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(54) SYSTEM FOR MEASURING STRESS LEVEL

(57) This document discloses a solution for estimating a stress level of a human by using heart activity measurement data. According to an aspect, a method comprises: method for estimating a stress level of a human by an apparatus, comprising: executing a breathing exercise application by the apparatus, starting a breathing exercise of the breathing exercise application and outputting, during the breathing exercise, breathing instructions to a user of the apparatus; acquiring a set of heart activity measurement data samples measured by a heart activity sensor from the user during the breathing exercise; computing a set of inter-heartbeat interval samples of the set of heart activity measurement data samples; computing a cardiac coherence of the user during the exercise from the set of inter-heartbeat interval samples; measuring a respiratory rate of the user during the breathing exercise; computing a score of the breathing exercise on the basis of the respiratory rate and the cardiac coherence, the score indicating a stress level of the user; and outputting the score through an interface of the apparatus.

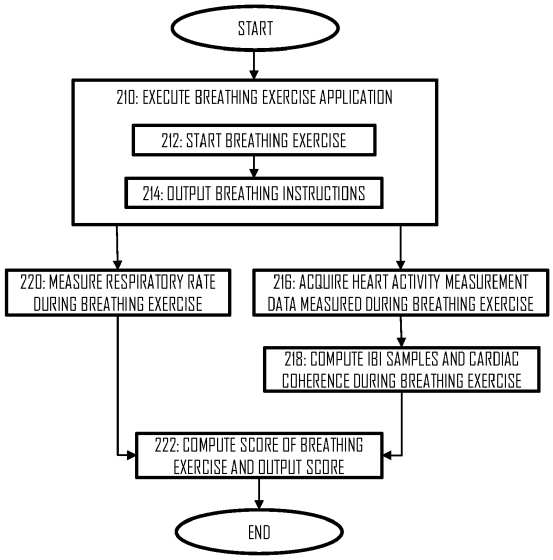

Fig 2B

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EUROPEAN SEARCH REPORT

Application Number
EP 19 17 8174

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X	US 2007/056582 A1 (WOOD MICHAEL [US] ET AL) 15 March 2007 (2007-03-15)	1-9, 12-14	TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	2 August 2019	Vogt, Titus

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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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

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EUROPEAN SEARCH REPORT

Application Number
EP 19 17 8174

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	WO 2009/104127 A1 (KONINKL PHILIPS ELECTRONICS NV [NL] ET AL.) 27 August 2009 (2009-08-27) * page 10 - page 14; claims; figures * -----	1-9, 11-14	
Y	WO 2019/077304 A1 (BOURNEMOUTH UNIV HIGHER EDUCATION CORPORATION [GB]) 25 April 2019 (2019-04-25) * page 6; claims; figures * -----	1-14	
			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
Munich	2 August 2019	Vogt, Titus

CATEGORY OF CITED DOCUMENTS

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& : member of the same patent family, corresponding document

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 19 17 8174

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
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02-08-2019

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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)	测量应力水平的系统		
公开(公告)号	EP3534373A3	公开(公告)日	2019-09-11
申请号	EP2019178174	申请日	2019-06-04
[标]申请(专利权)人(译)	博能电子公司		
申请(专利权)人(译)	Polar Electro Oy公司		
当前申请(专利权)人(译)	Polar Electro Oy公司		
[标]发明人	CELKA PATRICK MARTINMAKI KAISU TUULARI ESA SANTANIEMI NUUTTI AHOLA RIIKKA KORHONEN TOPI RAHKO JUHO RONNBERG LOTTA		
发明人	CELKA, PATRICK MARTINMÄKI, KAISU TUULARI, ESA SANTANIEMI, NUUTTI AHOLA, RIIKKA KORHONEN, TOPI RANTALA, INKA RAHKO, JUHO RÖNNBERG, LOTTA		
IPC分类号	G16H50/30 A61B5/00 A61B5/08		
代理机构(译)	KOLSTER OY AB		
审查员(译)	福格特TITUS		
其他公开文献	EP3534373A2		
外部链接	Espacenet		

摘要(译)

该文献公开了一种通过使用心脏活动测量数据来估计人的压力水平的解决方案。根据一个方面，一种方法包括：用于通过装置估计人的压力水平的方法，包括：由所述装置执行呼吸运动应用，开始呼吸运动应用的呼吸运动并在呼吸运动期间输出，向装置的使用者呼吸指令;在呼吸运动期间，从用户获取由心脏活动传感器测量的一组心脏活动测量数据样本;计算该组心脏活动测量数据样本的一组心跳间间隔样本;从一组心跳间间隔样本计算锻炼期间用户的心脏相干性;测量呼吸运动期间使用者的呼吸频率;基于呼吸率和心脏相干性计算呼吸运动的得分，该得分指示用户的压力水平;并通过该装置的接口输出得分。

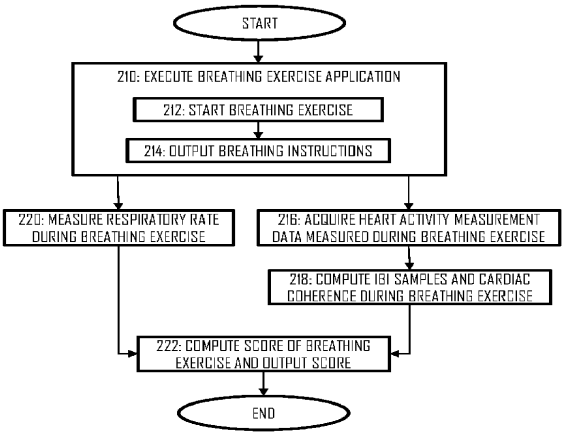

Fig 2B