

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION,
Petitioner,

v.

APPLE INC.,
Patent Owner

Case IPR2023-00634
U.S. Patent 10,627,783

PATENT OWNER SUR-REPLY

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PATENT OWNER'S LIST OF EXHIBITS

EX-2001	U.S. Patent Pub. No. 2014/0107493 to Yuen et al. (“Yuen”)
EX-2002	U.S. Patent Pub. No. 2016/0103985 to Shim et al. (“Shim”)
EX-2003	U.S. Patent Pub. No. 2017/0011210 to Cheong et al. (“Cheong”)
EX-2004	U.S. Patent No. 7,946,758 to Mooring (“Mooring”)
EX-2005	U.S. Patent Pub. No. 2014/0139486 to Mistry et al. (“Mistry”)
EX-2006	U.S. Patent No. 8,229,535 to Mensinger et al. (“Mensing”)
EX-2007	U.S. Patent No. 7,682,070 to Burton (“Burton”)
EX-2008	U.S. Patent Pub. No. 2007/0228404 to Tran et al. (“Tran”)
EX-2009	U.S. Patent Pub. No. 2005/0274971 to Wang et al. (“Wang”)
EX-2010	U.S. Prov. App. No. 61/943,004 (“Cheong Provisional”)
EX-2011	File History of U.S. Patent App. No. 17/188,995
EX-2012	File History of U.S. Patent App. No. 17/951,973
EX-2013	File History of U.S. Patent App. No. 18/075,253
EX-2014	File History of U.S. Patent App. No. 18/119,175
EX-2015	U.S. Patent Pub. No. 2010/0193804 to Brown et al. (“Brown”)
EX-2016	U.S. Patent Pub. No. 2005/0030518 to Nishi et al. (“Nishi”)

EX-2017	U.S. Patent No. 7,455,423 to Takenaka (“Takenaka”)
EX-2018	File History of Shim (EX-2002), with Korean priority document—KR Patent Application 10-2269797B1—included therein at pages 203-348 (“Shim File History”)
EX-2019	Declaration of Dr. Brian Anthony, Ph.D.
EX-2020	Deposition Transcript of R. James Duckworth, Ph. D.
EX-2021	Joint Claim Construction Chart for Asserted Apple Patents, <i>Apple Inc. v. Masimo Corp.</i> , Case No. 22-1378-MN-JLH (D. Del. July 13, 2023)
EX-2022	Joint Claim Construction Brief for Apple Asserted Patents, <i>Apple Inc. v. Masimo Corp.</i> , Case No. 22-1378-MN-JLH (D. Del. August 31, 2023)
EX-2023	S. Annam, “Scholar Works at UT Tyler Four-Coil Wireless Power Transfer Using Resonant Inductive Coupling,” Electric Engineering Theses, Paper 19 (2012).
EX-2024	Z. Atrqchi et al., “Efficiency Examination of The Circular Coils with Two Types of Cross-Sections for WPT System,” UMDC-SDSP (2020).
EX-2025	Y. Li et al., “Maximizing Transfer Distance for WPT via Coupled Magnetic Resonances by Coupling Coils Design and Optimization,” IEEE Access, vol. 8, pp. 74157–74166 (2020).
EX-2026	Y. Li et al., “Influences of Coil Radius on Effective Transfer Distance in WPT System,” IEEE Access, vol. 7, pp. 125960–125968 (2019).

- EX-2027 Y. Li et al., “Directional characteristics of wireless power transfer via coupled magnetic resonance,” *Electron.*, Vol. 9, No. 11, pp. 1–14 (2020).
- EX-2028 K. A. Mohamad et al., “Effect of Circular Coil Dimension on Resonant Coupling Wireless Power Transfer System,” *J. Telecommun. Electron. Comput. Eng.*, Vol. 10, No. 2–6, pp. 19–23 (2018).
- EX-2029 A. P. Sample et al. “Analysis, experimental results, and range adaptation of magnetically coupled resonators for wireless power transfer,” *IEEE Trans. Ind. Electron.*, Vol. 58, No. 2, pp. 544–554 (2011).
- EX-2030 G. Vigneau et al., “Design and modeling of PCB coils for inductive power charging,” *Wirel. Power Transf.*, Vol. 2, No. 2, pp. 143–152 (2015).
- EX-2031 R. Vinge, “Wireless Energy Transfer by Resonant Inductive Coupling,” p. 83 (2015).
- EX-2032 F. Wen et al., “Research on optimal receiver radius of wireless power transfer system based on BP neural network,” *Energy Reports*, Vol. 6, pp. 1450–1455 (2020).
- EX-2033 to EX-2042 RESERVED
- EX-2043 Deposition Testimony of Dr. R. Donald Duckworth

I. INTRODUCTION

As the POR explained, Masimo failed to demonstrate obviousness of the Challenged Claims given the Petition's deficient and factually-flawed contentions. Masimo's Reply uses the POR-identified issues as a roadmap for presenting new theories and evidence to cure its failure to meet its burden. This revisionist strategy is contrary to Board rules and case law¹, and is highly prejudicial to Apple who—at this late juncture of the proceeding—cannot bring additional evidence/testimony to bear on these issues. Masimo's new theories/evidence should therefore be rejected. Even if considered, they fail to demonstrate obviousness of the Challenged Claims.

