

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2014/0107493 A1 Yuen et al.

(54) PORTABLE BIOMETRIC MONITORING DEVICES AND METHODS OF OPERATING

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(21) Appl. No.: 13/924,784

(22) Filed: Jun. 24, 2013

Related U.S. Application Data

(60) Provisional application No. 61/662,961, filed on Jun. 22, 2012, provisional application No. 61/752,826, filed on Jan. 15, 2013.

Apr. 17, 2014 (43) Pub. Date:

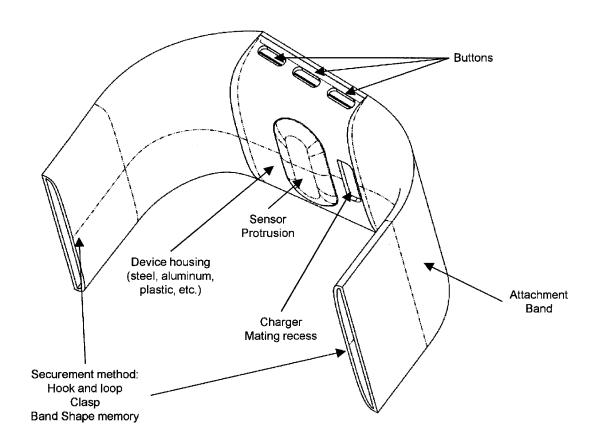
Publication Classification

(51) Int. Cl. A61B 5/024 (2006.01)

(52) U.S. Cl. CPC A61B 5/02427 (2013.01); A61B 5/02438 (2013.01); A61B 5/02433 (2013.01)

(57)ABSTRACT

The present inventions, in one aspect, are directed to portable biometric monitoring device including a housing having a physical size and shape that is adapted to couple to the user's body, at least one band to secure the monitoring device to the user, a physiological sensor, disposed in the housing, to generate data which is representative of a physiological condition of the user data. The physiological sensor may include a light source to generate and output light having at least a first wavelength, and a photodetector to detect scattered light (e.g., from the user). A light pipe is disposed in the housing and optically coupled to the light source directs/transmits light therefrom along a predetermined path to an outer surface of the housing. Processing circuitry calculates a heart rate of the user using data which is representative of the scattered light.





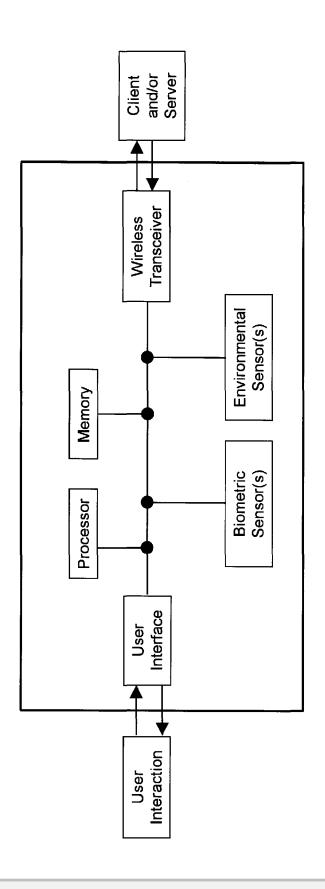
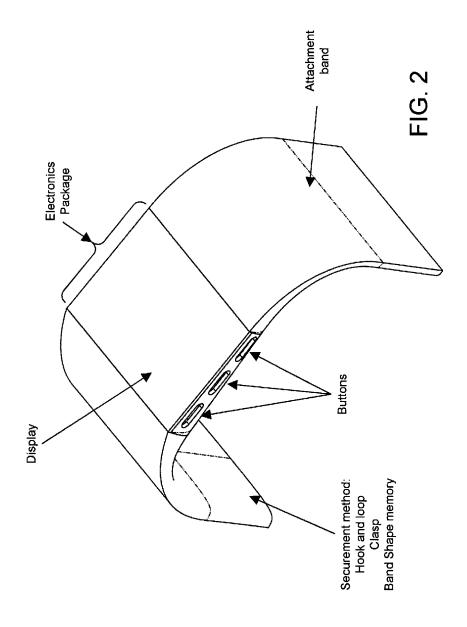
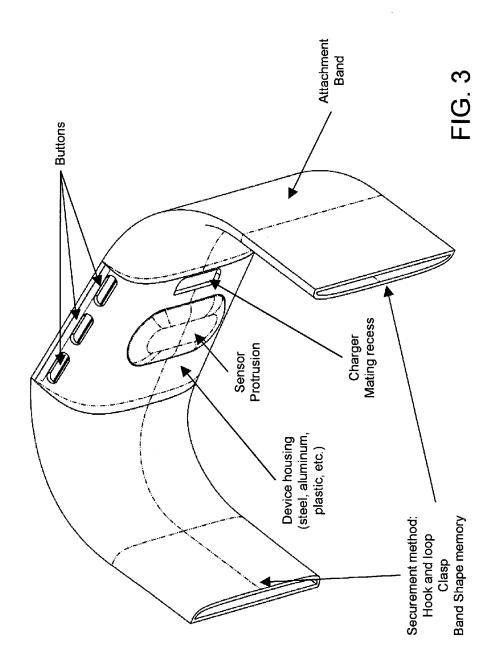


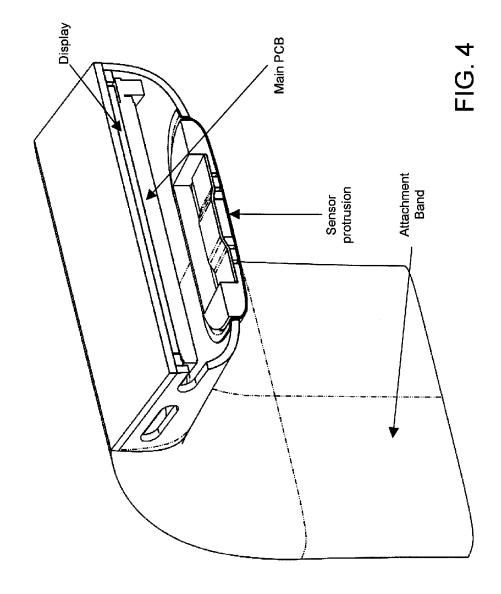
FIG. 1













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