

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION
Petitioner

v.

APPLE INC.
Patent Owner

Case IPR2023-00635
Patent 10,987,054

**PATENT OWNER APPLE INC.'S
PRELIMINARY RESPONSE**

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LIST OF EXHIBITS

Exhibit No.	Description
APPLE-2001	Declaration of Dr. Thomas Kenney

I. INTRODUCTION

The Petition sets forth ten Grounds of unpatentability, each of which suffers from critical defects that render *Inter Partes* Review untenable.

To start, each of Masimo's ten grounds relies on a primary reference (Rothkopf) that was identified by the Examiner during prosecution and applied by the Examiner in a rejection. Yet, the Petition does not identify any "material error" by the Office during prosecution, and does not even acknowledge that Rothkopf has already been applied by the Office and found lacking. Rather, Masimo falsely asserts that "none of the references the Petition relies on were considered during examination." Pet., 90. This failure to identify any material errors made by the Office with respect to the Examiner's application of Rothkopf during prosecution is dispositive, especially when coupled with analysis on the merits that demonstrate meaningful deficiencies in the Petition's analysis of Rothkopf consistent with the PTO's original analysis.

In yet another dispositive failure of the Petition, Masimo asserts that the term "carrier member" is "require[d]...to be construed according to 35 U.S.C. §112(f)" yet Masimo refuses to identify a corresponding structure for the term "carrier member" and therefore fails to identify how any of the references disclose the corresponding structure or an equivalent thereof. Pet., 11. The Petition fails to

satisfy Masimo's burden to both "identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function" for the term "carrier member" and to specify where the corresponding structure "is found in the prior art patents or printed publications relied upon." 37 C.F.R. § 42.104(b)(3)-(4). The Board has regularly denied such petitions. *Infra*, Section VI.

The Petition is defective on the merits in other ways, confirming the PTO's original analysis of Rothkopf and the prior art of record. APPLE-2001, ¶¶37-38. The Petition relies on Rothkopf alone as anticipatory, but fails to identify any single embodiment that provides all of the identified elements, and does not remedy with any obviousness rationale. The Petition also fails to identify any viable rationale for modifying Rothkopf based on Jung (Grounds 2-2C) or Paulke (Ground 3-3C). Instead, the absence of the proposed structure in the prior art references highlights that the Petition's proposal is based only on impermissible hindsight. These and other faults with the Petition are laid out in detail below.

Ultimately, for at least these reasons, the "information presented in the petition" is plainly insufficient to satisfy Masimo's burden under § 314(a). Institution of this Petition should be denied.

II. THE *ADVANCED BIONICS* TEST FAVOR DISCRETIONARY DENIAL UNDER § 325(d)

Rothkopf, the primary reference relied upon in all Grounds of the Petition, was cited by the Examiner and *applied to the claims in a substantive rejection*. Discretionary denial of institution under 35 U.S.C. § 325(d) is therefore proper. 35 U.S.C. § 325(d) recites, in part:

In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into account whether, and reject the petition or request because, *the same or substantially the same prior art or arguments previously were presented to the Office*.¹

The PTAB uses the following two-part framework to determine whether to exercise its discretion to deny institution of an *inter partes* review under § 325(d):

- (1) whether the same or substantially the same art previously was presented to the Office *or* whether the same or substantially the same arguments previously were presented to the Office; and

¹ All emphasis added unless otherwise noted.

(2) if ***either condition*** of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

Here, the Rothkopf reference (the sole reference for Ground 1 and primary reference for all other grounds) was previously considered and applied by the Office during prosecution of the '054 patent and therefore “the same or substantially same prior art or arguments previously were presented to the Office,” satisfying the first prong of the *Advanced Bionics* framework. 35 U.S.C. § 325(d). Indeed, a cursory review of the face of the '054 patent shows that Rothkopf was “cited by examiner” during prosecution:

2016/0058375 A1* 3/2016 Rothkopf G06F 3/015
600/301

EX1001, p. 2. The Examiner also ***applied*** Rothkopf to pending claims to reject the claims during prosecution. EX1002, 114-115. Yet Masimo has completely ignored that the primary reference relied upon in all Grounds of the Petition was previously assessed with respect to the issued claims by the Office during prosecution. Masimo has therefore failed to meet its burden to demonstrate that the Examiner committed

a material error, satisfying the second prong of *Advanced Bionics*. As demonstrated below, the *Advanced Bionics* framework favors discretionary denial under § 325(d).

A. Substantially the Same Prior Art Or Arguments Were Previously Presented to the Patent Office During Prosecution (*Advanced Bionics* Prong 1)

Rothkopf—the sole reference for Ground 1 and primary reference for all other grounds—was applied by the Examiner in rejecting the claims during prosecution of the '054 patent. EX1002, 114-115. At the time of filing the application that would become the '054 patent, the Applicant submitted a request for first action interview under the pilot program. EX1002, 169. The Examiner subsequently issued a First Action Interview Pilot Program Pre-Interview Communication rejecting all of the claims. *Id.*, 113. The Examiner's search identified "US-20160058375-A1" to "Rothkopf; Fletcher R." and labeled "Rothkopf" as reference "D2." *Id.*, 113-114. In rejecting the claims, the Examiner applied Rothkopf along with primary reference Kegasawa to dependent claim 22. EX1002, 114. Rothkopf therefore served as the basis for a rejection.

The fact that Rothkopf was applied to only a single dependent claim *does not* weigh negatively against this factor or discretionary denial in general. In a decision designated informative, the Board made clear that discretionary denial under § 325(d) is appropriate even when specific challenged claims were not previously rejected based on the reference relied upon in the Petition so long as the Examiner

considered the reference prior to allowing the claims. *Unified Patents Inc. v. Berman*, IPR2016-01571, Paper 10 at 11-12 (PTAB Dec. 14, 2016) (Informative). Specifically, the Board held that in situations in which a reference is applied to some, but not all, of the issued claims during prosecution, the reference is viewed by the Board as having been “considered previously by the Office” even with respect to “issued claims [that] were never rejected over [[the cited reference]].” *Id.*; *see also Monolithic Power Systems, Inc. v. Volterra Semiconductor LLC*, IPR2020-01348, Paper 19 at 11-12 (PTAB Mar. 4, 2021) (finding that evidence (beyond an IDS) that the Examiner reviewed a reference relied upon in the Petition, even if the Examiner never applied the reference in rejecting any of the claims, “weighs heavily for application of our discretion to deny institution.”). The situation here is no different from that in *Unified Patents*—Rothkopf was identified by the Examiner during a search and applied in a rejection to the claims before the Examiner ultimately allowed the claims. EX1002, 114-115, 42-48. Rothkopf was evaluated by the Examiner during prosecution and served as a basis for rejection and therefore was considered previously by the Office. There is no reason to “readjudicate substantially the same prior art and arguments as those presented during prosecution and considered by the Examiner.” *Unified Patents*, IPR2016-01571, Paper 10 at 12.

Because Rothkopf was applied during prosecution, Ground 1, which relies on Roghkopf alone, relies on the exact same art already considered during prosecution.

The only other Grounds addressing the independent claims, Grounds 2 and 3, rely on Rothkopf as the primary reference while adding Jung or Paulke, respectively. However, as demonstrated in Sections V.B-C, *infra*, both the Rothkopf-Jung and Rothkopf-Paulke combinations fail to provide at least one of the elements identified by the Examiner as missing from the known prior art (which included Rothkopf).

Specifically, in allowing the claims of the '054 patent, the Examiner concluded that the known prior art “*fails to disclose*, teach, or suggest the carrier assembly comprising *a carrier member and (first/second or rear) electrode(s)* as claimed.” EX1002, 47. Specifically, none of the known references provided a “motivation to modify the carrier assembly (53 in FIG. 16) of Kegasawa” to “provide electrodes directly onto the carrier assembly.” Indeed, in the Examiner’s summary of the initial interview, the Examiner stated that “Applicant pointed out that *the novelty of the invention is forming the electrode directly on a carrier substrate formed from glass/sapphire dome.*” EX1002, 105. The claims were subsequently allowed after such features were incorporated into the independent claims. EX1002, 89-94, 42-48. Masimo agrees that the claims were allowed after the Applicant added “limitations of a ‘carrier assembly’ comprising a ‘carrier member’ positioning [*sic*] first and second electrodes.” Pet., 7-8.

Yet Masimo relies on Rothkopf alone as allegedly disclosing elements in each of the independent claims directed to just such a feature. Therefore, not only does

the Petition rely on the same art considered and applied during prosecution, but also presents the same arguments. As mentioned above, Ground 1 relies on Rothkopf alone and therefore presents the exact same prior art previously considered during prosecution with respect to all claim elements. In Ground 2, Masimo relies exclusively on Rothkopf as allegedly disclosing Element 1f “*a first electrode positioned on the carrier member...*” Pet., 40-42. Masimo goes on to argue that, with respect to Element 1g, Rothkopf alone allegedly “discloses a second electrode (‘pair of electrodes’) positioned on the carrier member,” relying on Jung only for “the exact configuration of the electrodes.” Pet., 41. As discussed above, these claim elements are the exact features of a “carrier assembly comprising a carrier member and (first/second or rear) electrode(s) as claimed” that the Examiner found to be missing from the art of record, including Rothkopf. EX1002, 47. Therefore, with respect to these elements identified by the Examiner as missing from Rothkopf and the other art of record, the Petition presents the same prior art for Ground 2.

Continuing with Ground 2, with respect to Element 9g, which recites in part “a rear electrode positioned on the carrier member,” Masimo once again insists that “Rothkopf [alone] teaches this limitation as explained above with regard to limitation 9g of Ground 1.” Pet., 55. Masimo goes on to argue that “Jung *also* discloses a biometric sensor carrier assembly with a biometric sensor carrier member” therefore indicating that Masimo believes that Jung is duplicative of the

teachings of Rothkopf for this element and therefore Jung is “substantially the same” prior art previously considered by the Office. Pet., 56. Indeed, Masimo only relies on Jung as allegedly disclosing a specific arrangement for the electrodes, not for the concept of the electrodes positioned on the carrier as claimed. Pet., 56-58. Masimo provides a nearly identical analysis with respect to Element 15e, which recites in part “a rear electrode positioned on the carrier member.” Pet., 63-65. As with Claim 9, Masimo once again asserts that “Rothkopf [alone] teaches this limitation as explained above with regard to Claim 15e of Ground 1” while relying on Jung for the specific arrangement of electrodes. *Id.*

Ground 3 shows a similar pattern. With respect to Element 1F, (“***a first electrode positioned on the carrier member...***”) the Petition merely cites back to the Ground 2 analysis, which, as discussed above, relies on Rothkopf alone. Pet., 74. With respect to Element 1g, as in Ground 2, Masimo alleges that Rothkopf alone “discloses a second electrode (‘pair of electrodes’) positioned on the carrier member,” relying on Paulke only for “the exact configuration of the electrodes.” Pet., 75-78. As discussed above, these claim elements are the exact features of a “carrier assembly comprising a carrier member and (first/second or rear) electrode(s) as claimed” that the Examiner found to be missing from the art of record, including Rothkopf. EX1002, 47.