For the independent claims, Masimo's obviousness theory presents a wrist-worn device with a wireless charging coil and optical elements provided within a confined opening behind a rear device cover. The references underpinning this theory—Honda and Kotanagi—don't teach/suggest this configuration. This configuration is also refuted by the only evidence of record that teaches a configuration of a wireless charging coil and optical elements in a watch's rear

¹¹ See *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016); *Google LLC v. Nobots LLC*, IPR2022-00940, Paper 38, at 24-26 (PTAB Nov. 29, 2023); Consolidated Trial Practice Guide (Nov. 2019), 73.

portion. Even if the proposed combination's device could be so configured, Masimo has not shown that a POSITA would have done so—particularly considering the detrimental impact to wireless charging stemming from its proposed configuration. Masimo's Reply does not dispute these issues, instead coloring them as tradeoffs. However, these tradeoff arguments are refuted by the evidence on which Masimo relies. Masimo also attempts to sidestep these issues by providing new modifications to its combination. These new theories, if considered, stand refuted by the record and still fail to cure the combination's deficiencies and issues. On this record, Masimo has failed to demonstrate obviousness of the independent claims.

The dependent claims fare no better. For claims 6 and 12, Masimo's Reply advances new theories to cure the Petition's flawed mapping of the "cover is a disk" limitation to Kotanagi's protruding part—which is neither a disk nor a cover and is instead part of the device's housing. Even Masimo's new theory that a circular cover could be provided over the entire protruding part is refuted by Kotanagi and its own expert's deposition testimony. For claim 11, Masimo's analysis hinges on the biosensor module including the cover—despite the claim confirming that these are separate and distinct components. Masimo's Reply argues its interpretation is consistent with some specification embodiments, but

nothing in the specification justifies importing limitations into the claim from example embodiments. Finally, for claim 16's limitation reciting magnetic coupling of the watch to the dock, Masimo abandons its previously-presented deficient theories in favor of new theories. Even if considered, these theories stand refuted by the record and fail to demonstrate why or how a POSITA would have combined the references' teachings.

II. KOTANAGI-HONDA DOES NOT RENDER OBVIOUS CLAIM 9

For this claim, Masimo contends, in view of Kotanagi-Honda, that a biosensor module and a wireless charging receive coil would be positioned in a confined opening behind a rear device cover through which wireless power and optical signals pass. Petition, 21-33; Reply, 7-20; POR, 27-56.

But Kotanagi and Honda don't disclose Masimo's proposed configuration. POR, 28-31. Only one identified reference—Fraser—describes a wrist-worn device with wireless coil and optical elements. However, Fraser teaches that the coil, when positioned around optical elements, expands well beyond the cover—thus confirming that the coil would not be provided in the confined opening behind Kotanagi's cover glass, as Masimo proposes. POR, 42-56. Thus, the record evidence does not teach/suggest Masimo's concocted combination. *Id.*

Moreover, Masimo doesn't dispute the numerous issues—including the detrimental impact to wireless charging—with its combination. POR, 36-56. Instead, Masimo advances multiple rebuttals, which are legally and factually flawed, as explained below.

A. Masimo's Arguments are Flawed and Refuted by the Record

1. Masimo Fails to Credibly Refute Kotanagi's Express Size Constraints

The Petition failed to account for Kotanagi's imposed constraints on its protruding part's size. POR, 27-36. None of Masimo's arguments justify disregarding these constraints.

Masimo first argues that the protruding part's size is not claimed and therefore irrelevant. Reply, 8. However, the size is relevant because it is a constraint of Masimo's proposed combination. Masimo then claims that the protruding part's diameter of 20mm applies to Kotanagi's FIG. 8 embodiment—and not the relied-upon FIG. 5 embodiment. Wrong. Kotanagi teaches that the 20mm diameter is a constraint of the “invention”—and not of just one embodiment. EX-1005, ¶¶36-37; EX-1052, 81:21-87:5; POR, 32-33.

Given the protruding part's 20mm diameter, Masimo doesn't dispute that the available width of Kotanagi's rectangular cover is roughly half (~10mm). POR, 32-33; Reply, 9-10. Masimo, however, contends that an Apple-cited reference confirms

that coil diameters under 10mm are suitable for wearable devices. Reply, 9 (citing EX2028, 2, 5). This argument fails. First, EX2028 is not prior art² and does not inform what would have been known as of the patent's effective filing date. Second, the POR was not evaluating whether a smaller coil in a vacuum is suitable. Rather, the POR addressed the detrimental impact to wireless charging from such a coil's presence in a confined opening and behind/around metallic components (per Masimo's proposed combination)—which this paper doesn't address. POR, 33-41.

Finally, Masimo contends that, if a larger coil is needed, a POSITA would have enlarged Kotanagi's opening and cover glass. Reply, 10 (citing EX-1005, ¶¶74-75). The Petition's independent claim analysis did not contemplate this modification, or provide Kotanagi's newly-cited portion as support. *See* Petition, 21-33. This new theory should therefore be rejected. Nevertheless, if considered, this theory rests on a flawed premise. The cited Kotanagi disclosure teaches that the protruding part can have any *shape*—not that it can have any *size* (which Kotanagi constrains to a 20mm diameter). EX-1005, ¶¶36-37, 74-75. Kotanagi also does not teach/suggest that the cover and opening provided therein would be expanded. POR, 32-33. Moreover, components, such as electrodes, disposed on the protruding part

² <https://jtec.utem.edu.my/jtec/article/view/4363> (published 2018)

suggest that the cover and opening cannot be arbitrarily expanded as Masimo now contends. Masimo has thus failed to credibly explain why or how Kotanagi's opening and/or cover would be expanded. Therefore, even if coil sizes and shapes could be adjusted, as Masimo asserts in conclusory fashion (Reply, 10-11), they would still be subject to Kotanagi's size constraints.

