#) A1 20030116
[Y] (CRIBIER ALAIN [FR]);
[US2011094519](#) A1 20110428
[Y] (GOPAL VIDYA [US], et al);
[WO2011057087](#) A1 20110512
[X] (TRUSTEES UNIVERSITY OF PENNSYLVANIA [US], et al)

CCI - [A61F2/2418](#) ; [A61L31/10](#) ;
[A61L31/145](#)

CCA - [A61F2/2409](#) ; [A61F2210/0061](#) ;
[A61F2230/0013](#) ;
[A61F2250/0069](#) ; [A61L2420/06](#)

CLC - [A61L31/10](#), [C08L33/04](#), INV
- [A61L31/10](#), [C08L71/02](#), INV

CI - A61F2/2418 (EP, US)
- A61L31/10 (EP, US)
- A61L31/145 (EP, US)

CA - A61F2/2409 (EP, US)
- A61F2210/0061 (EP, US)
- A61F2230/0013 (EP, US)
- A61F2250/0069 (EP, US)
- A61L2420/06 (EP, US)

CL - A61L31/10, C08L33/04, INV (EP, US)
- A61L31/10, C08L71/02, INV (EP, US)

PA - UNIVPENNSYLVANIA[US];
PHILADELPHIA CHILDREN HOSPITAL [US]

TI - SUPERABSORBENT COATED STENTS
FOR VASCULAR REDUCTION AND
FOR ANCHORING **VALVE**
REPLACEMENTS

AB - A **stent**-based vascular reducer
platform adapted for
percutaneous delivery to and
anchoring in a pulmonary
or **tricuspid valve** annulus and a

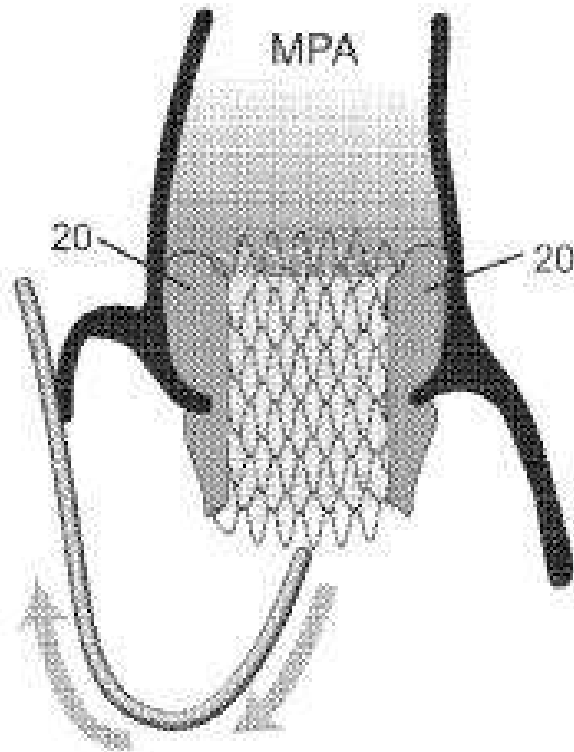


Figure 4

valved-**stent** prosthetic device adapted to be percutaneously delivered to the pulmonary or **tricuspid valve** annulus for mounting in the vascular reducer platform. The vascular reducer platform includes an at least partially self- expanding **stent** and a cuff made of an absorbent material disposed at least partially circumferentially around the outer and inner surfaces of the **stent**. Upon placement at an implantation site such as the pulmonary or **tricuspid valve** annulus, the absorbent material expands by absorption of a fluid to substantially adhere and seal the **stent** at the implantation site. Preferably, the cuff expansion is delayed for a time sufficient to permit positioning of the **stent** at the implantation site. The **stent** and cuff may also be used as a space-reducer for venous insufficiency, aortic aneurysms, and hydroureter treatment.

- 12/48 © EPODOC / EPO
- PN - [GB2513195](#) A 20141022
- PR - GB20130007144 20130419
- AP - GB20130007144 20130419
- DT - *; Rep
- CT - || STSE (A)
[WO2009042196](#) A2 20090402 [] (ST JUDE MEDICAL [US], et al);
[US2009157175](#) A1 20090618 [] (BENICHOU NETANEL [IL]);
[US2004186563](#) A1 20040923 [] (LOBBI MARIO M [US])
- CTNP - || STSE (A)
[] - <http://straitaccesstechnologies.com/the-solution>
- CCI - [A61F2/2418](#)
- CCA - [A61F2/2433](#) ; [A61F2230/0095](#) ;

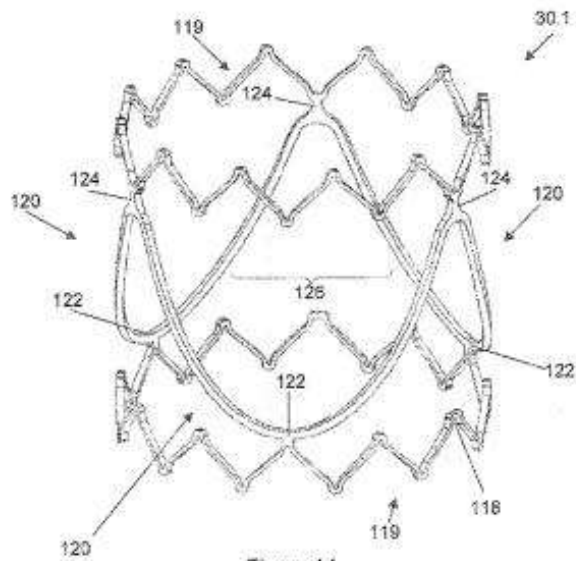


Figure 14

[A61F2250/006](#)

- CI - A61F2/2418 (EP, GB)
- CA - A61F2/2433 (EP, GB)
 - A61F2230/0095 (EP)
 - A61F2250/006 (EP)
- PA - STRAIT ACCESS TECH HOLDINGS
PTY LTD [ZA]
- TI - A **stent** for a prosthetic heart **valve**
- AB - A **stent** 30.1 for a prosthetic heart **valve** is provided. The **stent** supports a **tricuspid valve** having three leaflets (see figure 2) and is introduced into a patient's body through minimally invasive procedure. The **stent** 30.1 comprises a ring-like body defining in its height three arch-shaped elements 120, wherein each arch-shaped element 120 has an arc 122 and a pair of haunches 126 forming three commissural posts. The arch-shape of the elements 120 provides an attachment zone for the **valve** leaflets and is defined by a plane, cylinder or cone intersecting a cylinder or cone at an angle. Reinforcing members 119 are provided on the **stent** which act to strengthen the **stent** and support the **valve** leaflets during opening and closing and to secure the **stent** within a **valve** annulus. The reinforcing members span between adjacent arch elements and/or connect between adjacent commissural posts.

13/48 © EPODOC / EPO

- PN - [US2013131793](#) A1 20130523
- PNFP - US8894702 B2 20141125
- PR - US201313747384 20130122; US20090569856 20090929; US20080136716P 20080929
- AP - US201313747384 20130122
- DT - **
- CT - || R141 (A1)
[US2005137695](#) A1 20050623 [] (SALAHIEH AMR [US], et al);
[US6790229](#) B1 20040914 [] (BERREKLOUW ERIC [NL]);

[US2001047200](#) A1 20011129 [] (WHITE GEOFFREY HAMILTON [AU], et al);
[US2008071369](#) A1 20080320 [] (TUVAL YOSI [IL], et al);
[US2009149946](#) A1 20090611 [] (DIXON CHRISTOPHER G [US]);
[US2012271398](#) A1 20121025 [] (ESSINGER JACQUES [CH], et al);
[US2012059454](#) A1 20120308 [] (MILLWEE BILLIE J [US], et al);
[US2010256723](#) A1 20101007 [] (MURRAY ROBERT [US]);
[US865203](#) A 19070903 [] (MUSTONEN HENRY [US], et al);
[US7442204](#) B2 20081028 [] (SCHWAMMENTHAL EHUD [IL], et al);
[US2010094411](#) A1 20100415 [] (TUVAL YOSI [IL], et al);
[US2014100653](#) A1 20140410 [] (SAVAGE PADRAIG [IE], et al);
[US8647381](#) B2 20140211 [] (ESSINGER JACQUES [CH], et al);
[US2013144378](#) A1 20130606 [] (QUADRI ARSHAD [US], et al);
[US2010114305](#) A1 20100506 [] (KANG WEI-CHANG [TW], et al);
[US8449599](#) B2 20130528 [] (CHAU MARK [US], et al);
[US8470023](#) B2 20130625 [] (EIDENSCHINK TRACEE E J [US], et al);
[US2010274345](#) A1 20101028 [] (RUST MATTHEW [US]);
[US2007067016](#) A1 20070322 [] (JUNG JOHANNES [DE]);
[US2002022853](#) A1 20020221 [] (SWANSON WILLIAM J [US], et al);
[US2013150956](#) A1 20130613 [] (YOHANAN ZIV [IL], et al);
[US7993394](#) B2 20110809 [] (HARITON ILIA [IL], et al);
[US8236045](#) B2 20120807 [] (BENICHO NETANEL [IL], et al);
[US2012123529](#) A1 20120517 [] (LEVI TAMIR [IL], et al);
[US2014222142](#) A1 20140807 [] (KOVALSKY IGOR [US], et al);
[US2005234546](#) A1 20051020 [] (NUGENT ALAN [US], et al);
[US2014277422](#) A1 20140918 [] (RATZ J BRENT [US], et al);
[US2014277427](#) A1 20140918 [] (RATZ J BRENT [US], et al)

- || STSE (B2)

[US865203](#) A 19070903 [] (MUSTONEN HENRY [US], et al);
[US6790229](#) B1 20040914 [] (BERREKLOUW ERIC [NL]);
[US7442204](#) B2 20081028 [] (SCHWAMMENTHAL EHUD [IL], et al);
[US7993394](#) B2 20110809 [] (HARITON ILIA [IL], et al);
[US8236045](#) B2 20120807 [] (BENICHO NETANEL [IL], et al);
[US8449599](#) B2 20130528 [] (CHAU MARK [US], et al);
[US8470023](#) B2 20130625 [] (EIDENSCHINK TRACEE E J [US], et al);
[US8647381](#) B2 20140211 [] (ESSINGER JACQUES [CH], et al);
[US2001047200](#) A1 20011129 [] (WHITE GEOFFREY HAMILTON [AU], et al);
[US2002022853](#) A1 20020221 [] (SWANSON WILLIAM J [US], et al);
[US2005137695](#) A1 20050623 [] (SALAHIEH AMR [US], et al);
[US2005234546](#) A1 20051020 [] (NUGENT ALAN [US], et al);
[US2007067016](#) A1 20070322 [] (JUNG JOHANNES [DE]);
[US2008071369](#) A1 20080320 [] (TUVAL YOSI [IL], et al);
[US2009149946](#) A1 20090611 [] (DIXON CHRISTOPHER G [US]);
[US2010094411](#) A1 20100415 [] (TUVAL YOSI [IL], et al);
[US2010114305](#) A1 20100506 [] (KANG WEI-CHANG [TW], et al);
[US2010256723](#) A1 20101007 [] (MURRAY ROBERT [US]);
[US2010274345](#) A1 20101028 [] (RUST MATTHEW [US]);
[US2012059454](#) A1 20120308 [] (MILLWEE BILLIE J [US], et al);
[US2012123529](#) A1 20120517 [] (LEVI TAMIR [IL], et al);
[US2012271398](#) A1 20121025 [] (ESSINGER JACQUES [CH], et al);

	US2013144378 A1 20130606 [] (QUADRI ARSHAD [US], et al); US2013150956 A1 20130613 [] (YOHANAN ZIV [IL], et al); US2014100653 A1 20140410 [] (SAVAGE PADRAIG [IE], et al); US2014222142 A1 20140807 [] (KOVALSKY IGOR [US], et al); US2014277422 A1 20140918 [] (RATZ J BRENT [US], et al); US2014277427 A1 20140918 [] (RATZ J BRENT [US], et al)
CCI	- A61F2/2412 ; A61F2/2415 ; A61F2/2418
CCA	- A61F2210/0076 ; A61F2220/0016 ; A61F2220/005 ; A61F2220/0075 ; A61F2230/0013 ; A61F2230/0054 ; Y10T29/49426
CI	- A61F2/2403 (US) - A61F2/2409 (US) - A61F2/2412 (EP, US) - A61F2/2415 (EP, US) - A61F2/2418 (EP, US)
CA	- A61F2/848 (US) - A61F2002/8483 (US) - A61F2002/8486 (US) - A61F2210/0076 (EP, US) - A61F2220/0016 (EP, US) - A61F2220/005 (EP, US) - A61F2220/0075 (EP, US) - A61F2230/0013 (EP, US) - A61F2230/0054 (EP, US) - Y10T29/49426 (EP, US)
PA	- (A1) CARDIAQ VALVE TECHNOLOGIES INC [US]; CARDIAQ VALVE TECHNOLOGIES INC [US] - (B2) CARDIAQ VALVE TECHNOLOGIES INC [US]
TI	- (A1) REPLACEMENT HEART VALVE AND METHOD - (B2) Replacement heart valve and method
AB	- (A1) A heart valve includes a valve body made of a flexible material such as pericardium. The valve body is made of two layers of material, an outer layer, and an inner layer that defines a plurality of leaflets. The leaflets of the inner layer are attached to the outer layer. In some embodiments the valve body is made by cutting a single piece of flat source tissue, folding the cut tissue and forming it into a tubular pattern having the inner and outer layers. The multi-layer valve body can be mounted on a stent for delivery within a patient's heart. - (B2) A method of treating a native heart valve includes delivering a replacement valve to the native heart valve . The native heart valve can be any one of aortic, pulmonary, mitral and tricuspid valves. The replacement valve comprising an expandable frame and a valve body attached to the expandable frame. The method can also include expanding the frame at a patient's valve annulus, wherein expansion of the frame causes respective

ends of both proximal anchors and distal anchors connected to the frame to draw closer together to grasp native tissue between the respective ends of the proximal anchors and distal anchors.

