

(19)



(11)

**EP 1 938 862 A3**

(12)

**EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**25.08.2010 Bulletin 2010/34**

(43) Date of publication A2:  
**02.07.2008 Bulletin 2008/27**

(21) Application number: **08006191.4**

(22) Date of filing: **18.08.2004**

(51) Int Cl.:

<b>A61N 1/362</b> (2006.01)	<b>A61B 5/00</b> (2006.01)
<b>A61B 5/0205</b> (2006.01)	<b>A61L 9/04</b> (2006.01)
<b>A61M 15/00</b> (2006.01)	<b>A61N 1/20</b> (2006.01)
<b>A61N 1/36</b> (2006.01)	<b>A61B 5/04</b> (2006.01)
<b>A61B 5/103</b> (2006.01)	<b>A61K 9/22</b> (2006.01)
<b>A61M 31/00</b> (2006.01)	<b>A61N 1/18</b> (2006.01)
<b>A61N 1/365</b> (2006.01)	

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL HR LT LV MK**

(30) Priority: **18.08.2003 US 642998**  
**18.08.2003 US 643203**  
**18.08.2003 US 643006**  
**18.08.2003 US 643016**  
**18.08.2003 US 643154**  
**18.09.2003 US 504229 P**  
**11.03.2004 US 798794**  
**15.04.2004 US 824776**  
**17.08.2004 US 920675**  
**17.08.2004 US 920568**  
**17.08.2004 US 920569**  
**17.08.2004 US 920549**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:  
**04781543.6 / 1 656 181**

(71) Applicant: **Cardiac Pacemakers, Inc.**  
**St. Paul MN 55112-5798 (US)**

(72) Inventors:  
• **Hartley, Jesse W.**  
**Lino Lakes**  
**Minnesota 55014 (US)**

- **Quan, Ni**  
**Shoreview**  
**Minnesota 55126 (US)**
- **Hatlestad, John D.**  
**Maplewood**  
**Minnesota 55117 (US)**
- **Lovett, Eric G.**  
**Mendota Heights**  
**Minnesota 55120 (US)**
- **Kenknight, Bruce H.**  
**Maple Grove**  
**Minnesota 55311 (US)**
- **Stahmann, Jeffrey E.**  
**Ramsey**  
**Minnesota 55303 (US)**
- **Lee, Kent**  
**Fridley**  
**Minnesota 55432 (US)**

(74) Representative: **Charig, Raymond Julian et al**  
**Potter Clarkson LLP**  
**Park View House**  
**58 The Ropewalk**  
**Nottingham**  
**NG1 5DD (GB)**

(54) **Disordered breathing management system and methods**

(57) An approach to providing disordered breathing therapy includes sensing conditions affecting the patient and adapting a therapy to mitigate the disordered breathing based on the sensed conditions. The therapy may be adapted to enhance therapy effectiveness, to provide therapy that reduces an impact of the therapy on the pa-

tient, or to achieve other therapeutic goals. Cardiac electrical therapy to mitigate the disordered breathing may include various cardiac pacing regimens and/or delivery of non-excitatory electrical stimulation to the heart.