2. Masimo Does Not Dispute the Combination's Detrimental Impact to Quick and Efficient Charging, and Cannot Avoid These Issues with its Flawed Tradeoffs Arguments

Masimo does not dispute Honda's goal of quick and efficient charging, but asserts that (1) Honda does not set a threshold rate/amount for quick/efficient charging and (2) the claim does not provide such thresholds. Reply, 11. These arguments fail. Honda describes multiple examples/configurations that achieve its above-stated goal. EX-1006, 5:9-61, 6:4-16:28. Also, Masimo's assertion that the claim doesn't specify any charging speed ignores the detrimental impact to wireless charging that stems from its proposed combination. Similarly, Masimo's assertion that trickle/slow charging is acceptable (Reply, 12) again disregards this express goal.

Masimo next asserts that wireless charging would be included in Kotanagi's device despite Honda's stated goal. Reply, 11. But this overly-broad framing ignores a key issue—whether a POSITA would have implemented the coil in

Kotanagi's space-constrained opening behind its rear cover. As the POR explained, a POSITA would not have done so. POR, 27-56.

Moreover, Masimo doesn't dispute the increased spacing due to its proposed positioning of the coil behind the optical elements, but asserts that a POSITA would have "considered coil spacing and adjustments to accommodate coils as part of ordinary engineering." Reply, 12-13. This assertion fails to explain how that increased spacing would be balanced or how the purported coil adjustments would be made.³ Even Masimo's reliance on Honda is misguided, given Honda seeks to reduce coil spacing by positioning each coil directly adjacent to its respective device's cover. EX-1006, FIG. 2, 13:3-31, 2:36-52.

³ Masimo's criticisms of Dr. Anthony's testimony regarding component dimensions lack merit. Reply, 13-15. Dr. Anthony's analysis assumed "representative relative dimensions" of Figure 5, which indicated that coil would be 2-to-4mm away from the cover (EX-2019, ¶¶129-130). Masimo's arguments also ignores the optical elements' circuitry that adds to these components' dimensions. Reply, 13-15. Indeed, recognizing the failure to address these dimension issues, Masimo's expert attempts to cure that failure by presenting a new obviousness theory and evidence (EX-1060, ¶331)—which should be rejected.

Masimo also doesn't dispute that its proposed coil positioning would cause detrimental noise and interference to the proposed wireless charging scheme. Reply, 14. Masimo, however, suggests that these issues are acceptable because Honda's device provides wireless charging and heart rate sensing without undue noise or interference. *Id.* But, Honda doesn't describe where its pulse rate sensor is, nor does it describe this sensor being provided in front of/around its coil, as Masimo proposes. EX-1006, 6:17-20, FIG. 2. Masimo has therefore failed to demonstrate that its combination's issues/deficiencies would be acceptable.

3. *A POSITA Would Not Have Provided the Charging Coil Around the Optical Elements in Kotanagi's Opening, As Underscored by Fraser*

Masimo argues that its alternative proposed coil positioning (around optical elements) wouldn't encounter the above-discussed issues. Reply, 14-15.

However, this configuration is space-constrained and demands placing metallic materials in the coil's core, which would be susceptible to significant wireless charging degradation—thereby counseling against Masimo's proposed combination. POR, 50-56.

To rebut this assertion, Masimo and its expert contend that placing metallic materials in the coil's core of a watch is acceptable because Honda allegedly teaches core-less coils for “nonelectronic” watches and coils with cores for electronic apparatuses/watches. Reply, 17; EX-1060, ¶343. This mischaracterizes

Honda. The cited description relates to Honda's FIG. 2, which is directed to "electronic watches," as Dr. Duckworth conceded during deposition. EX-2043, 32:19-36:17; EX-1006, 6:4-49. Honda thus confirms using coils without cores for electronic watches, whereas coils with cores can be used for other electronic devices (e.g., toothbrushes). *Id.*

Even Masimo's new (and improper) reliance on Fraser to argue acceptability of its proposed configuration fails. Reply, 17-20. While Fraser contemplates positioning metallic materials in its coil's core, it does so in a manner that counteracts their detrimental effects—by substantially expanding the coil to cover a large portion of the rear device surface. POR, 42-56. Thus, Fraser confirms that a POSITA would not have implemented wireless charging and optical sensing in a wrist-worn device in the manner Masimo proposes. *Id.*

Masimo's attempts to minimize differences between Fraser and its proposed combination are also unavailing. First, Masimo argues that a large Fraser-like coil is unnecessary when smaller coils can provide sufficient current. Reply, 18. However, as explained in §II.A.1, this assertion is based on an inapplicable, non-prior art reference and fails to account for detrimental issues of the specific Kotanagi-Honda configuration.

Second, Masimo argues that using a Fraser-like coil in Kotanagi would not reduce charging efficiency. Reply, 20. This, however, overlooks that the device housing in the proposed combination is made of metal, thereby causing detrimental effects to wireless charging due to metallic materials being present in the wireless power transmission path. POR, 50-56.

Third, Masimo's characterization of Fraser as a "better alternative" and its own proposed combination as a "suitable option" is legally and factually flawed. Reply, 6, 9-10. Fraser is the only evidence of record of a wrist-worn device with an arrangement of a wireless charging receive coil encircling optical elements used for heart rate sensing. Fraser, however, confirms that the coil in this configuration would expand beyond the rear cover of the type shown in Kotanagi. Such a configuration would therefore counteract the detrimental wireless power transmission issues, which otherwise would be present in Masimo's proposed configuration—given that the confined opening behind the cover glass would significantly limit the coil's size. POR, 42-56. Masimo cites no evidence teaching/suggesting otherwise.

