



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

(10) **Patent No.:** **US 8,989,830 B2**
(45) **Date of Patent:** ***Mar. 24, 2015**

(54) **WEARABLE LIGHT-GUIDING DEVICES FOR PHYSIOLOGICAL MONITORING**

USPC 600/310
See application file for complete search history.

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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.

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This patent is subject to a terminal disclaimer.

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(22) Filed: **Sep. 12, 2014**

(65) **Prior Publication Data**

Primary Examiner — Rodney Fuller

US 2015/0032009 A1 Jan. 29, 2015

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Related U.S. Application Data

(57) **ABSTRACT**

(63) Continuation of application No. 14/184,364, filed on Feb. 19, 2014, now Pat. No. 8,886,269, which is a continuation of application No. 12/691,388, filed on Jan. 21, 2010, now Pat. No. 8,700,111.

A monitoring device configured to be attached to the body of a subject includes an outer layer and an inner layer secured together. The inner layer includes light transmissive material and has inner and outer surfaces. A base is secured to at least one of the outer and inner layers and includes an optical emitter and optical detector. A layer of cladding material is positioned near the outer surface of the inner layer, and at least one window is formed in the layer of cladding material that serves as a light-guiding interface to the body of the subject. The light transmissive material delivers light from the optical emitter to the body of the subject along a first direction and collects light from the body of the subject and delivers the collected light in a second direction to the optical detector. The first and second directions are substantially parallel.

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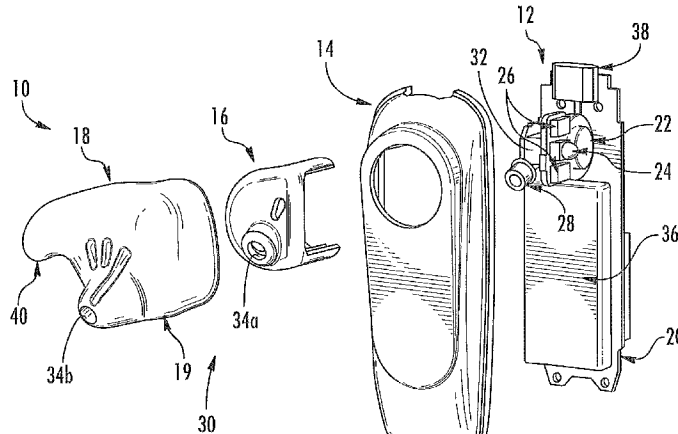
(51) **Int. Cl.**
A61B 5/00 (2006.01)
A61B 5/1455 (2006.01)

(52) **U.S. Cl.**
CPC *A61B 5/0082* (2013.01); *A61B 5/6838* (2013.01); *A61B 5/418* (2013.01); *A61B 5/1455* (2013.01); *A61B 5/6803* (2013.01)

USPC **600/310**

(58) **Field of Classification Search**
CPC A61B 5/0082

20 Claims, 21 Drawing Sheets



Related U.S. Application Data

- (60) Provisional application No. 61/208,567, filed on Feb. 25, 2009, provisional application No. 61/208,574, filed on Feb. 25, 2009, provisional application No. 61/212,444, filed on Apr. 13, 2009, provisional application No. 61/274,191, filed on Aug. 14, 2009.

