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Paper 43
Date: February 23, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,

Petitioner,

v.

MASIMO CORPORATION,

Patent Owner.

IPR2020-01537

Patent 10,588,553 B2

Before GEORGE R. HOSKINS, ROBERT L. KINDER, and AMANDA F. WIEKER, *Administrative Patent Judges.*

KINDER, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

Apple Inc. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–29 ("challenged claims") of U.S. Patent No. 10,588,553 B2 (Ex. 1001, "the '553 patent"). Paper 3 ("Pet."). Masimo Corporation ("Patent Owner") waived filing a Preliminary Response. Paper 8. We instituted an *inter partes* review of all challenged claims 1–29 on all asserted grounds of unpatentability, pursuant to 35 U.S.C. § 314. Paper 9 ("Inst. Dec.").

After institution, Patent Owner filed a Response (Paper 24, "PO Resp.") to the Petition, Petitioner filed a Reply (Paper 27, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 31, "Sur-reply").[1] An oral hearing was held on December 7, 2021, and a transcript of the hearing is included in the record. Paper 41 ("Tr.").

We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, Petitioner has met its burden of showing, by a preponderance of the evidence, that challenged claims 1–29 of the '553 patent are unpatentable.

B. Related Proceedings

Masimo Corporation v. Apple Inc., Civil Action No. 8:20-cv-00048 (C.D. Cal.) (filed Jan. 9, 2020);

Apple Inc. v. Masimo Corporation, IPR2020-01536 (PTAB Aug. 31, 2020) (challenging claims 1–29 of the '553 patent);

[1] After the Sur-reply was filed, we authorized Petitioner to file an Identification of Testimony. Paper 37.

Apple Inc. v. Masimo Corporation, IPR2020-01520 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,258,265 B1);

Apple Inc. v. Masimo Corporation, IPR2020-01521 (PTAB Sept. 2, 2020) (challenging claims of U.S. Patent No. 10,292,628 B1);

Apple Inc. v. Masimo Corporation, IPR2020-01523 (PTAB Sept. 9, 2020) (challenging claims of U.S. Patent No. 8,457,703 B2);

Apple Inc. v. Masimo Corporation, IPR2020-01524 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,433,776 B2);

Apple Inc. v. Masimo Corporation, IPR2020-01526 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 6,771,994 B2);

Apple Inc. v. Masimo Corporation, IPR2020-01538 (PTAB Sept. 2, 2020) (challenging claims of U.S. Patent No. 10,588,554 B2); and

Apple Inc. v. Masimo Corporation, IPR2020-01539 (PTAB Sept. 2, 2020) (challenging claims of U.S. Patent No. 10,588,554 B2).

Pet. 3; Paper 5, 3.

Patent Owner further identifies certain pending patent applications, as well as other issued and abandoned applications, that claim priority to, or share a priority claim with, the '553 patent. Paper 5, 1–2.

C. The '553 Patent

The '553 patent is titled "Multi-Stream Data Collection System for Noninvasive Measurement of Blood Constituents," and issued on March 17, 2020, from U.S. Patent Application No. 16/534,949, filed August 7, 2019. Ex. 1001, codes (21), (22), (45), (54). The '553 patent claims priority through a series of continuation and continuation-in-part applications to Provisional Application Nos. 61/078,228 and 61/078,207, both filed July 3, 2008. *Id.* at codes (60), (63).

The '553 patent relates to noninvasive methods and devices for measuring various blood constituents or analytes. *Id.* at code (57). The '553 patent discloses a two-part data collection system including a noninvasive sensor that communicates with a patient monitor. *Id.* at 2:38–40. The sensor includes a sensor housing, an optical source, and several photodetectors, and is used to measure a blood constituent or analyte, e.g., oxygen or glucose. *Id.* at 2:29–35, 2:64–65. The patient monitor includes a display and a network interface for communicating with a handheld computing device. *Id.* at 2:45–48.

Figure 1 of the '553 patent is reproduced below.