As such, the present case is distinguished from cases where selecting from among two working alternatives involves accepting the tradeoffs between the two (as contemplated by the *Mouttet* and *Intel* cases that Masimo cites (Reply, 6, 18)).

That's because the record here presents a single working configuration (Fraser) that is different from the concocted Kotanagi-Honda combination, which Masimo has failed to demonstrate as a "suitable" option/alternative.

4. Masimo's New Theory Regarding Enlarging the Cover and Opening Is Improper and Flawed

To resuscitate its flawed analysis, Masimo asserts that Kotanagi's rear cover and opening could be expanded to accommodate a larger coil behind the cover. Reply, 15-20 (showing line drawings suggesting—without any corroborated evidence—that an enlarged coil could be so provided). The Petition's claim 9 analysis never presented this modification. *See* Petition, 21-27. This theory is only referenced in a conclusory statement for a dependent claim (Reply, 15; Petition, 39). Even if considered, this theory lacks support in Kotanagi or the record. *See id.* Indeed, the limited space around Kotanagi's optical elements precludes the type of expansion that Masimo seeks. POR, 53-55.

Nevertheless, if the cover and/or opening were bigger (as Masimo now argues and shows in its Reply) and a larger coil were positioned around the optical elements, the coil would still be constrained by the protruding part's size. Reply, 16, 19-20. Thus, unlike in Fraser, Kotanagi-Honda's coil would still not cover a substantial portion of the rear device surface and Masimo cites no evidence

suggesting that such a configuration would counteract the detrimental impact to wireless charging. POR, 50-56.

5. Masimo's Explanation of the Physics of Wireless Power Transmission is Flawed

Masimo fails to credibly rebut the POR's arguments that, if Kotanagi's device included the Fraser-like coil, wireless power would not pass through the device's cover. Reply, 20-26. As explained below, Masimo's argument incorrectly equates magnetic field with wireless power transfer.

In particular, while magnetic field may be present in the central portions of two opposing coils and wireless power transfer occurs at least because of magnetic field between the coils, it is incorrect to equate magnetic field with wireless power transfer as Masimo argues. See Reply, 25 (a "cover configured to 'pass wireless power' is one that passes the magnetic field"). Indeed, wireless power transfer is a function of a number of factors, including magnetic field and, e.g., distance between the coils and the relative alignment of the coils. Moreover, Masimo ignores that wireless power transfer happens *between* the coils (i.e., from the transmit coil to the receive coil) and the magnetic field *between* proximally-positioned and generally aligned coils results in wireless power transfer. EX-1052, 152:9-160:4. Unsurprisingly, other than naked expert testimony, Masimo has not identified any evidence indicating that magnetic field existing beyond the coils

causes wireless power transfer. Therefore, wireless power transmission—in the context of Fraser and Kotanagi—happens between the coils, and any magnetic field present beyond the coils and where the cover would be provided—would not result in wireless power transmission. *Id.*; POR, 42-50.

6. *Dr. Anthony's Modeling is Consistent with Industry-Wide Modeling Approaches*

Dr. Anthony modeled wireless power transfer between charging coils using techniques described in numerous peer-reviewed papers. EX-2019, ¶¶144-150, 169-174; EX-1052, 33:16-39:15. Dr. Duckworth's criticisms of the modeling (Reply, 26-28; EX-1060, ¶¶354-362) lack merit for the below reasons, which highlight his lacking experience with modeling of wireless power transfer (as he confirmed in deposition). EX-2043, 56:15-57:17.

First, Masimo's criticism that the modeling illustrates relative performance—instead of absolute performance—ignores that measuring relative performance enables analyzing how varying certain parameters (while maintaining other parameters the same) impacts wireless charging. EX-1052, 123:18-137:17.

Second, Masimo incorrectly contends that the modeling did not include any inputs, coil configuration, or equations. *Id.*; EX-2019, ¶¶144-150, 169-174. Moreover, as Dr. Anthony explained, there was no need to list equations and functions built into commercial software used for such modeling. *Id.*

Third, Masimo’s assertion that improper coil assumptions were used fails to appreciate that the assumptions were applied equally to all simulated coils for the *relative* performance comparison. *Id.*

Fourth, Masimo’s suggestion that the cited references don’t support the modeling methodology also lack merit. Dr. Anthony cited ten references as supporting his modeling approach. That some references also discussed wireless charging in non-watch fields (Reply, 28) corroborates the common methodology used for modeling wireless power transfer. Notably, Masimo’s Reply affirmatively uses many of these references (at 10, 14, 22)—further undercutting the references’ alleged inapplicability. Finally, Masimo does not dispute the modeling’s conclusions or proffer its own modeling to suggest different conclusions. EX-2043, 56:15-57:17.

On this record, Masimo has failed to demonstrate that Kotanagi-Honda renders obvious claim 9.

III. KOTANAGI-HONDA DOES NOT RENDER OBVIOUS CLAIM 11

Masimo’s claim 11 analysis hinges on the “biosensor module” including “the cover.” Petition, 36-39; POR, 56-59. While the “biosensor module” may include the “cover” in certain contexts, in the context of claims 9 and 11, the plain

claim language precludes that interpretation.⁴ *Id.* Claim 9 (from which claim 11 depends) recites a cover “disposed over the biosensor module,” with “the cover [being] configured to pass optical signals” to/from “the biosensor module.” Thus, claim 9 confirms the cover as separate and different from the biosensor module, and describes the relationship between the two. *Id.*; EX-1001, claims 13-14 (separately reciting structural limitations for each component).

