EXHIBIT 2115

(12) **United States Patent**
LeBoeuf et al.

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(54) **METHODS AND APPARATUS FOR GENERATING DATA OUTPUT CONTAINING PHYSIOLOGICAL AND MOTION-RELATED INFORMATION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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(51) **Int. Cl.**
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H04R 1/10 (2006.01)
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(52) **U.S. Cl.**
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(58) **Field of Classification Search**
USPC 600/310
See application file for complete search history.

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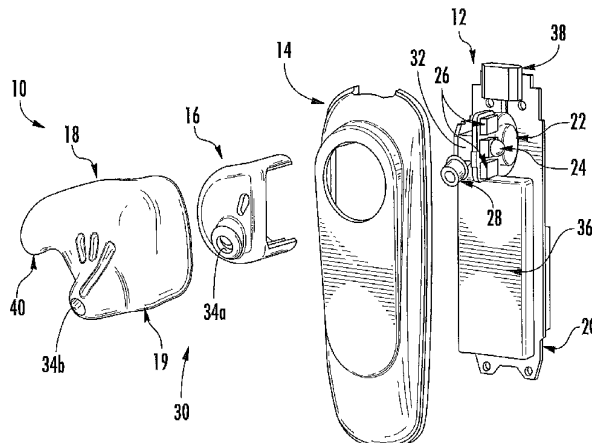(Continued)

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(57) **ABSTRACT**

A method of generating a data string containing physiological and motion-related information includes sensing physical activity of a subject via at least one motion sensor attached to the subject, sensing physiological information from the subject via at least one photoplethysmography (PPG) sensor attached to the subject, and processing signals from the at least one motion sensor and signals from the at least one PPG sensor into a serial data string of physiological information and motion-related information. A plurality of subject physiological parameters can be extracted from the physiological information, and a plurality of subject physical activity parameters can be extracted from the motion-related information. The serial data string is parsed out such that an application-specific interface can utilize the physiological information and motion-related information for an application that generates statistical relationships between subject physiological parameters and subject physical activity parameters in the physiological information and motion-related information.

21 Claims, 21 Drawing Sheets

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A61B 5/16	(2006.01)

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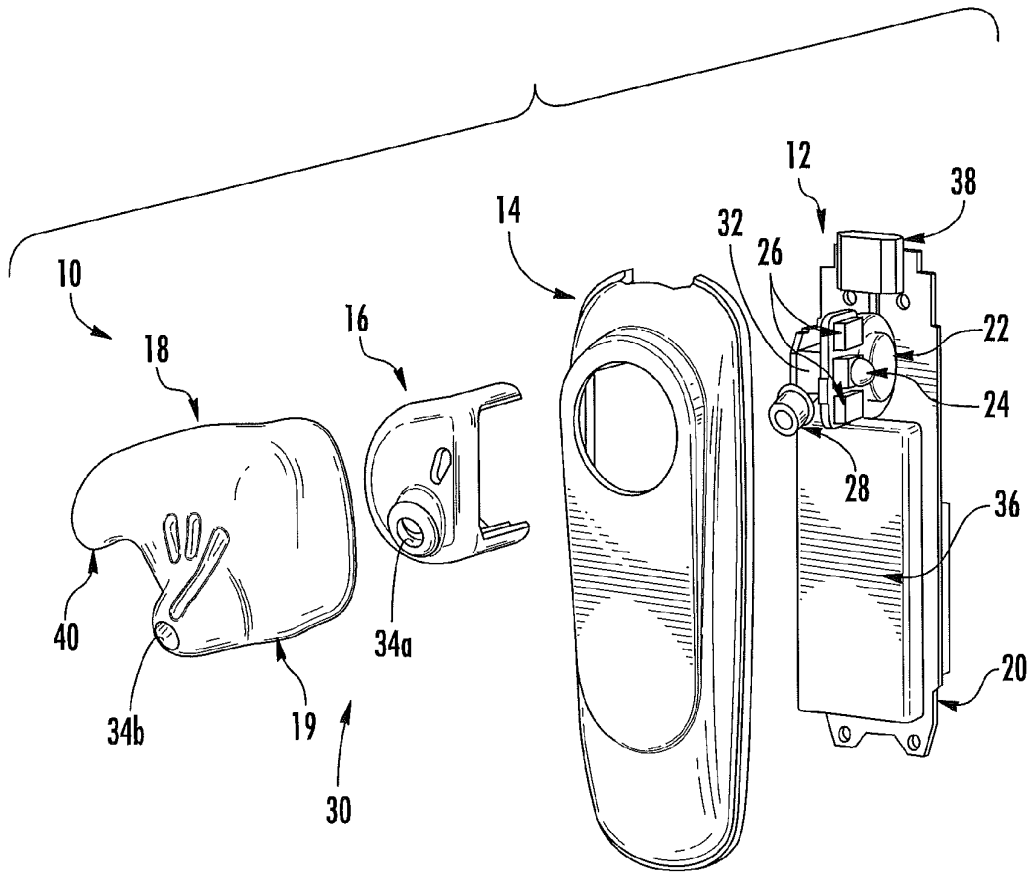
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FIG. 1