**EP 1 938 862 A3**

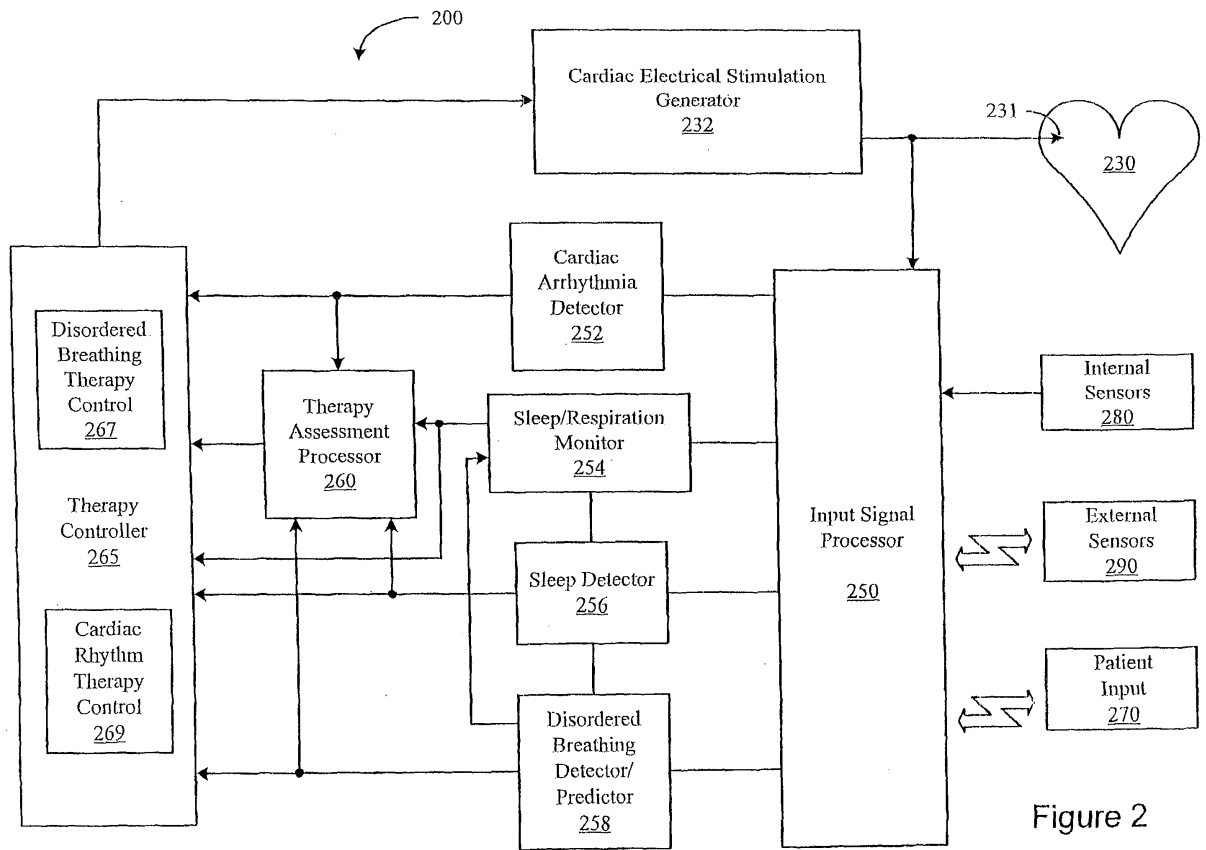


Figure 2



EUROPEAN SEARCH REPORT

Application Number  
EP 08 00 6191

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2001/012954 A1 (CZYGAN GERALD [DE] ET AL) 9 August 2001 (2001-08-09) * paragraphs [0006] - [0047] * -----	1-22	INV. A61N1/362 A61B5/00 A61B5/0205
Y	US 2003/153956 A1 (PARK EULJOON [US] ET AL) 14 August 2003 (2003-08-14) * paragraphs [0003] - [0115] * -----	1-22	A61L9/04 A61M15/00 A61N1/20 A61N1/36
A	US 2002/029002 A1 (BARDY GUST H [US]) 7 March 2002 (2002-03-07) * paragraphs [0006] - [0140] * -----	1-22	A61B5/04 A61B5/103 A61K9/22 A61M31/00
A	US 4 846 195 A (ALT ECKHARD [DE]) 11 July 1989 (1989-07-11) * figures 4,5 * -----	1-22	A61N1/18 A61N1/365
			TECHNICAL FIELDS SEARCHED (IPC)
			A61B A61N A61L A61M
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 July 2010	Examiner Kurze, Volker
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

