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- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM,

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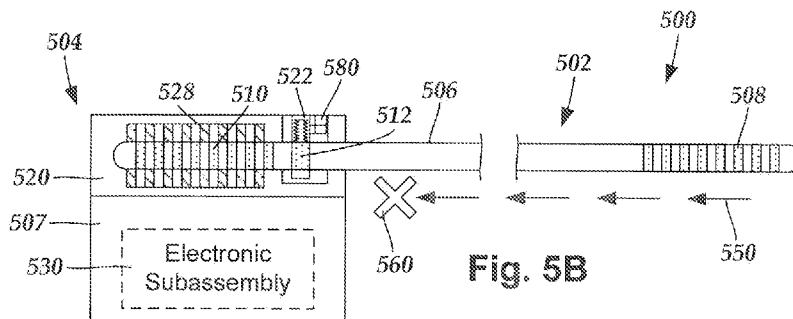
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Published:

- with international search report (Art. 21(3))
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18 April 2013

(54) **Title:** SYSTEMS FOR ELECTRICALLY DISCONNECTING CONNECTOR CONTACTS FROM AN ELECTRONIC SUB-ASSEMBLY OR FROM A LEAD AND AN ASSOCIATED METHOD



(57) **Abstract:** An implantable electrical stimulation system (500) includes a control module (504) electrically coupleable to a lead (502). The control module includes a housing (507), an electronic subassembly (530) disposed in the housing and a connector assembly (520) for receiving the lead. The connector assembly includes a port for receiving a proximal end of the lead. Connector contacts (528) are disposed in the connector assembly housing and electrically couple to the electronic subassembly. The connector contacts align with terminals (510) disposed on the lead to form an electrical connection between the connector contacts and the terminals when the proximal end of the lead is disposed in the port of the connector assembly. A disconnecting feature (580) includes a switch for electrically disabling, or at least significantly reducing, the electrical connection between the connector contacts and the electronic subassembly when the switch is opened.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/043841

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61N1/08 A61N1/375
ADD.
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 practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7 962 224 B1 (BLISCHAK BRIAN [US]) 14 June 2011 (2011-06-14)	1,3,6-9, 12,13
Y	column 2, line 59 - column 3, line 3 column 3, line 49 - column 4, line 30 column 4, line 61 - column 5, line 56 column 8, line 34 - line 65; figures 1, 5B	5
X	US 2009/163980 A1 (STEVENSON ROBERT A [US]) 25 June 2009 (2009-06-25)	1-4,6-9, 12,13
Y	paragraph [0100] - paragraph [0104] paragraph [0111] - paragraph [0113] paragraph [0132] - paragraph [0137]; figure 14	5
X	US 2004/260355 A1 (HOLLEMAN TIMOTHY W [US] ET AL) 23 December 2004 (2004-12-23)	1,6-8, 10,11
Y	paragraph [0013] - paragraph [0016] paragraph [0022]; figures 1, 3	5
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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 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 26 September 2012	Date of mailing of the international search report 19/02/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Sigurd, Karin
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/043841

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.:
because they relate to subject matter not required to be searched by this Authority, namely:

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.:

1-13

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. claims: 1-13

An implantable electrical stimulation system with an electrical connection between the plurality of connector contacts and the electronic subassembly and with a switch for electrically disabling the electrical connection.

2. claims: 14-20

An implantable electrical stimulation system with means for misaligning the connector contacts and the terminals and a method for its use.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/043841

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2 099 511 A (VIKTOR CAESAR) 16 November 1937 (1937-11-16) page 1, column 2, line 24 - page 2, column 1, line 19 page 3, column 2, line 28 - line 40; figure 1 -----	5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/043841

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 7962224	B1	14-06-2011	US 7962224 B1	14-06-2011
			US 2011213445 A1	01-09-2011

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			GB 435547 A	16-09-1935
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