(19) Europäisches Patentamt
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G01B 11/16 *(2006.01)* ***G01L 1/24*** *(2006.01)*
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A61B 90/00 *(2016.01)* *A61B 34/37* *(2016.01)*
A61B 34/00 *(2016.01)* *A61B 90/96* *(2016.01)*
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(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
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(54) **Robotic instrument systems and methods utilizing optical fiber sensors**

(57) The present application is directed to a medical system comprising one or more optical sensors configured to be coupled to a patient's chest, and a controller configured to determine patient's respiration based on signals received from the one or more optical sensors. Further, the present application is directed to a medical system comprising one or more optical sensors configured to be coupled to a patient's body and/or a structure used to stabilize the patient's body, and a controller configured to determine one or more position and/or orientation variables of the patient's body based on signals received from the one or more optical sensors. Finally, the present application is also directed to methods corresponding to the features of the above mentioned medical systems.

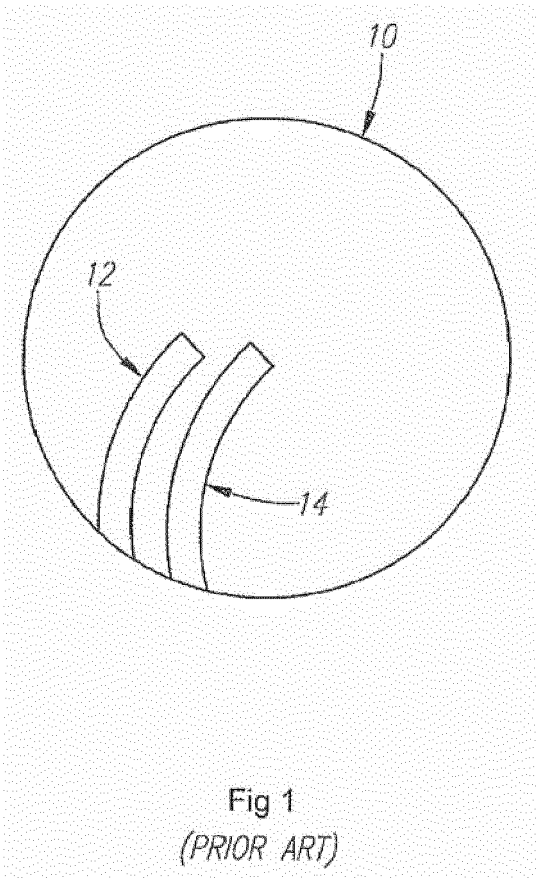

Fig 1
(PRIOR ART)

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EUROPEAN SEARCH REPORT

Application Number
EP 13 15 1394

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 384 437 A1 (ASTON PHOTONIC TECH LTD [GB]) 28 January 2004 (2004-01-28) * paragraphs [0028], [0060]; figures 1,13 * -----	1-3, 11-13	INV. A61B34/30 A61B5/00 A61B8/00 A61B1/00
X	US 2003/095263 A1 (VARSHNEYA DEEPAK [US] ET AL) 22 May 2003 (2003-05-22) * paragraphs [0139], [0140]; figures 4,5,5a * -----	1-3, 11-13	A61B5/06 A61B6/12 G01B11/16 G01L1/24 A61B34/20
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Y	EP 0 665 686 A2 (TEXAS INSTRUMENTS INC [US]) 2 August 1995 (1995-08-02) * column 3, line 3 - line 28 * -----	7	
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TECHNICAL FIELDS SEARCHED (IPC)
A61B B25J

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 May 2017	Mayer-Martenson, E

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

EPO FORM 1503 03.82 (P04C01)

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EUROPEAN SEARCH REPORT

Application Number
EP 13 15 1394

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 5 146 206 A (CALLAWAY JAMES J [US]) 8 September 1992 (1992-09-08) * column 8, line 39 - column 9, line 66; figure 3 *	8	A61B8/08

TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 May 2017	Mayer-Martenson, E

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X : particularly relevant if taken alone
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L : document cited for other reasons

& : member of the same patent family, corresponding document

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Application Number
EP 13 15 1394

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 13 15 1394

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3, 11-13

   fiber sensors for respiration determination

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2. claims: 4-10, 14, 15

   fiber sensors for patient position and/or orientation monitoring

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 15 1394

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.