14/48 © EPODOC / EPO

PN - [EP2789312](#) A1 20141015

PR - EP20130305461 20130409

AP - EP20130305461 20130409

DT - *; Rep

CT - || STSE (A1)

[US2011288632](#) A1 20111124

[XI] (WHITE JENNIFER K [US])

[X] 1-3,5,6,8,9,12-14

* paragraphs [0039] - [0054] - [060] - [0061] - [064] , [081] - [0085]; figures 1, 3-4, 7, 13 *
[I] 4;

[US2009132035](#) A1 20090521

[XI] (ROTH ALEX T [US], et al)

[X] 1-3,5-14

* paragraphs [0181] - [0182] - [0217] - [0230] - [0256] , [0262] , [0285]; figures 1A-1B, 12A-16J, 24A-24B, C27 *
[I] 4;

[US2012310328](#) A1 20121206

[X] (OLSON CHRISTOPHER [US], et al)

[X] 1,8,9,14

* paragraphs [0009] , [107];
figure 21 *;

[US2010331972](#) A1 20101230

[X] (PINTOR RAFAEL [US], et al)

[X] 1,8,9,14

* paragraphs [0108] , [0112];
figures 5A-5E *

CCI - [A61F2/2412](#) ; [A61F2/2418](#)

CCA - [A61F2002/0081](#) ;

[A61F2220/0008](#) ;

[A61F2230/0006](#) ;

[A61F2230/0023](#) ;

[A61F2230/0054](#) ;

[A61F2230/0056](#) ;

[A61F2230/0058](#) ;

[A61F2250/0014](#) ;

[A61F2250/0021](#) ;

[A61F2250/0026](#) ;

[A61F2250/0036](#)

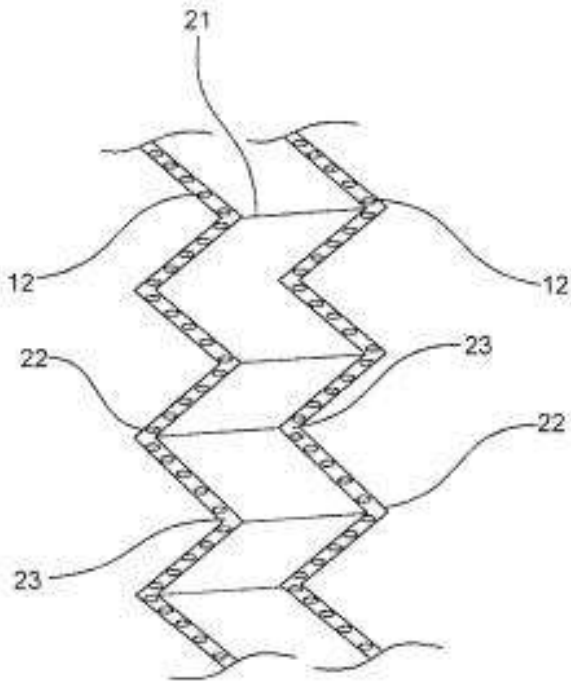


Fig. 5

- CI
 - A61F2/0077 (US)
 - A61F2/2412 (EP, US)
 - A61F2/2418 (EP, US)
 - A61F2/844 (US)
 - A61F2/848 (US)
- CA
 - A61F2002/0081 (EP, US)
 - A61F2/04 (US)
 - A61F2/82 (US)
 - A61F2220/0008 (EP, US)
 - A61F2230/0006 (EP, US)
 - A61F2230/0023 (EP, US)
 - A61F2230/0054 (EP, US)
 - A61F2230/0056 (EP, US)
 - A61F2230/0058 (EP, US)
 - A61F2250/0014 (EP, US)
 - A61F2250/0021 (EP, US)
 - A61F2250/0026 (EP, US)
 - A61F2250/0036 (EP, US)
- PA
 - EPYGON SASU [FR]
- TI
 - Expandable **stent-valve** and method for manufacturing a **stent**
- AB
 - An expandable **stent-valve** (1), having a **stent** component (2) and a **valve** component (3), preferably an aortic **valve** component, a mitral **valve** component or a **tricuspid valve** component, wherein the **stent** component (2) comprises an outer surface (10, 11, 23) area structured in a manner such that the surface (10, 11, 23) area has a higher coefficient of friction between the outer surface (10, 11, 23) and a duct wall than an untreated surface area of the **stent** component (2), said surface area preferably being structured with micro-incisions (12) or micro-grooves.

PN - [US2013046380](#) A1 20130221

PR - US201113574088
20110120; US20100692061
20100122; WO2011IL00064
20110120

AP - US201113574088 20110120

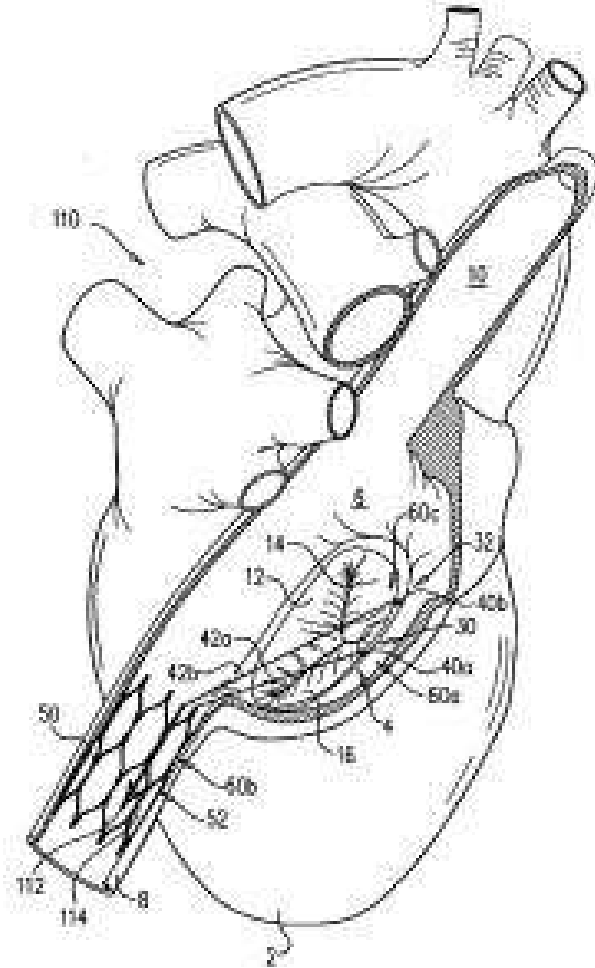
DT - **

CT - || R141 (A1)
[US2006241745](#) A1 20061026 [
] (SOLEM JAN O [CH]);
[US2007265700](#) A1 20071115 [
] (ELIASSEN KENNETH A [US], et al);
[US2005177228](#) A1 20050811 [
] (SOLEM JAN O [CH], et al);
[US2005080483](#) A1 20050414 [
] (SOLEM JAN OTTO [CH], et al);
[US2008125861](#) A1 20080529 [
] (WEBLER WILLIAM E [US], et al);
[US2007288086](#) A1 20071213 [
] (KALMANN MENNO [NL], et al);
[WO2004069055](#) A2 20040819 [
] (EV3 SUNNYVALE INC [US], et al);
[US2005075713](#) A1 20050407 [
] (BIANCUCCI BRIAN [US], et al)

CCI - [A61B17/0401](#) ; [A61B17/064](#) ;
[A61B17/068](#) ; [A61F2/2442](#) ;
[A61F2/2454](#) ; [A61F2/2457](#) ;
[A61F2/2487](#) ; [A61F2/915](#)

CCA - [A61B2017/00243](#) ;
[A61B2017/0409](#) ;
[A61B2017/0412](#) ;
[A61B2017/0414](#) ;
[A61B2017/0443](#) ;
[A61B2017/0464](#) ;
[A61B2017/048](#) ;
[A61B2017/0488](#) ;
[A61B2017/0496](#) ;
[A61B2017/0649](#) ; [A61F2/246](#) ;
[A61F2/90](#) ; [A61F2220/0008](#) ;
[A61F2220/0016](#) ;
[A61F2230/0013](#) ;
[A61F2230/0054](#)

CI - A61B17/0401 (EP, US)
- A61B17/064 (EP, US)
- A61B17/068 (EP, US)
- A61F2/2442 (EP, US)
- A61F2/2454 (EP, US)



CA	- A61F2/2457 (EP, US)
	- A61F2/2487 (EP, US)
	- A61F2/848 (US)
	- A61F2/915 (EP, US)
	- A61B2017/00243 (EP, US)
	- A61B2017/00407 (US)
	- A61B2017/0409 (EP, US)
	- A61B2017/0412 (EP, US)
	- A61B2017/0414 (EP, US)
	- A61B2017/0437 (US)
	- A61B2017/0441 (US)
	- A61B2017/0443 (EP, US)
	- A61B2017/0464 (EP, US)
	- A61B2017/048 (EP, US)
	- A61B2017/0488 (EP, US)
	- A61B2017/0496 (EP, US)
	- A61B2017/0649 (EP, US)
	- A61F2/246 (EP, US)
	- A61F2002/8483 (US)
	- A61F2002/8486 (US)
	- A61F2/90 (EP, US)
	- A61F2220/0008 (EP, US)
	- A61F2220/0016 (EP, US)
	- A61F2230/0013 (EP, US)
	- A61F2230/0054 (EP, US)
PA	- 4TECH INC [US]; MAISANO FRANCESCO [IT]; VANERMEN HUGO [BE]; PEREVALOV VALERY [IL]; HOF REPHAEL [IL]; ALFIERI OTTAVIO [IT]; TOBIS IDAN [IL]
TI	- TRICUSPIDVALVE REPAIR USING TENSION
AB	- Apparatus is provided including a stent , which is configured to assume compressed and expanded states. The stent includes one or more elongated members, and two or more rings, which are coupled together by the one or more elongated members and by no other elements of the stent . The rings define respective planes that are generally perpendicular to the elongated members when the stent is in its expanded state.

A longitudinal member, having a proximal end and a distal end, is coupled to the **stent** at the proximal end of the longitudinal member. A tissue anchor is coupled to the distal end of the longitudinal member. Other applications are also described.

16/48 © EPODOC / EPO

PN - [CN102670333](#) A 20120919

PR - CN201210187138 20120608

AP - CN201210187138 20120608

DT - I

CT - || STSE (A)

[CN201664353U](#) U 00000000 [Y]

[Y] 9-10

* 说明书第[0016]-[0017]段, 说明书附图1 *;

[CN102014791](#) A 00000000 [YX]

[Y] 3,4,5,7-10

* 说明书第[0112]-[0125]段, 说明书附图2a-5b *

[X] 1-2,3,4,6;

[US6001126](#) A 00000000 [A]

[A] 1-10

* 全文 *;

[CN1799520](#) A 00000000 [Y]

[Y] 4,5,8,

* 说明书摘要, 说明书第4页倒数第10-8、5-3行, 说明书附图1 *;

[CN1696329](#) A 00000000 [Y]

[Y] 7

* 说明书第1页倒数第2行-第2页第13行 *;

[CN201481598U](#) U 00000000 [Y]

[Y] 3

* 说明书第[0015]-[0018]段, 说明书附图2 *

PA - UNIV TONGJI

TI - Aortic **valve stent** with coronary artery and conveyor of same

AB - The utility model belongs to the technical field of medical instruments, and relates to an aortic **valve stent** with a coronary artery and a conveyor of the aortic **valve stent**. The aortic **valve stent** comprises a tubular **stent** body (2) and a **tricuspid valve** (4), and further comprises coronary artery stents (9); and the tubular stand body (2) comprises a **stent** proximal end (7) and a **stent** distal end (8), wherein the coronary artery stents (9) are arranged at the left and the right ends of the **stent** proximal end (7), and the **stent** proximal end (7) is lined with the **tricuspid valve** (4). Compared with other interventional valves, the aortic **valve stent** has good biological compatibility, is fixed firmly, ensures that the blood in the coronary artery flows smoothly, is designed with an in vivo positioning device, a perivalvular leakage prevention device and a recovery device (a recovery line), can improve or overcome the problems of biological compatibility, in

vivo positioning, influence on the blood flowing of the coronary artery, unrecovery, perivalvular leakage and the like.

17/48 © EPODOC / EPO

- PN - [CN202313807U](#) U 20120711
- PR - CN201120397678U 20111014
- AP - CN201120397678U 20111014
- DT - I
- PA - YU ZOU
- TI - Artificial- **valve bicuspid-valve** membrane-covered **stent** with asymmetrical atrioventricular fixing structure
- AB - The utility model discloses an artificial-**valve bicuspid-valve** membrane-covered **stent** with an asymmetrical atrioventricular fixing structure. The artificial-**valve bicuspid-valve** membrane-covered **stent** comprises a **stent** with an asymmetrical atrioventricular fixing system, a **valve** in the **stent** and an ultrathin polytetrafluoroethylene membrane covering outside the **stent**. The **stent** is made of nickel-titanium memory alloy capable of spontaneously dilating and comprises a left atrium fixing structure, a middle waist part and a left ventricle fixing structure. Fixing systems for the atriums and the ventricles have the same crown-like shape and are different in size, atrium faces are larger in diameter, and ventricle faces are smaller. The waist part is used for bearing an artificial **valve** and is determined in the diameter according to the specific dimension of a mitral annulus. The **valve** is formed by sewing commercial products of swine or bovine pericardial valves to form three semilunar sinuses. The ultrathin polytetrafluoroethylene membrane covers outside the **stent**.

