

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

IPR2024-00242
Patent 10,687,743 B1

Before RICHARD H. MARSCHALL, DAVID COTTA, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

COTTA, *Administrative Patent Judge*.

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

I. INTRODUCTION

Apple Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review (“IPR”) of claims 1, 3–14, and 16–25 (the “challenged claims”) of U.S. Patent No. 10,687,743 B1 (“the ’743 patent”). Paper 3 (“Petition” or “Pet.”). Petitioner concurrently filed a parallel petition in another proceeding also requesting *inter partes* review of the challenged claims on different asserted grounds. *Apple Inc. v. Masimo Corp.*, IPR2024-00241 (“the ’241 IPR”), Paper 3.¹ At the same time, Petitioner filed a Notice Ranking and Explaining Material Differences Between Petitions for *Inter Partes* Review of U.S. Patent No. 10,687,743 (Paper 2, “Notice” or “Notice of Ranking”) requesting that we consider whether to institute *inter partes* review based on the petition in the ’241 IPR prior to considering the Petition in this proceeding. Notice 1.

Masimo Corporation (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). Patent Owner also filed a Response to Petitioner’s Notice of Ranking. Paper 9.

With our authorization, Petitioner filed a Preliminary Reply to Patent Owner’s Preliminary Response, and Patent Owner Filed a Preliminary Sur-reply. Paper 10 (“Prelim. Reply”); Paper 11 (“Prelim. Sur-reply”).

Concurrently herewith, we grant the petition in the ’241 IPR and institute *inter partes* review of claims 1–25 of the ’743 patent in that proceeding. ’241 IPR, Paper 11 (PTAB July 9, 2024). For the reasons provided below, and based on the circumstances present here, we find that

¹ The ’241 IPR also requested review of claims 2 and 15, which are not challenged in this proceeding.

Petitioner has not shown that a parallel petition challenging the same claims of the '743 patent at issue in the '241 IPR is warranted. We exercise discretion under 35 U.S.C. §314(a) to deny institution of *inter partes* review in this proceeding.

II. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies Apple Inc. as the real party-in-interest. Pet. 79. Patent Owner identifies Masimo Corporation as the real party-in-interest. Paper 4, 1.

B. *Related Matters*

The parties identify as a related matter the following lawsuit involving the '743 patent: *Apple Inc. v. Masimo Corp.*, No. 1:22-cv-01378-MN-JLH (D. Del.) (hereafter "Delaware Litigation"). Pet. 88; Paper 4, 1. Petitioner also identifies ITC proceeding Inv. No. 337-TA-1276 that concerns the '743 patent. Pet. 80.

Claims of the '743 patent are concurrently challenged by Petitioner in IPR2024-00241. *Id.* at 79.

Patent Owner also identifies the following patents and applications claiming priority to, or sharing a priority claim with, the '743 patent: U.S. Patent No. 10,448,871 B2 (issued from U.S. Application No. 15/195,199); U.S. Patent No. 10,470,695 B2 (issued from U.S. Application No. 16/226,249); U.S. Patent No. 10,638,961 B2 (issued from U.S. Application No. 16/532,061); U.S. Patent No. 10,646,146 B2 (issued from U.S. Application No. 16/532,065); U.S. Patent No. 10,722,159 B2 (issued from U.S. Application No. 16/791,963); U.S. Patent No. 10,687,744 B1 (issued

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from U.S. Application No. 16/835,712); U.S. Patent No. 10,687,745 B1 (issued from U.S. Application No. 16/835,772; also under Reexamination Request 90/019,457); and U.S. Application No. 16/871,874. Paper 4, 1; Paper 8, 1.

Patent Owner also identifies the following USPTO proceedings in which Petitioner has challenged patents asserted by Patent Owner in the Delaware Litigation: IPR2024-00290 (PTAB) (challenging U.S. Patent No. 8,190,223 B2); IPR2024-00296 (PTAB) (challenging U.S. Patent No. 10,984,911 B2); IPR2024-00243 (PTAB) (challenging U.S. Patent No. 10,722,159 B2); IPR2024-00244 (PTAB) (challenging U.S. Patent No. 10,722,159 B2); IPR2024-00293 (PTAB) (challenging U.S. Patent No. 10,736,507 B2); IPR2024-00294 (PTAB) (challenging U.S. Patent No. 10,736,507 B2); and IPR2024-00241 (PTAB) (challenging the '743 patent). Paper 4, 2. And Petitioner identifies as relevant the following USPTO proceedings in which it has challenged Patent Owner's patents: IPR2020-01722 (PTAB) (challenging U.S. Patent No. 10,470,695 B2); IPR2022-01291 (PTAB) (challenging U.S. Patent No. 10,687,745 B1); and IPR2022-01465 (PTAB) (challenging U.S. Patent No. 10,687,745 B1). Pet. 79–80.