Continuing with Ground 3, for both Element 9g (“a rear electrode positioned on the carrier member...”) and 15e (“a rear electrode positioned on the carrier member...”), Masimo once again asserts that “Rothkopf [alone] teaches this limitation as explained above with regard to [[Element 9g/15e]] of Ground 1” while relying on Paulke only for the specific arrangement of electrodes. Pet., 79-81, 84-86.

With respect to the dependent claims addressed in Grounds 1A, 2A-2C, and 3A-3C, an informative decision by the Board specifies that citation by the Petition to additional secondary references “in certain grounds, for the additional subject matter of certain dependent claims, is insufficient to persuade us that exercising our discretion under 35 U.S.C. § 325(d) is inappropriate” when the reference(s) relied upon with respect to the independent claims were previously presented to the Office. *Kayak Software Corp. v. Int’l Bus. Mach. Corp.*, CBM2016-00075, Paper 16 at 10 (PTAB Dec. 15, 2016) (Informative). The addition of Pei, Honda, Francis, and Lapetina with respect to certain dependent claims does not weigh against discretionary denial under § 325(d).

Because the Petition relies exclusively on the same or substantially the same prior art considered by the Examiner during prosecution for the features thought to be missing from the prior art of a “carrier assembly comprising a carrier member

and (first/second or rear) electrode(s) as claimed” (EX1002, 47), the first prong of the *Advanced Bionic* framework is satisfied.

B. Petitioner Has Not Met its Burden to Demonstrate Any Error Material to Patentability (*Advanced Bionics* Prong 2)

Because the first prong of the *Advanced Bionic* framework is satisfied, Petitioner bears the burden to demonstrate the second prong of the framework, namely “that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, IPR2019-01469, Paper No. 6 at 8, 10-11 (burden is on the petitioner to identify “a material error by the Office” during prosecution to avoid discretionary denial under U.S.C. § 325(d)), 20-21. Not only has Masimo failed to satisfy this burden of demonstrating such a “material error,” the Petition never even alleged it. In fact, Masimo completely ignores the Examiner’s application of Rothkopf in a claim rejection during prosecution, falsely asserting that “none of the references the Petition relies on were considered during examination.” Pet., 90.

Additionally, as demonstrated in Sections V.A-C, *infra*, the references cited in the Petition fail to provide the very feature believed to be missing from the prior art of a “carrier assembly comprising a carrier member and (first/second or rear) electrode(s) as claimed.” EX1002, 47. Masimo fails to present any new arguments or evidence to demonstrate how or why the Examiner erred in applying Rothkopf

to the claims during prosecution or how the Petition corrects for such errors.

Masimo has also made no showing to demonstrate or suggest that the examiner misapprehended or overlooked the teachings in the references of record.

Masimo's submission of expert testimony with the Petition is insufficient to overcome the fact that the relied upon reference was previously identified and applied by the Examiner because the additional testimony does not identify error by the Examiner, contains only "conclusory statement[s]" and is "unsupported by sufficient evidence." *PUMA North America, Inc. v. NIKE, Inc.*, IPR2019-01042, Paper 10 at 20-21 (PTAB Oct. 31, 2019) (Informative). That is especially true where, as is the case here, the supporting declaration "merely repeats, *verbatim*" the language of the Petition itself. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15-17 (August 24, 2022) (Precedential) (emphasis original); *Compare, e.g., Pet.*, 40-41 *with* EX1003, ¶¶83-84. Such declaration testimony that merely repeats the Petition "is entitled to little weight." *See* 37 C.F.R. § 42.65(a); *Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000); *Corning Inc. v. DSM IP Assets B.V.*, IPR2013-00048, Paper 94 at 33 (PTAB May 9, 2014) (citing to *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985)) ("bare opinion is entitled to little weight in the absence of objective, evidentiary support").

To be clear, Masimo relies on the previously applied Rothkopf reference as allegedly disclosing the claim features identified by the Examiner as having been

missing from the known art. *Supra*, Section II.A. Masimo requests that the Board substitute its judgment for that of the Examiner, without any identified error or explanation why the Examiner's analysis was incorrect. "If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability." *Advanced Bionics*, IPR2019-01469, Paper No. 6 at 9. Here, as discussed in Section V, *infra*, not only was the Examiner's determination "reasonable," it was also correct. The present IPR is simply a case of the Petitioner ignoring the Examiner's assessment of the art and requesting that the Board come to a different conclusion based on the same facts. The Board should decline this invitation.

Due to the fact that Masimo "has not articulated how or why the Examiner erred" in allowing the claims of the '054 patent after evaluation and application of Rothkopf during prosecution, this prong heavily favors discretionary denial of institution. *PUMA*, IPR2019-01042, Paper 10 at 15-16. For at least the above reasons, denial under § 325(d) would be proper.

III. Level of Ordinary Skill

For purposes of this IPR, Petitioner submits that a person of ordinary skill in the art at the time of the alleged invention (a "POSITA") would have had at least a bachelor's degree in electrical engineering, computer engineering, mechanical engineering, biomedical engineering, physics, or a related field, and would have

had at least two years of relevant work experience with capture and processing of data or information, including but not limited to physiological information, or equivalents thereof. APPLE-2001, ¶26. Less work experience may be compensated by a higher level of education and vice versa. *Id.*

IV. Masimo’s Petition is defective for failure to identify corresponding structure for terms it asserts should be construed as means-plus-function terms according to 35 U.S.C. § 112(f)

Masimo has failed to provide a proper construction as required by 37 C.F.R. § 42.104(b)(3) for terms it has identified as means-plus-function terms and therefore, as outlined below, institution should be denied.

A. “carrier member”

Masimo asserts that the term “carrier member,” which appears in each of the independent claims, is “nonstructural” and should therefore be construed as a means-plus-function term under 35 U.S.C. § 112(f). Pet. 11. Indeed, Masimo asserts that “courts *require* such terms to be construed according to 35 U.S.C. § 112(f).” *Id.* In this proceeding, it is the Petitioner’s burden to provide the proper construction. When, as here, a Petitioner argues under the *Phillips* standard that the claim elements must be construed as means-plus-function limitations, the Petition “*must* identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” 37 C.F.R. § 42.104(b)(3); *see also Verizon Services Corp. et al. v. AIP Acquisition LLC*,

IPR2015-01106, Paper No. 10 at 18 (PTAB Oct. 15, 2015) (“Per 37 C.F.R. § 42.104(b)(3), a petition **must** identify the specific portions of the specification that describe the structure, material, or acts corresponding to each function of a means-plus-function claim limitation.”). This requirement is not optional. “**By rule**, Petitioner is **required** to identify in its Petition the corresponding structure in the specification for means-plus-function terms.” *Samsung Elecs. Am., Inc. v. Uniloc 2017 LLC*, IPR2020-00046, Paper 6 at 6 (PTAB Apr. 1, 2020) (denying institution).

Despite this clear requirement, the Petition failed to identify both the function performed by the claimed “carrier member” and any corresponding structure for the term “carrier member” in the specification. Pet., 11. Instead, Masimo insists that “the ’054 Specification **does not**...provide any structure corresponding to a ‘carrier member.’” *Id.* Denial of institution is proper when the Petition lacks “any explanation or sufficient identification from Petitioner of the structure of the means-plus-function terms.” *Callminer, Inc. v. Mattersight Corp.*, IPR2020-00272, Paper 8 at 13-14 (PTAB June 18, 2020). Masimo’s failure to “identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function” is dispositive. 37 C.F.R. § 42.104(b)(3). Institution should be denied.

Masimo was obligated to “have either provided reasons why these limitations are not governed by 35 U.S.C. § 112[[f)], or Petitioner should have provided an explicit claim construction as required by [PTAB] rules.” *OrthoPediatrics Corp. v. K2M, Inc.*, IPR2018-01548, Paper 9 at 10 (PTAB March 1, 2019). Yet Masimo insisted that § 112(f) should apply while failing to provide the required construction. Here, Masimo “in effect, seeks an advisory opinion from the Board as to whether the challenged claims are indefinite under 35 U.S.C. § 112(b).” *Samsung*, IPR2020-00046, Paper 6 at 7-8. However, it is not the Board’s role “to issue advisory opinions on how we might have ruled if given additional statutory authority.” *Id.* Where, as here, the Petitioner asserts that 112(f) applies to a claim term, yet applies the cited references to the term using a plain and ordinary meaning construction, “the proper course for the Board to follow...is to decline to institute the IPR.” *Id.*, 10 (citing *Samsung Elecs. Am., Inc. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1353 (Fed. Cir. 2020)).

Masimo’s failure to identify any corresponding structure for the term “carrier member” also means that Masimo has failed to identify how the cited references disclose the corresponding structure for this term. “***Under governing precedent***, to show that a means-plus-function limitation was present in the prior art, Petitioner must demonstrate that the corresponding structure—or an equivalent—was present in the prior art.” *Microsoft Corp. v. Uniloc 2017 LLC*,

IPR2020-00103, Paper No. 8 at 9-10 (PTAB May 11, 2020) (denying institution) (internal quotations omitted). Where, as here, the “Petitioner fails to do so,” denial of institution is proper. *Id.*, 9-11.

As the Board has repeatedly held, when the “Petitioner has not identified structure, material, and acts in the Specification” corresponding to the means-plus-function term “Petitioner has not accounted for how such unidentified structure, material, and acts would have been met by the prior art.” *Toyota Motor Corp. v. Blitzsafe Tex., LLC*, IPR2016-00422, Paper 12 at 28 (PTAB July 6, 2016). In such scenarios, it is not the Board’s place to “make arguments for Petitioner” by identifying a corresponding structure and identifying where such a corresponding structure or equivalent can be found in the cited art. *Facebook, Inc. v. Sound View Innovations, LLC*, IPR2017-00985, Paper 17 at 12-14 (PTAB Sept. 5, 2017).

Indeed, when, as is the case here, an identification of the corresponding structure “is not present in the Petition[.]...[i]t follows that Petitioner has not explained how any prior art teaching accounts for the corresponding structure.” *Verizon Services Corp.*, IPR2015-01106, Paper No. 10 at 18. Denial of institution is therefore proper.² Masimo’s proposed alternative construction of “carrier

² *Verizon Services Corp.* was decided prior to the Supreme Court decision in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) and therefore institution was

member” to mean “a component of a carrier assembly” (Pet., 12) does not correct for the Petition’s failings on this point. Masimo has taken a firm position that § 112(f) construction applies to the term “carrier member” yet has refused to identify the function or corresponding structure for this term. Pet., 11-12. Masimo’s failure to meet the clear burden under 37 C.F.R. § 42.104(b)(3) is dispositive.

