

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

IPR2022-01465
Patent 10,687,745 B1

Before JOSIAH C. COCKS, NEIL T. POWELL, and JAMES A. TARTAL,
Administrative Patent Judges.

TARTAL, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Apple Inc. (“Petitioner”)¹ filed a Corrected Petition pursuant to 35 U.S.C. §§ 311–319 requesting an *inter partes* review of claims 2–6, 8, 10–14, 17, 19, and 21–26 (“the Challenged Claims”) of U.S. Patent No. 10,687,745 B1 (Ex. 1001, “the ’745 patent”). Paper 10 (“Pet.”). Masimo Corporation (“Patent Owner”)² filed a Preliminary Response. Paper 11 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b) (2018); 37 C.F.R. § 42.4(a) (2019). An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the Petition, the Preliminary Response, and the evidence of record, we conclude that the information presented shows a reasonable likelihood that Petitioner would prevail in showing the unpatentability of at least one of the Challenged Claims. Accordingly, we authorize an *inter partes* review to be instituted as to the Challenged Claims of the ’745 patent on the grounds raised in the Petition. Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far (prior to Patent Owner’s Response). This is not a final decision as to patentability of claims for which *inter partes* review is instituted. Any final decision will be based on the record, as fully developed during trial.

¹ Petitioner identifies no additional real parties in interest. Pet. 78.

² Patent Owner identifies no additional real parties in interest. Paper 5, 2.

II. BACKGROUND

A. The '745 Patent

The '745 patent is titled “Physiological Monitoring Devices, Systems, and Methods,” and issued on June 23, 2020, from U.S. Patent Application No. 16/835,772, filed March 31, 2020. Ex. 1001, codes (21), (22), (45), (54). The '745 patent summarizes its disclosure as follows:

This disclosure describes embodiments of non-invasive methods, devices, and systems for measuring blood constituents, analytes, and/or substances such as, by way of non-limiting example, oxygen, carboxyhemoglobin, methemoglobin, total hemoglobin, glucose, proteins, lipids, a percentage therefor (e.g., saturation), pulse rate, perfusion index, oxygen content, total hemoglobin, Oxygen Reserve Index™ (ORI™) or for measuring many other physiologically relevant patient characteristics. These characteristics can relate to, for example, pulse rate, hydration, trending information and analysis, and the like.

Id. at 2:40–50.

Figures 7A and 7B of the '745 patent are reproduced below:

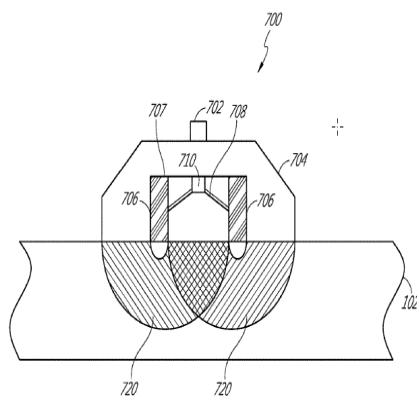


FIG. 7A

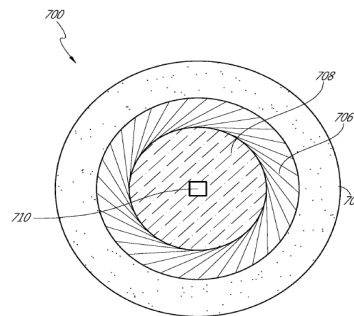


FIG. 7B

Figures 7A and 7B above depict side and top views, respectively, of a three-dimensional pulse oximetry sensor according to an embodiment of the '745 patent. *Id.* at 5:28–33. Sensor 700 includes emitter 702, light

diffuser 704, light block (or blocker) 706, light concentrator 708, and detector 710. *Id.* at 10:49–51. The sensor functions to irradiate tissue measurement site 102, e.g., a patient’s wrist, and detects emitted light that is reflected by the tissue measurement site. *Id.* at 10:43–49. “[L]ight blocker 706 includes an annular ring having a cover portion 707 sized and shaped to form a light isolation chamber for the light concentrator 708 and the detector 710.” *Id.* at 11:10–12. “[L]ight blocker 706 and cover 707 ensures that the only light detected by the detector 710 is light that is reflected from the tissue measurement site.” *Id.* at 11:16–19.

