

DOCUMENT MADE AVAILABLE UNDER THE PATENT COOPERATION TREATY (PCT)

International application number: **PCT/US2014/070170**

International filing date: **12 December 2014 (12.12.2014)**

Document type: **Certified copy of priority document**

Document details: Country/Office: **US**
 Number: **61/970,551**
 Filing date: **26 March 2014 (26.03.2014)**

Date of receipt at the International Bureau: **05 January 2015 (05.01.2015)**

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-bis)

675569

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

January 04, 2015

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE.

APPLICATION NUMBER: 61/970,551

FILING DATE: *March 26, 2014*

RELATED PCT APPLICATION NUMBER: *PCT/US14/70170*

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS *US61/970,551*



Certified by

David J. Kyffes

Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office

ABSTRACT

A method for alerting an individual to record an electrocardiogram (ECG) includes the following steps. Heart rate and activity are monitored using a smart watch. The smart watch include nontransitory memory storing computer executable code that when executed by one or more processors cause the one or more processors to determine if the monitored heart rate and activity measurements represent an advisory condition for recording an ECG, and to generate and send notification signals when an advisory condition for recording an ECG is determined.

What is claimed is:

1. A smart phone having a removable back plate, the removable back plate comprising:

an electrode assembly positioned on an outer surface of the removable back plate and configured to sense heart-related signals upon contact with a user's skin, and to convert the sensed heart-related signals to ECG electrical signals; and

a converter assembly including an audio transmitter, positioned on an inner surface of the removable back plate, the converter assembly integrated with, and electrically connected to the sensor assembly and configured to receive the ECG electrical signals generated by the sensor and output ECG sound signals through the audio transmitter to a microphone in the smart phone, wherein the converter assembly is further configured to output the ECG signals as an ultrasonic FM sound signal.

2. A replaceable, removable smart phone back plate, the smart phone back plate comprising:

an electrode assembly positioned on an outer surface of the removable back plate and configured to sense heart-related signals upon contact with a user's skin, and to convert the sensed heart-related signals to ECG electrical signals; and

a converter assembly including an audio transmitter, positioned on an inner surface of the removable back plate, the converter assembly integrated with, and electrically connected to the sensor assembly and configured to

receive the ECG electrical signals generated by the sensor and output ECG sound signals through the audio transmitter to a microphone in a computing device within range of the audio transmitter, wherein the converter assembly is further configured to output the ECG signals as an ultrasonic FM sound signal.

3. An ECG device comprising:

an electrode assembly configured to sense heart-related signals upon contact with a user's skin, and to convert the sensed heart-related signals to ECG electrical signals wherein the electrode assembly is positioned on an outer surface of a removable back plate for a smartphone; and

a converter assembly including an audio transmitter for outputting frequency modulated ultrasonic signals, positioned on an inner surface of the removable back plate for the smartphone, the converter assembly integrated with, and electrically connected to the electrode assembly and configured to receive the ECG electrical signals generated by the electrode assembly and output ECG sound signals through the audio transmitter as an ultrasonic FM sound signal, wherein the output from the audio transmitter is detectable by a microphone in a smartphone when the back plate is positioned on the smartphone.

4. A smart watch for monitoring a subject to determine when to record an electrocardiogram (ECG), the smart watch comprising:

at least one heart rate monitor;

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.