B. “housing member”

Masimo asserts in the Petition that “‘member’ style claim terms are nonstructural, and accordingly, courts require such terms to be construed according to 35 U.S.C. §112(f).” Pet., 11. Yet Masimo offers no construction, and therefore identifies no corresponding structure, for the term “housing member,” which appears in each of independent claims. The Petition fails due to Masimo’s failure to identify corresponding structure in the ’054 Specification for the same reasons discussed with respect to the term “carrier member” in Section VI.A, *supra*. That is, Masimo was obligated to “have either provided reasons why these limitations are not governed by 35 U.S.C. § 112 [(f)], or Petitioner should have provided an explicit claim construction as required by [PTAB] rules.” *OrthoPediatrics*, IPR2018-01548, Paper 9 at 10. Because Masimo has not done so with respect to

denied with respect to only the dependent claims to which pre-AIA 112/6 applied. Here, Masimo has asserted that 112(f) (pre-AIA 112/6) applies to an element of each independent claim and therefore denial of the entire petition is proper.

the term “housing member,” institution should be denied. *Microsoft*, IPR2020-00103, Paper No. 8 at 9-11.

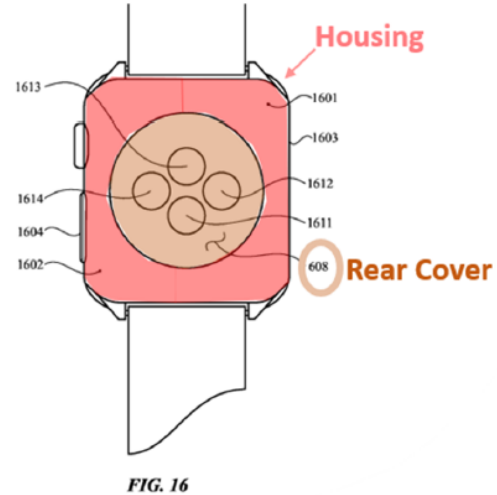
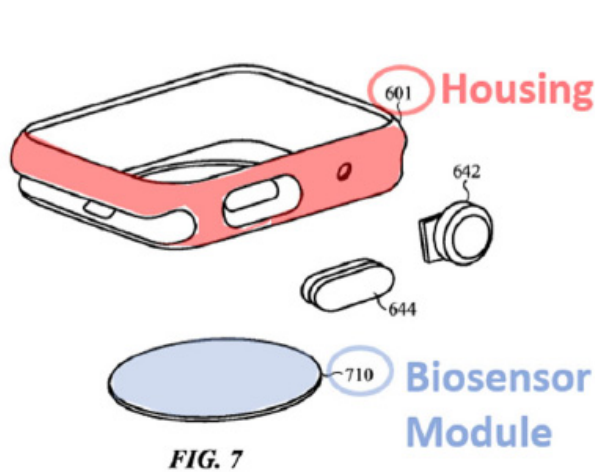
V. The Petition Fails To Provide “a [first/second/rear] electrode positioned on the carrier member” (All Grounds)

Each of the grounds in the Petition that address the independent claims (Grounds 1, 2, and 3) fails to demonstrate that the cited references disclose Elements 1f, 1g, 9g, and 15e. APPLE-2001, ¶39. This defect taints all grounds, and provides an independent reason institution should be denied.

A. Ground 1 Fails To Provide Elements 9g and 15e

Ground 1 is an anticipation ground that relies on Rothkopf alone. Pet., 19. But the Petition fails to demonstrate that Rothkopf describes Elements 9g and 15e.

For example, in addressing Element 9e, Masimo identifies Rothkopf’s “biosensor module 710” as purportedly disclosing the claimed carrier assembly and the “rear cover 608” as purportedly disclosing the claimed carrier member. *Id.*, 21-22.



Pet., 21-22 (annotated FIGS. 7 and 16 of Rothkopf); *see also* EX1005, [0012] (“A rear cover may be **disposed over** the biosensor module...”); APPLE-2001, ¶¶41-43.

In addressing Element 9g (a rear electrode positioned on the carrier member...), Masimo points to Rothkopf’s disclosure that “biosensor module 710 may include ... one or more electrodes or conductive elements that are configured to detect and measure a physiological condition or property of the user” and notes that “biosensor module 710 includes the rear cover 608.” Pet., 23 (quoting EX1005, [0148]). The fact that the biosensor module includes “one or more electrodes” and also “includes the rear cover 608,” however, does not provide that one or more electrodes are specifically positioned **on** the rear cover 608 (the component Masimo equates to the claimed carrier member). APPLE-2001, ¶43. The Petition lacks any evidence or explanation that these passages of Rothkopf

indicate that the electrodes are positioned on “rear cover 608,” rather than another portion of the biosensor module 710. *Id.* Simply put, this paragraph of Rothkopf does not describe the electrodes as positioned *on* the rear cover 608. *Id.*

This gap is not remedied by citation to paragraph [0201] of Rothkopf—located seven pages later—that states “biosensors are disposed relative to or attached to a rear cover 608.” Pet., 23 (citing EX1005, [0201]); APPLE-2001, ¶44. The Petition lacks any explanation from Rothkopf of *which* biosensors are “attached to” the rear cover. Other portions of Rothkopf describe that the biosensors located on the biosensor module are *light sources* and *photodetectors*— “[t]he biosensor module may include an array of light sources configured to emit light into a body of the user, and a photodetector configured to receive light produced by a light source of the array of light sources that is reflected from the body and produce a sensor signal.” EX1005, [0021], [0013]; APPLE-2001, ¶44. A POSITA therefore would have recognized from Rothkopf’s disclosures as a whole that Rothkopf’s broad discussion of “biosensors” being “disposed relative to or attached to” the rear cover 608 is in fact referring to optical sensors positioned relative to or attached to the rear cover and not referring to electrodes positioned on the outer surface of the rear cover 608. APPLE-2001, ¶44.

Notably, the Petition ignores that each and every specific example described by Rothkopf exclusively indicates electrodes positioned at a different location

away from the rear cover, never hinting at implementation of electrodes on the transparent rear cover. APPLE-2001, ¶¶44-46. For example, Rothkopf goes on to disclose, when describing the entire product more generally, that “[t]he biosensors may include optical and/or electronic biometric sensors that may be used to compute one or more health metrics” and that “[a]n example consumer product having multiple biosensors is described below with respect to FIG. 16.” EX1005, [0062]. In the device shown in FIG. 16, **only** the light emitting and detecting biosensors are positioned on the biosensor module. The electrodes are expressly described and illustrated as separate from the rear cover 608. APPLE-2001, ¶¶45-46. The “light sources 1611-1613 and a detector 1614” are positioned on the rear cover 608 while “a first electrode 1601 and second electrode 1602 are disposed on the rear face of the device 100” off of the rear cover 608:

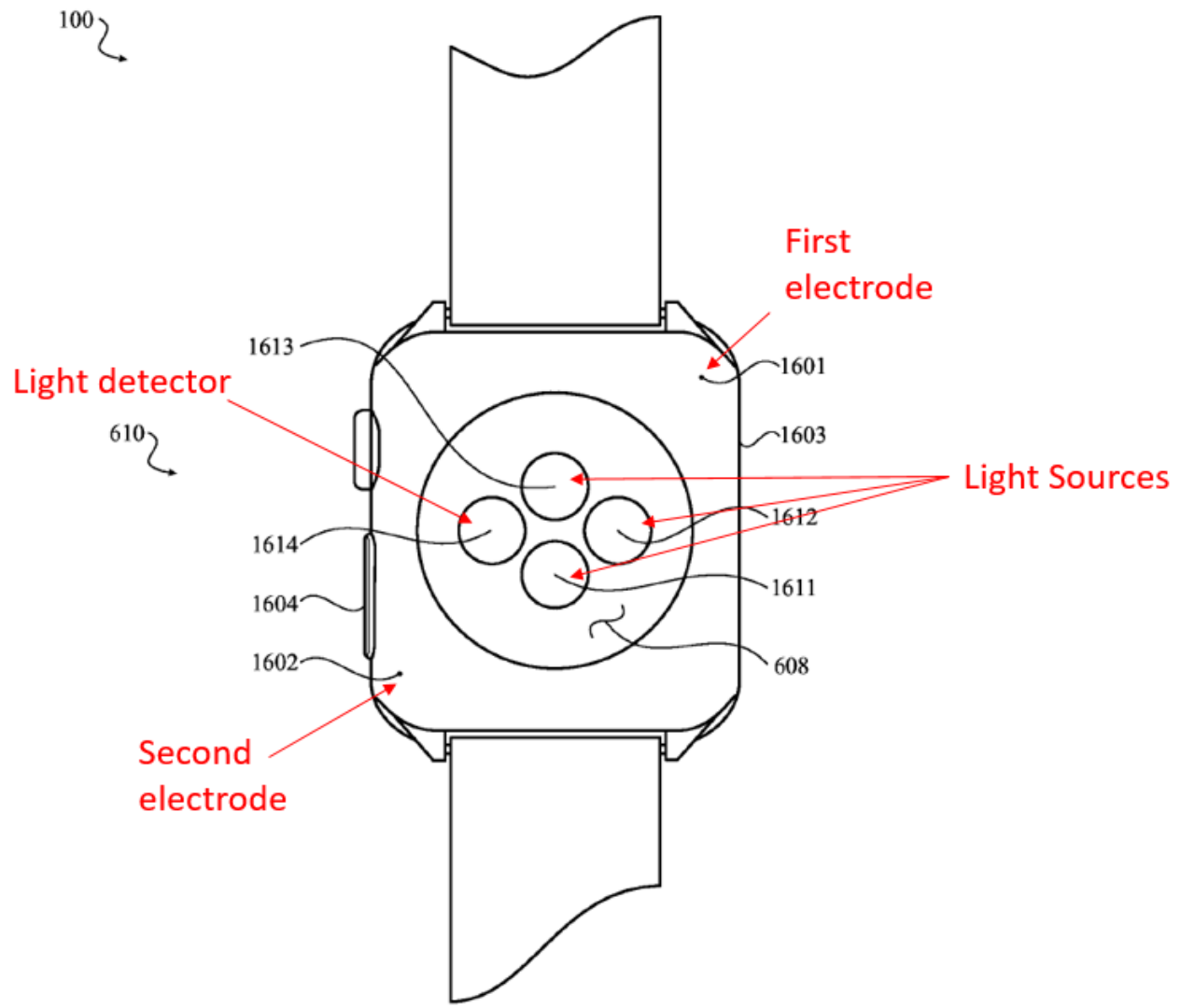


FIG. 16

EX1005, FIG. 16 (annotated), [0190], [0196]; APPLE-2001, ¶46.