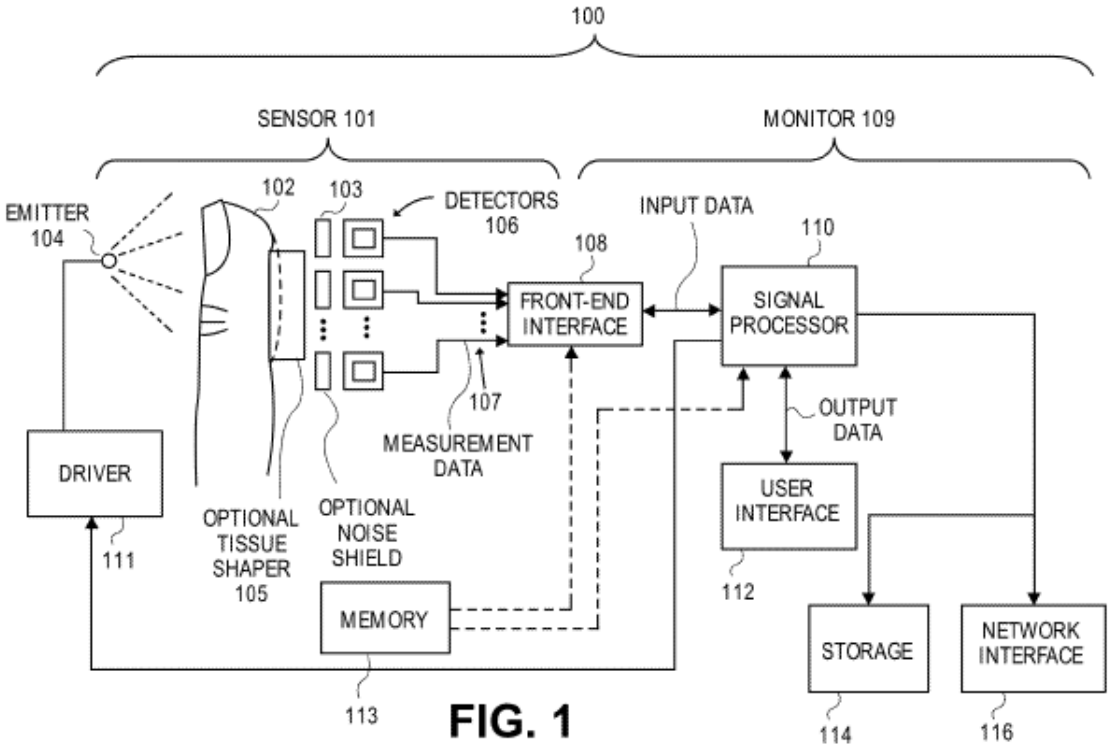

FIG. 1

Figure 1 illustrates a block diagram of data collection system 100 including sensor 101 and monitor 109. *Id.* at 11:47–58. Sensor 101 includes optical emitter 104 and detectors 106. *Id.* at 11:59–63. Emitters 104 emit light that is attenuated or reflected by the patient's tissue at measurement site 102. *Id.*

at 14:3–7. Detectors 106 capture and measure the light attenuated or reflected from the tissue. *Id.* In response to the measured light, detectors 106 output detector signals 107 to monitor 109 through front-end interface 108 and detectors 106 can be implemented using photodiodes. *Id.* at 14:7–10, 14:26–32. Sensor 101 also may include tissue shaper 105, which may be in the form of a convex surface that: (1) reduces the thickness of the patient's measurement site; and (2) provides more surface area from which light can be detected. *Id.* at 11:2–14.

Monitor 109 includes signal processor 110 and user interface 112. *Id.* at 15:16–18. "[S]ignal processor 110 includes processing logic that determines measurements for desired analytes . . . based on the signals received from the detectors." *Id.* at 15:21–24. User interface 112 presents the measurements to a user on a display, e.g., a touch-screen display. *Id.* at 15:46–56. The monitor may be connected to storage device 114 and network interface 116. *Id.* at 15:60–16:11.

The '553 patent describes various examples of sensor devices. Figures 14D and 14F, reproduced below, illustrate sensor devices.

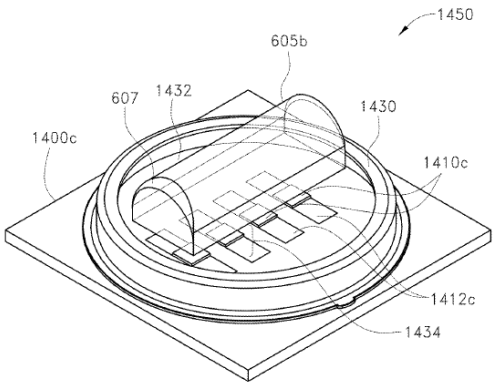

FIG. 14D

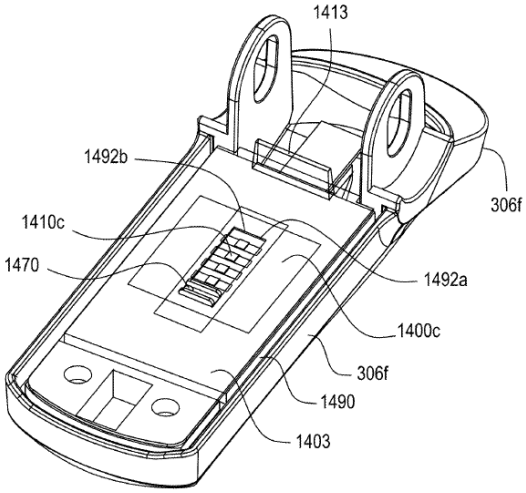

FIG. 14F

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