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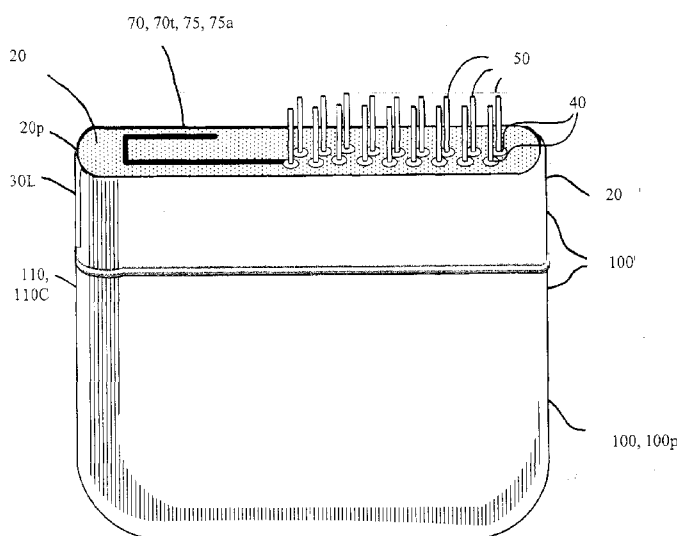
Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) Title: HOUSING STRUCTURE FOR A MEDICAL IMPLANT INCLUDING A MONOLITHIC SUBSTRATE

FIG. 5A



(57) Abstract: Embodiments described herein provide lid structures for medical implant (MI) housing. In one embodiment, the invention provides a lid structure for a MI housing comprising a substrate comprising a dielectric material, a conductive portion fabricated on a substrate surface or interior, a frame at least partially surrounding the substrate perimeter, a plurality of vias projecting at least partially through the substrate, a plurality of conductive pins with at least one pin projecting through a via. The frame is hermetically joined to the substrate and can be hermetically joined to the housing. The conductive portion allows electrical components, including capacitors, inductors, resistor and antennas to be fabricated on or coupled to the substrate surface or interior. The antenna comprises a conductive trace positioned on a substrate top surface and is configured to send and receive signals between an implant within a patient's body and a communication device external to the body.



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29 July 2010

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/062392**A. CLASSIFICATION OF SUBJECT MATTER*****A61N 1/372(2006.01)i, A61N 1/36(2006.01)i, A61N 1/37(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 : As above

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

Japanese utility models and applications for utility models

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

eKOMPASS (KIPO internal) & keywords : "implantable medical device (IMD)", "header (connector)", "substrate", "frame", "vias", and "pins"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007-0179554 A1 (LYER, RAJESH V. et al.) 2 August 2007 See paragraphs [0002], [0006], [0028], [0033], [0034], [0039], [0046], [0056], figures 2, 6, 9.	1-14, 16, 26-31, 35-38
A	US 2005-0024837 A1 (YOUNKER, NICK A. et al.) 3 February 2005 See paragraphs [0017], [0018], [0021], [0022], [0028], figures 1, 2A, 5A-5C.	1-41
A	US 2007-0123949 A1 (DABNEY, WARREN S. et al.) 31 May 2007 See paragraphs [0001], [0016], [0110], [0111], [0114], [0117], figures 1, 47-49.	1-41
A	US 2006-0009813 A1 (TAYLOR, WILLIAM J. et al.) 12 January 2006 See paragraphs [0002], [0011], [0012], [0026], [0027], figures 3A-3C, 4A, 4B.	1-41

☐ 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

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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

"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

International application No.

PCT/US2009/062392**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.: 42-61
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 42-61 pertain to methods for treatment of human body by therapy or surgery, thus relate to a subject matter which this International Searching Authority is not required to search under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the 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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/062392

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