



US 20150355604A1

(19) **United States**

(12) **Patent Application Publication**  
**Fraser et al.**

(10) **Pub. No.: US 2015/0355604 A1**  
(43) **Pub. Date: Dec. 10, 2015**

(54) **SMART DEVICE INCLUDING BIOMETRIC SENSOR**

*G01J 1/04* (2006.01)  
*A61B 5/1455* (2006.01)  
*H04B 5/00* (2006.01)  
*H02J 7/02* (2006.01)

(71) Applicant: **Google Technology Holdings LLC**,  
Mountain View, CA (US)

(52) **U.S. Cl.**  
CPC ..... *G04G 21/025* (2013.01); *H04B 5/0031*  
(2013.01); *H02J 7/025* (2013.01); *G01J 1/0407*  
(2013.01); *A61B 5/14551* (2013.01); *A61B*  
*5/02416* (2013.01); *A61B 5/02438* (2013.01)

(72) Inventors: **Nicholas A. Fraser**, Grayslake, IL (US);  
**Chad E. Davis**, Chicago, IL (US);  
**Thomas E. Gitzinger**, Libertyville, IL  
(US); **Dickon Isaacs**, Chicago, IL (US);  
**Mitul R. Patel**, Lake Zurich, IL (US)

(57) **ABSTRACT**

(21) Appl. No.: **14/462,759**

An apparatus can include a wrist worn device configured to be worn on a wrist of a user. The apparatus can include a controller. The apparatus can include a power supply. The apparatus can include a light emitter that can emit light from a user side of the wrist worn device to a wrist of the user. The apparatus can include a light detector that can detect light reflected from the wrist of the user from the first light emitter and can send a detector signal to the controller. The detector signal can be based on the detected light. The apparatus can include a lens coupled to a user side of the wrist worn device external to the light emitter and light detector. The lens can include an opaque section. The lens can also include light transmissive section that transmits light from the light emitter to the user.

(22) Filed: **Aug. 19, 2014**

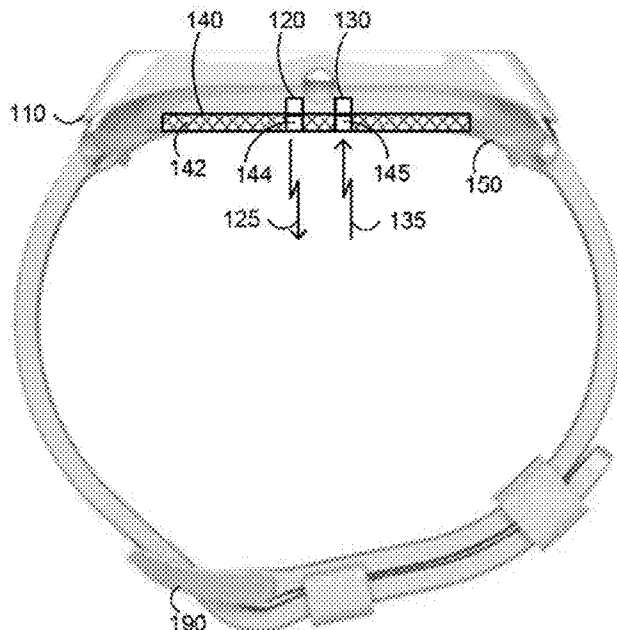
**Related U.S. Application Data**

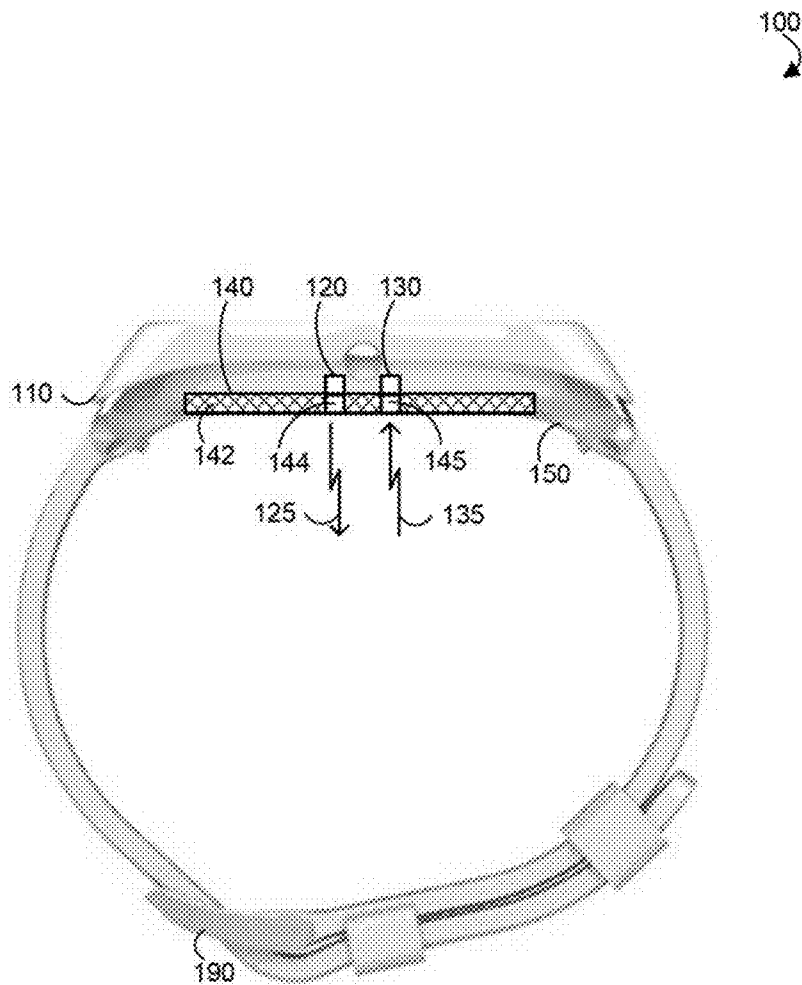
(60) Provisional application No. 62/007,967, filed on Jun. 5, 2014.