Critically, the Petition fails to cite anything in Rothkopf that describes electrodes attached to the “rear cover 608.” *See*, Pet. Ground 1. Instead, Rothkopf’s description that “biosensors are disposed relative to or attached to the rear cover 608” plainly refers to light emitting and photodetector biosensors, not

electrodes. EX1005, [0201]; APPLE-2001, ¶46. This becomes especially clear considering Rothkopf’s description that the “rear cover 608” is “optically transparent” and functions to “provide operational access to one or more optical components of the biosensor module.” EX1005, [0012]; [0139]; [0149]; [0201]; APPLE-2001, ¶44.

The Petition’s unsupported leap is not bridged by Rothkopf’s description that biometric sensors of the device as a whole can include both “one or more electrodes” and “a light source and a photodetector to form a photoplethysmography (PPG) sensor.” EX1005, [0084]; APPLE-2001, ¶47. As noted above, the specific arrangements of the different types of biosensors described by Rothkopf *exclusively* show the electrodes positioned *separate* from the rear cover 608. *Id.*, FIG. 16, [0196]. This conforms with the overall disclosure of Rothkopf that “[t]he *device* may also include at least one pair of electrodes disposed *on an exterior surface* of the wearable electronic device.” EX1005, [0024]. That is exactly what is shown in FIG. 16 (reproduced above)—electrodes located on an exterior surface of the watch housing that is distinct from the rear cover. APPLE-2001, ¶47. The Petition simply fails to identify any disclosure of the electrodes being positioned on the rear cover 608, and there is none. APPLE-2001, ¶¶40-47.

To be clear, the Petition relies exclusively on anticipation for this element, never even alleging an obviousness theory, and certainly not any rationale for why a POSITA would have modified the device of Rothkopf to include the electrodes on the rear cover 608. And any such analysis would be improper in an anticipation ground.

Ground 1's analysis of Element 15e ("a rear electrode positioned on the carrier member...") largely mirrors the analysis of Element 9g, citing to the same portions of Rothkopf, none of which describe electrodes positioned on the "rear cover 608." *Compare* Pet., 23 *with* Pet., 31-32; APPLE-2001, ¶¶40-41, 47.

Ground 1 therefore fails to demonstrate that Element 15e was taught in the prior art for the same reasons as discussed above with respect to Element 9g. Ground 1A does not correct for this deficiency in Ground 1, which applies only to dependent claim 10 and does not allege an alternative obviousness argument for these claim elements. Ground 1A is therefore fatally flawed for the same reasons as Ground 1.

B. Ground 2 Fails To Provide Elements 1f, 1g, 9g, and 15e

Ground 2 is an obviousness ground based on Rothkopf in view of Jung. Pet. 37. However, in its analysis of Element 1f ("a first electrode positioned on the carrier member..."), Masimo relies on Rothkopf alone. Pet., 40. Ground 2's analysis of Element 1f is nearly identical to the Ground 1 analysis of Element 9g, citing to all of the same portions of Rothkopf. *Compare* Pet., 23 *with* Pet., 40-41;

APPLE-2001, ¶48. As discussed in Section V.A, *supra*, there is no disclosure in Rothkopf of positioning the electrodes on the rear cover 608. Furthermore, in addressing Element 1f, the Petition does not allege that it would have been obvious to modify Rothkopf to position the electrodes on the rear cover 608 or provide a rationale for doing so. Pet., 40-41.

Turning to Element 1g, Masimo incorrectly asserts that “Rothkopf discloses a second electrode (‘pair of electrodes’) positioned on the carrier member (rear cover 608)” while citing to the analysis of Element 1f. Pet., 41. However, as discussed above, there is no disclosure in Rothkopf of positioning an electrode, let alone two, on the rear cover 608 itself. APPLE-2001, ¶49. Indeed, all recitations of a “pair of electrodes” in Rothkopf either refer to “[t]he device” in general or “the housing” rather than the rear cover of the device. EX1005, [0023]-[0024]. For example, Rothkopf describes that “[*t*]he device may also include at least one *pair of electrodes* disposed *on an exterior surface* of the wearable electronic device.” *Id.*, [0024]. In another example, Rothkopf describes that “*the device* also includes at least one *pair of electrodes* disposed on an exterior surface of *the housing*” rather than the rear cover. *Id.*, [0023]. There is simply no disclosure of the electrodes being positioned on the rear cover 608. APPLE-2001, ¶¶40-47.

While the Petition does cite Jung with respect to Element 1g, it does so only for “the exact configuration of the electrodes” while expressly relying on “the

teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 41-42; APPLE-2001, ¶50. The addition of Jung therefore does not correct the deficiency in Rothkopf of its lack of disclosure of actually positioning the electrodes on the rear cover 608. APPLE-2001, ¶¶50-52. Indeed, as discussed in greater detail in Section VI.A, *infra*, there is no disclosure whatsoever in Jung of positioning electrodes on a carrier member, and therefore Jung suffers from the same deficiency as Rothkopf. APPLE-2001, ¶¶63-67.

Ground 2’s analysis of Elements 9g and 15e simply cite back to the analysis of Ground 1 with respect to the teachings of Rothkopf. Pet., 55, 63. As discussed above, this analysis is faulty. The Petition further cites to Jung as “provid[ing] further details on the suggested embodiments of Rothkopf.” Pet., 56, 64. However, as discussed with respect to Element 1g, above, the Petition applies Jung’s disclosure to Rothkopf only for “the exact configuration of the electrodes” while expressly relying on “the teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 41-42; APPLE-2001, ¶¶50-52. Ground 2’s analysis of Elements 9g and 15e therefore fail for the reasons discussed with respect to Elements 1f and 1g, above. Grounds 2A-2C do not correct for this deficiency in Ground 2 as they apply to only certain dependent claims and do not allege any alternative obviousness arguments for these claim elements. Grounds 2A-2C are therefore fatally flawed for the same reasons as Ground 2.

C. Ground 3 Fails To Provide Elements 1f, 1g, 9g, and 15e

Ground 3 is an obviousness ground based on Rothkopf in view of Paulke.

Pet. 74. However, in its analysis of Element 1f (“a first electrode positioned on the carrier member...”), Masimo relies on Rothkopf alone, citing back to the analysis of Ground 2. *Id.* As discussed in Section V.B, *infra*, the Petition fails to demonstrate that Rothkopf provides Element 1f. APPLE-2001, ¶53.

Turning to Element 1g, Masimo’s arguments here are highly similar to those in Ground 2. Once again, Masimo incorrectly asserts that “Rothkopf discloses a second electrode (‘pair of electrodes’) positioned on the carrier member (rear cover 608)” while citing to the Ground 2 analysis of Element 1f. Pet., 75. As previously discussed, there is no disclosure in Rothkopf of positioning an electrode, let alone two, on the rear cover 608 itself. APPLE-2001, ¶¶54, 40-47. Indeed, all recitations of a “pair of electrodes” in Rothkopf describe the electrodes as being positioned on “[t]he device” in general or “the housing” rather than the rear cover of the device. EX1005, [0023]-[0024].

While the Petition does cite to Paulke with respect to Element 1g, it does so only for “the exact configuration of the electrodes” while expressly relying on “the teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 75-76; APPLE-2001, ¶55. The addition of Paulke therefore does not correct the

deficiency in Rothkopf of its lack of disclosure of actually positioning the electrodes on the rear cover 608. APPLE-2001, ¶55.

Ground 3's analysis of Elements 9g and 15e simply cite back to the analysis of Grounds 1 and 2 with respect to the teachings of Rothkopf. Pet., 79, 84. As discussed above, this analysis is faulty. The Petition further cites to Paulke with respect to Elements 9g and 15e. However, as discussed with respect to Element 1g, above, the Petition applies Paulke's disclosure to Rothkopf only for "the exact configuration of the electrodes" while expressly relying on "the teaching of Rothkopf to locate the electrodes on the biosensor module." Pet., 75-76. Ground 3's analysis of Elements 9g and 15e therefore fail for the reasons discussed with respect to Elements 1f and 1g, above. APPLE-2001, ¶¶53-55. Grounds 3A-3C do not correct for this deficiency in Ground 3 as they apply to only certain dependent claims and do not allege any alternative obviousness arguments for these claim elements. Grounds 3A-3C are therefore fatally flawed for the same reasons as Ground 23

VI. Grounds 2-2C: The Petition Fails to Demonstrate a POSITA Would Have Been Motivated to Combine Rothkopf and Jung to Achieve the Claimed Invention

The Petition's Ground 2 obviousness suffers from multiple fatal defects. First, Masimo's proposed modification of Rothkopf based on Jung is premised on the false assertion that Jung describes first and second electrodes "positioned on

and wrapped around the edges of [a] carrier (231).” Pet., 42. From this incorrect assertion of Jung’s structure, the Petition proposes modification of Rothkopf to have electrodes that “wrap around the edges” of Rothkopf’s rear cover and that extend from the exterior to “interior” surfaces of the “rear cover.” Pet., 44-45. But Petitioner’s theory ignores Jung’s actual structure that in fact lacks these features. APPLE-2001, ¶¶63-67. The Ground 2 combination is thus based on a structure that is simply not described by Jung and that is found only in the ’054 patent itself, confirming the hindsight nature of the Petition’s analysis.

Second, the Petition asserts a motivation to “improve contact with the user’s skin by covering as much of the carrier member as possible” (pet., 45), ignoring Rothkopf’s original solution and contact with the user’s skin that it already achieved. Third, the Petition does not acknowledge the detrimental effects resulting from the proposed modification, each of which would have been avoided by a POSITA.

A. The Proposed Rothkopf-Jung Combination is Contrary to Jung’s Structure.

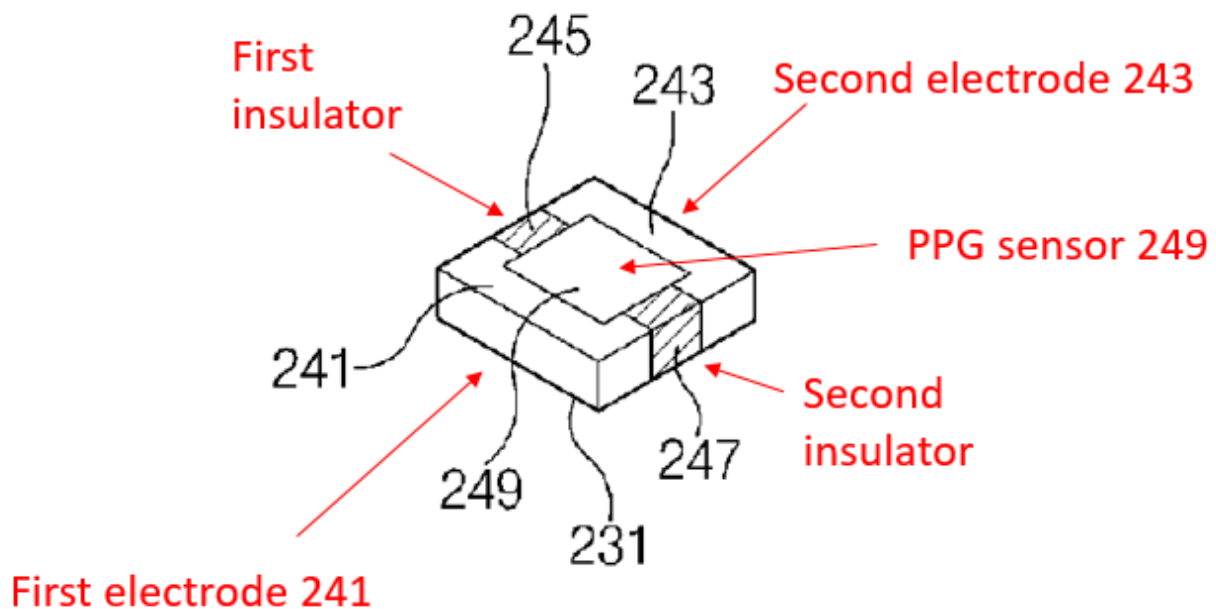
Masimo’s assertions regarding the teachings of Jung and the alleged combination of Rothkopf with Jung are contrary to the straightforward disclosures of the references themselves. APPLE-2001, ¶63. Rather than finding foundation in the actual teachings of Jung, the lack of support for Masimo’s assertions in Jung

confirm Masimo's obviousness theory is based only on improper hindsight. *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (a showing of obviousness must rest on a factual basis, and it may not resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983) ("to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher").