To support its assertion to the contrary, Masimo offers the following analogy: “a cover can be part of a module just as a clear plastic lid can be both disposed over, and part of, a container.” Reply, 4. This analogy fails. The container is akin to the claimed device—not the biosensor module. Moreover, a container includes a lid and a body, with the lid disposed over the container’s body. *See also* EX-1006, 6:22-25 (watch including a cover disposed over the watch’s body). Similarly, the cover and the biosensor module are the claimed device’s components, with one component (cover) disposed over the other (biosensor module). So, a logical evaluation of Masimo’s analogy aligns with

⁴ Apple’s proposed construction does not suggest otherwise, as Masimo wrongly contends (Reply, 5).

what the claim 9 confirms on its face—that the biosensor module is separate and distinct from the cover.

Masimo next asserts that its construction is “consistent with” certain ’783 specification disclosures. Reply, 3-5. The cited disclosures and Dr. Anthony’s testimony regarding the same relate to “example” “embodiments” where the biosensor module “may” include the cover. EX-1001, 28:9-17, 2:50-54, FIG. 7, 16, 6:9-25. Masimo’s importation of limitations from example embodiments into the claim cannot stand—especially when doing so would be internally and grammatically inconsistent with the claims’ recitation of the cover disposed over the separate biosensor module. POR, 56-59.

Finally, Masimo’s reliance on *Google* is also misplaced. Reply, 5; *Google LLC v. EcoFactor, Inc.*, 92 F.4th 1049, 1058 (Fed. Cir. 2024). In *Google*, the claim recited five inputs, and the dispute turned on whether the inputs “must be distinct or may be entwined.” *Id.*, 1053-54. There, the claim did not recite any interrelationship between these inputs nor explain whether these inputs are separate/distinct. *Id.*, 1058-59. In contrast, claims 9 and 11 clearly delineate between these components and describe their relationship to each other, thereby confirming that these components are separate and distinct.

IV. KOTANAGI-HONDA(-KATERAAS) DOES NOT RENDER OBVIOUS CLAIMS 1 AND 15

Masimo has failed to demonstrate obviousness of these claims for reasons described for claim 9.

V. KOTANAGI-HONDA(-PARK) DOES NOT RENDER OBVIOUS CLAIM 16

Claims 15 and 16 require wireless power transmission from a dock to the device's charging receive coil—which Masimo's expert confirmed as requiring magnetic coupling between the dock's coil and the receive coil. EX-2043, 30:12-32:16; Reply, 28-29; POR, 61-62. Thus, claim 16's *additional* limitation recitation that the watch is “configured to magnetically couple with the dock” necessarily requires an additional magnetic coupling. *Id.*

For such additional magnetic coupling, the Petition presented a combination of Kotanagi-Honda and Park. Petition, 55-57. The POR highlighted the Petition's failure to explain how and why a POSITA would combine these references—which the Reply doesn't contest. *Compare* POR, 61-66, *with* Reply, 29-32.

Instead, the Reply revises the combination by advancing new theories and evidence under the guise of addressing the POR's arguments. Reply, 28-32. As explained below, (1) the POR's identification of areas where Masimo failed to meet its burden does not authorize Masimo to present new obviousness theories

and (2) even if considered, these new theories don't cure Masimo's failure to meet its burden.

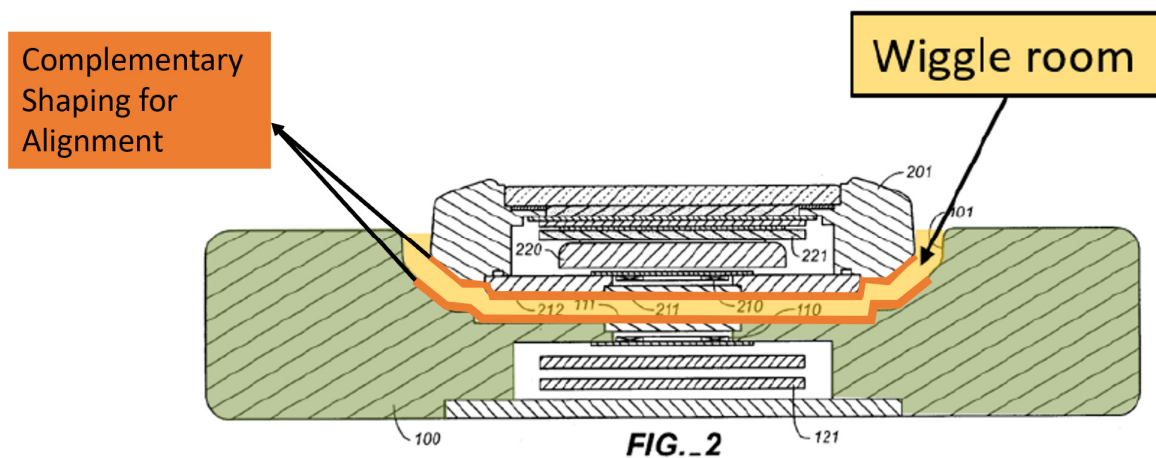
First, per Masimo, Apple argues that “Honda’s socket would align a watch so effectively that Park’s further magnetic alignment would not be needed.” Reply, 29. Not true. Rather, the POR stated that “Honda already provides alignment mechanisms to address misalignment issues between charge and transmit coils”—as the Petition acknowledged (Petition, 56)—and “Petitioner has offered no evidence that these mechanisms would be deemed insufficient by a POSITA, thereby leading a POSITA to look to additional or different mechanisms to address any misalignment concerns.” POR, 62-63.