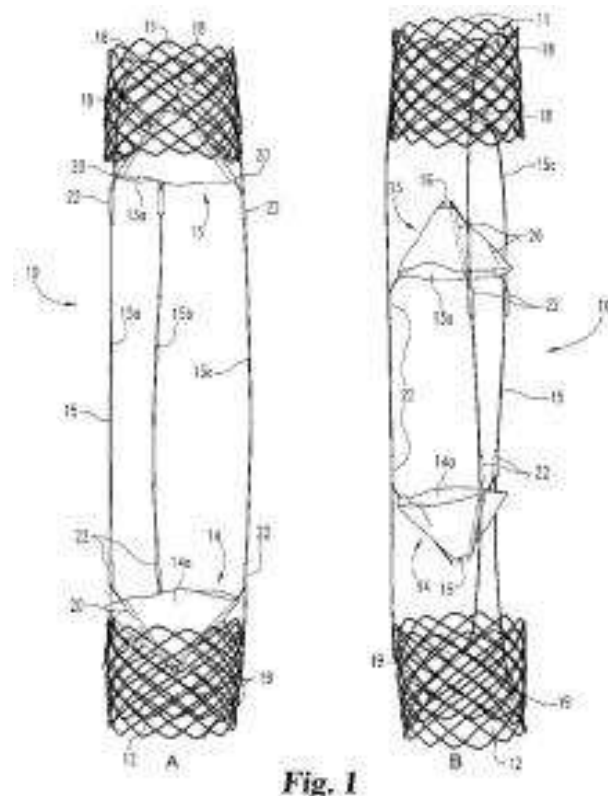
18/48 © EPODOC / EPO

- PN - [US2012136430](#) A1 20120531
- PNFP - US8870944 B2 20141028
- PR - US201213357178 20120124; WO2011US45255 20110725; US20100370362P 20100803; US20100385609P 20100923
- AP - US201213357178 20120124
- DT - **
- CT - || R141 (A1)
[US2003014104](#) A1 20030116 [] (CRIBIER ALAIN [FR]);
[US7070616](#) B2 20060704 [] (MAJERCAK DAVID CHRISTOPHER [US], et al)
- || STSE (B2)
[US7070616](#) B2 20060704 [] (MAJERCAK DAVID CHRISTOPHER [US], et al);
[US2003014104](#) A1 20030116 [] (CRIBIER ALAIN [FR])
- CCI - [A61F2/2418](#)
- CCA - [A61F2/2412](#) ; [A61F2/2475](#) ; [A61F2002/825](#) ; [A61F2002/826](#) ; [A61F2220/0016](#) ;
[A61F2220/005](#) ; [A61F2220/0058](#) ; [A61F2250/0007](#) ; [A61F2250/0008](#)
- CI - A61F2/2418 (EP, US)
- CA - A61F2/2412 (EP, US)
- A61F2/2475 (EP, US)
- A61F2002/825 (EP, US)

	- A61F2002/826 (EP, US) - A61F2220/0016 (EP) - A61F2220/005 (EP) - A61F2220/0058 (EP) - A61F2250/0007 (EP, US) - A61F2250/0008 (EP, US)
PA	- (A1) - SOCHMAN JAN [CZ]; PEREGRIN JAN [CZ] - (B2) - SOCHMAN JAN [CZ]; PEREGRIN JAN [CZ]; COOK MEDICAL TECHNOLOGIES LLC [US]
TI	- (A1) - TWO VALVE CAVAL STENT FOR FUNCTIONAL REPLACEMENT OF INCOMPETENT TRICUSPID VALVE - (B2) - Two valve caval stent for functional replacement of incompetent tricuspid valve
AB	- (A1 B2) - A two valve caval stent for functional replacement of an incompetent tricuspid valve. The device is designed for minimally invasive percutaneous transcatheter placement and includes two stents connected by a bridge sized to span the right atrium, and two valves anchored by the stents in the superior and inferior vena cavae. Each of the valves optionally has a conical shape divided by supporting struts into three cusps that simulate the action of a native tricuspid valve.

19/48 © EPODOC / EPO

PN	- EP2600798 A1 20130612
PNFP	- EP2600798 B1 20151028
PR	- US20100370362P 20100803; US20100385609P 20100923; WO2011US45255 20110725
AP	- EP20110738378 20110725
DT	- I
CCI	- A61F2/2418
CCA	- A61F2/2412 ; A61F2/2475 ; A61F2002/825 ; A61F2002/826 ; A61F2220/0016 ; A61F2220/005 ; A61F2220/0058 ; A61F2250/0007 ; A61F2250/0008
CI	- A61F2/2418 (EP, US)
CA	- A61F2/2412 (EP, US) - A61F2/2475 (EP, US) - A61F2002/825 (EP, US) - A61F2002/826 (EP, US)



- A61F2220/0016 (EP)
 - A61F2220/005 (EP)
 - A61F2220/0058 (EP)
 - A61F2250/0007 (EP, US)
 - A61F2250/0008 (EP, US)

PA - (A1 B1)
 COOK MEDICAL TECHNOLOGIES
 LLC [US]

TI - (A1 B1)
 TWO **VALVE** CAVAL **STENT** FOR
 FUNCTIONAL REPLACEMENT OF
 INCOMPETENT **TRICUSPID** VALVE

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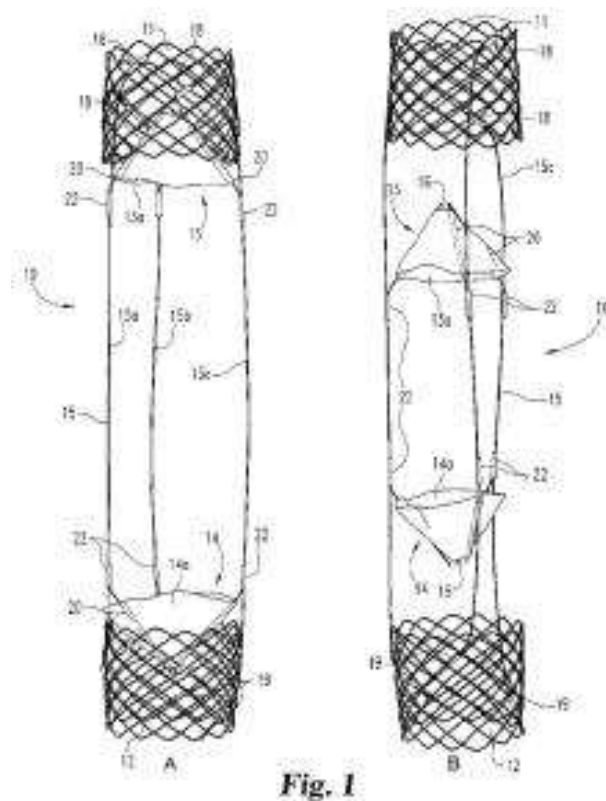
PN - [WO2012018599](#) A1 20120209

PR - US20100370362P
 20100803; US20100385609P
 20100923

AP - WO2011US45255 20110725

DT - *; Rep

CT - |EP| ISR (A1)
[US2004210306](#) A1 20041021
 [IY] (QUIJANO RODOLFO C [US], et al)
 [I] 1-6,13-15
 * paragraph [0038]; figures 5,6 *
 * paragraph [0047] -
 paragraph [0049] *
 [Y] 7-12;
[WO2010079426](#) A1 20100715
 [Y] (VALVE MEDICAL LTD [IL], et al)
 [Y] 7,8
 * paragraph [0034]; figure 5 *;
[WO2009092782](#) A1 20090730
 [Y] (JENAVALVETECHNOLOGY INC [US], et al)
 [Y] 9-12
 * page 20, paragraph 3 -
 paragraph 4; figure - *
 * page 10, paragraph 3 -
 paragraph 4 *;
[EP1958597](#) A1 20080820
 [A] (UNIV ZUERICH [CH])
 [A] 1,15
 * column 17, line 15 - line 54;
 figure - *;
[US6319278](#) B1 20011120



[A] (QUINN STEPHEN F [US])
 [A] 1,15
 * column 3, line 39 - line 53;
 figures 6,7 *

- CCI - [A61F2/2418](#)
- CCA - [A61F2/2412](#) ; [A61F2/2475](#) ;
[A61F2002/825](#) ; [A61F2002/826](#) ;
[A61F2220/0016](#) ;
[A61F2220/005](#) ;
[A61F2220/0058](#) ;
[A61F2250/0007](#) ;
[A61F2250/0008](#)
- CI - A61F2/2418 (EP, US)
- CA - A61F2/2412 (EP, US)
 - A61F2/2475 (EP, US)
 - A61F2002/825 (EP, US)
 - A61F2002/826 (EP, US)
 - A61F2220/0016 (EP)
 - A61F2220/005 (EP)
 - A61F2220/0058 (EP)
 - A61F2250/0007 (EP, US)
 - A61F2250/0008 (EP, US)
- PA - COOK MEDICAL TECHNOLOGIES
 LLC [US]; PEREGRIN JAN [CZ];
 SOCHMAN JAN [CZ]
- TI - TWO **VALVE** CAVAL **STENT** FOR
 FUNCTIONAL REPLACEMENT OF
 INCOMPETENT **TRICUSPID VALVE**
- AB - A two **valve** caval **stent** for
 functional replacement of an
 incompetent **tricuspid valve**. The
 device is designed for minimally
 invasive percutaneous
 transcatheter placement and
 includes two stents connected by
 a bridge sized to span the right
 atrium, and two valves anchored
 by the stents in the superior and
 inferior vena cavae. Each of the
 valves optionally has a conical
 shape divided by supporting
 struts into three cusps that
 simulate the action of a
 native **tricuspid valve**.

PNFP - EP2399549 B1 20140319

PR - EP20020804403 20021011; US20010975750 20011011

AP - EP20110005557 20021011

DT - **

CT - || STSE (A1)
[WO0149213](#) A2 20010712 [XI] (ADVANCED BIO PROSTHETIC SURFAC [US], et al)
[X] 1,2,4,6,7,11,12
* the whole document *
[I] 3,5,9,10;
[WO0176510](#) A2 20011018 [XPI] (EDWARDS LIFESCIENCES CORP [US])
[XP] 1-6,11-13
* the whole document *
[I] 7,9,10;
[US5840081](#) A 19981124 [A] (ANDERSEN HENNING RUD [DK], et al)
[A] 1-15
* the whole document *;
[WO0047139](#) A1 20000817 [A] (HEARTPORT INC [US])
[A] 1-15
* figures 5-10,34-38 *;
[FR2815844](#) A1 20020503 [AP] (SEGUIN JACQUES [FR])
[AP] 1
* page 10, line 34 - page 11, line 12 *
* figure 9 *

CCI - [A61F2/2412](#) ; [A61F2/2415](#) ; [A61F2/2418](#) ; [A61F2/2427](#) ; [A61F2/2433](#) ; [A61F2/9522](#) ;
[A61F2/9524](#)

CCA - [A61F2/82](#) ; [A61F2210/0014](#) ; [A61F2220/0008](#) ; [A61F2220/0016](#) ; [A61F2220/0075](#) ;
[A61F2220/0083](#) ; [A61F2230/0054](#) ; [A61F2230/0069](#) ; [A61F2250/001](#) ; [A61F2250/0098](#)

CI - A61F2/2412 (EP, US)
- A61F2/2415 (EP)
- A61F2/2418 (EP, US)
- A61F2/2427 (EP, US)
- A61F2/243 (US)
- A61F2/2433 (EP)
- A61F2/2436 (US)
- A61F2/9522 (EP)
- A61F2/9524 (EP)

CA - A61F2/2403 (US)
- A61F2/2409 (US)
- A61F2/2415 (US)
- A61F2/2421 (US)
- A61F2/2433 (US)
- A61F2/2463 (US)
- A61F2/82 (EP, US)
- A61F2/9522 (US)
- A61F2210/0014 (EP, US)
- A61F2220/0008 (EP, US)

	- A61F2220/0016 (EP, US)
	- A61F2220/0075 (EP, US)
	- A61F2220/0083 (EP, US)
	- A61F2230/0054 (EP, US)
	- A61F2230/0069 (EP, US)
	- A61F2250/001 (EP, US)
	- A61F2250/0098 (EP, US)
PA	- (A1 B1) EDWARDS LIFESCIENCES PVT INC [US]
TI	- (A1 B1) Implantable prosthetic device
AB	- (A1) The present invention relates to a percutaneously implantable prosthetic device suitable for replacing a deficient heart valve , the prosthetic device comprising: a collapsible and expandable tubular support stent (380), the support stent adapted to be initially crimped to a delivery configuration for catheterization through a body duct to a target location in the human heart, the support stent adapted to be radially expanded from the delivery configuration to a deployed configuration, the support stent comprising a net-like frame capable of being crimped to a narrow state and then deployed to a wider state; and a valve assembly having a tubular shape, the valve assembly comprising a tubular main conduit body having an inlet end and an outlet end, wherein the valve assembly comprises leaflets (371) at the outlet end forming a tricuspid leaflet assembly; wherein the valve assembly is positioned within the support stent with the inlet end of the main conduit body secured to a bottom portion of the support stent , and the main conduit body at or adjacent the leaflets is stitched to the support stent along stitching lines to thereby provide the valve assembly with a three-dimensional tricuspid valve form when the support stent is in the deployed configuration, whereby when flow passes through the valve assembly from the inlet end to the outlet end the leaflets are in an open position allowing the flow to exit the outlet end, and when the flow is reversed the leaflets collapse so as to block the outlet end, and wherein the valve assembly is attached to the support stent with the net-like frame providing an open wall structure (378) radially adjacent the leaflets suitable for permitting blood flow therethrough.

22/48 © EPODOC / EPO

PN	- CA2705591 A1 20090522
PR	- US20070939452 20071113; WO2008US83426 20081113
AP	- CA20082705591 20081113
DT	- I
CCI	- A61F2/2412 ; A61F2/2415 ; A61F2/2475
CCA	- A61F2/2418
CI	- A61F2/06 (KR) - A61F2/2409 (KR) - A61F2/2412 (EP, US) - A61F2/2415 (EP, KR, US) - A61F2/2418 (KR) - A61F2/2475 (EP, KR, US)

- A61L27/14 (KR)
- B29C53/04 (KR)
- CA - A61F2/2418 (EP, US)
- PA - QUINTESENZA JAMES [US]
- TI - **BICUSPID**VASCULAR **VALVE** AND METHODS FOR MAKING AND IMPLANTING SAME
- AB - A vascular **valve** constructed from a biocompatible material that is designed to be surgically implanted in a patient's blood vessel, such as the right ventricular outflow tract. At the first end of the **valve** there is an orifice defined by at least two opposing free edges, and which can occupy either a first, closed position or a second, open position. At the second end of the **valve** there are at least two flexible members attachable to an anterior and a posterior wall of a patient's blood vessel. A length of the orifice between said at least two opposing free edges when the orifice is generally closed is equal to about 1.5 to 2 times the diameter of a patient's blood vessel. Optionally, the two flexible members to a **stent** or tubular graft. The valved **stent** or tubular graft can be inserted into a patient's blood vessel or heart.

23/48 © EPODOC / EPO

- PN - [AU2008320957](#) A1 20090522
- PNFP - AU2008320957B B2 20140313
- PR - US20070939452 20071113; WO2008US83426 20081113
- AP - AU20080320957 20081113
- DT - I
- CT - || STSE (B2)
[US5344442](#) A 19940906 [] (DEAC RADU [US]);
[US2004117004](#) A1 20040617 [] (OSBORNE THOMAS A [US], et al);
[US2006167542](#) A1 20060727 [] (QUINTESENZA JAMES [US])
- CCI - [A61F2/2412](#) ; [A61F2/2415](#) ; [A61F2/2475](#)
- CCA - [A61F2/2418](#)
- CI - A61F2/06 (KR)
A61F2/2409 (KR)
A61F2/2412 (EP, US)
A61F2/2415 (EP, KR, US)
A61F2/2418 (KR)
A61F2/2475 (EP, KR, US)
A61L27/14 (KR)
B29C53/04 (KR)
- CA - A61F2/2418 (EP, US)
- PA - (A1)
QUINTESENZA JAMES
(B2)
QUINTESENZA JAMES [US]
- TI - (A1 B2)
Bicuspid vascular **valve** and methods for making and implanting same
- AB - (B2)

A vascular **valve** constructed from a biocompatible material that is designed to be surgically implanted in a patient's blood vessel, such as the right ventricular outflow tract. At the first end of the **valve** there is an orifice defined by at least two opposing free edges, and which can occupy either a first, closed position or a second, open position. At the second end of the **valve** there are at least two flexible members attachable to an anterior and a posterior wall of a patient's blood vessel. A length of the orifice between said at least two opposing free edges when the orifice is generally closed is equal to about 1.5 to 2 times the diameter of a patient's blood vessel. Optionally, the two flexible members to a **stent** or tubular graft. The valved **stent** or tubular graft can be inserted into a patient's blood vessel or heart.

