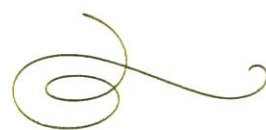


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The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

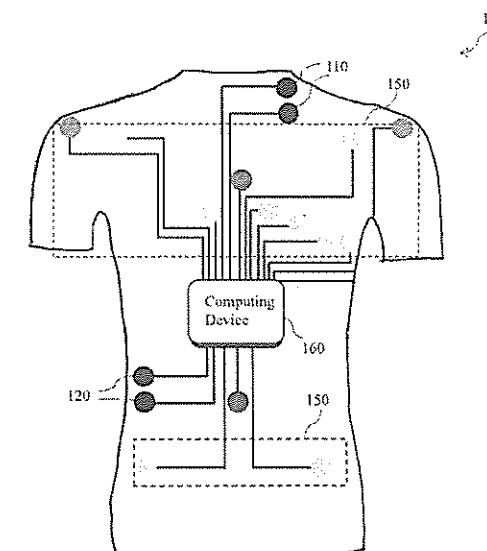
Katherine Kelly Vidal

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

(12) **United States Patent**
Datta et al.
(10) **Patent No.:** **US 11,382,364 B2**
(45) **Date of Patent:** **Jul. 12, 2022**

(54) WEARABLE HEALTH MONITORING FABRIC	(56) References Cited
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(71) Applicant: HEMODYNAMIQ WEARABLES PRIVATE LIMITED , Bangalore (IN)	7,559,902 B2 * 7/2009 Ting A61B 5/0408 600/529
(72) Inventors: Deepanjan Datta , Kolkata (IN); Ratnadipa Banerjee , Kolkata (IN); Sai Kamalesh , Bangalore (IN)	9,414,758 B1 * 8/2016 Brockway A61B 5/6804 (Continued)
(73) Assignee: HEMODYNAMIQ WEARABLES PRIVATE LIMITED , Bangalore (IN)	FOREIGN PATENT DOCUMENTS
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 106 days.	WO 2005027720 A2 3/2005 WO 2015056262 A1 4/2015 WO 2017198891 A1 11/2017
(21) Appl. No.: 16/105,196	OTHER PUBLICATIONS
(22) Filed: Aug. 20, 2018	Seoane et al., "Sensorized Garments and Textrode-Enabled Measurement Instrumentation for Ambulatory Assessment of the Autonomic Nervous System Response in the ATREC Project," Sensors 2013, 13, 8997-9015.*
(65) Prior Publication Data	(Continued)
US 2019/0373962 A1 Dec. 12, 2019	Primary Examiner — Ahmed M Farah
(30) Foreign Application Priority Data	(74) <i>Attorney, Agent, or Firm</i> — Horizon IP Pte Ltd.
Jun. 8, 2018 (IN) 201831021669	
(51) Int. Cl.	(57) ABSTRACT
A41D 1/04 (2006.01)	A wearable health monitoring fabric is provided. The wearable fabric includes a set of textrodes. The set of textrodes is configured to measure thoracic electrical bioimpedance (TEB) of a user's body. The set of textrodes include at least two first textrodes. The set of textrodes also include at least two second textrodes. The set of textrodes is fabricated on an upper part of the wearable fabric. Further, the wearable health monitoring fabric is more compatible and user friendly as the textrodes are non-invasive in nature.
A41D 1/00 (2018.01)	
(Continued)	
(52) U.S. Cl.	
CPC A41D 1/002 (2013.01); A41B 1/00 (2013.01); A41C 3/0064 (2013.01); A41D 1/02 (2013.01);	
(Continued)	
(58) Field of Classification Search	
CPC A61B 5/02; A61B 5/025; A61B 5/0255; A61B 5/021; A61B 5/0253; A61B 5/108;	
(Continued)	

8 Claims, 9 Drawing Sheets



Maintenance Fee Notice

If the application for this patent was filed on or after December 12, 1980, maintenance fees are due three years and six months, seven years and six months, and eleven years and six months after the date of this grant, or within a grace period of six months thereafter upon payment of a surcharge as provided by law. The amount, number and timing of the maintenance fees required may be changed by law or regulation. Unless payment of the applicable maintenance fee is received in the United States Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period.

Patent Term Notice

If the application for this patent was filed on or after June 8, 1995, the term of this patent begins on the date on which this patent issues and ends twenty years from the filing date of the application or, if the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121, 365(c), or 386(c), twenty years from the filing date of the earliest such application ("the twenty-year term"), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b), and any extension as provided by 35 U.S.C. 154(b) or 156 or any disclaimer under 35 U.S.C. 253.

If this application was filed prior to June 8, 1995, the term of this patent begins on the date on which this patent issues and ends on the later of seventeen years from the date of the grant of this patent or the twenty-year term set forth above for patents resulting from applications filed on or after June 8, 1995, subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b) and any extension as provided by 35 U.S.C. 156 or any disclaimer under 35 U.S.C. 253.