Confronted with this failure, Masimo’s Reply manufactures new obviousness theories and evidence, including (1) relying on Honda’s background section to now argue that charging stations have alignment issues, (2) asserting that Honda’s socket is deficient because it has wiggle room, and (3) identifying Park’s Figure 11 and its associated teaching to presumably illustrate that Park’s techniques would perform “further alignment.” *See* Reply, 29-31 (citing EX-1006, 1:52-53, FIG. 10).

These new theories/evidence should be rejected as untimely and improper; however, even if considered, they are flawed. For example, the cited descriptions

from Honda's Background—including the phrase “modest degree of displacement”—speak to alignment issues in prior charging stations. EX-1006, 1:52-53. They, however, don't address or criticize Honda's charging station that has a socket designed and shaped for specific alignment with a to-be-charged device (with its own complementary shape and design).

Indeed, contrary to Masimo's new arguments, Honda doesn't teach or suggest that any “wobble room” or “degree of displacement” between the device and the charging station. Masimo's identification of the alleged “wobble room” in yellow annotation below (EX-1006, FIG. 2) also ignores that this space exists because the device is not seated in the charging station.



When the watch is seated in the charging station, Masimo's expert confirmed that the watch's cover glass 211 would be directly adjacent to the charging station's cover glass 11. EX-2043, 36:5-17. Masimo also ignores that the

shape/configuration of the charging station and Honda's watch are designed for aligning the devices—thereby avoiding any wiggle or displacement. EX-1006, FIG. 2 (orange annotation; added by Apple); Petition, 88.

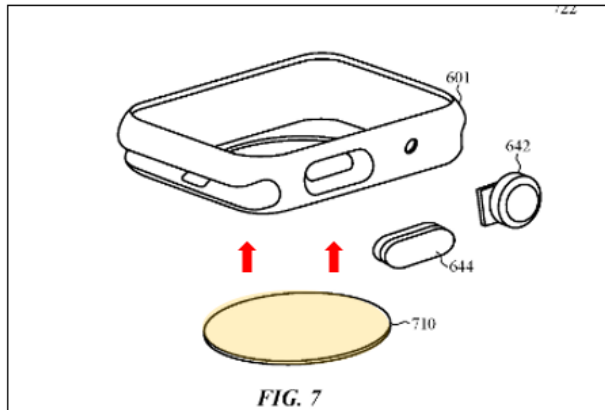
Third, Honda doesn't teach that its socket-based alignment is deficient such that additional alignment mechanisms would be needed. What's more, Honda already provides a solution for countering any misalignment between devices—as Masimo acknowledges. Reply, 29-30 (“Honda...addresses misalignment regardless of socket.”); POR, 62-63. Thus, given Honda's express teachings, Masimo's new theories still fail to demonstrate why a POSITA would have sought to supplement Honda's teachings with Park's (which does not teach/suggest Honda-like alignment mechanisms (POR, 64)).

Moreover, the Petition also failed to explain the proposed magnet's position in the alleged device and whether that would avoid interfering with the combination's alleged wireless charging—which Honda seeks to avoid. POR, 65-66; EX-2019, ¶205. Masimo attempts to cure this failure by improperly advancing another new theory: that a POSITA would have implemented shielding, per Park, to prevent the detrimental effect of a magnet's presence. Reply, 32. This new theory—if considered—fails for two reasons. First, it still does not explain where/how the magnets would be positioned in the device. Second, it fails to

explain how Park’s shielding—which is not described in the context of a wrist-worn device—would be implemented in the combination’s wrist-worn device. Indeed, had Apple been able to provide rebuttal evidence, it would have highlighted that shield elements normally require significant space. Thus, Masimo’s conclusory assertion that shielding would be deployed offers no reasoned basis for where or how that would be accomplished in a compact, space-constrained wrist-worn device. Moreover, Park’s cited reference to shielding (EX1015, 37; Reply, 32) doesn’t address this issue because it describes shielding between the magnet and the “transmitting” coil—both of which are in the charging station and not the alleged “watch.” *See id.* Therefore, Masimo’s assertion—that “a POSITA would have known to position the magnets to address” the detrimental impact to wireless charging, “or include shielding” in the watch (Reply, 32)—lacks any reasoned or evidentiary basis and thus, must be rejected.

VI. KOTANAGI-HONDA-KATERAAS DOES NOT RENDER OBVIOUS CLAIM 6

Claim 6 recites that the “ceramic cover”—which is “disposed over the second opening”—is “a disk.” *See* EX-1001, Fig. 7 (reproduced in part below; annotated).



For this claim, the POR demonstrated that (1) Kotanagi’s protruding part 4—which is part of the housing—is neither a cover nor a disk, and (2) Kotanagi’s rectangular cover glass (alleged “ceramic cover”) is also not the claimed “disk.” POR, 68-73; Petition, 60-64, 77-80.

Masimo’s Reply presents rebuttals—including multiple new and improper obviousness theories—to salvage its flawed claim mapping. These rebuttals are refuted by the record.

