(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 174 081 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
14.01.2004 Bulletin 2004/03

(43) Date of publication A2:
23.01.2002 Bulletin 2002/04

(51) Int Cl.[7]: **A61B 5/0488**, A61B 5/11

(21) Application number: **01306170.0**

(22) Date of filing: **18.07.2001**

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

(30) Priority: **21.07.2000 US 628989**

(71) Applicant: **GE Marquette Medical Systems, Inc.**
Milwaukee, Wisconsin 53223 (US)

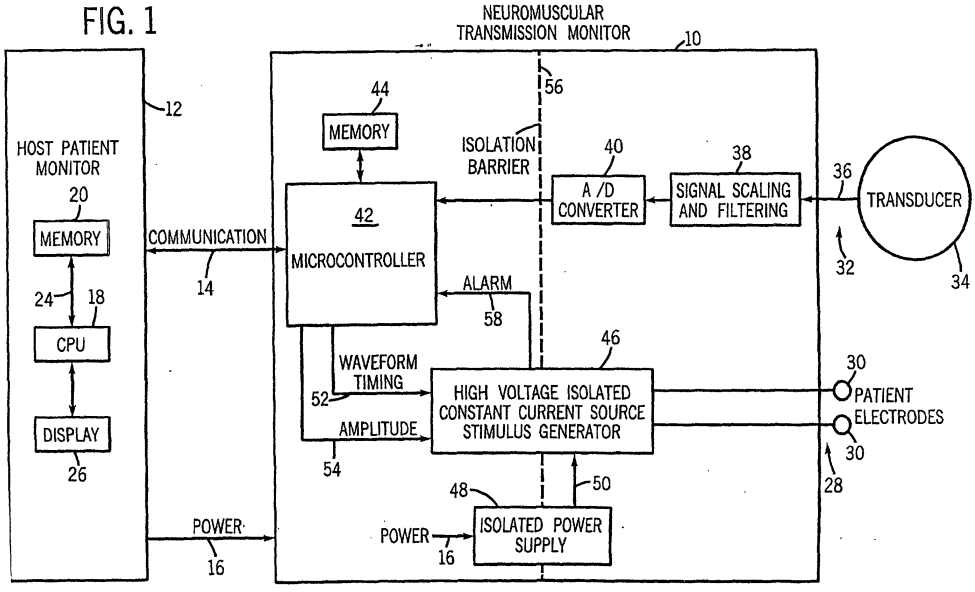
(72) Inventor: **Duckert, David Wayne**
Menomonee Falls, Wisconsin 53051 (US)

(74) Representative: **Goode, Ian Roy**
London Patent Operation
General Electric International, Inc.
15 John Adam Street
London WC2N 6LU (GB)

(54) Method and system having simplified neuromuscular transmission scoring

(57) A method and apparatus are each disclosed that are capable of providing a simplified neuromuscular transmission score utilizing multiple conventional stimulus modes. After applying a neuromuscular stimulus (28) to a patient and measuring a neuromuscular response (34) from the patient, a universal value is assigned (106) to the neuromuscular response signal (36). The universal value is applicable to a single progressive scale that encompasses the multiple conventional stimulus mode scales. A neuromuscular transmission monitor (10) is disclosed having at least one electrode (30), a transducer (34), and a processing unit (18, 42) to process the data and determine a correct stimulus mode for the neuromuscular response signal (36) and produce a non-mode specific value applicable to the single universal scale. The technique is implemented in a computer program which may reside in the memory (20, 44) of either the neuromuscular transmission monitor (10), or a host patient monitor (12). In the former, the neuromuscular transmission monitor (10) is more autonomous, and in the latter, acts more as a slave unit.