Masimo asserts that Jung discloses a carrier member provided by a "biometric sensor (231)," and that the "[b]iometric sensor (231) includes: first and second electrodes (241, 243, respectively); and a light emitter and receiver (249)." Pet., 42. Massimo further asserts that "the first and second electrodes are ***positioned on and wrapped around the edges*** of the carrier." Pet., 42 (referring to biometric sensor 231 as a "carrier member"); *see also*, Pet., 15 ("first and second electrodes (241, 243) may be disposed on and around the edges of the biometric sensor 231."); 54 (alleging Jung discloses electrode disposed on an "interior surface" of carrier member); 60 ("interior wrapped portion of the electrode").

In drastic contrast to the Petition's characterization, however, Jung includes no disclosure of such a "carrier member" that electrodes are "positioned on" or "wrapped around." Pet., 42, 56, 63. Rather, Jung discloses that the structure of the "biometric sensor 231" is ***formed from the various sensors (and intervening***

insulators) themselves. APPLE-2001, ¶¶63-64, 66. Specifically, as described by Jung and shown in FIG. 2 (below), the biometric sensor 231 is an assembly made up of first and second electrodes 241 and 243 that are separated by insulators 245 and 247 with a PPG sensor positioned in the center of the assembly. EX1006, [0046]; APPLE-2001, ¶64. The first and second electrodes 241 and 243 extend from the top to the bottom of the biometric sensor 231 and are not *positioned on* a carrier member (as required by the claims), and certainly not “*wrapped around*” edges from exterior/front to interior:



EX1006, FIG. 2 (partial, annotated), [0046]; APPLE-2001, ¶¶64, 66.

Moreover, Jung confirms that the biometric sensor 231 (the outer structure of which is formed from the first and second electrodes 241 and 243 and the insulators 245 and 247) is in fact mounted on an *internal* “first printed circuit

board 230” of Jung’s smartphone. EX1006, [0045]; APPLE-2001, ¶65. Indeed, the Petition itself acknowledges this aspect of Jung’s structure—“the electrodes connect directly to a circuit board (230) and processor inside the housing.” *See, e.g.,* Pet, 54.

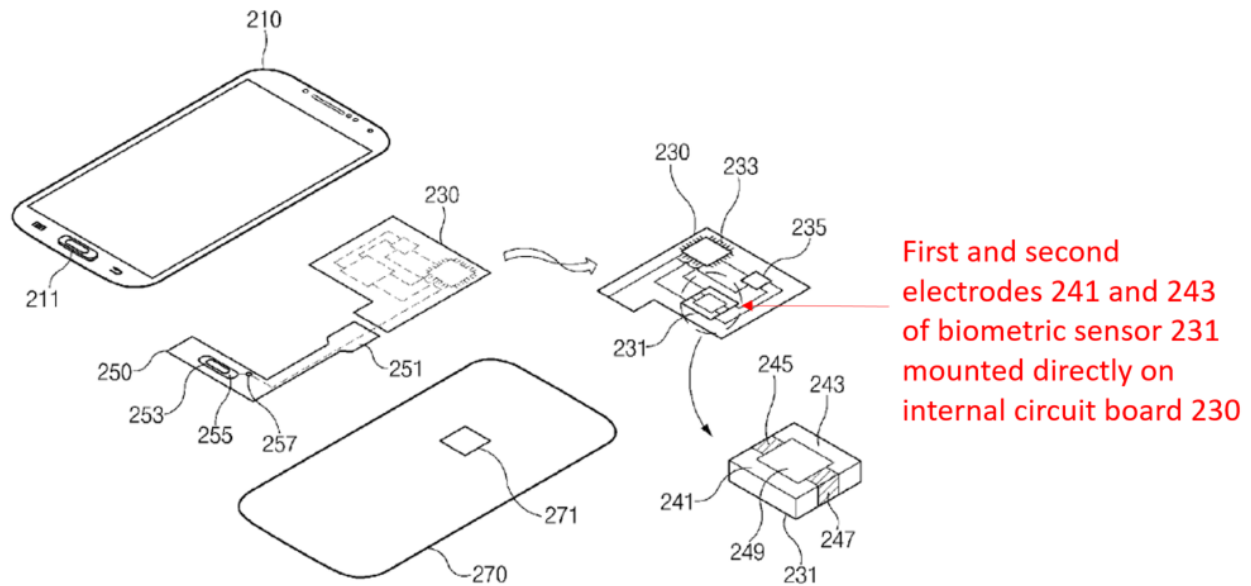


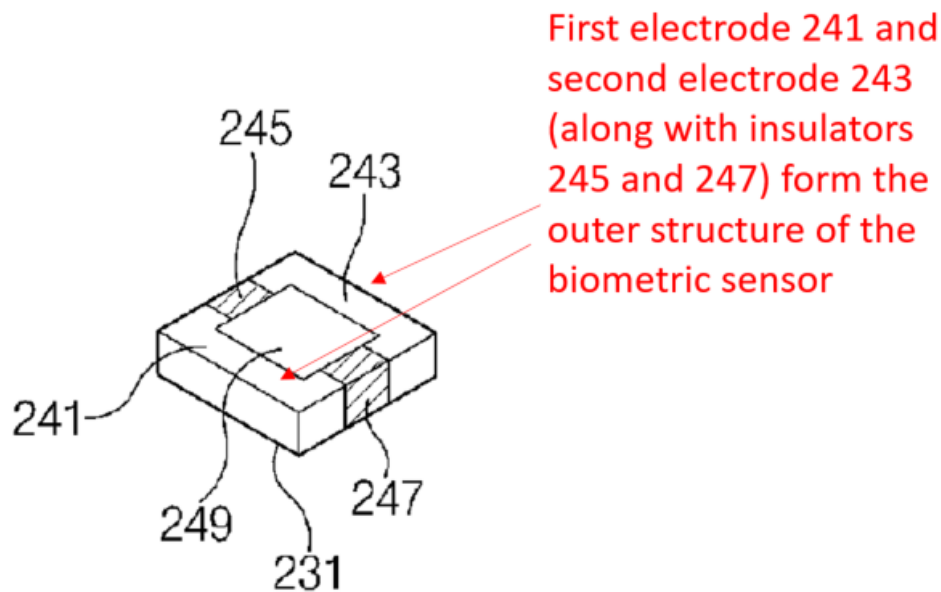
FIG. 2

EX1006, FIG. 2 (annotated). There is simply no disclosure in Jung of the biometric sensor having a carrier member that the electrodes 241 and 243 are “positioned on” or “wrapped around” from exterior to interior. APPLE-2001, ¶¶66-67.

Turning now to Masimo’s alleged combination of Rothkopf with Jung, Masimo asserts that a POSITA “would look to other mobile electronic device

references that teach the use of electrodes *on* a biosensor carrier assembly,” and “would position the electrodes and *wrap* the electrodes *around* the edges of Rothkopf’s carrier member as taught by Jung.” *Id.* 42; 45 (“[a] POSITA seeking to implement the teachings of Rothkopf would understand based on Jung’s disclosure, that the electrodes can wrap around the edges of a carrier member that includes an optical PPG sensor in a central location of the carrier member.”); 54 (“interior surface” of carrier member); 56; 60 (“interior wrapped portion of the electrode”); 63. But as discussed above, Jung simply never describes first and second electrodes 241 and 243 are “*positioned on and wrapped around*” a carrier member. APPLE-2001, ¶¶66-67, 64.

Jung is clear that the first and second electrodes 241 and 243 (along with PPG sensor 249 and insulators 245 and 247) *form* the structure of Jung’s biometric sensor 231—not that electrodes 241 and 243 are positioned “*on a biosensor carrier assembly*” as asserted by the Petition. EX1006, [0046]; APPLE-2001, ¶¶64, 66.



EX1006, FIG. 2 (partial, annotated). Moreover, as noted above, the first and second electrodes 241 and 243 are mounted directly onto Jung’s internal circuit board 230. *Id.*, [0045]; FIG. 2; Pet., 44 (“connects directly to a circuit board”); 54 (“electrodes connect directly to a circuit board (230)”); 56 (“biosensor carrier (231) . . . connects directly to a circuit board (230)”); APPLE-2001, ¶65.

There is also no disclosure in Jung of the electrodes 241 and 243 being ***wrapped around the edges*** of a carrier assembly. Rather, Jung discloses electrodes that, along with two sections of insulating material, form the outer structure of a biometric sensor. *See, e.g.*, EX1006, FIG. 2; APPLE-2001, ¶66. The electrodes are never described or shown to be “wrapped” so as to extend from an exterior surface to an interior surface of a carrier—Jung’s electrodes extend from top to bottom through the thickness of the biometric sensor 231. *Id.* Masimo’s assertion

that Jung discloses “electrodes [that] wrap around the edges of a carrier member” (Pet., 45) is belied by Jung’s actual teachings. APPLE-2001, ¶¶66-67.

Ultimately, the Petition’s obviousness theory relies on a purported structure that is not described by—and that is in fact contrary to—Jung’s actual teachings, confirming the Petition’s reliance on impermissible hindsight to follow the roadmap set forth by the claims. Because there is no support in Jung for positioning electrodes on a carrier member (or wrapping electrodes around the edges of a carrier member), the Petition fails to demonstrate a POSITA would have been prompted to modified Rothkopf according to Masimo’s altered version of FIG. 16 of Rothkopf (Pet., 46). For at least these reasons, the Petitioner fails to demonstrate that a POSITA would have modified Rothkopf in view of Jung to achieve elements 1g, 9g, and 15e.