18-05-2017

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	利用光纤传感器的机器人仪器系统和方法		
公开(公告)号	EP2628460A3	公开(公告)日	2017-06-28
申请号	EP2013151394	申请日	2008-08-14
[标]申请(专利权)人(译)	皇家飞利浦电子股份有限公司		
申请(专利权)人(译)	皇家飞利浦电子N.V.		
当前申请(专利权)人(译)	皇家飞利浦N.V.		
[标]发明人	RAMAMURTHY BHASKAR S TANNER NEAL A YOUNGE ROBERT G SCHLESINGER RANDALL L		
发明人	RAMAMURTHY, BHASKAR, S. TANNER, NEAL, A. YOUNGE, ROBERT G. SCHLESINGER, RANDALL, L.		
IPC分类号	A61B34/30 A61B5/00 A61B8/00 A61B1/00 A61B5/06 A61B6/12 G01B11/16 G01L1/24 A61B34/20 A61M25/01 A61B90/00 A61B34/37 A61B34/00 A61B90/96 A61B90/98 A61B8/08		
CPC分类号	A61B5/065 A61B5/066 A61B5/7285 A61B6/12 A61B18/1492 A61B34/20 A61B34/30 A61B34/37 A61B34/71 A61B34/77 A61B90/39 A61B90/96 A61B90/98 A61B2017/00699 A61B2017/00725 A61B2034/2061 A61B2034/301 A61B2034/715 A61B2034/741 A61B2090/374 A61B2090/376 A61B2090/378 A61B5/0059 A61B5/0064 A61B5/4887 A61B8/00 A61B8/48 A61B18/082 G01B11/16 G01B11/165 G01L1/242 A61B1/00004 A61B1/00013 A61B1/00045 A61B1/00057 A61B1/00165 A61B1/0017 A61B5/06 A61M2025/0166		
优先权	60/964773 2007-08-14 US		
其他公开文献	EP2628460A2		
外部链接	Espacenet		

摘要(译)

本申请涉及一种医疗系统，其包括被配置为耦合到患者胸部的一个或多个光学传感器，以及被配置为基于从一个或多个光学传感器接收的信号来确定患者的呼吸的控制器。此外，本申请涉及一种医疗系统，其包括一个或多个光学传感器，其被配置为耦合到患者的身体和/或用于稳定患者身体的结构，以及控制器，被配置为确定一个或多个位置和/或基于从一个或多个光学传感器接收的信号，患者身体的取向变量。最后，本申请还涉及对应于上述医疗系统的特征的方法。

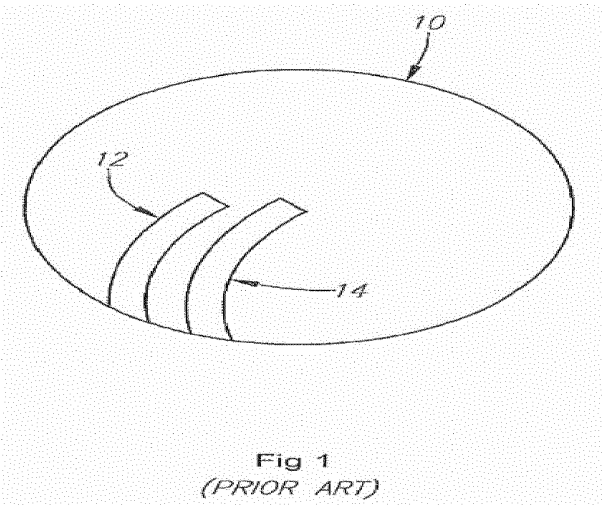

Fig 1
(PRIOR ART)