C. The '743 Patent

The '743 patent is directed to a non-invasive, optical-based physiological monitoring device. Ex. 1001, code (57). In one embodiment, the device is utilized to measure a patient's arterial blood oxygen saturation, sometimes shorthand as "SpO2." *See id.* at 1:20–25, 1:53–2:3, 2:15–17. In other embodiments, the device is utilized to measure other blood constituent characteristics. *See id.* at 2:39–49 (stating

the device can measure “oxygen, carboxyhemoglobin, methemoglobin, total hemoglobin, glucose, proteins, lipids, a percentage thereof (e.g., saturation), pulse rate, perfusion index, oxygen content, total hemoglobin, Oxygen Reserve Index™ (ORI™) or . . . many other physiologically relevant patient characteristics”).

Figure 3 of the '743 patent is reproduced below.

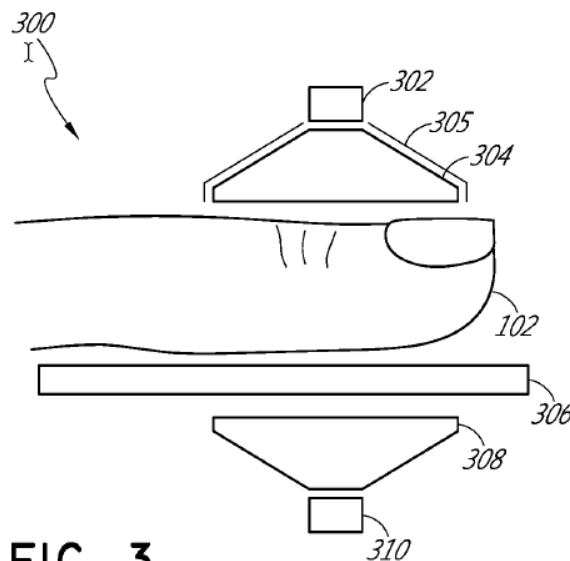


FIG. 3

Figure 3 is a schematic side view of pulse oximetry sensor 300 and tissue measurement site 102 (i.e., a patient’s fingertip). *Id.* at 5:12–14, 7:4–9.

Sensor 300 includes a “reflector 305,” “an emitter 302, a light diffuser 304, a light-absorbing detector filter 306, a light concentrator, 308, and a detector 310.” *Id.* at 7:12–14, 7:17–18.

Emitter 302 emits light toward tissue site 102, and diffuser 304 spreads the light over an area. *See id.* at 7:12–14, 7:30–49. “In some embodiments, the light diffuser 304 is a beam shaper that can homogenize the input light beam from the emitter 302, shape the output intensity profile of the received light, and define the way (e.g., the shape or pattern) the

emitted light is distributed to the tissue measurement site 102.” *Id.* at 7:44–49; *see also id.* at 7:63–66 (“Advantageously, the diffuser 304 can receive emitted light in the form of a point optical source and spread the light to fit a desired surface area on a plane defined by the surface of the Emitter 302 emits light toward tissue site 102.”). Reflector 305 prevents the emitted light from escaping out of the top portion of diffuser 304, thereby maximizing the light that reaches tissue site 102. *Id.* at 7:14–29.

The light enters tissue site 102, interacts with the patient’s blood flowing through the tissue site, and exits the tissue on the opposite side from which the light entered the tissue. *Id.* at Fig. 3, 6:55–64, 7:6–22. Filter 306 is coated with a “light-absorbing” material “such as, for example, black pigment,” and it has an opening (not shown in Figure 3) through which the transmitted light may pass to reach light concentrator 308 and light detector 310. *Id.* at 7:12–14, 8:32–38, 8:54–59; *see also id.* at 9:31–51 (describing light absorbing filter 306 in Figure 4A as having a “rectangular opening 402,” through which light may pass to light concentrator 308 and light detector 310). Detector 310 outputs a signal responsive to the transmitted light, and the signal is communicated to a processor which utilizes the signal to determine a physiological parameter of interest, such as blood oxygen saturation. *Id.* at 9:19–30; *see also id.* at 12:1–14:29.