B. The Petition Fails to Provide a Meaningful Motivation to Apply Jung to Rothkopf

The Petition’s sole alleged reason for its assertion that “[a] POSITA would be³ motivated to use the teachings of Jung to implement the carrier assembly

³ The Petition’s conclusory assertions regarding POSITA’s motivation *in the present day* fails to explain what a POSITA “would have” understood *at the time of the invention*, and provides yet another reason Masimo fails to meet its burden.

taught by Rothkopf,” is to “improve contact with the user’s skin by covering as much of the carrier member as possible without obstructing the optical sensor.” Pet., 45-46, 57, 64-65. But this assertion is not followed by any explanation or evidence as to how or why the purported motivation would “improve contact,” and fails to address Rothkopf’s original solution that provides contact with the user’s skin when worn. *Sony Corp. v. Fujifilm Corp.*, IPR2018-01751, Paper 14, 11 (PTAB April 12, 2019) (denying institution where the primary reference “already address[ed] the problem” purportedly motivating the combination and “it is not evident why [the primary reference] would have benefited from modifications based on [the secondary reference].”).

Masimo fails to demonstrate that its proposed modification of Rothkopf based on Jung would have achieved the sole purported motivation to “improve contact with the user’s skin.” Pet. 45. Rather, Masimo’s supposed “improve[ment]” based on the teachings of Jung would have been recognized by a POSITA as potentially **reducing** the contact area with the wearer’s skin, and thus

Costco Wholesale Corp. v. Robert Bosch, IPR2016-00035, Paper 16, 24-25 (April 25, 2016) (denying institution) (“This is not an artificial distinction; it is a substantive difference.”).

avoided. APPLE-2001, ¶¶56-62. This becomes clear from the straightforward teachings of Rothkopf in comparison to Masimo's proposed combination.

Rothkopf describes its device as a watch that makes contact with a user's wrist while being worn: "a first electrode 1601 and second electrode 1602 are *disposed on the rear face of the device 100*," and are "configured to *make contact with the skin of the user's wrist when the device is being worn*." EX1005, [0196]; APPLE-2001, ¶60.

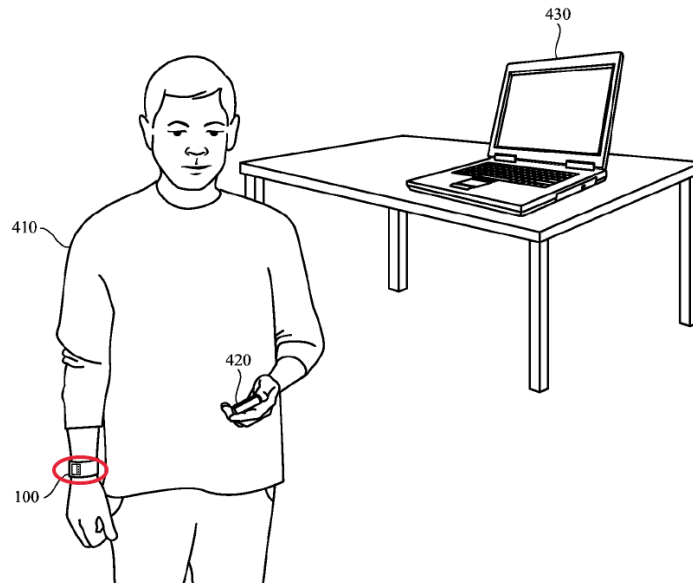


FIG. 4

EX1005, FIG. 4 (annotated). Based on Rothkopf's description that its existing first 1601 and second 1602 electrodes are "disposed on the rear face of the device 100" and "make contact with the skin of the user's wrist when the device is being worn," Rothkopf provides a surface area that provides consistent contact between the electrodes and skin of the user's wrist. APPLE-2001, ¶60.

The Petition ignores these teachings of Rothkopf, never alleging even a single example of how the electrodes of its proposed modification would “increase the contact area” or otherwise “improve contact,” as compared to Rothkopf’s existing solution. APPLE-2001, ¶¶61-62.

And the Petition ignores that its proposal would actually *reduce* contact and electrode surface area compared to electrodes that covered a substantial portion of Rothkopf’s “rear face.” EX1005, [0196] (“disposed on the rear face of the device 100”); APPLE-2001, ¶¶61-62. To the extent a POSITA would have been motivated to “increase the contact area” (which the Petition fails to demonstrate, and Jung never mentions), the Petition’s proposal achieves the opposite compared to a first electrode (blue) and second electrode (orange) disposed on available surface area of the “rear face”:

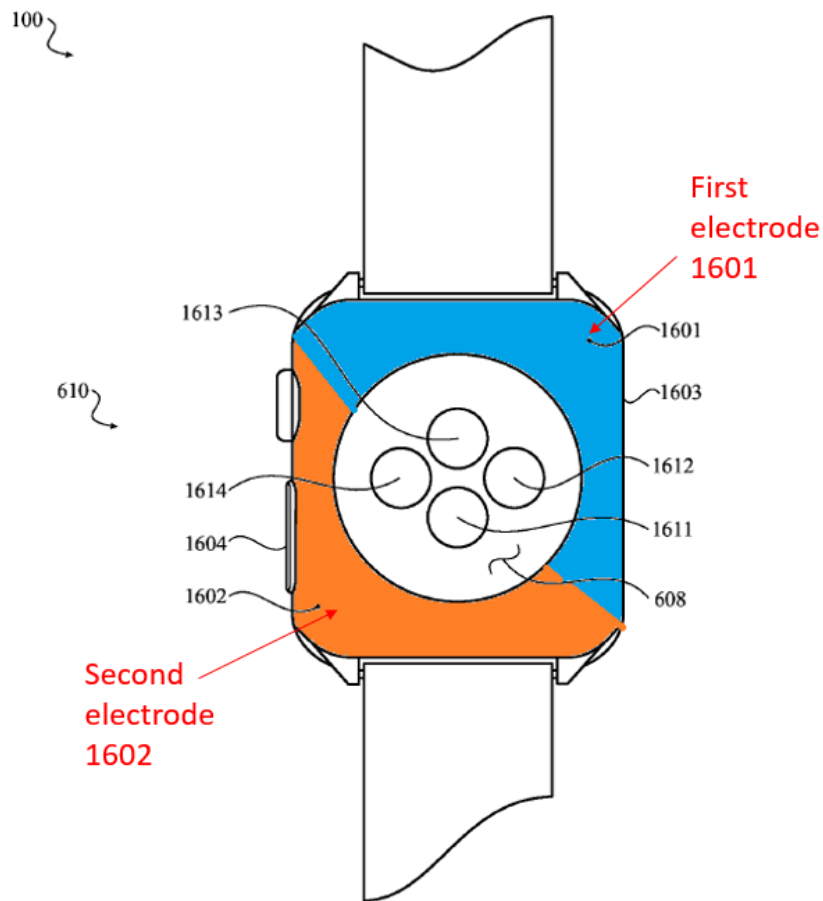
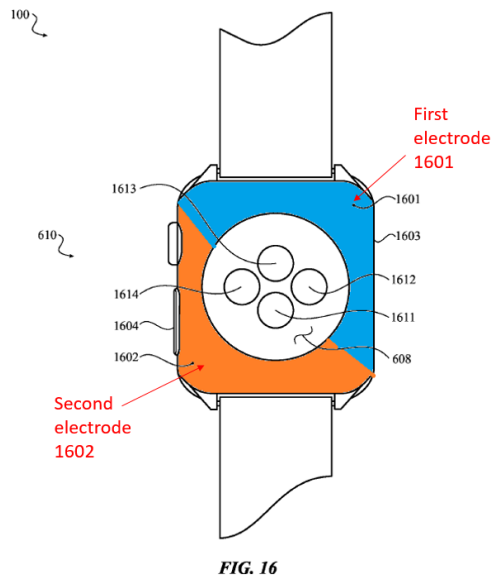


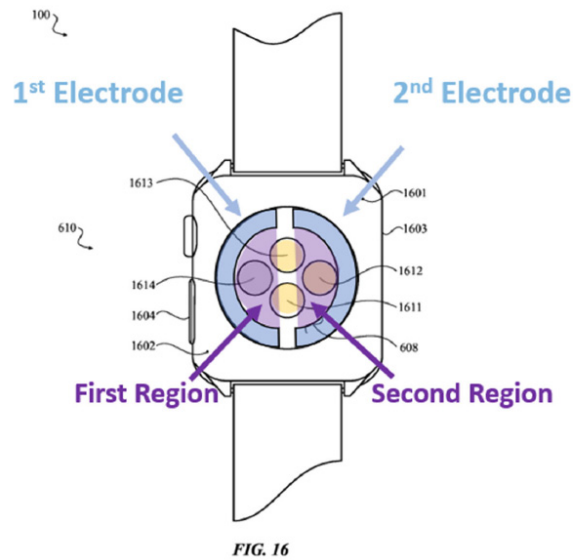
FIG. 16

EX1005, FIG. 16 (annotated), [0196].

Indeed, a side-by-side comparison of the unmodified watch of Rothkopf and the proposed modified device confirms that the proposed modification would actually significantly *decrease* the contact area of the skin-to-electrode interface, as compared to electrodes disposed on even a fraction of the available area on the “rear face.” APPLE-2001, ¶61.



Unmodified Rothkopf device
(EX1005, FIG. 16)

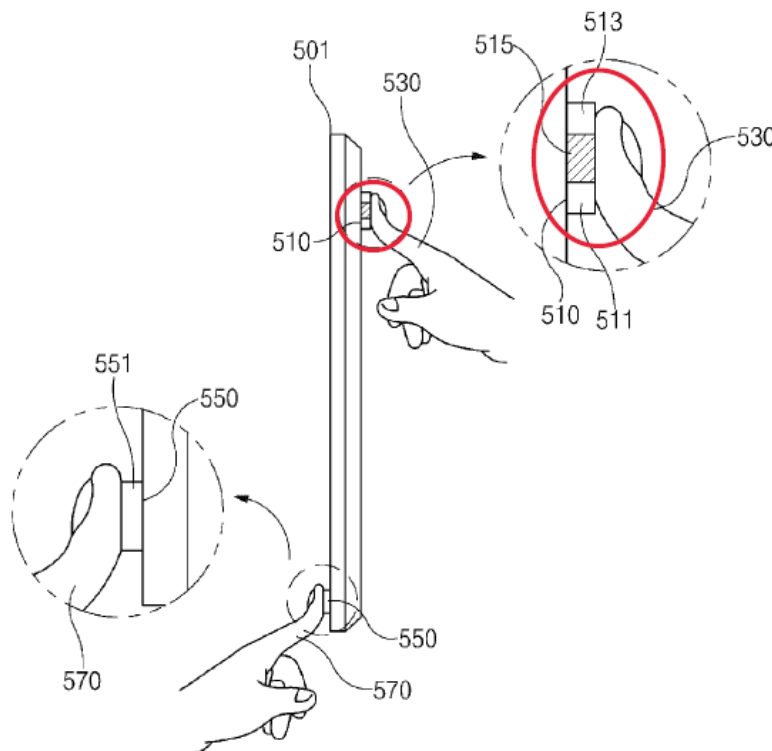


Proposed modification of
Rothkopf based on Jung
(Pet., 46)

Ultimately, the proposed modification suffers from a readily apparent defect that undermines the sole purported motivation. The Petition ignores it. This is insufficient to meet Petitioner's burden. *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017) ("Evidence suggesting reasons to combine cannot be viewed in a vacuum apart from evidence suggesting reasons not to combine"). The Petition never addressed Rothkopf's original structure in providing contact between the electrode and skin.