First, Masimo characterizes the POR as imputing the rectangular cover from Kotanagi’s FIG. 5 onto its FIG. 8 embodiment. Reply, 32-33. Not true. This ignores Masimo’s own reliance on FIG. 5’s embodiment given its mapping of “cover” to the rectangular cover glass in Kotanagi’s FIG. 5. Petition, 60. Notably, the Petition’s claim 1 analysis did not reference Kotanagi’s FIG. 8. *Id.*, 57-69. Then, for claim 6, the Petition exclusively focused on FIG. 8’s embodiment. Masimo thus failed to reconcile how its claim 1 mappings based on FIG. 5’s

embodiment would apply in the context of FIG. 8's embodiment relied upon for claim 6. If FIGS. 5 and 8 present distinct embodiments, as Masimo suggests, then Masimo had the burden to either explain how FIG. 8's embodiment independently renders obvious the claim 1 limitations or explain why/how a POSITA would replace FIG. 5's rectangular cover with a circular cover for FIG. 8's embodiment. Masimo's Petition did not do so. Apple thus addressed the only mapping of "ceramic cover" proffered by Masimo—i.e., Kotanagi's rectangular cover—which is not the claimed "disk."

Second, Masimo argues that Kotanagi does not "require" the rectangular cover for the Figure 8 embodiment and "a POSITA would have understood that Figure 8 intends to convey that any LED or PD is hidden behind the circular cover, without a separate rectangular window." Reply, 33. This argument rests on the flawed premise that FIG. 8 depicts a "circular cover." It does not. FIG. 8 depicts the circular protruding part 4, which is part of the housing and is not a cover. POR, 69-70; EX-2020, 62:13-22. Kotanagi does not teach/suggest that the protruding part 4 would be covered with a circular cover glass. Nor does it teach/suggest removing, replacing, or modifying components, such as the rectangular cover, disposed on this protruding part. The Petition did not demonstrate otherwise.

Indeed, a reasoned reading of Kotanagi confirms that FIG. 8 is illustrating a different shape for the protruding part 4 (relative to what's shown in FIG. 5) but is otherwise retaining the components disposed on/within this same-labeled part, such as the rectangular cover, the electrodes adjacent to this cover, the LED, and the PD. EX-1005, ¶¶74-79, p. 10, Indeed, Kotanagi states that FIG. 8's embodiment improves the adherence of the "biological sensor part 8." EX-1005, ¶¶77, 64, 46. And, Dr. Duckworth confirmed that, for this embodiment, the biological sensor part is provided on the protruding part 4's lower surface 4a and includes the LED, PD, and electrodes—despite these components not being depicted in FIG. 8. EX-2043, 41:5-42:2, 42:16-44:7, 45:20-46:7, 47:5-12, 48:16-49:7, 53:1-13, 55:15-20; Reply, 37.

Thus, a POSITA would have understood that protruding part 4 in FIG. 8 (and in FIGS. 9-13 on which Masimo newly relies (Reply, 34)) includes the same components, including the rectangular cover, shown on/within the same-labeled protruding part depicted in FIGS. 1 and 5.

Third, recognizing that its theory of covering the entire protruding part 4 with a circular cover fails to account for the electrodes present on the protruding part, Masimo presents another modification that relocates these electrodes. POR, 72-73; EX-1005, ¶¶58, 77; Reply, 33-34. Specifically, Masimo proposes moving

the electrodes to ridges shown in newly-cited Figures 11-13 of Kotanagi's device.

Id. Kotanagi, however, does not teach that electrodes are provided on these ridges (as Masimo acknowledges) or that the ridges perform the electrodes' stated function. Reply, 33-35; *see* EX-1005, ¶11 (ridged parts, together with the protruding part, enable "reliabl[e]" "adherence between the living body surface and the biological sensor part"). Moreover, Dr. Duckworth conceded during deposition that the biological sensor part 8, which includes electrodes, would be provided on the protruding part's lower surface 4a in FIG. 8. EX-2043, 41:5-42:2, 42:16-44:7, 45:20-46:7, 47:5-12, 48:16-49:7, 53:1-13, 55:15-20.

Fourth, Masimo finally argues that Apple "ignores Honda's teaching of a round ceramic cover having the claimed diameter and forming a water-tight seal." Reply, 35. This misstates the Petition's reliance on Honda. The Petition relied on Honda for its alleged teachings of a water-tight seal—and not for the "cover is a disk" limitation. Specifically, after contending that the alleged protruding disk in Kotanagi is the claimed disk, the Petition stated that "***Kotanagi does not specifically state that this disk is a ceramic cover forming a water-tight seal,***" as claim 6 additionally recites. Petition, 78-79 (emphasis added). The Petition leveraged Honda to address this purported deficiency, stating that Honda is in the "same field of endeavor" because it purportedly also "teaches a cover with" the

claimed diameter. *Id.* The Petition then discussed Honda’s alleged waterproofing teachings and concluded that a POSITA would recognize that Honda’s cover forms the claimed “water-tight seal” and that a “POSITA would expect to successfully achieve a water-tight seal (and be motivated to establish such a seal) based on” a POSITA’s general knowledge. *Id.*, 80.