FIG. 2

FIG. 3

FIG. 4A

DOCKET ALARM
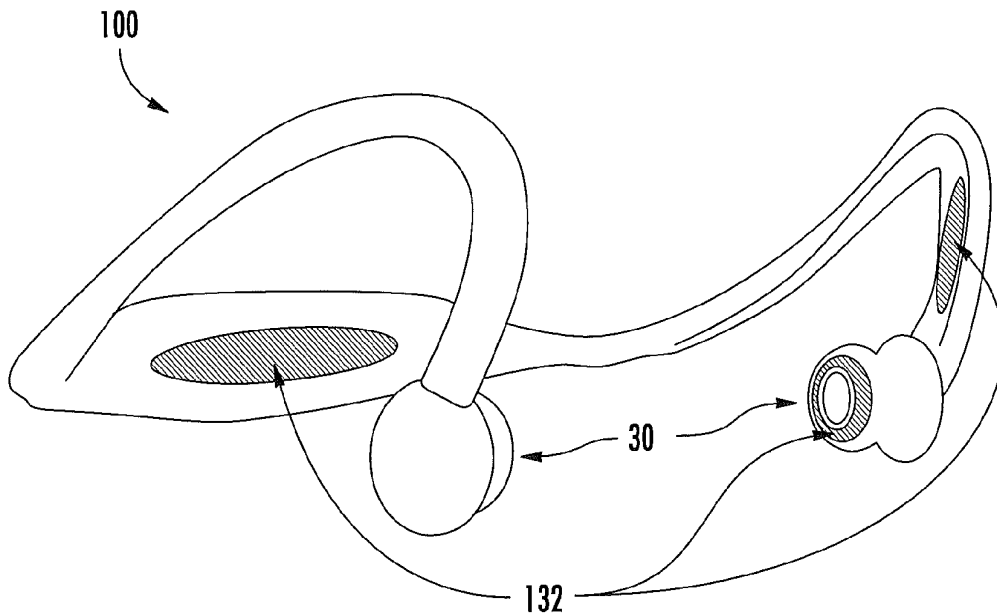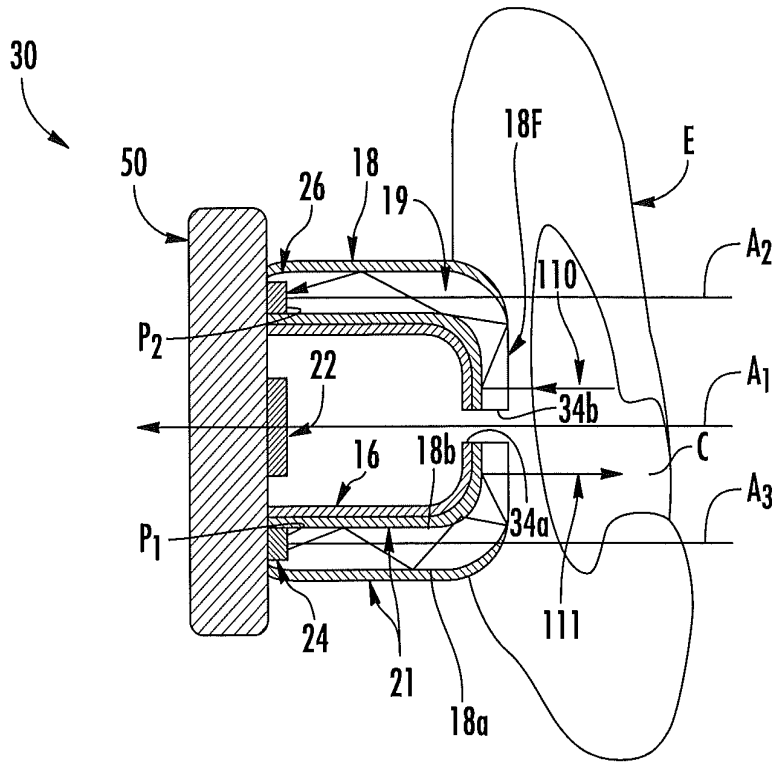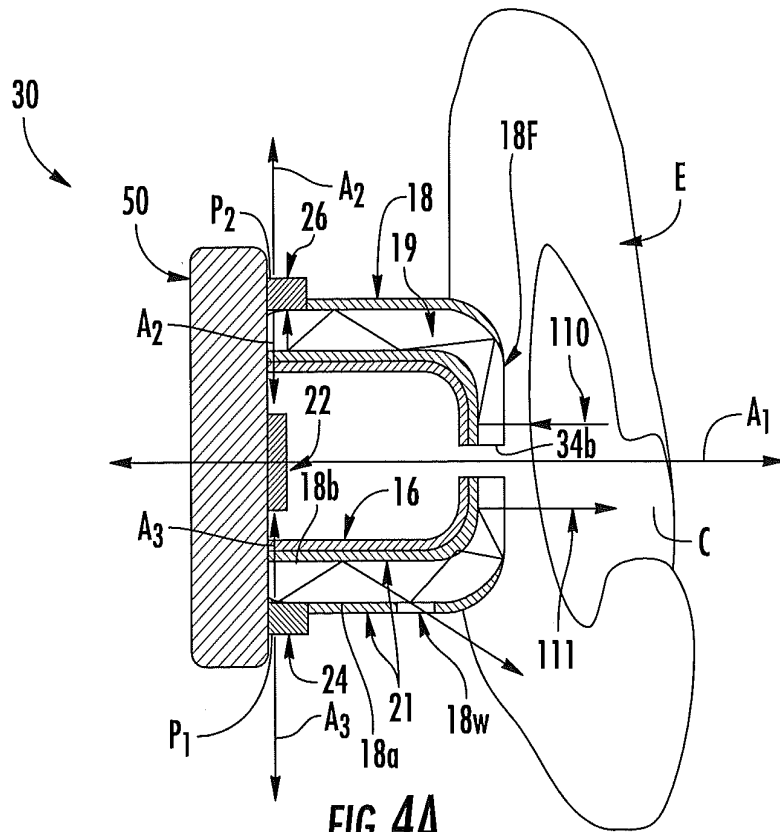
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