The Petition also fails to cite anything in Jung in support of its proposal that the proposed modification would increase contact area in the specific manner

proposed. *See* Ground 2. The Petition does not cite any passage in Jung to “increase the contact area.” *Id.* Instead, Jung describes the opposite. Jung illustrates a relatively small “biometric sensor” with electrodes illustrated to be smaller than a fingertip despite implemented in devices (e.g., including a “smartphones,” “workstations,” “smart watches,” etc.) that can be significantly larger than Rothkopf’s watch. *See* EX1006, FIGS. 1A, 2, 5; [0028]. For example, as shown in FIG. 5 of Jung, Jung’s biometric sensors have a relatively small profile despite being part of a relatively large device, configured to contact only a fingertip of a user:



EX1006, FIG. 5 (annotated).

Rothkopf’s original solution already includes electrodes that contact a wearer’s wrist that are disposed on a “rear face” having a larger surface area—substantially larger than the area of a fingertip. EX1005, FIGs. 4, 16; APPLE-2001, ¶¶60. This provides yet another example of how application of Jung’s teachings to Rothkopf would have served to *decrease* rather than increase the contact area of the skin-to-electrode interface in Masimo’s proposed combination. The Petition again ignores it, highlighting the Petition’s improper reliance on hindsight.

To be clear, Masimo’s assertion lacks any meaningful evidentiary support, which is not remedied by citation to paragraphs 85-88 of the Oslan Declaration (EX1003). Pet., 45. These paragraphs merely repeat, nearly verbatim, the text in the Petition. *Compare* Pet., 41-46 *with* EX1003, ¶¶85-88. The Oslan Declaration thus lacks any additional reasoning, explanation, or citation to additional evidence. *See* EX1003, ¶88. Such declaration testimony that merely repeats the Petition “is entitled to little weight.” *See* 37 C.F.R. § 42.65(a); *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1362-64 (Fed. Cir. 2019) (reversing finding of obviousness and refusing to give weight to petitioner’s “*ipse dixit* declaration”); *Upjohn*, 225 F.3d at 1311; *Corning*, IPR2013-00048, Paper 94 at 33 (citing to *Ashland Oil*, 776 F.2d at 294) (“bare opinion is entitled to little weight in the absence of objective, evidentiary support”).

Additionally, the Petition's proposed application of Jung to Rothkopf assumes that Rothkopf *already* includes the first and second electrodes on the rear cover 608 and that Jung merely teaches how to arrange such electrodes on the rear cover 608. Pet., 45-46. As discussed in Section V.A, *supra*, however, this assumption overstates the actual teachings of Rothkopf. The Petition's Ground 2 analysis lacks any additional obviousness theory for positioning the electrodes in the proposed manner. Relatedly, Masimo's assertion that a POSITA would have turned to Jung because it allegedly "teach[es] the use of electrodes on a biosensor carrier assembly" does not provide a proper motivation to combine because Jung actually discloses a different structure that does not provide support for this assertion. *Supra*, Section VI.A; Pet., 42; EX1006, [0045]-[0046], FIG. 2.

Ultimately, because Masimo's proposed motivation for modifying Rothkopf based on Jung relies exclusively on an alleged "*increase* [to] the contact area of the skin-to-electrode interface," (Pet., 45), the fact that the proposed modification actually significantly reduces the contact area of the electrodes with the wearer's skin leaves the Petition with no reason to modify Rothkopf in the proposed manner. APPLE-2001, ¶¶61-62. Instead, the purported motivation is premised only on the claimed invention and disclosures of the '054 patent. For this additional independent reason, Ground 2 fails.

C. Application of Jung to Rothkopf Would Not Have Led to the Claimed Invention

As discussed above, Masimo's proposed combination of Rothkopf with Jung proposes applying aspects of Jung's biometric sensor 231 to Rothkopf's rear cover 608. Pet., 43-46. However, even if a POSITA would have found a reason to apply Jung to Rothkopf (which the Petition does not demonstrate), Masimo's hindsight proposal never addresses Jung's teachings that its device is contacted with a user's finger, rather than continually worn against the user's skin. APPLE-2001, ¶¶70-71. In making its proposal, Masimo had the burden to at least address Jung's stated teachings. *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1069 (Fed. Cir. 2018) ("statements regarding preferences are relevant to a finding regarding whether a skilled artisan would be motivated to combine that reference with another reference."); *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017) ("Evidence suggesting reasons to combine cannot be viewed in a vacuum apart from evidence suggesting reasons not to combine"). This omission is particularly notable given Rothkopf describes third electrode 1603 and fourth electrode 1604, located along the sides of Rothkopf's device, and not the rear cover 608.

The biometric sensor 231 of Jung is described as mounting to an internal circuit board 230 and protruding through an opening in a battery cover 270 that is “detachable from the rear surface of the housing.” EX1006, [0045], [0050].

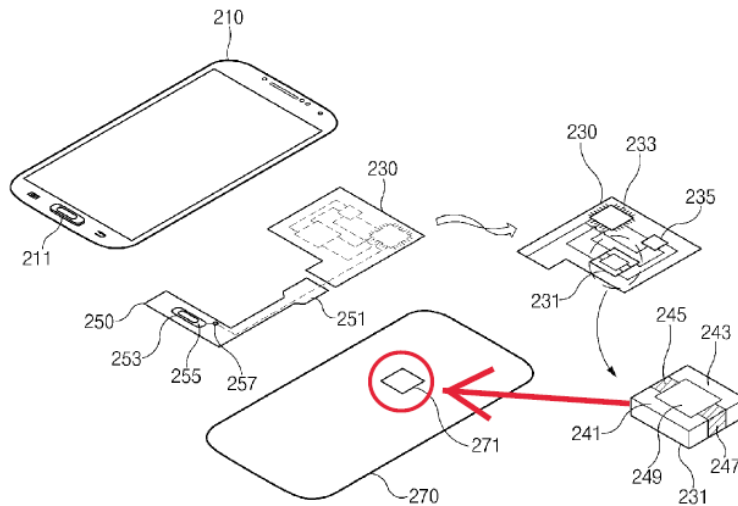
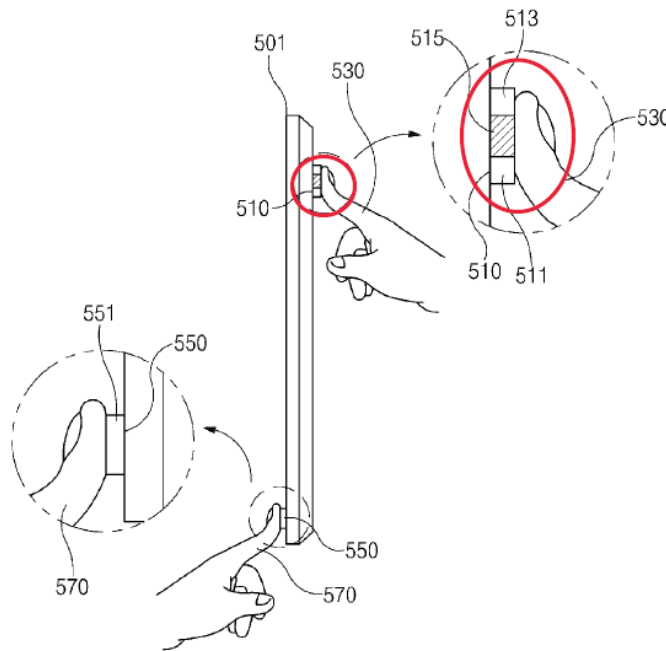


FIG. 2

EX1006, FIG. 2 (annotated); APPLE-2001, ¶¶69-70. As shown in FIG. 5, this biometric sensor is configured to operate by making contact with a user’s finger rather than being continually worn against the user’s skin:



EX1006, FIG. 5 (annotated); APPLE-2001, ¶70.

Furthermore, the drastic 90 degree angles of Jung's biometric sensor clearly indicate that it is not intended to be worn against a user's skin (such as against the wrist) as a POSITA would have recognized that such drastic angles would dig into the wearer's skin in an uncomfortable manner. APPLE-2001, ¶70.

Ignoring Jung's teachings and the detrimental effect of its proposal, Masimo provides no rationale for why the teachings regarding Jung's biometric sensor 231, configured to be contacted by a user's fingers, would have been applied to the rear cover 608 of Rothkopf, especially where Rothkopf describes finger contact sensors 1603 and 1604 on the sides of the device housing. APPLE-2001, ¶¶71-72.

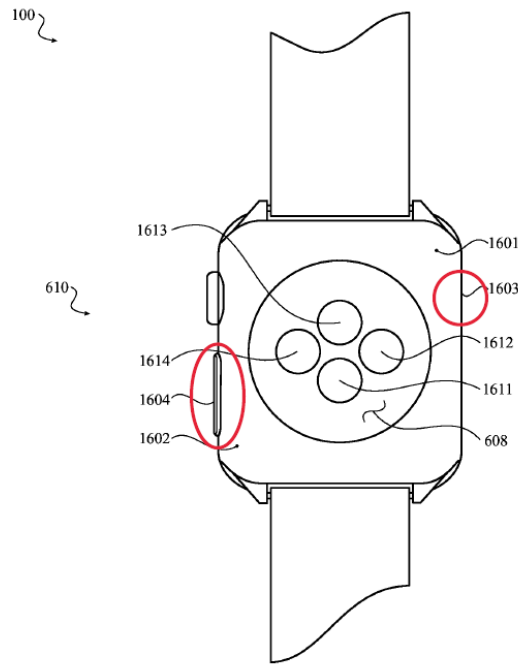


FIG. 16

EX1005, FIG. 16 (annotated); *see also* EX1005, [0196] (“the third 1603 and fourth 1604 electrodes are configured to come into contact with the skin of the user's other hand (that is not wearing the device 100). For example, the third 1603 and fourth 1604 electrodes may be contacted when the user pinches the device 100 between two digits (e.g., a forefinger and thumb).”

Here again, Petitioner’s disregard of the actual teachings of Rothkopf and Jung in favor of its own proposal, without explanation or support confirms that the proposed combination is therefore rooted in hindsight based on the disclosures of the ’054 patent itself. Simply put, the Petition offers no valid rationale for why application of Jung to Rothkopf would have resulted in the device depicted on page

46 of the Petition. APPLE-2001, ¶72. For this additional reason, Ground 2 fails as the Rothkopf-Jung combination fails to disclose elements 1g, 9g, and 15e.