24/48 © EPODOC / EPO

PN - [EP2243443](#) A1 20101027

PR - EP20090158497 20090422

AP - EP20090158497 20090422

DT - *; Rep

CT - || STSE (A1)

[WO03092554](#) A1 20031113 [X] (GEN HOSPITAL CORP [US], et al)
[X] 1

* page 11, line 9 - page 11, line 13 *

* page 21, line 6 - line 12; figure 24 *;

[US6168614](#) B1 20010102 [X] (ANDERSEN HENNING RUD [DK], et al)
[X] 1

* figure -; claims 12, 14 *;

[US2006155366](#) A1 20060713
[X] (LADUCA ROBERT [US], et al)
[X] 1

* paragraphs [0045] , [0 87]; figure 11 *;

[WO0047139](#) A1 20000817
[X] (HEARTPORT INC [US])
[X] 1

* page 7, line 11 - page 8, line 5;
figure - *

* page 15, line 20 - line 28 *;

[DE10121210](#) A1 20021114
[I] (UNIVERSITAETSKLINIKUM FREIBURG [DE])
[I] 1

* abstract *

CCI - [A61F2/2412](#)

CCA - [A61F2/07](#) ; [A61F2/2418](#)

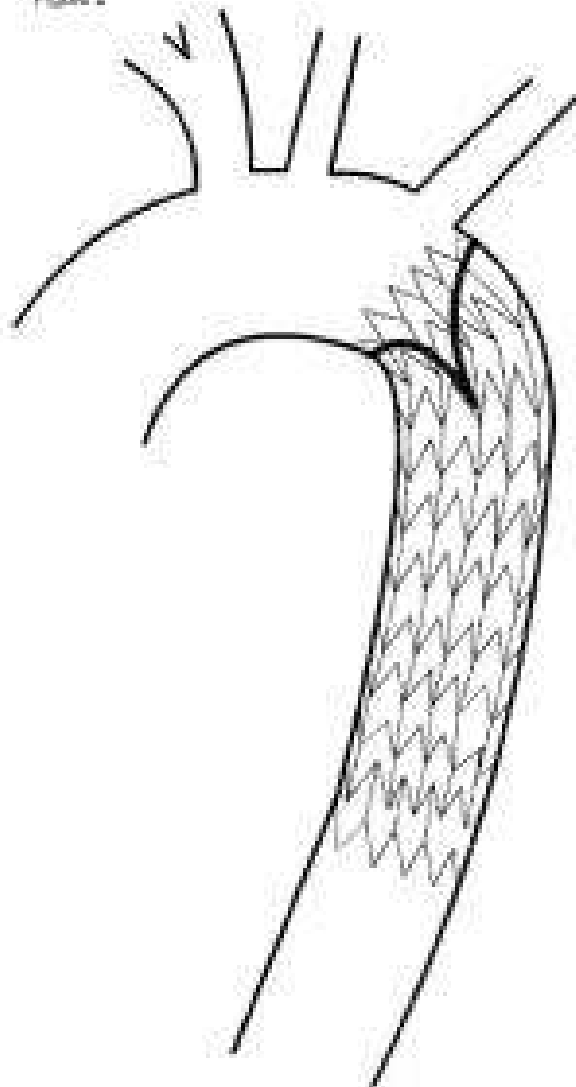
CI - A61F2/2412 (EP)

CA - A61F2/07 (EP)

- A61F2/2418 (EP)

PA - VANDEN BERG CORNELIS JOHANNES

Figure 2



MARIA [NL]

- TI - A **stent** comprising a **tricuspid valve**
- AB - The invention is in the field of devices intended for the treatment of heart failure of any origin with a substrate in the heart, in particular for the treatment of coronary diseases and/or arterial diseases More in particular, the invention provides an artificial **valve** that is suitable for permanently residing in an artery, more in particular the descending aorta, even more in particular the descending aorta just after branching of the left subclavian artery. A device according to the invention may be advantageously employed in the treatment of decompensatio cordis. A device according to the invention may be employed even if the arterial vessels are stiff.

25/48 © EPODOC / EPO

- PN - [WO2009064903](#) A1 20090522
- PR - US20070939452 20071113
- AP - WO2008US83426 20081113
- DT - **
- CT - |EP| ISR (A1)
[US2006167542](#) A1 20060727 [DXY] (QUINTESSENZA JAMES [US])
[DX] 1-3,6-11
* paragraphs [0010] - [0032]; figures 1-14 *
[Y] 4,5;
[US2004117004](#) A1 20040617 [XY] (OSBORNE THOMAS A [US], et al)
[X] 6-13
* paragraphs [0080] , [0129] , [0144] , [0146] , [0151] , [0153] , [0155] , [0160] , [0163] , [0176] , [0192]; figures 42-45,48,49,68 *
[Y] 4,5;
[US5344442](#) A 19940906 [DX] (DEAC RADU [US])
[DX] 1-3
* column 4, line 51 - column 5, line 15 *
* figures 3A-4 *
- CCI - [A61F2/2412](#) ; [A61F2/2415](#) ; [A61F2/2475](#)
- CCA - [A61F2/2418](#)
- CI - A61F2/06 (KR)
- A61F2/2409 (KR)
- A61F2/2412 (EP, US)
- A61F2/2415 (EP, KR, US)

- A61F2/2418 (KR)
- A61F2/2475 (EP, KR, US)
- A61L27/14 (KR)
- B29C53/04 (KR)
- CA - A61F2/2418 (EP, US)
- PA - QUINTESSENZA JAMES [US]
- TI - **BICUSPIDVASCULAR VALVE** AND METHODS FOR MAKING AND IMPLANTING SAME
- AB - A vascular **valve** constructed from a biocompatible material that is designed to be surgically implanted in a patient's blood vessel, such as the right ventricular outflow tract. At the first end of the **valve** there is an orifice defined by at least two opposing free edges, and which can occupy either a first, closed position or a second, open position. At the second end of the **valve** there are at least two flexible members attachable to an anterior and a posterior wall of a patient's blood vessel. A length of the orifice between said at least two opposing free edges when the orifice is generally closed is equal to about 1.5 to 2 times the diameter of a patient's blood vessel. Optionally, the two flexible members to a **stent** or tubular graft. The valved **stent** or tubular graft can be inserted into a patient's blood vessel or heart.

26/48 © EPODOC / EPO

- PN - [WO2005021063](#) A2 20050310
- PNFP - WO2005021063 A3 20060216
- PR - US20030653397 20030902
- AP - WO2004US28078 20040827
- DT - **
- CT - [US] ISR (A3)
[US5957949](#) A 19990928 [X] (LEONHARDT HOWARD J [US], et al);
[US6517573](#) B1 20030211 [Y] (POLLOCK DAVID T [US], et al);
[US5954766](#) A 19990921 [Y] (ZADNO-AZIZI GHOLAM-REZA [US], et al);
[US2003163194](#) A1 20030828 [Y] (QUIJANO RODOLFO C [US], et al);
[US2003135255](#) A1 20030717 [Y] (SUNDAR RANGARAJAN [US]);
[US6007575](#) A 19991228 [A] (SAMUELS SHAUN LAURENCE WILKIE [US])
- CCI - [A61F2/2418](#) ; [A61F2/2475](#)
- CCA - [A61F2220/0008](#) ; [A61F2220/0016](#) ; [A61F2230/0054](#)
- CI - A61F2/2418 (EP, US)
A61F2/2475 (EP, US)
- CA - A61F2220/0008 (EP, US)
A61F2220/0016 (EP, US)
A61F2230/0054 (EP, US)
- PA - (A2 A3)
3F THERAPEUTICS INC [US]
- TI - (A2 A3)
MEDICAL DEVICE FOR REDUCTION OF PRESSURE EFFECTS OF CARDIAC **TRICUSPIDVALVE** REGURGITATION
- AB - (A2 A3)
An elongate **valve stent** and methods for protecting an upper or a lower body of a patient

from high venous pressures comprising a **stent** member, the **stent** member comprising a support structure and a tissue **valve**, wherein the tissue **valve** is configured to permit fluid flow in one direction and prevent fluid flow in an opposite direction, and means for anchoring the **stent** member onto surrounding tissue of the superior vena cava or inferior vena cava.

27/48 © EPODOC / EPO

- PN - [WO2004093935](#) A2 20041104
- PNFP - WO2004093935 A3 20051020
- WO2004093935 B1 20051208
- PR - US20030418677 20030417
- AP - WO2004US11948 20040416
- DT - **
- CT - [US] ISR (A3)
[US6508833](#) B2 20030121 [X] (PAVCNIK DUSAN [US], et al);
[US4477930](#) A 19841023 [Y] (TOTTEN ROBERT P [US], et al)
- CCI - [A61F2/2418](#) ; [A61F2/2475](#)
- CCA - [A61F2002/828](#) ; [A61F2220/0008](#) ; [A61F2220/0016](#) ; [A61F2230/0054](#) ; [A61F2250/0008](#)
- CI - A61F2/2418 (EP, US)
- A61F2/2475 (EP, US)
- CA - A61F2002/828 (EP, US)
- A61F2220/0008 (EP, US)
- A61F2220/0016 (EP, US)
- A61F2230/0054 (EP, US)
- A61F2250/0008 (EP, US)
- PA - (A2 A3 B1)
QUIJANO RODOLFO C [US]; MCCARTHY PATRICK M [US]
- TI - (A2 A3 B1)
DEVICE FOR REDUCTION OF PRESSURE EFFECTS OF CARDIAC **TRICUSPID** VALVE
REGURGITATION
- AB - (A2 A3 B1)
A method of protecting an upper and a lower body of a patient from high venous pressures comprising: providing an elongate **valve stent**, wherein the **stent** comprises a first **stent** member with a first tissue **valve** secured to a first support structure being disposed at a first end of the **stent** and a second **stent** member with a second tissue **valve** secured to a second support structure being disposed at an opposite second end of the **stent**, wherein both support structures are collapsibly expandable, the second end being connected to the first end with at least one elongate connecting member; passing the elongate **valve stent** through a blood vessel with the first and second support structures in a collapsed position; and securing the first support structure to an inferior vena cava and the second support structure to a superior vena cava with both support structures in an expanded shape.

28/48 © EPODOC / EPO

- PN - [US2008065198](#) A1 20080313

PNFP - US7862610 B2 20110104

PR - US20070939452 20071113; US20050041603 20050124; US20040538870P 20040123

AP - US20070939452 20071113

DT - *; Rep

CT - || R141 (A1)
US2922437 A 19600126 [] (RIPPINGILLA EDWARD V);
US6673109 B2 20040106 [] (COX JAMES L [US]);
US6682559 B2 20040127 [] (MYERS KEITH [US], et al);
US7163556 B2 20070116 [] (XIE HUA [US], et al);
US6517576 B2 20030211 [] (GABBAY SHLOMO [US]);
US5500015 A 19960319 [] (DEAC RADU [US]);
US2007050014 A1 20070301 [] (JOHNSON CHAD E [US]);
US6875230 B1 20050405 [];
US2004117004 A1 20040617 [] (OSBORNE THOMAS A [US], et al);
US6752828 B2 20040622 [] (THORNTON SALLY C [US]);
US4340977 A 19820727 [] (BROWNLEE RICHARD T, et al);
US2004138742 A1 20040715 [] (MYERS KEITH [US], et al);
US2005149181 A1 20050707 [] (EBERHARDT CAROL E [US]);
US2006167542 A1 20060727 [] (QUINTESSENZA JAMES [US]);
US2003163194 A1 20030828 [] (QUIJANO RODOLFO C [US], et al);
US2003163195 A1 20030828 [] (QUIJANO RODOLFO C [US], et al);
US5344442 A 19940906 [] (DEAC RADU [US]);
US2003181974 A1 20030925 [] (XIE HUA [US], et al);
US5824063 A 19981020 [] (COX JAMES L [US]);
US6299637 B1 20011009 [] (SHAOLIAN SAMUEL M [US], et al);
US2006235511 A1 20061019 [] (OSBORNE THOMAS A [US]);
US2001039450 A1 20011108 [] (PAVCHNIK DUSAN [US], et al);
US2006253188 A1 20061109 [] (CASE BRIAN C [US]);
US7452371 B2 20081118 [] (PAVCHNIK DUSAN [US], et al);
US4790844 A 19881213 [] (OVIL YOEL [CA])

- || STSE (B2)
US5500015 A 19960319 [] (DEAC RADU [US]);
US7452371 B2 20081118 [] (PAVCHNIK DUSAN [US], et al);
US2001039450 A1 20011108 [] (PAVCHNIK DUSAN [US], et al);
US2007050014 A1 20070301 [] (JOHNSON CHAD E [US])

CCI - A61F2/2412 ; A61F2/2415 ; A61F2/2475

CCA - A61F2/2418

CI - A61F2/06 (KR)
- A61F2/2409 (KR)
- A61F2/2412 (EP, US)
- A61F2/2415 (EP, KR, US)
- A61F2/2418 (KR)
- A61F2/2475 (EP, KR, US)
- A61L27/14 (KR)
- B29C53/04 (KR)

CA - A61F2/2418 (EP, US)

- TI - (A1)
BICUSPIDVASCULAR **VALVE** AND METHODS FOR MAKING AND IMPLANTING SAME
- (B2)
Bicuspid vascular **valve** and methods for making and implanting same
- AB - (A1 B2)
A vascular **valve** constructed from a biocompatible material that is designed to be surgically implanted in a patient's blood vessel, such as the right ventricular outflow tract. At the first end of the **valve** there is an orifice defined by at least two opposing free edges, and which can occupy either a first, closed position or a second, open position. At the second end of the **valve** there are at least two flexible members attachable to an anterior and a posterior wall of a patient's blood vessel. A length of the orifice between said at least two opposing free edges when the orifice is generally closed is equal to about 1.5 to 2 times the diameter of a patient's blood vessel. Optionally, the two flexible members to a **stent** or tubular graft. The valved **stent** or tubular graft can be inserted into a patient's blood vessel or heart.