**Publication Classification**

(51) **Int. Cl.**  
*G04G 21/02* (2006.01)  
*A61B 5/024* (2006.01)

100





**FIG. 1**

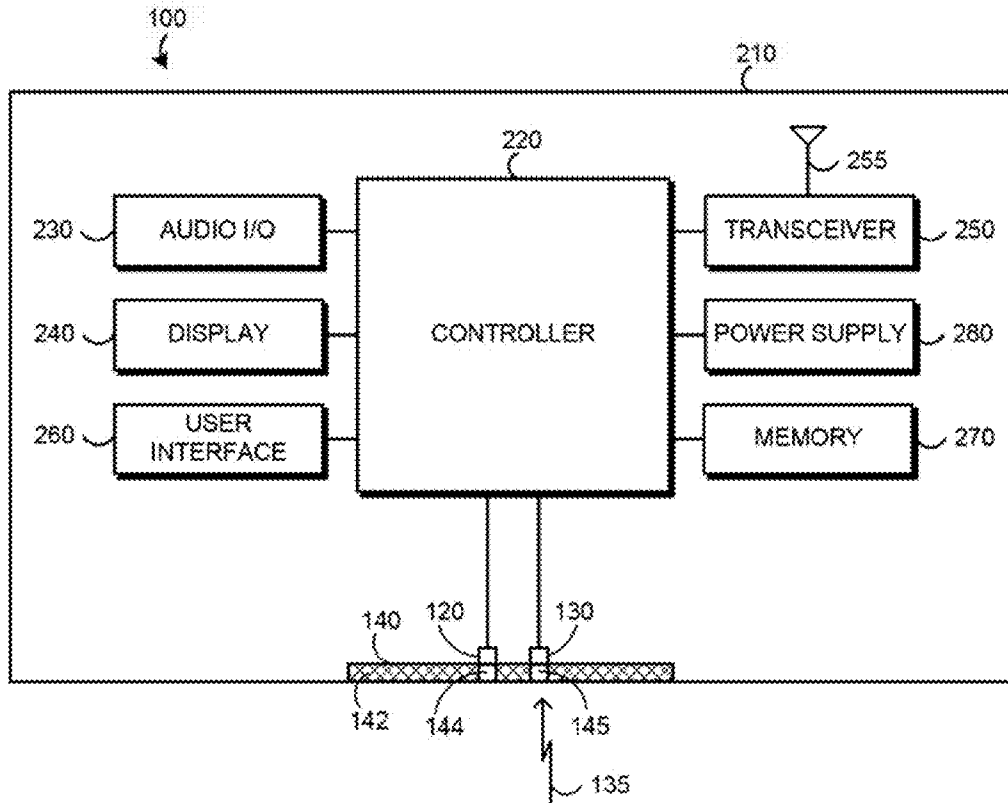
