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(54) Title: CARDIAC PATTERNING FOR IMPROVING DIASTOLIC FUNCTION

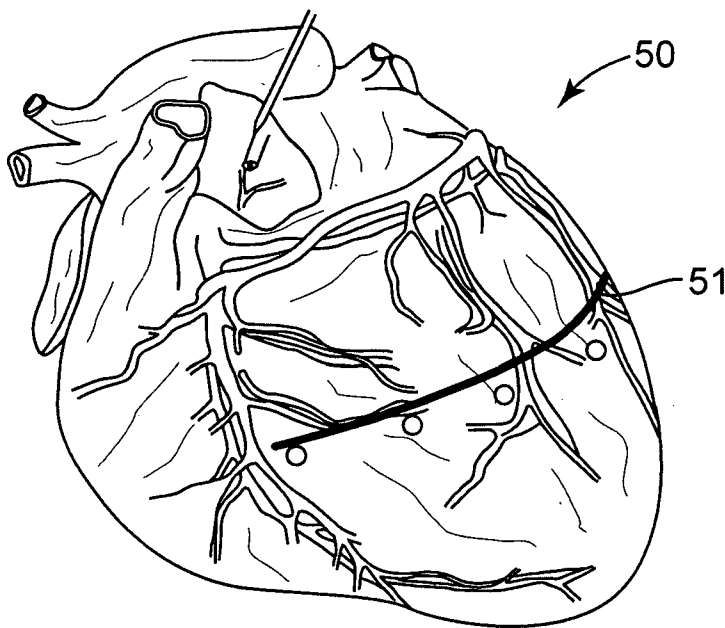


FIG. 5A

(57) Abstract: Cardiomyopathy may be treated by distributing a space-occupying diastole-assist agent within the myocardium or within the cardiac venous system in a pattern about one or more chambers of the heart, such that the space-modifying agent integrates into and thickens at least part of the cardiac wall about the chamber so as globally to reduce wall stress, stabilize or even reduce chamber size, and/or improve diastolic function. Some patterns also cause a beneficial global reshaping of the chamber. These changes occur quickly and are sustainable, and have a rapid and sustainable therapeutic effect on cardiac function. Patterns of distribution of space-occupying agent within the myocardium for global resizing may also be used or augmented to treat localized conditions such as myocardial infarctions, overt aneurysm of the ventricular wall as typically forms in response to large transmural myocardial infarctions, and mitral regurgitation due to a noncompliant mitral valve. These techniques may also be used to treat localized conditions that may not yet have progressed to cardiomyopathy.



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Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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- *of inventorship (Rule 4.17(iv))*

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A. CLASSIFICATION OF SUBJECT MATTER*A61N 1/36(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8: A61M, A61N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO Internal) "heart", "catheter", "chamber", "dose", "wall", "inject"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 6416510 B1 (PETER A. ALTMAN et al) 9 July 2002 See claims 1 and 14-16, column 9, line 60 - column 11, line 45, figures 1a-1c and 11	10 4 - 6
X A	US 6702777 B2 (SHLOMO BEN HAIM et al) 9 March 2004 See claims 1-5, column 2, lines 10-24, figures 1A-1C and 5	10 4 - 6
A	US 6511413 B2 (AMIR LANDEBERG) 28 January 2003 See claim 1, column 12, lines 10-25, figure 2	4 - 6, 10
A	US 7186210 B2 (YAIR FELD et al) 6 March 2007 See claims 1-3, figures 10a - 23	4 - 6, 10

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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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.: 1-3, 7-9, 11, 12
because they relate to subject matter not required to be searched by this Authority, namely:

Claims 1-3, 7-9, 11 and 12 pertain to methods for treatment of human or animal body by therapy and thus relate to a subject matter which this International Searching Authority is not required to search under Article 17(2)(a)(i) and Rule 39.1(iv) PCT.

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:

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

Remark on Protest

- The additional search fees were accompanied by the applicant's protest 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.