29/48 © EPODOC / EPO

- PN - [US6165216](#) A 20001226
- PR - US19960678196 19960712; US19950492896 19950620
- AP - US19960678196 19960712
- DT - **
- CT - || STSE (A)
[US4079468](#) A 19780321 [] (LIOTTA DOMINGO SANTO, et al);
[US4451936](#) A 19840605 [] (CARPENTIER ALAIN [FR], et al);
[US4793344](#) A 19881227 [] (CUMMING J STUART [US], et al);
[US5080670](#) A 19920114 [] (IMAMURA EISABURO [JP], et al);
[US5156621](#) A 19921020 [] (NAVIA JOSE A [AR], et al);
[US5215541](#) A 19930601 [] (NASHEF AWS S [US], et al);
[US5352240](#) A 19941004 [] (ROSS DONALD N [GB]);
[US5370685](#) A 19941206 [] (STEVENS JOHN H [US]);
[US5439667](#) A 19950808 [] (CAMIENER GERALD W [US]);
[GB2136533](#) A 19840919 [] (WESSEX MEDICAL LAB LIMITED)
- CTNP - || STSE (A)
[] - Buffalow News, Jan. 14, 1994VB Research Center Seeks Bio Tech Firms.
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- [] - D.J. Lentz et al., Prevention of Intrinsic Calcification in Porcine and Bovine Xenograft Materials, Trans. Am. Soc. Artif. Intern. Organs28:494 497 (1982).
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- [] - Hammond et al., Biological versus mechanical valve, J. Thorac. Cardiovasc. Surg. 93:182 98 (1987).
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- [] - Konstantinov et al., Plastic Surgery for Cardiac Valves: 15 Years Experience, Ann. Thorac. Surg.48:S77 8 (1989).
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- [] - Rhode et al., Pressure volume characteristics of aortas or harbor and Weddel sealsAm. J. Physiol. ,251:R174 R180 (1986).

- CCI - [A61F2/2412](#) ; [A61L27/3604](#) ; [A61L27/3645](#) ; [A61L27/507](#)
- CI - A61F2/2412 (EP, US)
- A61L27/3604 (EP, US)
- A61L27/3645 (EP, US)
- A61L27/507 (EP, US)
- PA - AGATHOSEFSTATHIOSANDREAS[US]
- TI - Human cardiac **valve** replacement with marine mammal ventricular outflow (aortic or pulmonary) **valve**
- AB - The present invention provides a method of treating human cardiac **valve** dysfunction, by replacing the existing **valve** with a novel bioprosthesis of the present invention which comprises a marine mammal ventricular outflow (aortic or pulmonary) **valve**. The marine mammal ventricular outflow **valve** is treated by a fixative agent to sterilize, fix, increase the strength of the leaflets and lessen the antigenicity of the tissue **valve**. Following this step, the marine mammal ventricular outflow **valve** can either be **stent**-mounted or can be unstented. The **stent**-mounted marine mammal ventricular outflow **valve** can be used to replace a human aortic, mitral, or **tricuspid valve**, while the unstented marine mammal ventricular outflow **valve** can be used to replace a human aortic or pulmonary **valve**. Being a natural trileaflet **valve**, with symmetrical cusps and no muscle shelf within the leaflet, the marine mammal ventricular outflow **valve** presents superior hemodynamic advantages over the existing aortic porcine and bovine pericardial valves. The increase thickness of the leaflets result in a long-term durability, without the attendant disadvantages of re-replacing a bioprosthesis. Alternatively, a marine mammal trileaflet **valve** can be constructed from tissues such as pericardium and fascia lata.

PN - [US4680031](#) A 19870714

PR - US19840664150
19841024; US19820445259
19821129

AP - US19840664150 19841024

DT - *; Rep

CT - || STSE (A)
[US2877792](#) A 19590317 [] (TYBUS FRANK W);
[US3001546](#) A 19610926 [] (SALISBURY CLIFFORD A);
[US3109444](#) A 19631105 [] (MCKEE JOHN F);
[US3744062](#) A 19730710 [] (PARSONNET V);
[US3835475](#) A 19740917 [] (CHILD FRANCIS W [US]);
[US3997923](#) A 19761221 [] (POSSIS ZINON C);
[US4106129](#) A 19780815 [] (CARPENTIER ALAIN F, et al);
[US4178638](#) A 19791218 [] (MEYER LOUIS C [US]);
[US4211325](#) A 19800708 [] (WRIGHT JOHN T M [US]);
[US4257444](#) A 19810324 [] (OGLE JR FRANCIS H, et al);
[US4319363](#) A 19820316 [] (KETHARANATHAN VETTIVETPILLAI);
[US4345340](#) A 19820824 [] (ROSEN JONATHAN J);
[US4364126](#) A 19821221 [] (ROSEN JONATHAN J, et al);
[US4441216](#) A 19840410 [] (IONESCU MARIAN I [GB], et al);
[US4470157](#) A 19840911 [] (LOVE JACK W [US])

CCI - [A61F2/2409](#) ; [A61F2/2412](#)

CCA - [A61F2/2415](#)

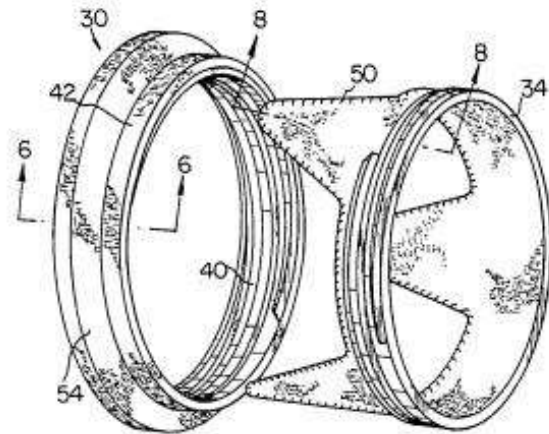
CI - A61F2/2409 (EP, US)
A61F2/2412 (EP, US)

CA - A61F2/2415 (EP, US)

PA - TASCON MEDICAL TECHNOLOGY
CORP [US]

TI - Heart **valve** prosthesis

AB - A "tissue **valve** type" heart **valve**



prosthesis is disclosed which has a biocompatible plastic sewing ring adapted to be surgically implanted into the mitral, aortic or **tricuspid** annulus of the human heart. The sewing ring has internal square threads and a biocompatible fabric mesh or cloth is embedded into the sewing ring so that the cloth can be fully wrapped around the sewing ring covering all of its plastic surfaces except for the internally protruding threads. A biocompatible plastic **stent** support ring has externally disposed threads to lock with the threads of the sewing ring in approximately one turn, or less. The **stent** support ring also embeds a biocompatible fabric mesh which can be wrapped around the **stent** support ring to cover all of its plastic surfaces, except for the protruding threads, and to form a cloth pocket wherein a solid **stent** is mounted. A porcine trileaflet **valve** is mounted to the **stent**. When the heart **valve** prosthesis is as implanted into the heart, the threads of the sewing ring and of the **stent** support ring interlock, and there are no plastic or metal surfaces, uncovered by biocompatible fabric, to be exposed to blood flow. Processes for making the solid metal **stent** by laser cutting, and the sewing and **stent** support rings by a specifically adapted plastic molding procedure, are also disclosed.

PN - [US2005049692](#) A1 20050303

PR - US20030653397 20030902

AP - US20030653397 20030902

DT - *; Rep

CT - || R141 (A1)

[US5855601](#) A 19990105 [] (BESSLER MARC [US], et al);

[US6503272](#) B2 20030107 [] (DUEBIG THOMAS W [US], et al);

[US6676698](#) B2 20040113 [] (MCGUCKIN JR JAMES F [US], et al);

[US4806595](#) A 19890221 [] (NOISHIKI YASU HARU [JP], et al);

[US6517573](#) B1 20030211 [] (POLLOCK DAVID T [US], et al);

[US5607465](#) A 19970304 [] (CAMILLI SANTE [IT]);

[US6383193](#) B1 20020507 [] (CATHCART BRUCE C [US], et al);

[US2003135255](#) A1 20030717 [] (SUNDARRANGARAJAN [US]);

[US2003163194](#) A1 20030828 [] (QUIJANO RODOLFO C [US], et al);

[US6608040](#) B1 20030819 [] (LIN CHING-KUAN [TW], et al);

[US6610085](#) B1 20030826 [] (LAZARUS HARRISON M [US]);

[US5954766](#) A 19990921 [] (ZADNO-AZIZI GHOLAM-REZA [US], et al);

[US5957949](#) A 19990928 [] (LEONHARDT HOWARD J [US], et al);

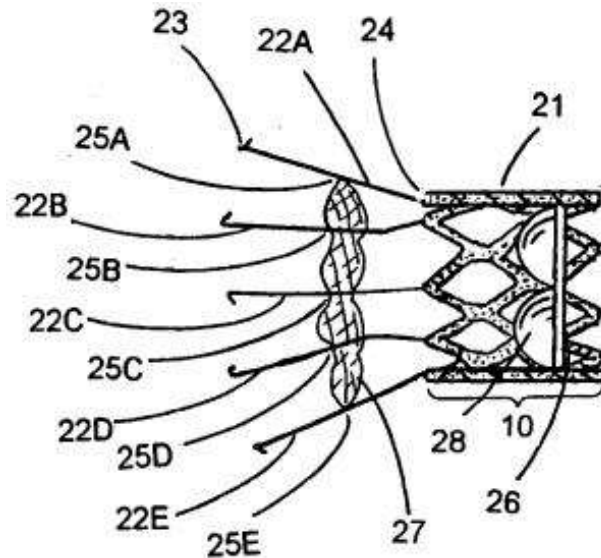
[US6451025](#) B1 20020917 [] (JERVIS JAMES E [US]);

[US5824061](#) A 19981020 [] (QUIJANO RODOLFO C [CH], et al);

[US6299637](#) B1 20011009 [] (SHAOLIAN SAMUEL M [US], et al);

[US2004206363](#) A1 20041021 [] (MCCARTHY PATRICK M [US], et al);

[US2004210306](#) A1 20041021 [] (QUIJANO RODOLFO C [US], et al);



[US5997573](#) A 19991207 [] (QUIJANO RODOLFO C [CH], et al);
[US6007575](#) A 19991228 [] (SAMUELSSHAUNLAURENCE WILKIE [US]);
[US2004260390](#) A1 20041223 [] (SARAC TIMUR PAUL [US], et al)

CCI - [A61F2/2418](#) ; [A61F2/2475](#)

CCA - [A61F2220/0008](#) ;
[A61F2220/0016](#) ;
[A61F2230/0054](#)

CI - A61F2/2418 (EP, US)
 - A61F2/2475 (EP, US)

CA - A61F2220/0008 (EP, US)
 - A61F2220/0016 (EP, US)
 - A61F2230/0054 (EP, US)

TI - Medical device for reduction of pressure effects of cardiac **tricuspid valve** regurgitation

AB - An elongate **valve stent** and methods for protecting an upper or a lower body of a patient from high venous pressures comprising a **stent** member, the **stent** member comprising a support structure and a tissue **valve**, wherein the tissue **valve** is configured to permit fluid flow in one direction and prevent fluid flow in an opposite direction, and means for anchoring the **stent** member onto surrounding tissue of the superior vena cava or inferior vena cava.

32/48 © EPODOC / EPO

PN - [US6358277](#) B1 20020319

PR - US20000598630 20000621

AP - US20000598630 20000621

DT - **

CT - || STSE (B1)
[US3739402](#) A 19730619 [] (KAHN P, et al);
[US4790844](#) A 19881213 [] (OVIL YOEL [CA]);

[US4960424](#) A 19901002 [] (GROOTERS RONALD K [US]);
[US5156621](#) A 19921020 [] (NAVIA JOSE A [AR], et al);
[US5344442](#) A 19940906 [] (DEAC RADU [US]);
[US5733331](#) A 19980331 [] (PEREDO MARIO OSVALDO VRANDECIC [BR]);
[US5824067](#) A 19981020 [] (GROSS JEFFREY M [US]);
[US6214055](#) B1 20010410 [] (SIMIONESCU DAN [RO], et al)

- CCI - [A61F2/2412](#) ; [A61F2/2457](#) ; [A61F2/2496](#)
- CI - A61F2/2412 (EP, US)
 - A61F2/2457 (EP, US)
 - A61F2/2496 (EP, US)
- PA - INT HEART INST MONTANA [US]
- TI - Atrio-ventricular valvular device
- AB - An anatomically designed atrioventricular **valve** is made of biologically compatible synthetic membrane or biological membrane of autologous, homologous or heterologous origin. A single piece of the selected membrane material is trimmed so as to form two unequal sheaths similar to the normal anterior and posterior mammalian mitral **valve** leaflets with a wide upper base to be sutured to the host's mitral annulus. These two leaflets are prolonged and tapered into two thin bands to be connected to the papillary muscles serving as replacements for the natural marginal chordae tendinae of the normal mitral **valve**. The two lateral sides of the membrane are joined to form a truncated cone with a wider upper circular base and a narrow extremity formed by the thin chordal bands. A set of sutures are placed between selected points at the base of the cone and the two thin prolongations serving as replacements for the **strut** or stay basal chords of the natural mitral **valve**. Thus, the mitral **valve** prosthesis is anatomical because it is stentless, **bicuspid** and supported by marginal and basal chordae. Obturators and sizers in the configuration of rods of varying diameter, to measure the host's **valve** annulus diameter and select the appropriate size of the prosthesis are used during implantation of the prosthesis. A rod shaped holder maintains the prosthesis during implantation, and a curved bodied measuring instrument is used to determine the precise location where the chordae tendinae of the prosthesis are to be sutured to the papillary muscles of a recipient mammal.

PN - [US4470157](#) A 19840911

PR - US19830486376
19830419; US19810257990
19810427

AP - US19830486376 19830419

DT - *; Rep

CT - || STSE (A)
[US3714671](#) A 19730206 [
] (GOODENOUGH S, et al);
[US3755823](#) A 19730904 [
] (HANCOCK W);
[US4035849](#) A 19770719 [
] (ANGELL WILLIAM W, et al);
[US4084268](#) A 19780418 [
] (IONESCU MARIAN I, et al);
[US4172295](#) A 19791030 [
] (BATTEN RICHARD J [US]);
[US4192020](#) A 19800311 [
] (CLARK RICHARD E [US], et al)

CTNP - || STSE (A)
[] - Frame Mounted Tissue
Heart Valves: Technique of
Construction by I. T. Bartek et al.,
Thorax (1974) 29, 51pp. 51 55.