Figure 8 of the ’745 patent is reproduced below:

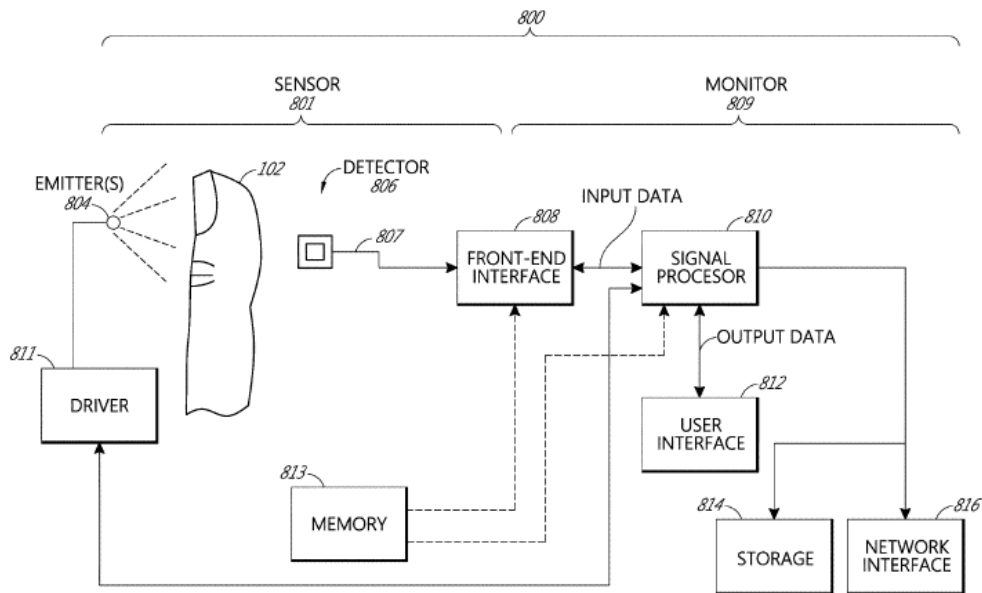


FIG. 8

Figure 8 above illustrates “a block diagram of an example pulse oximetry system capable of noninvasively measuring one or more blood analytes in a monitored patient.” *Id.* at 5:34–37. Pulse oximetry system 800 includes sensor 801 (or multiple sensors) coupled to physiological monitor 809. *Id.* at 12:21–23. Sensor 801 includes emitter 804 and detector 806. *Id.* at 12:32–34. Monitor 809 includes signal processor 810, which “includes

processing logic that determines measurements for desired analytes based on the signals received from the detector 806.” *Id.* at 13:33–40. Monitor 809 also includes user interface 812 that provides “an output, e.g., on a display, for presentation to a user of pulse oximetry system 800.” *Id.* at 13:33–35, 13:64–66.

B. Illustrative Claim

Petitioner challenges claims 2–6, 8, 10–14, 17, 19, and 21–26 of the ’745 patent. Pet. 1. Claims 2–6, 8, and 10–14 depend from claim 1. Claims 17 and 19 depend from claim 15. Claims 21–26 depend from claim 20. Claim 3 is illustrative of the claimed subject matter and is reproduced below, along with claim 1 from which it depends.

1. A physiological monitoring device comprising:
 - a plurality of light-emitting diodes configured to emit light in a first shape;
 - a material configured to be positioned between the plurality of light-emitting diodes and tissue on a wrist of a user when the physiological monitoring device is in use, the material configured to change the first shape into a second shape by which the light emitted from one or more of the plurality of light-emitting diodes is projected towards the tissue;
 - a plurality of photodiodes configured to detect at least a portion of the light after the at least the portion of the light passes through the tissue, the plurality of photodiodes further configured to output at least one signal responsive to the detected light;
 - a surface comprising a dark-colored coating, the surface configured to be positioned between the plurality of photodiodes and the tissue when the physiological monitoring device is in use, wherein an opening defined in the dark-colored coating is configured to allow at least a portion of light reflected from the tissue to pass through the surface;

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