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(54) Title: STIMULATION THERAPY FOR BLADDER DYSFUNCTION

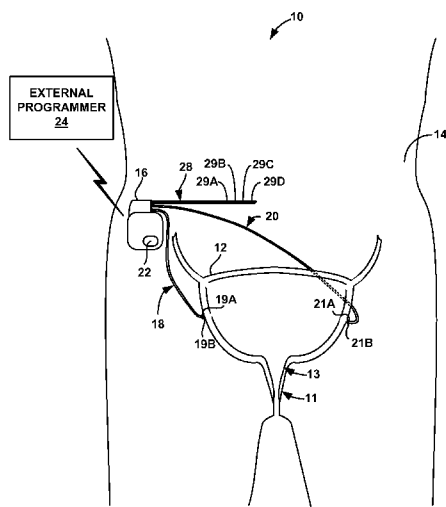


FIG. 1

(57) Abstract: A medical system may include a control module and a therapy delivery module configured to generate and deliver electrical stimulation therapy to a patient. The control module may be configured to control the therapy delivery module to deliver electrical stimulation at a first stimulation intensity for a first time period, to deliver electrical stimulation at a second stimulation intensity for a second time period immediately following the first time period, and to deliver electrical stimulation at the first stimulation intensity for a third time period immediately following the second time period. The second stimulation intensity may be less than the first stimulation intensity. The electrical stimulation may elicit a first inhibitory physiological response during the first time period and a second inhibitory physiological response during the second time period. The second inhibitory physiological response may be greater than the first inhibitory physiological response.



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**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/US2011/039311

A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61N1/36 A61B5/03  
ADD. A61N1/Q5

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 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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	wo 2006/092007 AI (CONTINENCE CONTROL SYSTEMS INT [AU]; STEPHENS TONY [AU]) 8 September 2006 (2006-09-08) figures 2,3,7-10, 13 page 2, line 5 - page 7, line 33 page 14, line 13 - page 17, line 28 page 19, line 10 - page 21, line 33 page 27, line 4 - page 28, line 33 -----	1,5-7 , 10,31 ,35
X	us 2007/100388 AI (GERBER MARTIN T [US]) 3 May 2007 (2007-05-03)  figures 1, 4 paragraph [0013] - paragraph [0023] paragraph [0032] paragraph [0054]  -----  - / - -	1,2,5-7, 10,31 , 32,35 ,36



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

"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

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"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

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European Patent Office, P.B. 5818 Patentlaan 2  
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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2011/039311

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/122660 A1 (BOVEJA BIRINDER R [US] ET AL) 8 June 2006 (2006-06-08)  the whole document  -----	1,2,5-7, 10,31, 32,35,36

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2011/039311

## 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.: 18-30, 52-61  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Methods 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.:  
1, 2, 5-7, 10, 31, 32, 35, 36

### 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

International Application No. PCTY US2Q11/Q39311

### 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, 2, 5-7, 10, 31, 32, 35, 36

A medical system comprising a control module being configured to cease delivery of electrical stimulation for the second time period immediately following the first time period.

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2. claims: 3, 11-17, 39-41

A medical system wherein the electrical stimulation is configured to elicit a first inhibitory physiological response and a second inhibitory physiological response each comprising a reduction in bladder contraction frequency.

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3. claim: 4

A medical system wherein the electrical stimulation is configured to elicit a first inhibitory physiological response wherein the first inhibitory physiological response comprises substantially no inhibitory physiological response.

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4. claims: 8, 9, 33, 34, 37, 38

A medical system comprising a sensor, wherein the control module is configured to detect a signal representative of the second inhibitory physiological response of the patient using the sensor.

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5. claims: 42-51, 62-69

A medical system comprising a control module configured to control the therapy delivery module to deliver electrical stimulation at a first stimulation intensity during a first time period, wherein the first stimulation intensity is between about 50% and about 100% of a threshold stimulation intensity.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006092007	A1	08-09-2006	EP 1853344 A1 14-11-2007
			JP 2008531138 A 14-08-2008
			US 2009054950 A1 26-02-2009
			WO 2006092007 A1 08-09-2006
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US 2007100388	A1	03-05-2007	NONE
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US 2006122660	A1	08-06-2006	NONE
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