



(11) **EP 2 895 063 B8**

(12) **CORRECTED EUROPEAN PATENT SPECIFICATION**

(15) Correction information:
Corrected version no 1 (W1 B1)
Corrections, see
Bibliography INID code(s) 73

(51) Int Cl.:
A61B 5/0452^(2006.01) A61B 5/046^(2006.01)

(48) Corrigendum issued on:
27.03.2019 Bulletin 2019/13

(86) International application number:
PCT/US2012/054620

(45) Date of publication and mention
of the grant of the patent:
16.01.2019 Bulletin 2019/03

(87) International publication number:
WO 2014/042618 (20.03.2014 Gazette 2014/12)

(21) Application number: **12767155.0**

(22) Date of filing: **11.09.2012**

(54) **A SYSTEM AND METHOD FOR DETECTING THE PRESENCE OF A P-WAVE IN AN ECG WAVEFORM**

SYSTEM UND VERFAHREN ZUR ERKENNUNG DER ANWESENHEIT EINER P-WELLE IN EINER EKG-KURVE

SYSTÈME ET PROCÉDÉ DE DÉTECTION DE LA PRÉSENCE D'UNE ONDE P DANS UNE ECG

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(43) Date of publication of application:
22.07.2015 Bulletin 2015/30

(73) Proprietor: **Drägerwerk AG & Co. KGaA**
23558 Lübeck (DE)

(72) Inventor: **COLE, Bryan, Thomas**
Allston, MA 02134 (US)

(74) Representative: **Haseltine Lake LLP**
Redcliff Quay
120 Redcliff Street
Bristol BS1 6HU (GB)

(56) References cited:
WO-A1-2009/090581 WO-A2-2008/007236

- **MAO LING, ZHANG GUO-MIN, SUN JI-XIANG: "P Wave Detection in ECG Signal Based on Location Estimation and Recognition Post-Processing", SIGNAL PROCESSING; CHINESE INSTITUTE OF ELECTRONICS, vol. 25, no. 6, 1 June 2009 (2009-06-01), pages 948-952, XP009169701, ISSN: 1003-0530**
- **JONAS CARLSON, ROLF JOHANSSON, S. BERTIL OLSSON: "Classification of Electrocardiographic P-Wave Morphology", IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, vol. 48, no. 4, 1 April 2001 (2001-04-01), XP011007059, ISSN: 0018-9294**
- **KEN FREEMAN, AVTAR SINGH: "P Wave Detection Of Ambulatory ECG", NEW FRONTIERS OF BIOMEDICAL ENGINEERING - INNOVATIONS FROM NUCLEAR TO SPACE TECHNOLOGY : 13TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY : OCTOBER 31 - NOVEMBER 3, 1991, ORLANDO, FLORIDA, USA, 31 October 1991 (1991-10-31), pages 647-648, XP010101690, ISBN: 978-0-7803-0216-7**

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 895 063 B8

- **YOGENDRA NARAIN SINGH ET AL: "A robust delineation approach of electrocardiographic P waves", 2009 IEEE SYMPOSIUM ON INDUSTRIAL ELECTRONICS AND APPLICATIONS (ISIEA 2009), 4 October 2009 (2009-10-04), pages 846-849, XP031582255, ISBN: 978-1-4244-4681-0**