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Paper 32
Date: April 11, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

IPR2020-01523
Patent 8,457,703 B2

Before JOSIAH C. COCKS, ROBERT L. KINDER, and AMANDA F. WIEKER, *Administrative Patent Judges*.

COCKS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)
Dismissing Patent Owner's Motion to Exclude
37 C.F.R. § 42.64

I. INTRODUCTION

A. Background

Apple Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–7, 9–18, and 20–24 ("challenged claims") of U.S. Patent No. 8,457,703 B1 (Ex. 1001, "the '703 patent"). We instituted the petitioned review (Paper 7).

Masimo Corporation ("Patent Owner") filed a Patent Owner Response (Paper 15, "PO Resp.") to oppose the Petition. Petitioner filed a Reply (Paper 18, "Pet. Reply") to the Patent Owner Response. Patent Owner filed a Sur-reply (Paper 20, "Sur-reply") to the Reply. Patent Owner filed a Motion to Exclude Petitioner's Evidence (Paper 25). Petitioner filed an Opposition to the Motion to Exclude (Paper 26). Patent Owner filed a Reply (Paper 27) to Petitioner's Opposition. We conducted an oral hearing on January 19, 2022. A transcript has been entered in the record (Paper 31, "Tr.").

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–7, 9–18, and 20–24 of the '703 patent. We determine Petitioner has not shown by a preponderance of the evidence that those claims are unpatentable.

B. Related Matters

The parties identify the following matters related to the ’703 patent:

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

Apple Inc. v. Masimo Corporation, IPR2020-01520 (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, IPR2020-01524 (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, IPR2020-01536 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,588,553 B2);

Apple Inc. v. Masimo Corporation, IPR2020-01537 (PTAB Aug. 31, 2020) (challenging claims of U.S. Patent No. 10,588,553 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. 75; Paper 3, 2.

C. The ’703 Patent

The ’703 patent is titled “Low Power Pulse Oximeter,” and issued on June 4, 2013, from U.S. Patent Application No. 16/174,144, filed November 13, 2007. Ex. 1001, codes (21), (22), (45), (54). The ’703 patent relates to a pulse oximeter that may reduce power consumption in the absence of certain parameters that may be monitored to trigger or override the reduced power consumption state. *Id*. at code (57). "In this manner, a pulse oximeter can lower power consumption without sacrificing performance during, for example, high noise conditions or oxygen desaturations." *Id.*

As depicted below, the low power pulse oximeter has signal processor 340 that derives physiological measurements 342, including oxygen saturation, pulse rate, and plethysmograph, from input sensor signal 322. Ex.1001, 4:64–5:10, Figs. 3, 4.

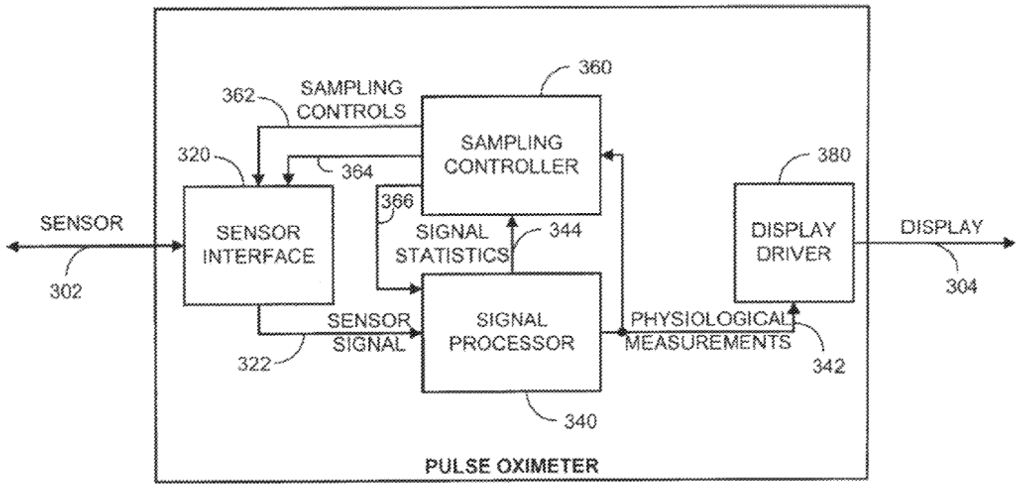

FIG. 3

Figure 3 above illustrates a top-level block diagram of a low power pulse oximeter. *Id.* at 4:40–41. Signal processor 340 may also derive signal statistics 344, such as signal strength, noise, and motion artifact. *Id.* at 5:14–15, Figs. 3, 4. Physiological measurements 342 and signal statistics 344 may be input into sampling controller 360, which outputs sampling controls 362 that in turn are used to regulate pulse oximeter power dissipation by causing sensor interface 320 to vary the sampling characteristics of sensor port 302 and by causing signal processor 340 to vary its sample processing characteristics. *Id.* at 5:15–27, Figs. 3, 4. According to the '703 patent, power dissipation "is responsive not only to output parameters, such as the physiological measurements 342, but also to internal parameters, such as the signal statistics 344." *Id.* at 5:24–27.

The pulse oximeter uses the physiological measurements and signal statistics to determine "the occurrence of an event or low signal quality condition." Ex. 1001, 6:25–28. An event determination is based upon the physiological measurements and "may be any physiological-related indication that justifies the processing of more sensor samples and an associated higher power consumption level, such as an oxygen desaturation, a fast or irregular pulse rate or an unusual plethysmograph waveform." *Id.* at 6:28–34. A low signal quality condition is based upon the signal statistics and "may be any signal-related indication that justifies the processing or more sensor samples and an associated higher power consumption level, such as a low signal level, a high noise level or motion artifact." *Id.* at 6:34–41.

The pulse oximeter "utilizes multiple sampling mechanisms to alter power consumption." Ex. 1001, 5:59–61. One sampling mechanism is "an emitter duty cycle control" that "determines the duty cycle of the current supplied by the emitter drive outputs 482 to both red and IR sensor emitters." *Id.* at 5:61–66. The sampling mechanisms "modify power consumption by, in effect, increasing or decreasing the number of input samples received and processed." *Id.* at 6:9–11. "Sampling, including acquiring input signal samples and subsequent sample processing, can be reduced during high signal quality periods and increased during low signal

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