

Apple Inc. (Petitioner)
v.
Masimo Corporation (Patent Owner)
Petitioner Demonstratives

Case Nos. IPR2022-01291 and IPR2022-01465
U.S. Patent No. 10,687,745


Before Hon. Josiah C. Cocks, George R. Hoskins, and Robert A. Po
Administrative Patent Judges

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'745 Patent Overview
Iwamiya-Sarantos Combinations
"Surface comprising a dark-colored coating" (elements [1.4] and [20.4])
Recited photodiode arrangement (element [15.4] and claims 6 and 26)*
Combining Iwamiya+Sarantos to determine oxygen saturation (claims 9 and 18) and include a second wavelength (claims 2 and 27)
"Second shape comprises a width and a length, and wherein the width is different from the length" (Claim 25)*
Sarantos-Shie Combinations
"First shape" and a different "second shape" (elements [1.1]-[1.2] and [20.1]-[20.2])
"Light block having a circular shape" (element [15.3])
Recited photodiode arrangement (element [15.4] and claims 6 and 26)*
"Second shape comprises a circular geometry" (claim 12)
"Second shape comprises a width and a length, and wherein the width is different from the length" (Claim 25)*
Reasonable Expectation of Success ("REOS") (claims 2, 9, 18, and 27)

'745 Patent Overview

Overview of the '745 Patent



US010687745B1

(12) **United States Patent**
Al-Ali

(10) **Patent No.:** US 10,687,745 B1
(45) **Date of Patent:** *Jun. 23, 2020

(54) **PHYSIOLOGICAL MONITORING DEVICES, SYSTEMS, AND METHODS**

(71) Applicant: **MASIMO CORPORATION**, Irvine, CA (US)

(72) Inventor: **Ammar Al-Ali**, San Juan Capistrano, CA (US)

(73) Assignee: **Masimo Corporation**, Irvine, CA (US)

(*) 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.

(21) Appl. No.: **16/835,772**

(22) Filed: **Mar. 31, 2020**

Related U.S. Application Data

(63) Continuation of application No. 16/791,963, filed on Feb. 14, 2020, which is a continuation of application (Continued)

(51) Int. Cl. (2006.01)
A61B 5/155
A61B 5/024
(Continued)

(52) U.S. CL. (2013.01); **A61B 5/0002**
CPC (2013.01); **A61B 5/02416** (2013.01);
(Continued)

(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**
A non-invasive, optical-based physiological monitoring system is disclosed. One embodiment includes an emitter configured to emit light. A diffuser is configured to receive and spread the emitted light, and to emit the spread light at a tissue measurement site. The system further includes a concentrator configured to receive the spread light after it has been attenuated by or reflected from the tissue measurement site. The concentrator is also configured to collect and concentrate the received light and to emit the concentrated light to a detector. The detector is configured to detect the concentrated light and to transmit a signal representative of the detected light. A processor is configured to receive the transmitted signal and to determine a physiological parameter, such as, for example, arterial oxygen saturation, in the tissue measurement site.

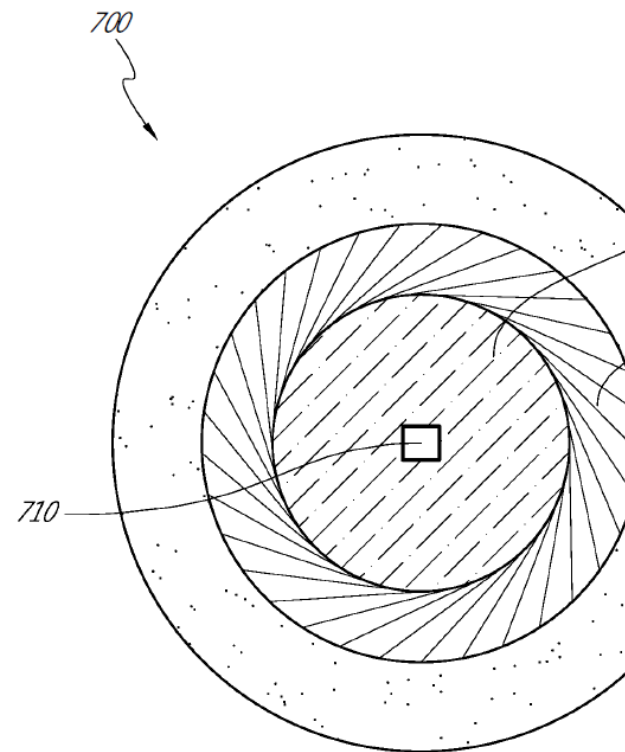
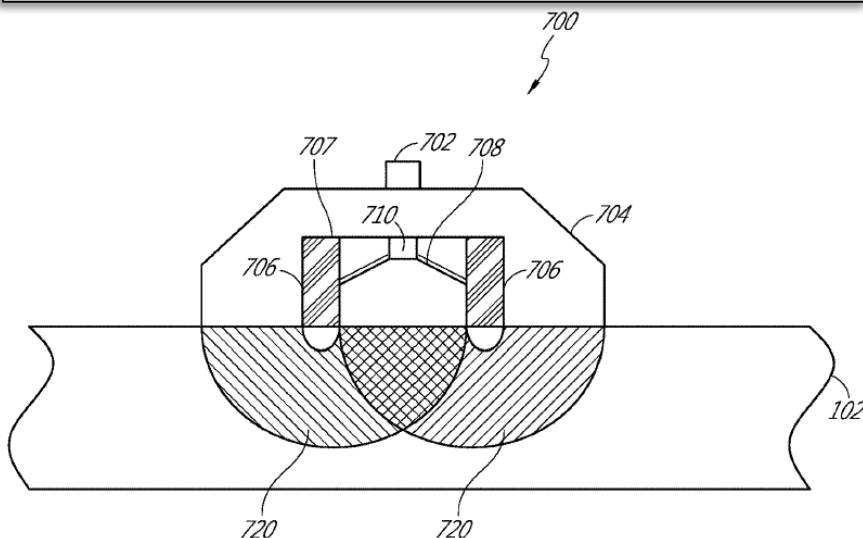
27 Claims, 7 Drawing Sheets



- The '745 Patent was filed Mar 31, 2020, and its earliest claimed date is July 2, 2015.
- The '745 Patent includes 27 claims
- The IPR2022-01291 Petition covers claims 1, 9, 15, 18, 20, and 27
- claims 1, 15, and 20 are independent
- The IPR2022-01465 Petition covers claims 2-6, 8, 10-14, 17, 19, and 21

Overview of the '745 Patent

FIGS. 7A and 7B are simplified schematic side and top views, respectively, of a 3D reflective pulse oximetry sensor 700 according to an embodiment of the present disclosure. In the illustrated embodiment, the 3D sensor 700 irradiates the tissue measurement site 102 and detects the emitted light that is reflected by the tissue measurement site 102. The 3D sensor 700 can be placed on a portion of the patient's body that has relatively flat surface, such as, for example a wrist, because the emitter 702 and detector 710 are on located the same side of the tissue measurement site 102. The 3D sensor 700 includes an emitter 702, a light diffuser 704, a light block 706, a light concentrator 708, and a detector 710.



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