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Paper 65
Date: January 25, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

IPR2022-01299
Patent 7,761,127 B2

Before JOSIAH C. COCKS, GEORGE R. HOSKINS, and ROBERT A. POLLOCK, *Administrative Patent Judges*.

POLLOCK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION

Determining All Challenged Claims Unpatentable

35 U.S.C. §§ 318(a)

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, we determine that Petitioner, Apple Inc., has established, by a preponderance of the evidence, that challenged claims 1–30 of Patent Owner Masimo Corporation's, ("Patent Owner") U.S. Patent No. 7,761,127 B2 (Ex. 1001, "the '127 patent") are unpatentable.

A. Procedural Background

Petitioner filed a Petition for *inter partes* review of claims 1–30 of the '127 patent. Paper 2 ("Pet."). Patent Owner timely filed a Preliminary Response to the Petition. Paper 9 ("Prelim. Resp.").

In view of the then-available, preliminary record, we concluded that Petitioner satisfied the burden, under 35 U.S.C. § 314(a), to show that there was a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims. Accordingly, on behalf of the Director (37 C.F.R. § 42.4(a) (2018)), and in accordance with *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1353 (2018) and the Office's Guidance on the Impact of *SAS* on AIA Trial Proceedings (Apr. 26, 2018),[1] we instituted an *inter partes* review of claims 1–30 on all the asserted grounds. Paper 21 ("Inst. Dec." or "DI"), 40–41.

[1] https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial.

After institution, Patent Owner filed a Patent Owner Response to the Petition. Paper 37 ("POR"). Petitioner filed a Reply to Patent Owner's Response (Paper 46, "Reply") and Patent Owner filed a respective Sur-reply (Paper 57, "Sur-reply"). With our authorization (Paper 51), Petitioner further filed individually numbered Observations Regarding Cross-Examination Testimony of Dr. William King (Paper 59, "Obsv.").

On November 17, 2023, the parties presented arguments at oral hearing, the transcript of which is of record. Paper 62 ("Tr.").

B. Real Parties-in-Interest

Petitioner identifies itself, Apple Inc., as the real party-in-interest. Pet. 70. Patent Owner, Masimo Corp., also identifies itself as the real party-in-interest. Paper 5, 1.

C. Related Matters

Concurrent with the filing of this Petition, Petitioner also challenged claims 1–30 of the '127 patent in IPR2022-01300 ("the 01300 IPR") on grounds not asserted here. *See* 01300 IPR, Paper 2. In light of its concurrent challenges, Petitioner filed a Notice of Ranking Petitions (Paper 3), to which Patent Owner responded (Paper 11). We addressed Petitioner's Notice of Ranking arguments and Patent Owner's response in the copending 01300 IPR and, in light of the record then before us, declined to institute trial in the 01300 IPR because "Petitioner [did] not set forth adequate reasoning that justifies the institution of multiple *inter partes* reviews based on two petitions both directed to claims 1–30 of the '127 patent." 01300 IPR, Paper 22, 10–11.

The '127 patent is among the patents addressed by the U.S. International Trade Commission in *In the Matter of Certain Light-Based Physiological Measurement Devices and Components Thereof*, Inv. No. 337-TA-1276. *See* Pet. 70; Paper 18, 1; Ex. 2093.[2] Patent Owner further reports that the '127 patent is at issue in *Apple Inc. v. Masimo Corporation and Sound United, LLC*, U.S. District Court for the District of Delaware, Case No. 1:22-cv-01378-MN. Paper 18, 1.

D. The '127 Patent and Relevant Background

The '127 patent, for "Multiple Wavelength Sensor Substrate," is generally directed to sensors comprising optical emitters (e.g., LEDs) and corresponding detectors to non-invasively measure physiological parameters in a subject's blood. Ex. 1001, code (54), 2:14–28, 2:49–65. These components are commonly used in pulse oximeters, which measure oxygen saturation and pulse rate. *Id.* at 2:14–16.

> In general, the sensor has light emitting diodes (LEDs) that transmit optical radiation of red and infrared wavelengths into a tissue site and a detector that responds to the intensity of the optical radiation after absorption (e.g. by transmission or transreflectance) by pulsatile arterial blood flowing within the tissue site.

Id. at 2:16–21.

As explained by Patent Owner's declarant, Dr. King, "each LED is designed and manufactured to emit light of a specific 'nominal' or 'centroid wavelength when measured under certain conditions. For example, a red

[2] Final Initial Determination on Violation of Section 337, ITC Inv. No. 337-TA-1276.

LED may have a nominal wavelength of 660 nm and an infrared LED may have a nominal wavelength of 905 nm." Ex. 2151 ¶ 30. The actual operating wavelength of an LED, however, is subject to temperature-induced wavelength shift, which could "produce inaccurate results in a light-based sensor that does not compensate for such wavelength shift." *See generally, id.* ¶¶ 31–36. As noted by Dr. King, one known method of reducing temperature-induced wavelength shift involved "controlling electrical inputs to the LEDs, such as drive current." *Id.* ¶ 36. Reflecting this approach, the Specification provides that,

> [o]ne aspect of a physiological sensor is emitters configured to transmit optical radiation having multiple wavelengths in response to corresponding drive currents. A thermal mass is disposed proximate the emitters so as to stabilize a bulk temperature for the emitters. A temperature sensor is thermally coupled to the thermal mass. The temperature sensor provides a temperature sensor output responsive to the bulk temperature so that the wavelengths are determinable as a function of the drive currents and the bulk temperature.

Ex. 1001, 2:57–65; Abstract.

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