Figures 7A and 7B of the ’743 patent are reproduced below.

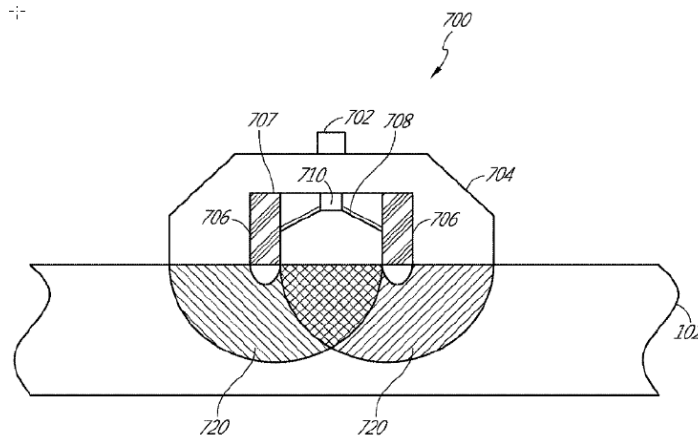


FIG. 7A

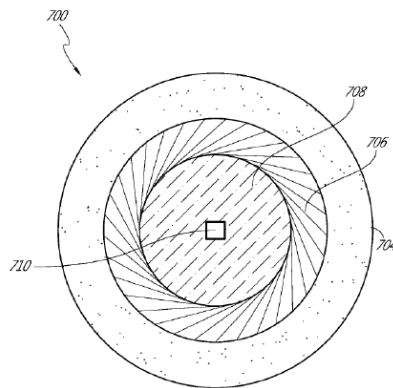


FIG. 7B

Figure 7A is a schematic side view of pulse oximetry sensor 700 and tissue measurement site 102, and Figure 7B is a schematic top view of sensor 700 with some components removed. *Id.* at 5:28–33, 10:40–42, 11:54–56.

Sensor 700 is useful in connection with a tissue site having a “relatively flat surface, such as, for example a wrist, because the emitter 702 and detector 710 are located on the same side of the tissue measurement site 102.” *Id.* at 10:43–49. Sensor 700 includes light diffuser 704 and light concentrator 708, and components 702, 704, 708, and 710 function substantially the same as corresponding components 302, 304, 308, and 310 of sensor 300 as described above. *Id.* at 10:49–11:9, 11:21–43. One difference, however, is that diffuser 704 spreads the light “over a wide, donut-shaped area” (seen best in Figure 7B) to enter tissue site 102. *Id.* at 10:65–11:6.

Sensor 700 additionally includes light blocker 706 and cover 707, which prevent light from emitter 702 from passing directly into light detector 710 without first traversing light path 720 within tissue site 102. *Id.* at 11:10–20, 11:44–67.

D. Challenged Claims

The '743 patent includes 25 claims, of which Petitioner challenges claims 1, 3–14, and 16–25 here. Independent claims 1 and 22 are illustrative of the subject matter of the challenged claims and are reproduced below.

1. *[1pre]* A physiological measurement device comprising:

[1a] one or more emitters configured to emit light in an initial light pattern;

[1b] an optical transmission material configured to be positioned between the one or more emitters and a tissue measurement site, wherein the optical transmission material is configured to alter a direction of at least a portion of the light emitted from the one or more emitters to shape an output light pattern by which the emitted light is directed toward a surface of the tissue measurement site, wherein the output light pattern comprises a different geometric shape than the initial light pattern;

[1c] a plurality of detectors configured to detect at least a portion of the light after passing through tissue, the plurality of detectors further configured to output at least one signal responsive to the detected light;

[1d] a light block configured to prevent at least a portion of the light emitted from the one or more emitters from reaching the plurality of detectors without first reaching the tissue;

[1e] a surface comprising a dark-colored coating, the surface positioned between the plurality of detectors and the tissue, 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; and

[1f] a processor configured to receive and process one or more signals responsive to the outputted at least one signal and determine a physiological parameter of a user responsive to the one or more signals.