CCI - [A61F2/2409](#) ; [A61F2/2412](#)

CCA - [A61F2220/0075](#)

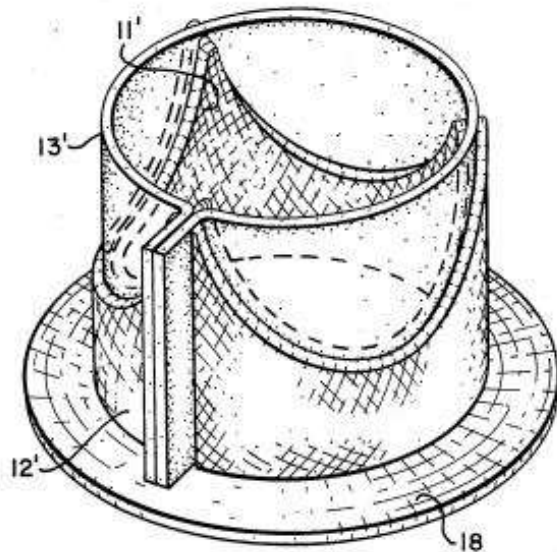
CI - A61F2/2409 (EP, US)
A61F2/2412 (EP, US)

CA - A61F2220/0075 (EP, US)

PA - LOVE JACK W

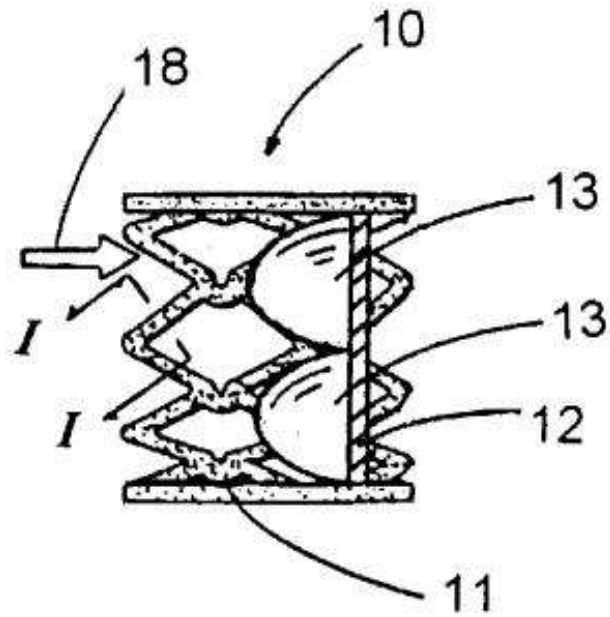
TI - **Tricuspid** prosthetic tissue
heart **valve**

AB - A method and apparatus for
providing a **tricuspid** heart **valve**
that can be assembled with
autogenous or foreign tissue
using a prefabricated kit
comprised of two stents that mate
together and a sewing ring,
one **stent** inside or below the
other, with the tissue clamped
between the stents. The inner or
lower **stent** has a scalloped wall
to provide three equally spaced
peaks extending from an annular
base. The stents may have



interlocking means at or near their base to not only lock them together, but also to clamp the tissue in place more securely. In the case of having the one **stent** inside the other, both stents may have a scalloped wall. The tissue is first placed over the inner **stent**, then after the outer **stent** is placed over the tissue, excess tissue is trimmed. The mated stents secure the tissue securely in place. The outer **stent** may have a ledge along its upper edge overhanging the inner **stent** to clamp the tissue. In the case of having one **stent** below the other, the upper **stent** may be a short cylinder scalloped at both ends to fit as a cap over the lower **stent**. Alternatively, the upper **stent** may be formed from three sections of bent rods welded at the peaks. In either case, the upper **stent** fits closely as a cap over the lower **stent**, and the lower **stent** may have an annular base or a scalloped base. In each embodiment, the stents may be made of thermoplastic material and covered by fabric that is thermobonded, i.e., secured to the stents by applying heat and pressure to at least selected areas.

PN - [US2004210306](#) A1 20041021
 PNFP - US7530995 B2 20090512
 PR - US20030418677 20030417
 AP - US20030418677 20030417
 DT - *: Rep
 CT - || R141 (A1)
 [US6503272](#) B2 20030107 [
] (DUERIG THOMAS W [US], et al);
 [US6508833](#) B2 20030121 [
] (PAVCNIK DUSAN [US], et al);
 [US7159592](#) B1 20070109 [
] (MAKOWER JOSHUA [US], et al);
 [US7159593](#) B2 20070109 [
] (MCCARTHY PATRICK M [US], et
 al);
 [US4806595](#) A 19890221 [
] (NOISHIKI YASU HARU [JP], et al);
 [US5607465](#) A 19970304 [
] (CAMILLI SANTE [IT]);
 [US6383193](#) B1 20020507 [
] (CATHCART BRUCE C [US], et al);
 [US6451025](#) B1 20020917 [
] (JERVIS JAMES E [US]);
 [US4477930](#) A 19841023 [
] (TOTTEN ROBERT P [US], et al);
 [US5824061](#) A 19981020 [
] (QUIJANO RODOLFO C [CH], et
 al);
 [US6299637](#) B1 20011009 [
] (SHAOLIAN SAMUEL M [US], et al);
 [US6319278](#) B1 20011120 [
] (QUINN STEPHEN F [US]);
 [US5855001](#) A 19981229 [
] (DOEDERLEIN DIETER D [CA], et
 al);
 [US5997573](#) A 19991207 [
] (QUIJANO RODOLFO C [CH], et al)
 - || STSE (B2)
 [US4477930](#) A 19841023 [
] (TOTTEN ROBERT P [US], et al);
 [US6319278](#) B1 20011120 [
] (QUINN STEPHEN F [US]);
 [US6508833](#) B2 20030121 [
] (PAVCNIK DUSAN [US], et al);
 [US7159592](#) B1 20070109 [
] (MAKOWER JOSHUA [US], et al)
 CCI - [A61F2/2418](#) ; [A61F2/2475](#)
 CCA - [A61F2002/828](#) ;



[A61F2220/0008](#) ;
[A61F2220/0016](#) ;
[A61F2230/0054](#) ;
[A61F2250/0008](#)

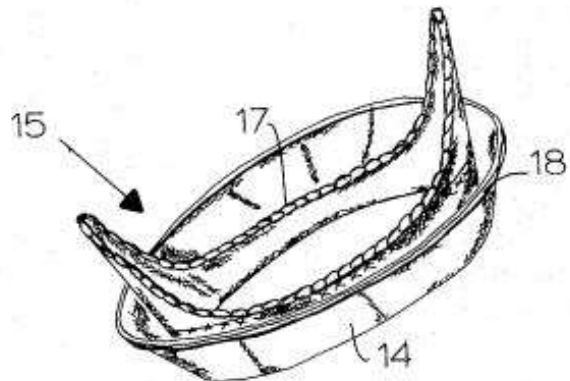
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| CI | - A61F2/2418 (EP, US)
- A61F2/2475 (EP, US) |
| CA | - A61F2002/828 (EP, US)
- A61F2220/0008 (EP, US)
- A61F2220/0016 (EP, US)
- A61F2230/0054 (EP, US)
- A61F2250/0008 (EP, US) |
| PA | - (B2)
3F THERAPEUTICS INC [US] |
| TI | - (A1 B2)
Device for reduction of pressure effects of cardiac tricuspid valve regurgitation |
| AB | - (A1 B2)
A method of protecting an upper and a lower body of a patient from high venous pressures comprising: providing an elongate valve stent , wherein the stent comprises a first stent member with a first tissue valve secured to a first support structure being disposed at a first end of the stent and a second stent member with a second tissue valve secured to a second support structure being disposed at an opposite second end of the stent , wherein both support structures are collapsibly expandable, the second end being connected to the first end with at least one elongate connecting member; passing the elongate valve stent through a blood vessel with the first and second support structures in a collapsed position; and securing the first support structure to an inferior vena cava and the second support structure to a superior vena cava with both support structures in an expanded shape. |

35/48 © EPODOC / EPO

- PN - [US6491511](#) B1 20021210
- PR - US19990418675 19991014
- AP - US19990418675 19991014
- DT - **
- CT - || STSE (B1)
[US3320972](#) A 19670523 [] (HIGH ROY F, et al);
[US3655306](#) A 19720411 [] (ROSS DONALD NIXON, et al);
[US4218782](#) A 19800826 [] (RYGG INGE H [DK]);
[US4473423](#) A 19840925 [] (KOLFF WILLEM J [US])
- CCI - [A61F2/2415](#) ; [A61F2/2496](#)
- CCA - [A61F2/2412](#) ; [A61F2240/002](#)
- CI - A61F2/2415 (EP, US)
A61F2/2496 (EP, US)
- CA - A61F2/2412 (EP, US)
A61F2240/002 (EP, US)
- PA - INT HEART INST MONTANA [US]
- TI - Mold to form **stent**-less replacement heart valves from biological membranes
- AB - A pair of templates form a mold for substantially flat biological membranes to shape the membrane into a configuration that, after trimming of excess tissue, is adapted for forming a replacement aortic, pulmonary, **tricuspid** or mitral heart **valve**. Each template has three members joined to another laterally, with each member configured to form, together with its mating member, the mold for one leaflet or cusp of the replacement heart **valve**. The negative template has concave surfaces for each member and the positive template has convex surfaces which mate with the concave surfaces of the first template. Each of the templates is made of thin, shell like material and has beveled edges. The biological membrane is placed between the mating convex and concave surfaces of the two templates assembled to one another to form the membrane into the configuration of the three leaflets of the replacement heart **valve**.

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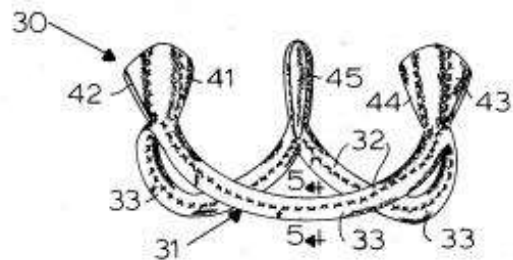
- PN - [US3739402](#) A 19730619
- PR - US19700081064 19701015
- AP - USD3739402 19701015
- DT - *; Rep
- CT - || STSE (A)
[US3548418](#) A 19701222 [] (ANGELL WILLIAM W, et al);
[US3570014](#) A 19710316 [] (HANCOCK WARREN D);
[US3451067](#) A 19690624 [] (JORDAN DANIEL LAZO);
[US3263239](#) A 19660802 [] (LOWELL EDWARDS MILES, et al)



CTNP	- STSE (A) [] - Surgery for Aortic Valve: Prosthesis and Heterograft by M. J. Levy et al., Surgery, Vol. 66, No. 2, pp. 313 318August 1969. [] - Surgitool Aortic Valve Prosthesis (Advertisement by Surgitool), The Journal of Thoracic & Cardiovascular Surgery, Vol. 58, No. 3September 1969. [] - The Homograft Prosthesis by N. E. Shumway et al., Prosthetic Heart Valves by L. A. Brewer, Editor in Chief, Charles C. Thomas, Publisher, Springfield, Illinois, pages 769 7771968. [] - Heart Valve Replacement With Autologous Fascia Lata by M. I. Ionescoll et al., The Lancet, Vol. 2, Aug. 16, 1969pages 335 338. [] - Technique of Mitral Valve Replacement with Autologous Fascia Lata by J. B. Flege et al., Journal of Thoracic & Cardiovascular Surgery, Vol. 54, No. 2, August 1967pp. 222 226. [] - Prosthetic And Fascia Lata Valves: Hydrodynamics and Clinical Results by D. Liotta et al., Trans. Amer. Soc. Artif. Int. Organs, Vol. XVI, April 1970pages 244 251.
CCI	- A61F2/2412
CCA	- Y10S623/90
CI	- A61F2/2412 (EP, US)
CA	- Y10S623/90 (EP, US)
PA	- CUTTER LAB
TI	- BICUSPIDFASCIALATA VALVE
AB	- A graft-support for homograft and heterograft tissue valve implantation comprising a ring base, two struts extending from one side of the ring base and

generally parallel to its axis, and a fabric layer covering the entire surface of the ring and struts. The fabric layer has a thickened portion at the apex of each **strut**, a second thickened portion along the top edge of the ring and a third thickened portion extending circumferentially of the ring. These thickened portions provide means for suturing the graft-support to the **valve** tissue and to the host heart, respectively. In one very advantageous embodiment, the ring is generally oblong in shape having a long diameter and a short diameter and the struts are disposed opposite to each other, one at each end of the oblong ring, i.e., at each end of the long diameter thereof or on a line parallel thereto.

- 37/48** © EPODOC / EPO
- PN - [US3714671](#) A 19730206
- PR - US19700093545 19701130
- AP - USD3714671 19701130
- DT - *; Rep
- CT - || STSE (A)
[US3570014](#) A 19710316 [
] (HANCOCK WARREN D);
[US3445916](#) A 19690527 [
] (SCHULTE RUDOLF R);
[US3451067](#) A 19690624 [
] (JORDAN DANIEL LAZO);
[US3548418](#) A 19701222 [
] (ANGELL WILLIAM W, et al)
- CTNP - || STSE (A)
 [] -
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 Homografts with Metal Rings by
 A. S. et al., The Journal of Thoracic
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 54, No. 5, Nov. 1967pp. 605 615.
 [] -
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 Replacement with Autologous



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[] -

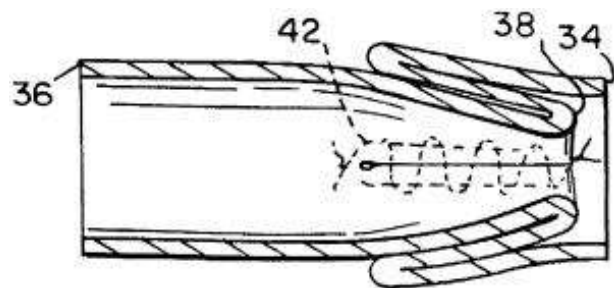
Mitral and Aortic Valve Replacement with Fascia Lata on a Frame by W. S. Edwards et al., Journal of Thoracic & Cardiovascular Surgery, Vol. 58, No. 6, Dec. 1969pp. 854 858.

