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Declaration under Rule 4.17:  
— of inventorship (Rule 4.17(iv))

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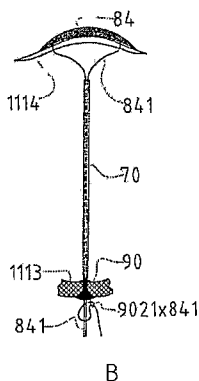
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(54) Title: CATHETER BASED MITRAL VALVE REPAIR METHOD AND APPARATUS

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(57) Abstract: Method and devices including novel suture composition, catheter type suture transporters, pushers -and tying instruments, implant-pledget for anchoring onto the mitral leaflet, myocardial free wall entry site occluder, and technique for catheter based treatment of mitral regurgitation are presented. In one embodiment, a leaflet tension apparatus is implanted to adjust the systolic leaflet amplitude excursion. A continuous guiding suture track is created from the direct left ventricular puncture site through one or two puncture sites of the leaflet (1114) via the transseptal catheter and femoral vein; a pledget-implant (84) is apposed onto the exteriorized distal (venous) suture end via its integrated suture part and is anchored onto the atrial leaflet surface (11141) by retracting the guiding suture from the epicardial end. Silicon tube (70) is interposed between the leaflet and the free myocardial wall (1113) covering the implant's integrated sutures (841) which are directed through the free myocardial wall occluder (90) and secured to its epicardial segment by an adjustable knot (9021x841) so as to keep the leaflet at the wanted distance during systole whilst the valve opening remains unhindered.

# INTERNATIONAL SEARCH REPORT

International application No  
PCT/RS2007/000006

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. A61B17/00      A61B17/04				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b>				
Minimum documentation searched (classification system followed by classification symbols) A61B				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 2001/025171 A1 (MORTIER TODD J [US] ET AL MORTIER TODD J [US] ET AL) 27 September 2001 (2001-09-27) figure 70 paragraphs [0132], [0195], [0196]	5		
<input type="checkbox"/> Further documents are listed in the continuation of Box C.				
<input checked="" type="checkbox"/> See patent family annex.				
* Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;">                     *A* document defining the general state of the art which is not considered to be of particular relevance                      *E* earlier document but published on or after the international filing date                      *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)                      *O* document referring to an oral disclosure, use, exhibition or other means                      *P* document published prior to the international filing date but later than the priority date claimed                 </td> <td style="width: 50%; vertical-align: top; padding: 5px;">                     *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention                      *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone                      *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.                      *&amp;* document member of the same patent family                 </td> </tr> </table>			*A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family
*A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family			
Date of the actual completion of the international search	Date of mailing of the international search report			
21 February 2008	07/07/2008			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  Schießl, Werner			

**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/RS2007/000006

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: 1-4, 11  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see additional sheet(s)

**Remark on Protest**

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

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

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

1. claim: 5

Suture transporter comprising an elongated metal cannula and possibly the suture, wherein the suture can be fixed to or released from a proximal opening of the cannula to allow transporting sutures to distant locations through a cardiovascular catheter

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2. claims: 6-10

A myocardial free wall occluder or an implant-pledget both made of a biocompatible polymer and being adapted to be coupled to guiding / tension sutures to form an artificial tension apparatus for a heart valve leaflet

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/RS2007/000006

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001025171 A1	27-09-2001	AU 5231099 A	21-02-2000
		EP 1100378 A1	23-05-2001
		WO 0006028 A1	10-02-2000
		US 6260552 B1	17-07-2001

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