FIG. 1



EP 1 174 081 A3

European Patent Office

DECLARATION

which under Rule 45 of the European Patent Convention shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number EP 01 30 6170

The Search Division considers that the present application, does not comply with the provisions of the EPC to such an extent that it is not possible to carry out a meaningful search into the state of the art on the basis of all claims

Reason:

Claims 1-4 and 6 are directed to a method for treatment of the human or animal body by therapy (Article 52 (4) EPC), because they comprise the step of "applying a neuromuscular stimulus to a patient" which is part of the therapy (neuromuscular blocking).

Claim 5 is directed to a computer priogram which defines method steps which are so broad in their scope that they are rendered unclear and not supported by the description (Article 84 EPC): a "neuromuscular response value" could be any number which is read from any input device. The "two different formats" could be "floating point" and "integer", two well known formats in programming. The "universal value" could be a floating point number, the "single scale" being the scale of real numbers, which encompasses both integers and floating point numbers.

Thus, a meaningful search cannot be carried out for claim 5 (Rule 45 EPC).

Claim 8 attempts to define technical apparatus features (lines 9-11) in terms which are so unclear in themselves ("non-mode specific value") and which are grammatically so incorrect that the meaning of the feature cannot be understood ("a single scale that encompass") and which uses an unclear reference to a previous feature which is not clearly identifiable ("based on the ... mode" - what is based on the mode? the

-/--

CLASSIFICATION OF THE APPLICATION (Int.Cl.7)

A61B5/0488
A61B5/11

Place of search	Date	Examiner
MUNICH	19 November 2003	Kurze, V

EPO FORM 1504 (P04C37)

European Patent Office

DECLARATION

which under Rule 45 of the European Patent Convention shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number EP 01 30 6170

The Search Division considers that the present application, does not comply with the provisions of the EPC to such an extent that it is not possible to carry out a meaningful search into the state of the art on the basis of all claims

CLASSIFICATION OF THE APPLICATION (Int.Cl.7)

Reason:

"non-mode specific value", or the "single scale" or the "multiple stimulus modes"?) so that a meaningful search of claims 8-10 is not possible (Rule 45 EPC).

The applicant's attention is drawn to the fact that a search may be carried out during examination following a declaration of no search under Rule 45 EPC, should the problems which led to the declaration being issued be overcome (see EPC Guideline C-VI, 8.5).

Place of search	Date	Examiner
MUNICH	19 November 2003	Kurze, V

EPO FORM 1504 (P04C37)

专利名称(译)	具有简化的神经肌肉传输评分的方法和系统		
公开(公告)号	EP1174081A3	公开(公告)日	2004-01-14
申请号	EP2001306170	申请日	2001-07-18
申请(专利权)人(译)	GE MARQUETTE医疗系统，INC.		
当前申请(专利权)人(译)	GE MARQUETTE医疗系统，INC.		
[标]发明人	DUCKERT DAVID WAYNE		
发明人	DUCKERT, DAVID WAYNE		
IPC分类号	A61B10/00 A61B5/00 A61B5/11 A61B5/0488		
CPC分类号	A61B5/1106 A61B5/0002 A61B2505/05		
优先权	09/628989 2000-07-21 US		
其他公开文献	EP1174081A2 EP1174081B1		
外部链接	Espacenet		

摘要(译)

公开了一种方法和装置，其能够利用多种常规刺激模式提供简化的神经肌肉传输分数。在对患者应用神经肌肉刺激（28）并测量来自患者的神经肌肉反应（34）之后，将通用值分配（106）给神经肌肉反应信号（36）。通用值适用于包含多个常规刺激模式标度的单个渐进标度。公开了一种神经肌肉传输监测器（10），其具有至少一个电极（30），换能器（34）和处理单元（18,42）以处理数据并确定神经肌肉响应信号的正确刺激模式（36）。 ）并产生适用于单一通用量表的非模式特定值。该技术在计算机程序中实现，该计算机程序可以驻留在神经肌肉传输监测器（10）或宿主患者监测器（12）的存储器（20,44）中。在前者中，神经肌肉传输监测器（10）更自主，而在后者中，更多地充当从属单元。