- CCI - [A61F2/2418](#)
- CCA - [Y10S623/90](#)
- CI - A61F2/2418 (EP, US)
- CA - Y10S623/90 (EP, US)
- PA - CUTTER LAB
- TI - TISSUE-TYPE HEART **VALVE** WITH A GRAFT SUPPORT RING OR **STENT**
- AB - A **tricuspid valve** and a graft support ring or **stent** therefor. The frame of the **stent** comprises three wire arcs, each formed along a circular or elliptical cylindrical surface. Each arc has an upstanding end portion that blends into a line parallel to the axis of the cylinder. Preferably, each arc is a separate wire, and, an elastomeric coating or a cloth pledget may lie over the meeting ends, which may be welded together. A fabric covering completely surrounds and encloses the frame, the coating or

pledget preventing later strike-through of the fabric by the metal during use. The fabric covering preferably provides a pair of radial wings at each post, one extending inwardly and the other one outwardly, and it also provides a continuous projection along the length of the wires for stitching. To this graft support ring is sutured living tissue, preferably autologous or homologous, by stitches to the wings and the continuous projection. A plurality of such tissue members, e.g., fascia lata, is used, one for each wire arc, shaped to provide a cusp-type **valve**. The tissue covers essentially all the surfaces of the fabric on both the inner and outer faces, so that essentially nothing but tissue is in contact with the blood and body tissues after the **valve** is installed.

38/48 © EPODOC / EPO

- PN - [US6126686](#) A 20001003
- PR - US19960032684P
19961210; WO1997US22728
19971210; US19990319653
19990610
- AP - US19990319653 19990610
- DT - **
- CT - || STSE (A)
[DE355959](#) C 19220710 [
] (HERMANN DEDERICH);
[GB477643](#) A 19380104 [
] (PERFECTION STOVE CO);
[GB599407](#) A 19480311 [
] (FRANCOIS JEAN MARIE
THEUNISSEN);
[US3320972](#) A 19670523 [] (HIGH
ROY F, et al);
[US3445916](#) A 19690527 [
] (SCHULTE RUDOLF R);
[US3562820](#) A 19710216 [
] (BRAUN BERNHARD);



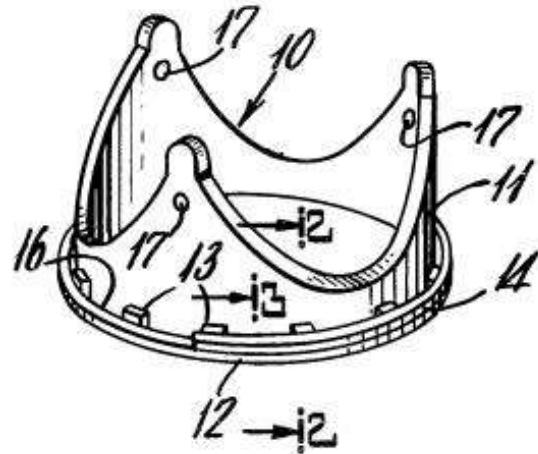
[US3736598](#) A 19730605 [] (BELLHOUSE B, et al);
[US4084268](#) A 19780418 [] (IONESCU MARIAN I, et al);
[FR2391708](#) A1 19781222 [] (BIOCOATING APS [DK]);
[US4247292](#) A 19810127 [] (ANGELL WILLIAM W);
[US4470157](#) A 19840911 [] (LOVE JACK W [US]);
[EP0133420](#) B1 19880210 [];
[EP0275535](#) A1 19880727 [] (BAYKUT DOGUHAN DR MED);
[EP0276975](#) A1 19880803 [] (OVIL YOEL);
[US4902508](#) A 19900220 [] (BADYLAK STEPHEN F [US], et al);
[EP0155245](#) B1 19900502 [];
[US5156621](#) A 19921020 [] (NAVIA JOSE A [AR], et al);
[EP0515324](#) A1 19921125 [] (SORIN BIOMEDICA SPA [IT]);
[US5275826](#) A 19940104 [] (BADYLAK STEPHEN F [US], et al);
[US5281422](#) A 19940125 [] (BADYLAK STEPHEN F [US], et al);
[WO9516411](#) A1 19950622 [] (AUTOGENICS [US]);
[US5480424](#) A 19960102 [] (COX JAMES L [US]);
[US5554389](#) A 19960910 [] (BADYLAK STEPHEN F [US], et al);
[WO9631226](#) A1 19961010 [] (PATEL UMESH H [US], et al);
[WO9724082](#) A1 19970710 [] (COX JAMES L [US]);
[US5713950](#) A 19980203 [] (COX JAMES L [US]);
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CTNP - || STSE (A)
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CCI - [A61F2/2412](#) ; [A61F2/2415](#) ;
[A61L27/3604](#) ; [A61L27/3629](#) ;
[A61L27/3641](#) ; [A61L27/3645](#) ;
[A61L27/3691](#) ; [A61L27/3886](#) ;
[A61L27/507](#)

- CCA - [A61F2/06](#) ; [A61F2/2409](#) ;
[A61F2220/0075](#) ; [Y10S623/91](#) ;
[Y10S623/918](#) ; [Y10S623/925](#)
- CI - A61F2/2412 (EP, US)
- A61F2/2415 (EP, US)
- A61L27/3604 (EP, US)
- A61L27/3629 (EP, US)
- A61L27/3641 (EP, US)
- A61L27/3645 (EP, US)
- A61L27/3691 (EP, US)
- A61L27/3886 (EP, US)
- A61L27/507 (EP, US)
- CA - A61F2/06 (EP, US)
- A61F2/2409 (EP, US)
- A61F2220/0075 (EP, US)
- Y10S623/91 (EP, US)
- Y10S623/918 (EP, US)
- Y10S623/925 (EP, US)
- PA - PURDUE RESEARCH FOUNDATION
[US]
- TI - Artificial vascular valves
- AB - PCT No. PCT/US97/22728 Sec. 371
Date Jun. 10, 1999 Sec. 102(e)
Date Jun. 10, 1999 PCT Filed Dec.
10, 1997 PCT Pub. No.
WO98/25549 PCT Pub. Date Jun.
18, 1998A method for preparing
vascular valves from submucosal
tissue is described. Both **bicuspid**
and **tricuspid valve** constructs are
described. The **bicuspid** constructs
can be formed with or without a
supporting **stent**. The **tricuspid**
constructs are formed by fixing
submucosal tissue to a
supporting **stent**, folding the
submucosal tissue, and forming
the **valve** commissures from the
folded submucosal tissue by
cutting along the folds. The
artificial vascular valves are
useful for replacing damaged or
diseased valves of a warm-
blooded vertebrate.

PN - [US4345340](#) A 19820824
 PR - US19810261392 19810507
 AP - US19810261392 19810507
 DT - *; Rep
 CT - || STSE (A)
 [US3448465](#) A 00000000 [];
 [US3503079](#) A 00000000 [];
 [US3570014](#) A 00000000 [];
 [US3755823](#) A 00000000 [];
 [US3839741](#) A 00000000 [];
 [US3983581](#) A 00000000 [];
 [US4035849](#) A 00000000 [];
 [US4084268](#) A 00000000 [];
 [US4106129](#) A 00000000 [];
 [US4172295](#) A 00000000 [];
 [US4222126](#) A 00000000 []
 CCI - [A61F2/2409](#) ; [A61F2/2412](#)
 CCA - [Y10S623/90](#)
 CI - A61F2/2409 (EP)
 A61F2/2412 (EP)
 CA - Y10S623/90 (EP)
 PA - VASCOR INC
 TI - **Stent** for mitral/tricuspid heart **valve**
 AB - A plastic **stent** for a prosthetic trileaflet heart **valve** consisting of a cylindrical body section terminating at one end in three apical, commissure posts, and at the other end, in an outward-extending flange. The flange is provided with an interrupted channel encircling the base of the cylindrical section. An optional metal ring may be mounted adjacent the flange and spaced from the base of the cylindrical section. A cloth cover is secured to the **stent** by stitching directly through the flange in the area of reduced thickness resulting from the interrupted channel.



40/48 © EPODOC / EPO
 PN - [WO9700651](#) A1 19970109
 PR - US19950492896 19950620

AP - WO1996US10363 19960618

DT - *; Rep

CT - |US| ISR (A1)
[US5352240](#) A 19941004 [Y] (ROSS DONALD N [GB]);
[US4793344](#) A 19881227 [Y] (CUMMING J STUART [US], et al)

CCI - [A61F2/2412](#) ; [A61L27/3604](#) ; [A61L27/3645](#) ; [A61L27/507](#)

CI - A61F2/2412 (EP, US)
A61L27/3604 (EP, US)
A61L27/3645 (EP, US)
A61L27/507 (EP, US)

PA - AGATHOS EFSTATHIOS A [US]

TI - HUMAN **VALVE** REPLACEMENT WITH MARINE MAMMAL **VALVE**

AB - The present invention provides a method of treating human cardiac **valve** dysfunction, by replacing the existing **valve** with a bio-prosthesis of the present invention which comprises a marine mammal ventricular outflow (aortic (6) or pulmonary (20)) **valve**. The marine mammal ventricular **valve** is treated by a fixative agent to sterilize, fix, increase the strength of the leaflets and lessen the antigenicity of the tissue **valve**. Following this step, the marine mammal ventricular **valve** can either be **stent** mounted or unstented. The **stent** (25) mounted marine mammal ventricular **valve** can be used to replace a human aortic, mitral, or **tricuspid valve**, while the unstented marine mammal ventricular **valve** can be used to replace a human aortic or pulmonary **valve** (20).

41/48 © EPODOC / EPO

PN - [WO0197741](#) A2 20011227

PNFP - WO0197741 A3 20020919

PR - US20000598630 20000621

AP - WO2001US19602 20010620

DT - *; Rep

CT - |EP| ISR (A3)
[US5415667](#) A 19950516
[DA] (FRATER ROBERT W M [US])
[DA] 1,12
* column W *

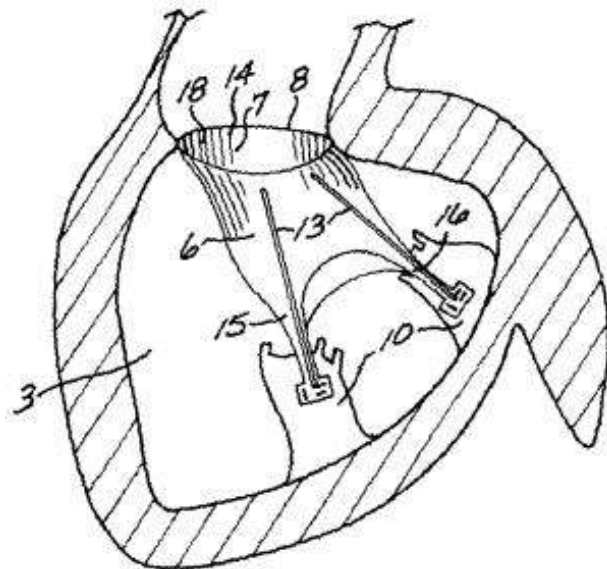
CCI - [A61F2/2412](#) ; [A61F2/2457](#) ;
[A61F2/2496](#)

CI - A61F2/2412 (EP, US)
A61F2/2457 (EP, US)
A61F2/2496 (EP, US)

PA - (A2 A3)
INT HEART INST MONTANA [US]

TI - (A2 A3)
ATRIO-VENTRICULAR VALVULAR
DEVICE

AB - (A2)



An anatomically designed atrioventricular **valve** is made of biologically compatible synthetic membrane or biological membrane of autologous, homologous or heterologous origin. A single piece of the selected membrane material is trimmed so as to form two unequal sheaths similar to the normal anterior and posterior mammalian mitral **valve** leaflets with a wide upper base to be sutured to the host's mitral annulus. These two leaflets are prolonged and tapered into two thin bands to be connected to the papillary muscles serving as replacements for the natural marginal chordae tendinae of the normal mitral **valve**. The two lateral sides of the membrane are joined to form a truncated cone with a wider upper circular base and a narrow extremity formed by the thin chordal bands. A set of sutures are placed between selected points at the base of the cone and the two thin prolongations serving as replacements for the **strut** or stay basal chords of the natural mitral **valve**. Thus, the mitral **valve** prosthesis is anatomical because it is stentless, **bicuspid** and supported by marginal and basal chordae. Obturators and sizers in the configuration of rods of varying diameter, to measure the host's **valve** annulus diameter and select the appropriate size of the prosthesis are used during implantation of the prosthesis. A rod shaped holder maintains the prosthesis during implantation, and a curved bodied measuring instrument is used to determine the precise location where the

chordae tendinae of the prosthesis are to be sutured to the papillary muscles of a recipient mammal.

- (A3)

An anatomically designed atrioventricular **valve** is made of biologically compatible synthetic membrane or biological membrane of autologous, homologous or heterologous origin. A single piece of the selected membrane material is trimmed so as to form two unequal sheaths similar to the normal anterior and posterior mammalian mitral **valve** leaflets with a wide upper base to be sutured to the host's mitral annulus. These two leaflets are prolonged and tapered into two thin bands to be connected to the papillary muscles serving as replacements for the natural marginal chordae tendinae of the normal mitral **valve**. The two lateral sides of the membrane are joined to form a truncated cone with a wider upper circular base and a narrow extremity formed by the thin chordal bands. A set of sutures are placed between selected points at the base of the cone and the two thin prolongations serving as replacements for the **strut** or stay basal chords of the natural mitral **valve**. Thus, the mitral **valve** prosthesis is anatomical because it is stentless, **bicuspid** and supported by marginal and basal chordae . Obturators and sizers in the configuration of rods of varying diameter, to measure the host's **valve** annulus diameter and select the appropriate size of the prosthesis are used during implantation of the prosthesis. A

rod shaped holder maintains the prosthesis during implantation, and a curved bodied measuring instrument is used to determine the precise location where the chordae tendinae of the prosthesis are to be sutured to the papillary muscles of a recipient mammal.