VII. Grounds 3-3C: The Combination of Rothkopf and Paulke is Based on Hindsight and Fails to Provide the Claimed Invention

The combination of Rothkopf with Paulke fails for two additional reasons:

(1) the Petition fails to identify any motivation to apply Paulke to Rothkopf in the proposed manner; and (2) the Petition overstates the teachings of Paulke and the proposed combination is based on Hindsight.

A. The Petition Fails to Provide Any Motivation to Apply Paulke to Rothkopf

Ground 3 of the Petition relies on the hindsight rationale that a “POSITA would position the electrodes as taught by Paulke in order to maintain contact with the user’s skin.” Pet., 77. In doing so, Masimo ignores that Rothkopf’s original solution undermines the alleged motivation because it was already configured to achieve that benefit (EX1005, [0196]), giving rise to an especially strong “inference of nonobviousness.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) (“An *inference of nonobviousness is especially strong* where the prior art’s teachings undermine the very reason being proffered as to why a person of ordinary skill would have combined the known elements.” (emphasis added)). Critically, the Petition ignored the fact that Rothkopf’s original solution already served to maintain contact with the user’s skin

when the device was worn. *Sony Corp. v. Fujifilm Corp.*, IPR2018-01751, Paper 14, 11 (PTAB April 12, 2019) (denying institution where the primary reference “already address[ed] the problem” purportedly motivating the combination and “it is not evident why [the primary reference] would have benefited from modifications based on [the secondary reference].”); APPLE-2001, ¶60.

In more detail, the Petition relies on a theory that a “POSITA would be motivated to use the teachings of Paulke to implement the carrier assembly taught by Rothkopf,” and to do so “would position the electrodes as taught by Paulke in order to maintain contact with the user’s skin.” Pet., 77. That is it. The sole purported motivation articulated in the Petition is to “maintain contact with the user’s skin.” See Pet., Ground 3 Analysis.

Critically, however, Rothkopf already provides for this purported benefit. APPLE-2001, ¶60. Rothkopf describes a wrist worn device having “a first electrode 1601 and second electrode 1602” that are “disposed on the rear face of the device 100” and “configured to *make contact with the skin of the user's wrist when the device is being worn.*” EX1005, [0196].

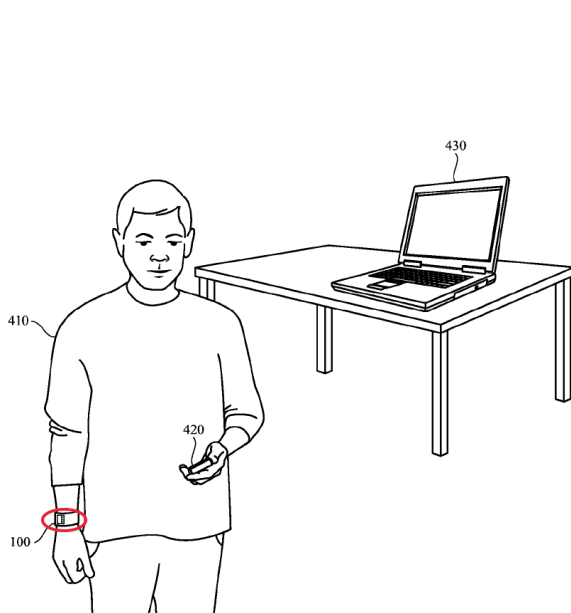


FIG. 4

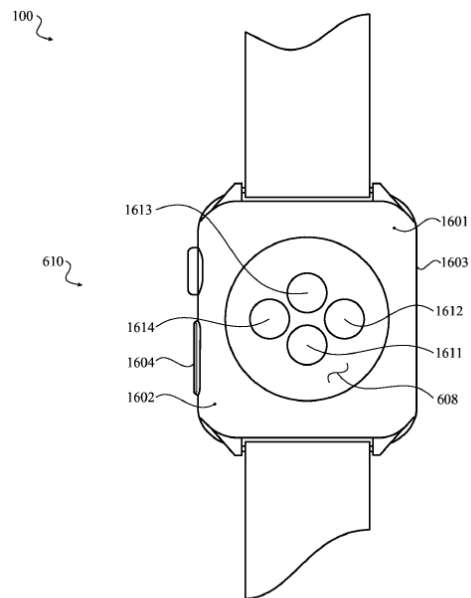


FIG. 16

EX1005, FIGS. 4, 16 (annotated).

The Petition fails to provide any explanation why a POSITA would have been motivated to modify Rothkopf to “maintain contact with the user’s skin,” when Rothkopf already provides for electrodes disposed on a “rear face” of Rothkopf’s wrist-worn device that contacts the user’s skin when worn. EX1005, [0196] (“make contact with the skin of the user’s wrist when the device is being worn.”); APPLE-2001, ¶¶60-62. *Microsoft Corp.*, IPR2018-00026, Paper 7, 15; *see also DePuy*, 567 F.3d at 1326 (“inference of nonobviousness is especially strong”); *Polaris*, 882 F.3d at 1069. While the Petition erroneously ignores Rothkopf’s original solution and the law, it would be reversible error for the Board to do the same.

The Petition's Ground 3 obviousness analysis suffers from another fatal defect. Similar to the combination of Rothkopf with Jung discussed in Section VI.B, *supra*, Masimo ignores the detrimental effect of its proposed combination. The proposed modification could actually significantly **decrease** the contact area of the skin-to-electrode interface, as compared to electrodes disposed on even a fraction of the available area on the "rear face" of Rothkopf's original design. *Supra*, VI.B; APPLE-2001, ¶¶61-62, 58. Masimo's own assertions indicate a POSITA would have avoided such a result, asserting that a decrease in the contact area of the first and second electrodes would have led to increased impedance and degraded the ability to reduce motion artifacts. Pet., 45; APPLE-2001, ¶62.

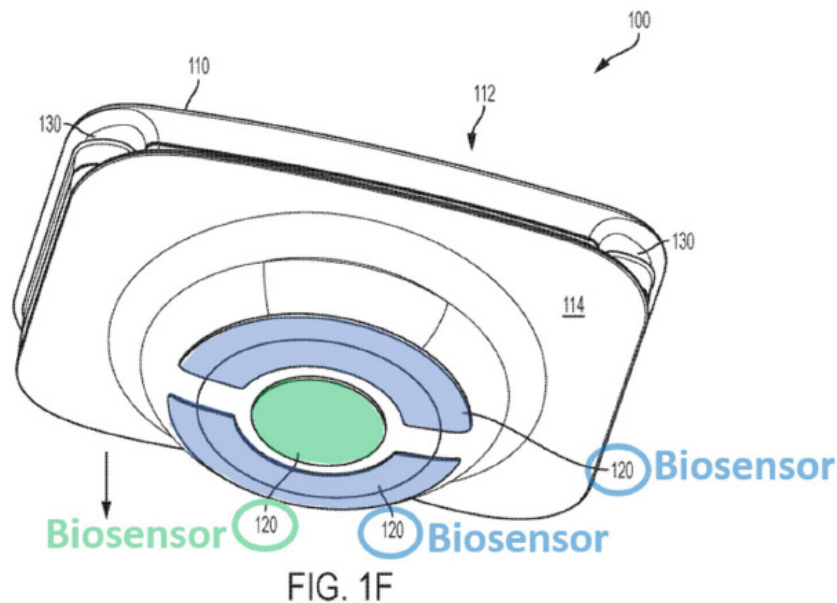
To be clear, the lack of any sufficient motivation is not remedied by Masimo's assertion that "[a] POSITA would have expected success in making this combination as it is a mere rearrangement of compatible components in a predictable way to obtain a predictable result." Even if true (which the Petition fails to demonstrate) this is at best an assertion that a POSITA **could** have applied Paulke to Rothkopf in the proposed manner, not a rationale as to **why** a POSITA would have done so. Pet., 78. The Petition had the burden of showing that the claimed invention **would** have been obvious at the time of the invention, not merely whether a POSITA **could** have modified the prior art device. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns

whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.” (emphasis in original)). Indeed, a proper obviousness analysis must “explain *why* a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does.*” *ActiveVideo Networks, Inc. v. Verizon Commc’n, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012); *see also TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (“Although the *KSR* test is flexible, the Board must still be careful not to allow hindsight reconstruction of references . . . *without any explanation as to how or why* the references would be combined to produce the claimed invention.”). Here, Masimo has provided no discussion of a motivation as to why a POSITA would have modified Rothkopf based on Paulke in the proposed manner. For this reason alone, Ground 3 fails.

B. The Proposed Rothkopf-Paulke Combination is Based on Hindsight and Not Supported by the References Themselves.

The Petition overstates the teachings of Paulke and the proposed combination of Rothkopf with Paulke is based on hindsight rather than any actual disclosure of the references. In describing the proposed combination of Rothkopf with Paulke, Masimo asserts that Paulke discloses “two biosensors 120 (annotated in blue) may be first and second electrodes (such as for galvanic or ECG

measurements) and biosensor 120 (annotated in green) may be for optical reflectance of blood vessels or oxygen saturation (PPG)” followed by this annotated figure from Paulke:



Pet., 76-77. This assertion by Masimo drastically overstates the disclosures of Paulke and relies on disclosures found only in the '054 patent itself to fill in the gaps. APPLE-2001, ¶¶73-74.

Rather than describing two electrodes surrounding a PPG sensor, as Masimo asserts, Paulke simply states that “[b]iosensor(s) 120 protruding from the wrist-facing inner surface 114 of housing 110 of biosensor module 100 may include any suitable number and/or type(s) of biosensors.” EX1007, 14:26-28. Paulke then goes on to provide a list of “suitable biosensors” that includes 19 different sensor examples, with no specific arrangement for these various “suitable biosensors.” *Id.*,

15:12-18; APPLE-2001, ¶74. Masimo's assertion that Paulke discloses two electrodes arranged around a PPG sensor is based purely on hindsight based on the disclosures of the '054 patent itself, and not on any actual disclosure of Paulke. APPLE-2001, ¶74 ("Dr. Oslan's assertion that Paulke discloses two electrodes arranged around a PPG sensor is *simply not supported*."). There is therefore no support for the alleged combination of Rothkopf with Paulke depicted in the Petition in which electrodes are added to Rothkopf's rear cover 608 encircling the emitter windows and detector window. Pet., 77-78; APPLE-2001, ¶¶73-74. For this additional reason, Ground 3 fails.

VIII. Conclusion

For at least the reasons discussed above, the Board should deny the Petition.

Respectfully submitted,

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CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response to Petition totals 10,506, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4) and 42.205(b), the undersigned certifies that on June 28, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and supporting exhibits were provided via email, to the Petitioner by serving the email correspondence address of record as follows:

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