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(54) **System and method for monitoring cardiorespiratory parameters**

(57) An apparatus, system, and method is disclosed for monitoring the motion, breathing, heart rate of humans in a convenient and low-cost fashion, and for deriving and displaying useful measurements of cardiorespiratory performance from the measured signals. The motion, breathing, and heart rate signals are obtained through a processing applied to a raw signal obtained in a non-contact fashion, typically using a radio-frequency sensor. Processing into separate cardiac and respiratory components is described. The heart rate can be determined by using either spectral or time-domain processing. The respiratory rate can be calculated using spectral analysis. Processing to derive the heart rate, respiratory sinus arrhythmia, or a ventilatory threshold parameter using the system is described.; The sensor, processing, and display can be incorporated in a single device which can be worn or held close to the body while exercising (e.g., in a wristwatch or mobile phone configuration), or alternately placed in a fixed piece of exercise equipment at some distance form the body (e.g., in a treadmill dash panel), and may also be integrated with other sensors, such as position locators.

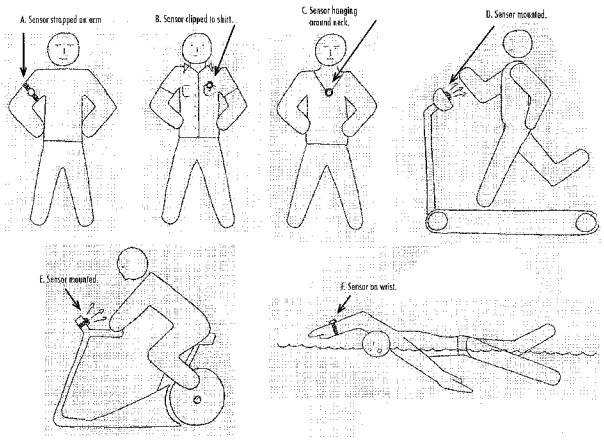

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 11 19 5916

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

A61B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	6 June 2012	Schwenke, Stephanie

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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EUROPEAN SEARCH REPORT

Application Number
EP 11 19 5916

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (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
The Hague	6 June 2012	Schwenke, Stephanie

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X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 19 5916

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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06-06-2012

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

专利名称(译)	用于监测心肺功能参数的系统和方法		
公开(公告)号	EP2469436A3	公开(公告)日	2012-07-18
申请号	EP2011195916	申请日	2007-10-31
[标]申请(专利权)人(译)	必安康医疗有限公司		
申请(专利权)人(译)	BIANCAMED有限公司		
当前申请(专利权)人(译)	BIANCAMED有限公司		
[标]发明人	DE CHAZAL PHILIP HANLEY CONOR HENEGHAN CONOR		
发明人	DE CHAZAL, PHILIP HANLEY, CONOR HENEGHAN, CONOR		
IPC分类号	G06F19/00 A61B5/00 A61B5/0205 A61B5/11 A61B5/113 A61B5/05		
CPC分类号	A61B5/0004 A61B5/0205 A61B5/0507 A61B5/1102 A61B5/1118 A61B5/113 A61B5/6802 A61B5/6804 A61B5/681 A61B5/6822 A61B5/6824 A61B5/6895		
优先权	60/863862 2006-11-01 US		
其他公开文献	EP2469436A2		
外部链接	Espacenet		

摘要(译)

公开了一种用于以方便和低成本的方式监测人的运动，呼吸，心率，以及用于从测量的信号导出和显示心肺功能的有用测量的装置，系统和方法。通过应用于以非接触方式获得的原始信号的处理，通常使用射频传感器，获得运动，呼吸和心率信号。描述了处理成单独的心脏和呼吸组分。可以通过使用频谱或时域处理来确定心率。可以使用光谱分析来计算呼吸率。描述了使用该系统导出心率，呼吸性窦性心律失常或通气阈值参数的处理。传感器，处理和显示器可以结合在单个装置中，该装置可以在锻炼时佩戴或靠近身体（例如，在手表或移动电话配置中），或者可替换地放置在一些固定的锻炼设备中。距离形成身体（例如，在跑步机仪表板中），并且还可以与其他传感器集成，例如位置定位器。

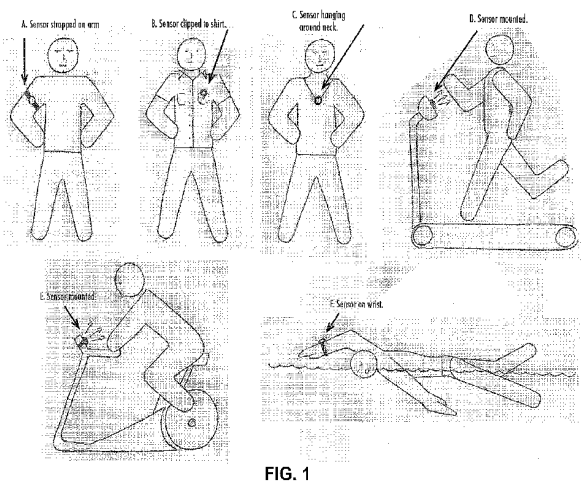

FIG. 1