1  
EPO FORM 1503 03.02 (F04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

EP 08 00 6191

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-07-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001012954 A1	09-08-2001	AT 309028 T	15-11-2005
		DE 19963245 A1	21-06-2001
		DE 50011557 D1	15-12-2005
		EP 1108445 A2	20-06-2001
-----			
US 2003153956 A1	14-08-2003	US 2003153953 A1	14-08-2003
-----			
US 2002029002 A1	07-03-2002	AU 751798 B2	29-08-2002
		AU 7157300 A	24-05-2001
		CA 2325665 A1	16-05-2001
		US 2002173727 A1	21-11-2002
		US 6411840 B1	25-06-2002
		US 2002099303 A1	25-07-2002
-----			
US 4846195 A	11-07-1989	CA 1321621 C	24-08-1993
		DE 3709073 A1	29-09-1988
-----			

专利名称(译)	呼吸管理系统和方法无序		
公开(公告)号	<a href="#">EP1938862A3</a>	公开(公告)日	2010-08-25
申请号	EP2008006191	申请日	2004-08-18
[标]申请(专利权)人(译)	心脏起搏器股份公司		
申请(专利权)人(译)	心脏起搏器, INC.		
当前申请(专利权)人(译)	心脏起搏器, INC.		
[标]发明人	HARTLEY JESSE W QUAN NI HATLESTAD JOHN D LOVETT ERIC G KENKNIGHT BRUCE H STAHMANN JEFFREY E LEE KENT		
发明人	HARTLEY, JESSE W. QUAN, NI HATLESTAD, JOHN D. LOVETT, ERIC G. KENKNIGHT, BRUCE H. STAHMANN, JEFFREY E. LEE, KENT		
IPC分类号	A61N1/362 A61B5/00 A61B5/0205 A61L9/04 A61M15/00 A61N1/20 A61N1/36 A61B5/04 A61B5/103 A61K9/22 A61M31/00 A61N1/18 A61N1/365 A61B5/0215 A61B5/024 A61B5/042 A61B5/0464 A61B5 /0476 A61B5/0488 A61B5/0496 A61B5/053 A61B5/08 A61B5/083 A61B5/085 A61B5/087 A61B5/11 A61B5/113 A61M16/00 A61M16/10 A61N1/37 G06F19/00		
CPC分类号	A61B5/0031 A61B5/02055 A61B5/0215 A61B5/024 A61B5/02405 A61B5/0421 A61B5/0422 A61B5 /0464 A61B5/0476 A61B5/0488 A61B5/0496 A61B5/053 A61B5/0809 A61B5/0816 A61B5/0836 A61B5 /087 A61B5/103 A61B5/1116 A61B5/1118 A61B5/113 A61B5/1135 A61B5/145 A61B5/4035 A61B5 /4812 A61B5/4815 A61B5/4818 A61B2562/0219 A61M16/026 A61M16/0666 A61M16/10 A61M2016 /0021 A61M2016/0036 A61M2016/0039 A61M2016/0042 A61M2202/0208 A61M2205/3303 A61M2205 /3306 A61M2205/3375 A61M2205/3561 A61M2205/3592 A61M2205/52 A61M2230/04 A61M2230/10 A61M2230/202 A61M2230/205 A61M2230/30 A61M2230/432 A61M2230/435 A61M2230/50 A61M2230 /60 A61M2230/63 A61M2230/65 A61N1/3601 A61N1/3627 A61N1/365 A61N1/36514 A61N1/36535 A61N1/36557 A61N1/36578 A61N1/36585 A61N1/36592 A61N1/37 G06F19/3418 G16H20/40		
优先权	10/642998 2003-08-18 US 10/643203 2003-08-18 US 10/643006 2003-08-18 US 10/643016 2003-08-18 US 10/643154 2003-08-18 US 60/504229 2003-09-18 US 10/798794 2004-03-11 US 10/824776 2004-04-15 US 10/920675 2004-08-17 US 10/920568 2004-08-17 US 10/920569 2004-08-17 US 10/920549 2004-08-17 US		

摘要(译)

提供无序呼吸治疗的方法包括感测影响患者的病症并基于所感测的状况调整治疗以减轻呼吸紊乱。治疗可以适于增强治疗效果，提供减少治疗对患者的影响或实现其他治疗目标的治疗。用于减轻呼吸紊乱的心脏电疗法可包括各种心脏起搏方案和/或向心脏递送非兴奋性电刺激。

