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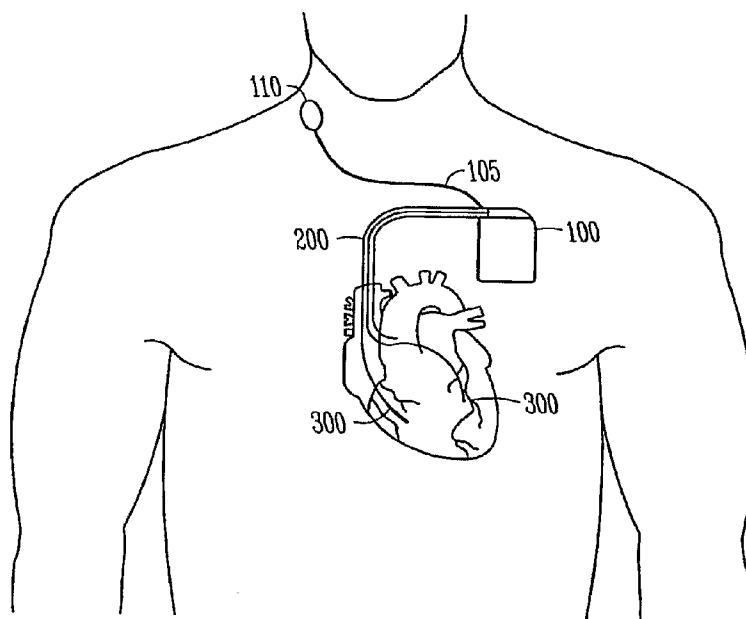
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Published:

- 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

[Continued on next page]

(54) **Title:** DEVICE FOR DETECTING AND TREATING DEPRESSION



(57) **Abstract:** A system is described for detecting and/or treating depression that may be incorporated into an implantable device such as a cardiac rhythm management device. The device may determine that depression is present by analysis of heart rate variability measured using the cardiac sensing channels of the device and/or by detection of blood-borne factors that are associated with depression. If depression is detected, the device may be configured to automatically delivery therapy such as neuromodulation and/or drug delivery.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/001086

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61N1/36

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)
A61N

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

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

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/023282 A1 (BARRETT BURKE T [US] ET AL BARRETT BURKE T [US] ET AL) 30 January 2003 (2003-01-30) paragraphs [0011], [0034], [0038]; figures	1-10
X	US 5 299 569 A (WERNICKE JOACHIM F [US] ET AL) 5 April 1994 (1994-04-05) column 7, line 56 - line 63 column 8, line 57 - column 9, line 26 column 10, line 9 - line 17	1,2
A	column 11, line 8 - line 24; figures ----- -/--	8

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 document but published on or after the international filing date
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- *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
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- *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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 176 242 B1 (RISE MARK T [US]) 23 January 2001 (2001-01-23) column 2, line 7 - line 34 column 8, line 45 - column 9, line 3 column 9, line 57 - line 67 column 13, line 28 - line 43; figures -----	1-3,6,7
A	WO 93/02744 A (CYBERONICS INC [US]) 18 February 1993 (1993-02-18) page 5, line 4 - page 6, line 3 page 14, line 12 - line 29; figures -----	1-10
A	US 2002/193838 A1 (LOVETT ERIC G [US]) 19 December 2002 (2002-12-19) paragraphs [0003], [0007] - [0009]; figures -----	1-10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/001086

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 11-20
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by 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 III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

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

Remark on Protest

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

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2007/001086
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