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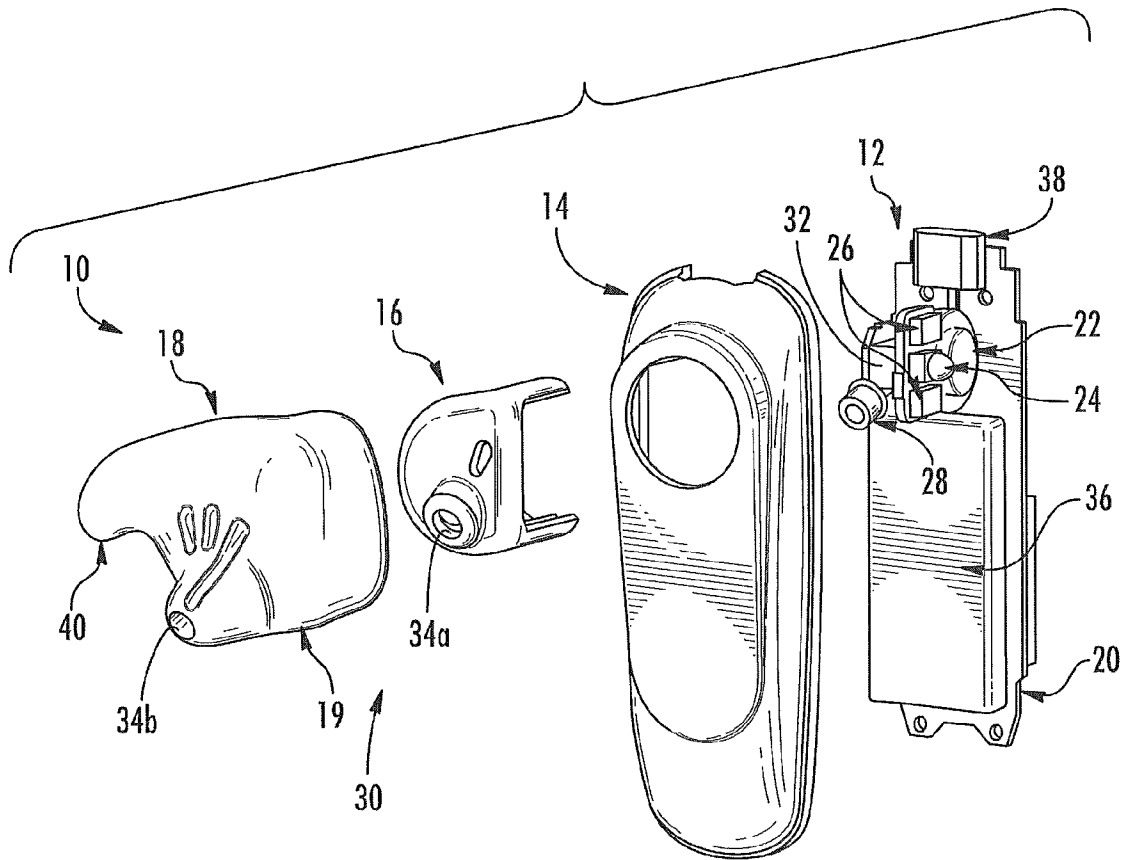


FIG. 1

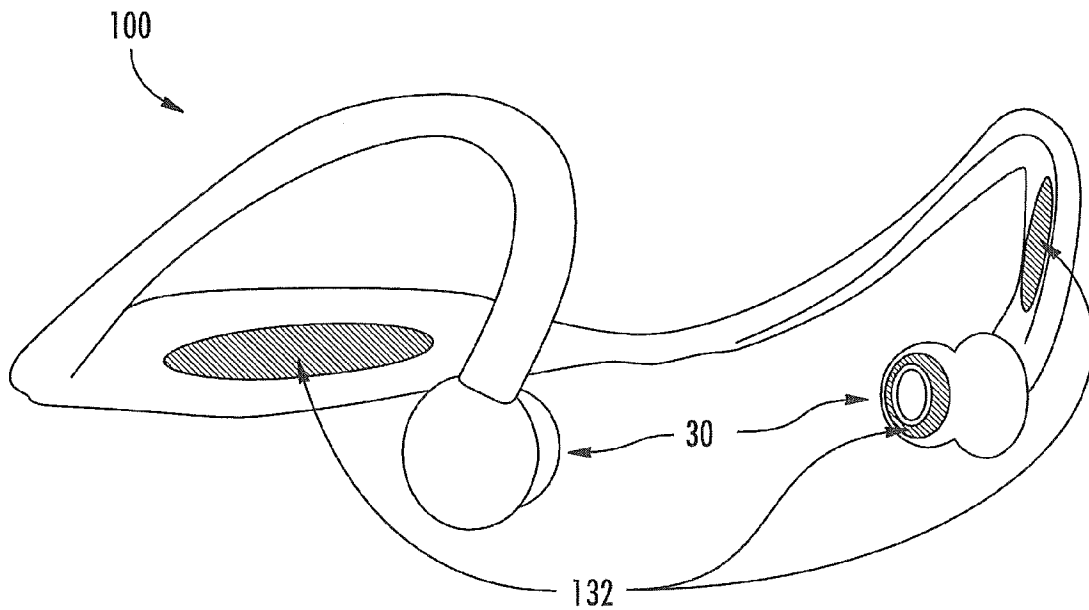


FIG. 2

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