42/48 © EPODOC / EPO

PN - [US4892541](#) A 19900109

PR - US19870008207
19870129; US19820445259
19821129; US19840664150
19841024

AP - US19870008207 19870129

DT - *; Rep

CT - || STSE (A)
[US2659252](#) A 19531117 [] (KIPP
EGBERT M);
[US3714671](#) A 19730206 []
] (GOODENOUGH S, et al);
[US3983581](#) A 19761005 []
] (ANGELL WILLIAM W, et al);
[US4035849](#) A 19770719 []
] (ANGELL WILLIAM W, et al);
[US4044170](#) A 19770823 []
] (SCHARBACH HEINZ, et al);
[US4106129](#) A 19780815 []
] (CARPENTIER ALAIN F, et al);
[US4388735](#) A 19830621 []
] (IONESCU MARIAN I [GB], et al);
[US4441216](#) A 19840410 []
] (IONESCU MARIAN I [GB], et al);
[US4626255](#) A 19861202 []
] (REICHART BRUNO [DE], et al)

CCI - [A61F2/2409](#) ; [A61F2/2412](#)

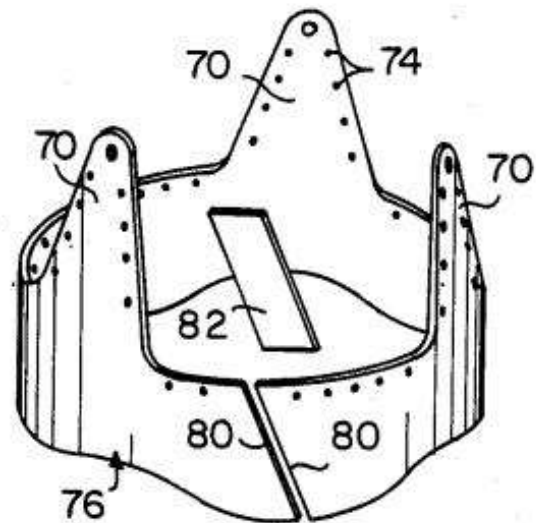
CCA - [Y10S623/90](#) ; [Y10S623/91](#)

CI - A61F2/2409 (EP, US)
A61F2/2412 (EP, US)

CA - Y10S623/90 (EP, US)
Y10S623/91 (EP, US)

PA - TASCON MEDICAL TECHNOLOGY
CORP [US]

TI - Heart **valve** prosthesis



AB

- A "tissue **valve** type" heart **valve** prosthesis is disclosed which has a biocompatible plastic sewing ring adapted to be surgically implanted into the mitral, aortic or **tricuspid** annulus of the human heart. The sewing ring has internal square threads and a biocompatible fabric mesh or cloth is embedded into the sewing ring so that the cloth can be fully wrapped around the sewing ring covering all of its plastic surfaces except for the internally protruding threads. A biocompatible plastic **stent** support ring has externally disposed threads to lock with the threads of the sewing ring in approximately one turn, or less. The **stent** support ring also embeds a biocompatible fabric mesh which can be wrapped around the **stent** support ring to cover all of its plastic surfaces, except for the protruding threads, and to form a cloth pocket wherein a solid **stent** is mounted. A porcine trileaflet **valve** is mounted to the **stent**. When the heart **valve** prosthesis is as implanted into the heart, the threads of the sewing ring and of the **stent** support ring interlock, and there are no plastic or metal surfaces, uncovered by biocompatible fabric, to be exposed to blood flow. Processes for making the solid metal **stent** by laser cutting, and the sewing and **stent** support rings by a specifically adapted plastic molding procedure, are also disclosed.

PN - [GB1243293](#) A 19710818

PR - US19680759858 19680916

AP - GB19690045088 19690912

DT - **

CCI - [A61F2/2418](#)

CCA - [A61F2220/0058](#) ;
[A61F2220/0075](#) ; [Y10S623/90](#)

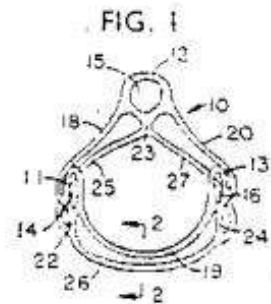
CI - A61F2/2418 (EP, US)

CA - A61F2220/0058 (EP, US)
A61F2220/0075 (EP, US)
Y10S623/90 (EP, US)

PA - HANCOCK WARREN DALE [US]

TI - IMPROVEMENTS RELATING
TO **STENT'S** FOR HEART VALVES

AB - 1,243,293. Heart **valve** support devices. W. D. HANCOCK. 12 Sept., 1969 [16 Sept., 1968], No. 45088/69. Heading A5R. A **stent** 10 for a natural, or naturallyshaped synthetic, replacement heart **valve** comprises a generally annular framework having spaced apical portions 12, 13, 14 for supporting the commissures of a heart **valve**, and upper arms 18, 19, 20, and lower arms 25, 26, 27 connecting the apical portions and adapted to lie adjacent marginal portions of the cups of a **valve** fitted over the **stent** for attachment thereto. The portions 12 to 14 are apertured and arcuate, upper connecting arms 18 to 20 being curved downwardly therefrom more than lower arms 25 to 27. The framework is integrally formed of plastics material or of metal, such as stainless steel, the upper arms being bendable in the latter case to accommodate different sized valves secured to the **stent** by sutures. The connecting arms may be covered by a tubular cloth (20), and an outer cloth or sponge ring (58) may be located around the arms



providing a bed for fibrous ingrowth after grafting and acting as a hemodynamic seal. The **stent** 10 is for use in the aortic or pulmonary position, a similar **stent** (32), Fig. 5 (not shown) for the mitral or **tricuspid** position being larger and having an integral lower outer ring (50) or a cloth ring (73) around the lower arms, by either of which means the **stent** (32) and **valve** may be secured in the heart. An annular ring (53), of for example felt, may be located between ring (50) and the lower arms to provide a hemodynamic seal. Ragged edges of a **valve** and sutures may be covered by cloth (62) providing a fibrous ingrowth bed. The circumferential spacings between adjacent apexes may be all different, or two spacings may be equal and the third 17 to 33% shorter.

PN - [EP1878407](#) A1 20080116

PR - GR20060100400 20060712

AP - EP20070386016 20070709

DT - *; Rep

CT - || STSE (A1)
[WO9700651](#) A1 19970109
[X] (AGATHOS EFSTATHIOS A [US])
[X] 1-6
* claims 1-20 *;
[US2004024452](#) A1 20040205
[X] (KRUSE STEVEN D [US], et al)
[X] 1-6
* paragraphs [0028] , [0029] ,
[0056] *;
[US6589279](#) B1 20030708
[X] (ANDERSON KIMBERLY A [US],
et al)
[X] 1-6
* column 4, lines 62-67 *

CCI - [A61F2/2415](#) ; [A61L27/3625](#) ;
[A61L27/3641](#) ; [A61L27/3645](#) ;
[A61L27/3687](#)

CI - A61F2/2415 (EP)
A61L27/3625 (EP)
A61L27/3641 (EP)
A61L27/3645 (EP)
A61L27/3687 (EP)

PA - AGATHOSEFSTATHIOS-ANDREAS
[GR]

TI - Human cardiac **valve** replacement
with seal heart **valve** (aortic or
pulmonary)

AB - The present invention provides a
new method of constructing
a **tricuspid** bioprosthetic **valve**
derived from the heart **valve** of
seal (aortic or pulmonary), which
can be used to treat human
cardiac **valve** dysfunction, by
replacing the existing **valve** with a
novel bioprosthesis of the present
invention. This new
bioprosthesis, after having being
extracted from the heart of the
seal, is treated with a fixative
agent to sterilize, fix, increase the
strength of the leaflets and lessen

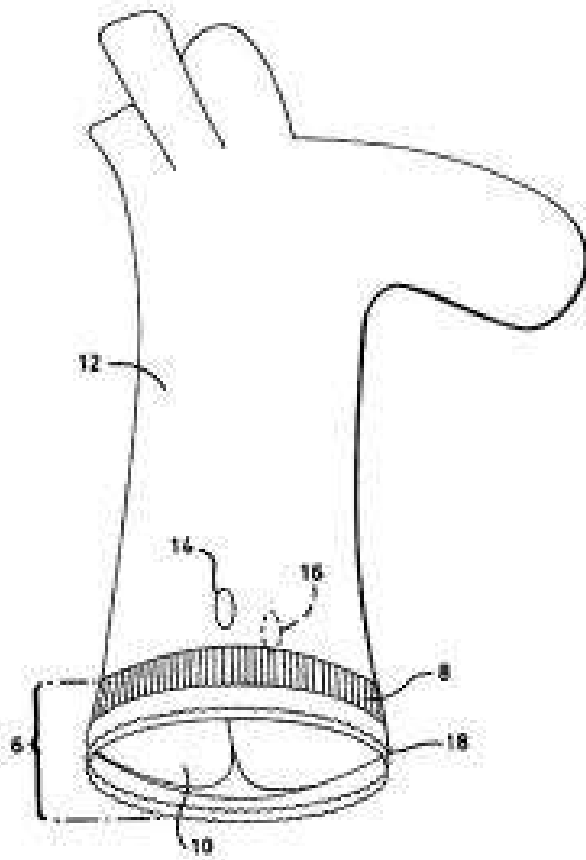


Fig. 1

the antigenicity of the tissue **valve**. Following this step the seal **valve** can either be **stent**-mounted or can be unstented. Being a natural trileaflet **valve**, with symmetrical cusps and no muscle shelf within the leaflet, the seal **valve** presents superior hemodynamic performance over the existing aortic porcine and bovine pericardial valves. The increase thickness of the leaflets result in a long term durability, without the attendant disadvantages or re-replacing a bioprosthesis. Alternatively, a seal **valve** can be constructed from tissues such as pericardium or fascia lata.

45/48 © EPODOC / EPO

PN - [CN201001791Y](#) Y 20080109
 PR - CN20072034427U 20070212
 AP - CN20072034427U 20070212
 DT - I
 PA - XIANGQING KONG [CN]
 TI - **Stent** for reducing left ventricular mitral back-flow and its conveying device
 AB - The utility model discloses a bracket used to reduce the reflux via the **bicuspid valve** of the left ventricle and thus realize the purpose of curing the incompetence of the **bicuspid valve** without the need of an operation on the chest with a small trauma and a low risk, as well as a conveying appliance for the bracket, and aims to solve the large operating trauma and the high death rate caused by the prior art for the treatment of the incompetence of the **bicuspid valve**. The utility model substantially consists of a bracket used to increase the curvature radius of the **bicuspid valve** ring and a conveying appliance used to fix both ends of the bracket. The bracket is capable of changing the natural bending shape of the coronary sinus, pushes the rear ring of the **bicuspid valve** upwards and thus improves the combination of the **valve** tips and reduces the reflux via the **bicuspid valve** after it is sent by the conveying appliance into the coronary sinus near the rear tip of the **bicuspid valve** of the patient and interacts with the wall of the coronary sinus.

46/48 © EPODOC / EPO

PN - [CA2536577](#) A1 20050310
 PR - US20030653397 20030902; WO2004US28078 20040827
 AP - CA20042536577 20040827
 DT - I

CCI - [A61F2/2418](#) ; [A61F2/2475](#)

CCA - [A61F2220/0008](#) ; [A61F2220/0016](#) ; [A61F2230/0054](#)

CI - A61F2/2418 (EP, US)
- A61F2/2475 (EP, US)

CA - A61F2220/0008 (EP, US)
- A61F2220/0016 (EP, US)
- A61F2230/0054 (EP, US)

PA - 3F THERAPEUTICS INC [US]

TI - MEDICAL DEVICE FOR REDUCTION OF PRESSURE EFFECTS OF CARDIAC **TRICUSPIDVALVE** REGURGITATION

AB - An elongate **valve stent** and methods for protecting an upper or a lower body of a patient from high venous pressures comprising a **stent** member, the **stent** member comprising a support structure and a tissue **valve**, wherein the tissue **valve** is configured to permit fluid flow in one direction and prevent fluid flow in an opposite direction, and means for anchoring the **stent** member onto surrounding tissue of the superior vena cava or inferior vena cava.

47/48 © EPODOC / EPO

PN - [CA2525606](#) A1 20041104

PNFP - CA2525606 C 20100622

PR - US20030418677 20030417; WO2004US11948 20040416

AP - CA20042525606 20040416

DT - I

CCI - [A61F2/2418](#) ; [A61F2/2475](#)

CCA - [A61F2002/828](#) ; [A61F2220/0008](#) ; [A61F2220/0016](#) ; [A61F2230/0054](#) ; [A61F2250/0008](#)

CI - A61F2/2418 (EP, US)
- A61F2/2475 (EP, US)

CA - A61F2002/828 (EP, US)
- A61F2220/0008 (EP, US)
- A61F2220/0016 (EP, US)
- A61F2230/0054 (EP, US)
- A61F2250/0008 (EP, US)

PA - (A1)
MCCARTHY PATRICK M [US]; QUIJANO RODOLFO C [US]
- (C)
QUIJANO RODOLFO C [US]; MCCARTHY PATRICK M [US]

TI - (A1 C)
DEVICE FOR REDUCTION OF PRESSURE EFFECTS OF CARDIAC **TRICUSPIDVALVE** REGURGITATION

AB - (A1)
A method of protecting an upper and a lower body of a patient from high venous pressures comprising: providing an elongate **valve stent**, wherein the **stent** comprises a first **stent** member with a first tissue **valve** secured to a first support structure being disposed at a first end of the **stent** and a second **stent** member with a second

tissue **valve** secured to a second support structure being disposed at an opposite second end of the **stent**, wherein both support structures are collapsibly expandable, the second end being connected to the first end with at least one elongate connecting member; passing the elongate **valve stent** through a blood vessel with the first and second support structures in a collapsed position; and securing the first support structure to an inferior vena cava and the second support structure to a superior vena cava with both support structures in an expanded shape.

- (C)

A method of protecting an upper and a lower body of a patient from high venous pressures comprising: providing an elongate **valve stent**, wherein the **stent** comprises a first **stent** member with a first tissue **valve** secured to a first support structure being disposed at a first end of the **stent** and a second **stent** member with a second tissue **valve** secured to a second support structure being disposed at an opposite second end of the **stent**, wherein both support structures are collapsibly expandable, the second end being connected to the first end with at least one elongate connecting member; passing the elongate **valve stent** through a blood vessel with the first and second support structures in a collapsed position; and securing the first support structure to an inferior vena cava and the second support structure to a superior vena cava with both support structures in an expanded shape.

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PA - INT HEART INST MONTANA [US]

TI - ATRIO-VENTRICULAR VALVULAR DEVICE

AB - An anatomically designed atrioventricular **valve** is made of biologically compatible synthetic membrane or biological membrane of autologous, homologous or heterologous origin. A single piece of the selected membrane material is trimmed so as to form two unequal sheaths similar to the normal anterior and posterior mammalian mitral **valve** leaflets with a wide upper base to be sutured to the host's mitral annulus. These two leaflets are prolonged and tapered into two thin bands to be connected to the papillary muscles serving as replacements for the natural marginal chordae tendinae of the normal mitral **valve**. The two lateral sides of the membrane are joined to form a truncated cone with a wider upper circular base and a narrow extremity formed by the thin chordal bands. A set of sutures are placed between selected points at the base of the cone and the two thin prolongations serving as replacements for the **strut** or stay basal chords of the natural mitral **valve**. Thus, the mitral **valve** prosthesis is anatomical because it is stentless, **bicuspid** and supported by marginal and basal chordae. Obturators and sizers in the configuration of rods of varying diameter, to measure the host's **valve** annulus diameter and select the appropriate size of the prosthesis are used during implantation of the prosthesis. A rod shaped holder maintains the prosthesis

during implantation, and a curved bodied measuring instrument is used to determine the precise location where the chordae tendinae of the prosthesis are to be sutured to the papillary muscles of a recipient mammal.

[SS 5]