Moreover, Honda’s cited disclosures don’t teach/suggest that its cover is circular or a disk. Petition, 77-80; EX-1006, FIG. 2, 1:24-31, 13:22-25, 15:36-38. Thus, even assuming *arguendo* the Petition advanced a Honda-based theory for the “cover is a disk” limitation (Reply, 35), Masimo failed to demonstrate how or why Kotanagi’s rectangular cover (alleged “cover”) would be modified to be the claimed “disk”—especially when Honda’s cited disclosures don’t teach that the cover is a disk. *See id.*

VII. KOTANAGI-HONDA-JABORI(-PARK) DOES NOT RENDER OBVIOUS CLAIM 12

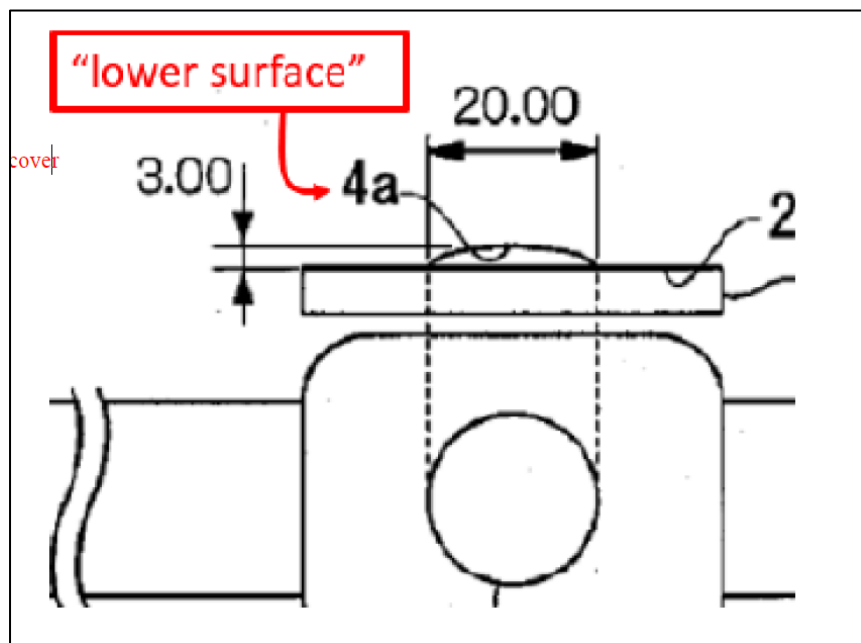
As with claim 6, Masimo’s claim 12 analysis (for the “cover is a disk...” limitation) is riddled with mischaracterizations and new theories aimed at resuscitating its flawed analysis.

Masimo first asserts that “Apple does not dispute that Kotanagi teaches the claimed disk having a convex shape that protrudes away from the housing’.”

Reply, 35. This mischaracterizes the POR. The claim recites that “the cover is a

disk having a convex shape that protrudes away from the housing” and the POR explained that the proposed combination(s) do/does not teach that the “cover is a disk” (POR, 73-74). It follows that the proposed combination does not disclose/suggest the larger limitation—“the cover is a disk having a convex shape that protrudes away from the housing.” *Id.*

The Reply asserts that Kotanagi’s FIGS. 10 (below; Petitioner-annotated) and 13 would be understood as “a disk...[forming] a convex ‘cover glass’ that spans the through-hole 22.” Reply, 35-36. These arguments are flawed.



First, as explained for claim 6, protruding part 4 is part of the housing and is not a cover or a disk. Indeed, the component labeled 4a (annotated above) is the protruding part’s lower surface—it is not a cover, much less the rectangular cover 23 that is disposed over an opening formed in this lower surface. Petition, 87.

Second, as explained for claim 6, Kotanagi’s FIG. 10-13 and their associated descriptions don’t teach/suggest that the protruding part 4 (even if shown as having a convex shape) would be covered with a cover that is a disk. Reply, 36. Even if that could be done, Masimo does not offer any reasoned analysis and evidence for such a modification. *See id*

Nor does Kotanagi teach/suggest removing, replacing, or modifying components disposed on this protruding part, such as the rectangular cover 23. The Petition—and the Reply—are silent on how or why Kotanagi’s rectangular cover 23 would be modified or replaced with a cover that is a disk in the FIGS. 10 and 13 embodiments—or whether that would have been obvious. Masimo also fails to reconcile its mappings to “different” embodiments for its analysis of claims 9 and 12 (as described for claim 6).

Third, as explained for claim 6, Masimo’s new assertion that the ridged parts on the rear surface—shown in Kotanagi’s FIG. 13—would include the electrodes, is also flawed. Reply, 35-36.

Finally, Masimo criticizes Apple for allegedly “ignor[ing] the secondary references”—Honda, Jabori, and Park—and the motivations to combine, pursuant to which Masimo now contends that “a POSITA would have made modifications to use Kotanagi’s disk with a reciprocally concave dock.” Reply, 36. Again,

Masimo's alleged disk refers to Kotanagi's circular protruding part, which is not a cover or a disk. The Petition never relied on the secondary references for the "cover is a disk" feature, nor did it explain how/why Kotanagi's rectangular cover (alleged "cover") would be modified to the claimed "disk" based on these references. Petition, 88-93. Instead, the Petition relied upon these references to contend that Kotanagi's "convex" protrusion/protruding part would be accommodated in a modified, concave-shaped "charging station." Petition, 89-91. Even if that were the case, it still does not demonstrate that Kotanagi's rectangular cover would be modified to be a disk.

VIII. CONCLUSION

For the foregoing reasons, Apple requests a FWD confirming the Challenged Claims' patentability.

Respectfully submitted,

Date: June 11, 2024

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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 Sur-Reply totals 5,598, which is less than the 5,600 words allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on June 11, 2024, a complete and entire copy of this Patent Owner's Sur-Reply and Exhibit 2043 were provided via email, to the Petitioner by serving the email correspondence addresses of record as follows:

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