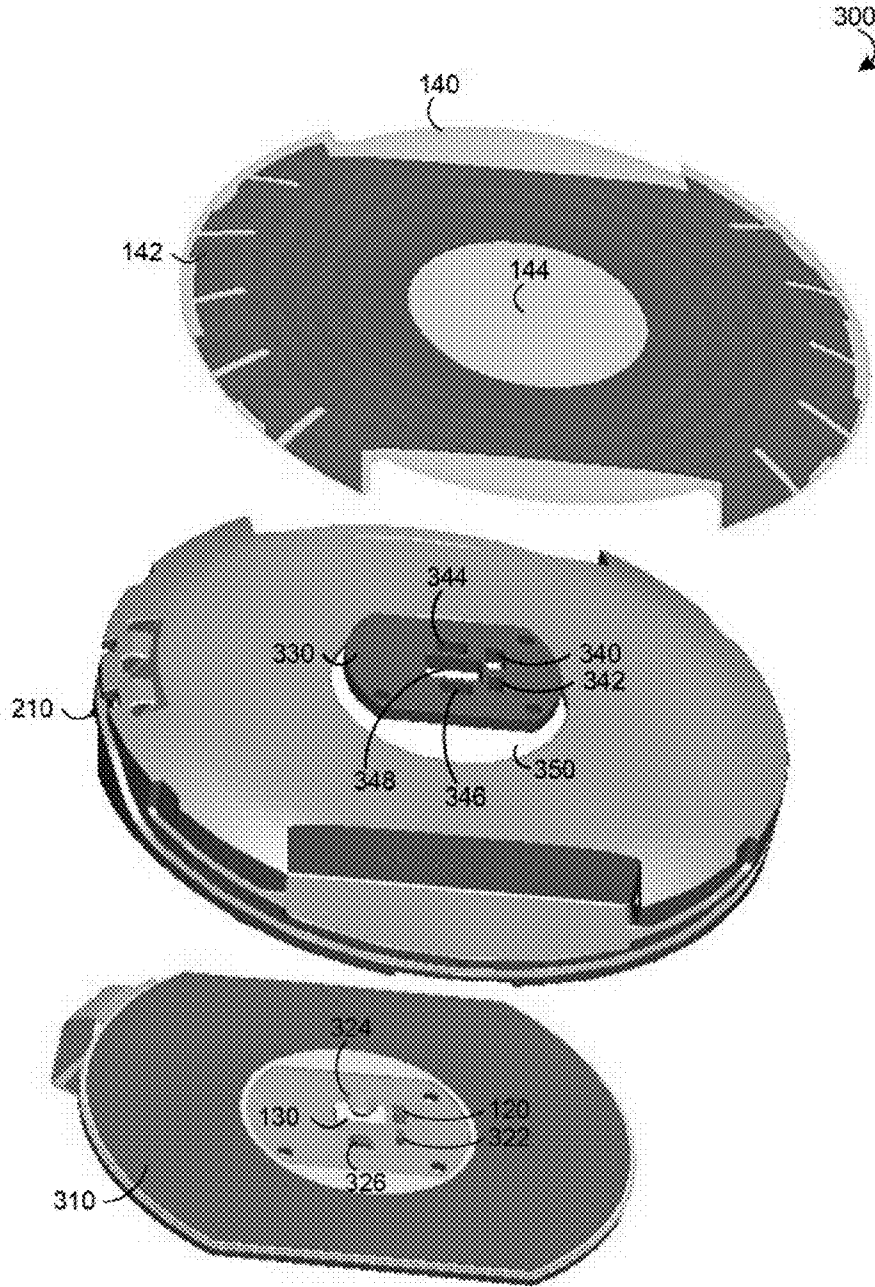
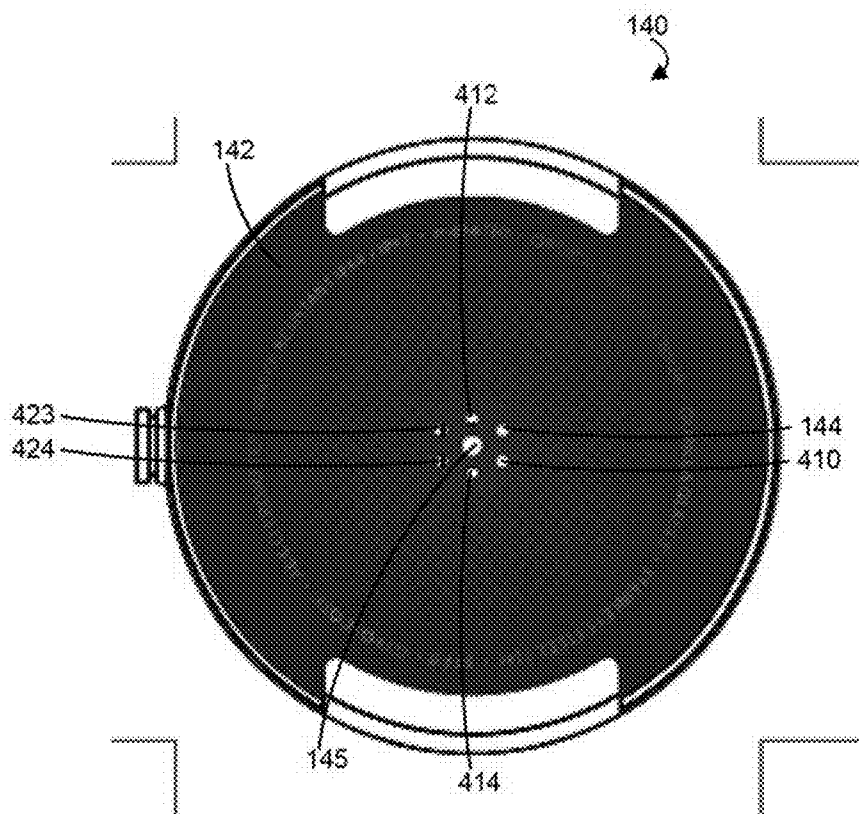


FIG. 2



**FIG. 3**



**FIG. 4**

# 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.