22. [22pre] A physiological measurement device comprising:

[22a] one or more emitters configured to emit light;

[22b] a diffuser configured to be positioned between the one or more emitters and a tissue measurement site;

[22c] a circular shaped light block;

[22d] a plurality of detectors configured to detect at least a portion of the light after the light passes through a portion of the tissue measurement site bounded by the light block, wherein the plurality of detectors are arranged in an array having a spatial configuration corresponding to a shape of the portion of the tissue measurement site bounded by the circular shaped light block, wherein the plurality of detectors are further configured to output at least one signal responsive to the detected light;

[22e] wherein the light block is configured to prevent at least a portion of light emitted from the one or more emitters from reaching the plurality of detectors without first reaching tissue; and

[22f] a processor configured to receive and process one or more signals responsive to the outputted at least one signal and determine a physiological parameter of the user responsive to the one or more signals.

Ex. 1001, 15:32–62, 17:29–18:18 (with bracketed designations added by Petitioner, *see* Pet. vi–xv).

E. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1, 3–14, and 16–25 are unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §²	Reference(s)/Basis
1, 3–6, 9–13, 22–25	103	Sarantos, ³ Shie ⁴
7	103	Sarantos, Shie, Utter ⁵
8	103	Sarantos, Shie, Han ⁶
14, 16–21	103	Sarantos, Shie, Utter, Han

Petitioner relies on the declaration of Brian W. Anthony, Ph.D. Ex. 1003.

Patent Owner relies on the declaration of Vijay K. Madiseti, Ph.D.

Ex. 2002.

III. EXERCISE OF DISCRETION

Petitioner filed two petitions requesting *inter partes* review of the '743 patent: the petition at issue in the '241 IPR and the petition at issue in this proceeding (“the '242 IPR”). At Petitioner’s request, we considered the petition in the '241 IPR first. Notice 1. We instituted an *inter partes* review in the '241 IPR for the reasons discussed in the institution decision in that

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. §§ 102, 103 effective March 16, 2013. The date of the earliest patent document to which the '743 patent claims priority is July 2, 2015. *See* Ex. 1001, codes (63), (60). Because that date falls after the effective date of the applicable AIA amendments, we apply the AIA versions of §§ 102 and 103 here.

³ Sarantos et al., US 9,392,946 B1, issued July 19, 2016 (Ex. 1005 (“Sarantos”).

⁴ Shie et al., US 6,483,976 B2, issued Nov. 19, 2002 (Ex. 1007 (“Shie”).

⁵ Utter, II, US 8,446,275 B2, issued May 21, 2013 (Ex. 1006 (“Utter”).

⁶ Han et al., US 2016/0058312 A1, published Mar. 3, 2016 (Ex. 1008 (“Han”).

proceeding. '241 IPR, Paper 12 (PTAB July 9, 2024). We now consider whether Petitioner has shown that institution of its second-ranked petition, which challenges claims of the '743 patent that are already at issue in the '241 IPR, is warranted. Specifically, because Petitioner concurrently filed two petitions challenging claims of the same patent, we consider whether we should exercise discretion to deny the second-ranked petition. *See* 35 U.S.C. § 314(a); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (explaining that section “314(a) invests the Director with discretion on the question whether to institute review”); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

The Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) (“CTPG”)⁷ states that “one petition should be sufficient to challenge the claims of a patent in most situations” and that “multiple petitions by a petitioner are not necessary in the vast majority of cases.” CTPG 59. The CTPG further states that “[t]wo or more petitions filed against the same patent at or about the same time (e.g., before the first preliminary response by the patent owner) may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns.” *Id.* (citing 35 U.S.C. § 316(b)). The CTPG provides the following guidance:

To aid the Board in determining whether more than one petition is necessary, if a petitioner files two or more petitions challenging the same patent, then the petitioner should, in its petitions or in a separate paper filed with the petitions, identify:
(1) a ranking of the petitions in the order in which it wishes the

⁷ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

Board to consider the merits, if the Board uses its discretion to institute any of the petitions, and (2) a succinct explanation of the differences between the petitions, why the issues addressed by the differences are material, and why the Board should exercise its discretion to institute additional petitions if it identifies one petition that satisfies petitioner's burden under 35 U.S.C. § 314(a).

Id. at 59–60 (footnote omitted).

In its Notice of Ranking, Petitioner asserts that multiple petitions are warranted because the grounds in the two petitions are “non-redundant” and “demonstrate the obviousness of the Challenged Claims in materially different ways.” Notice 1. According to Petitioner, as was the case with two previously instituted IPRs (IPR2022-01465 and IPR2022-01291) challenging a related patent (U.S. Patent No. 10,687,745 B1), the grounds presented in the two petitions “could not have been presented with a single petition,” due to “word count constraints and the number of claims challenged.” *Id.* at 5.

The present IPR (“the ’242 IPR”) relies on Sarantos as the primary reference while the ’241 IPR relies on Iwamiya as the primary reference. Petitioner identifies the modifications it proposes the person of ordinary skill in the art (“POSA” or “POSITA”) would have made to Sarantos and to Iwamiya, respectively, as distinguishing the two IPRs. *Id.* at 2. Thus, in the ’241 IPR, Petitioner proposes that the POSA would have “modified Iwamiya to include both a dark colored coating on its light shielding frame, and functionality for measuring blood oxygen saturation.” *Id.* In the ’242 IPR, Petitioner relies on Sarantos as disclosing these features and proposes that the POSA would have modified Sarantos to “include one of multiple optical

elements to provide ‘light diffusing and shaping advantages,’ such that a first shape of light is changed into a second shape.” *Id.*

The modification Petitioner proposes to make to Sarantos is significant because in IPR2022-01465, the Board addressed substantially the same issue. In that case, as here, Petitioner proposed to modify Sarantos’s wristwatch sensor to use the light shape changing material disclosed in Shie. *Compare* Pet. 10 (“It would have been obvious to a POSITA to use the light shape changing material of Shie in the window region 2226 (orange) between light source 2208 (green) of Sarantos’s wristwatch sensor and the user’s wrist tissue.”); *with* Ex. 2036, 139 (decision in IPR2022-01465 explaining “[Petitioner] asserts it would have been obvious ‘to use the light shape changing material of Shie in the wristwatch sensor of Sarantos in between LEDs 2208 and the user’s wrist tissue’”). Whether the POSA would have been motivated to make this modification is dispositive in this case. *See* Prelim. Resp. 38–41.

In IPR2022-01465, on a fully developed record, the Board determined that Petitioner did not “explain sufficiently why a person of ordinary skill in the art would have been led to use a *light shape changing lens* within the context of *Sarantos’s sensor*.” Ex. 2036, 143; *see also id.* at 146 (explaining that Dr. Anthony’s testimony “seeks to establish only that Shie’s cylindrical lens structures *shape light*, and does not explain *why* or *how* Shie’s cylindrical lens structures would achieve any of the three benefits identified in the Petition in the context of Sarantos’s sensor”). Thus, the Board determined that Petitioner had not established sufficient motivation to support a finding of obviousness. *Id.* at 145, 146. This prior decision weighs heavily against institution. Put simply, we find little reason to go

forward with Petitioner's second-ranked Petition where the Board in IPR2022-01465 previously decided an issue, in a Final Written Decision, against Petitioner that is case dispositive in this Petition.

We recognize that the record in this proceeding is not identical to that in IPR2022-01465 and that it is possible that Petitioner could adduce evidence in this proceeding that would address the deficiencies the Board identified in Petitioner's showing. But on the present record, Petitioner relies on the same prior art and the same testifying expert to support its argument that it would have been obvious to make the same proposed modification to Sarantos. And, in its Notice of Ranking, Petitioner emphasizes the "strong similarities" between the claims in the patents at issue as a way of showing that going forward with a second petition in this case would not burden the Board or Patent Owner. Notice 4. Given that Petitioner has already met the reasonable likelihood standard for institution in the '241 IPR, the possibility that Petitioner *might* be more successful litigating an issue on the second go-around than it was on the first does not present circumstances warranting institution of a second petition.

We also recognize that in IPR2024-01244, the Board reached a different conclusion on the multiple petition issue. Although that case included a ground with the same case-dispositive issue that the IPR2022-01465 panel previously decided against Petitioner (i.e., involving a Sarantos/Shie combination), that case included an additional ground (involving Sarantos alone) not presented here. The Board in that case determined that the additional ground met the institution threshold and based its decision to go forward with a second petition on that additional ground,

rather than on the grounds including the issue previously resolved against Petitioner. IPR2024-01244, Paper 11 (PTAB July 9, 2024).

IV. CONCLUSION

For the foregoing reasons, we exercise our discretion under § 314(a) and deny institution of *inter partes* review of the '743 patent in this proceeding.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied*, and an *inter partes* review of the challenged claims is not instituted in this proceeding.

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