

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION
Petitioner,

v.

APPLE INC.,
Patent Owner

Case IPR2023-00745
U.S. Patent 10,076,257

PATENT OWNER'S RESPONSE

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LIST OF EXHIBITS

APPLE-2001	U.S. Patent Application Publication No. 2014/0171776 (“Lin”)
APPLE-2002	U.S. Provisional Application No. 61/111,498
APPLE-2003	Declaration of Dr. Thomas W. Kenny
APPLE-2004	Joint Claim Construction Brief for Apple Asserted Patents from <i>Apple Inc. v. Masimo Corporation et al.</i> , Case No. 1-22-cv-01378 (D. Del. Oct. 20, 2022)
APPLE-2005	Definition of “embedded” from Wiley Electrical and Electronics Engineering Dictionary, IEEE Press, Wiley-Interscience (2004)
APPLE-2006	Definition of “embed” from Merriam-Webster’s Collegiate Dictionary, Eleventh Edition, Merriam-Webster, Inc. (2005)
APPLE-2007	Definition of “embed” from Webster’s College Dictionary, Random House (2005)
APPLE-2008	Transcript of January 12, 2024 deposition of Alan L. Oslan

I. INTRODUCTION

Masimo’s challenges to claims 1-4 and 8-22 of U.S. Patent No. 10,076,257 (“the ’257 patent”) rest on overbroad claim constructions, inconsistent mappings of the cited references to the challenged claims, and, in the case of Ground 2, insufficient explanations of an unworkable prior art combination.

For example, in its Petition, Masimo presents an overly broad construction of “embedded” that is inconsistent with Masimo’s asserted construction for the related term “embedded in” in the district court proceeding. In this way, Masimo attempts to improperly pursue different definitions by merely excluding/including the term “in” after the term “embedded.” Specifically, in this proceeding, Masimo proposes that “‘embedded’ means ‘an integral part of’ such as, by ‘being placed in the thickness of a surrounding material including forming an outer and/or inner surface’ or ‘placed underneath an exterior surface and against an inner surface.’”¹ Yet in the related district court proceeding, Masimo proposes an *entirely different, and substantially narrower, construction* for the similar (but not identical) term “embedded in” of “set firmly into and surrounded by material.” APPLE-2004, 57².

¹ All emphasis added unless otherwise noted.

² Page numbers refer to PDF pages rather than original page numbers.

Masimo's assertion of an overly broad construction in this proceeding for purposes of assessing validity while simultaneously asserting a much narrower construction in the district court in an effort to avoid infringement should not be permitted.

Furthermore, as detailed below, Masimo's petition is rife with inconsistent mappings of the cited references to the challenged claims, with Masimo switching between its various theories in an incoherent manner that fails to identify how any of its multiple mappings satisfies every claim element or which particular mapping is being discussed in any given paragraph. For example, under Ground 1, Masimo maps the "first pad" in claim 1, alternatively, (i) to an electrode, (ii) to a base metal of an electrode, and (iii) to a leaf spring in Mills. Yet all these mappings fail because, as demonstrated below, no single mapping provides all requirements of the claimed "first pad."

The Petition also fails to explain how the proposed combination of Markel and Mills would be feasible given the physical configuration of Markel's device with respect to Mills' description and use of the leaf spring 62. In addition to these flaws, numerous other claim elements are simply not disclosed by Masimo's proposed prior art mappings.

II. THE '257 PATENT

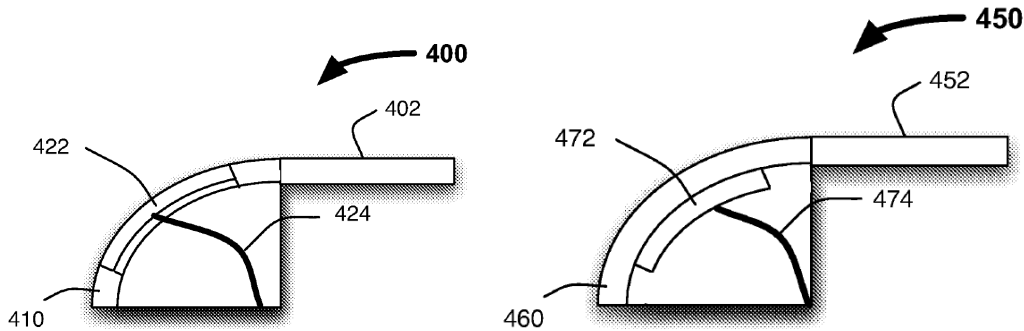
A. Background of the Invention

The '257 Patent is directed to an electronic device that includes a sensor for detecting a user's cardiac signal. EX1001, 2:1-2. The sensor can be used to unlock the device in response to "authentica[ing] a user based on the attributes of the user's heartbeat." *Id.*, 1:49-2:3.

A "heart sensor 112 can include one or more leads connected to the exterior of the electronic device." EX1001, 6:3-8. "The cardiac signals detected by the heart sensor leads can be coupled to a processor incorporated in heart sensor 112, or instead provided to processor 102." *Id.*, 6:10-16. "The processor may then analyze the received signals and generate, from the received signals, one or more characteristic quantities of the user's heartbeat or heart rate for authentication." *Id.*

The '257 Patent provides several example configurations for its disclosed electronic device. For example, "FIG. 4A is a cross-sectional view of an illustrative electronic device having a bezel with an embedded heart sensor lead," where "lead 422 is exposed to the user." *Id.*, 9:18-26. "FIG. 4B is a cross-sectional view of another illustrative electronic device having a bezel with an embedded heart sensor lead," where lead 472 is placed "underneath the outer surface of the bezel." *Id.* 9:45-49. Each of lead 422 in FIG. 4A and lead 472 in

FIG. 4B is coupled to a respective connector (424 and 474) that “transmit[s] the signals to a processor” of the device. *Id.*, 9: 24-26, 9:51-52.



Left: '257 Patent, FIG. 4A; Right: '257 Patent, FIG. 4B

The '257 Patent also discloses embodiments where a lead is “embedded in or behind display 302” or “embedded in or adjacent to the housing.” EX1001, 8:40-52, 10:25-29.

III. Level of Ordinary Skill

A person of ordinary skill in the art on or about the claimed priority date of the '257 Patent (“POSITA”) would have had at least a bachelor’s degree in electrical engineering, mechanical engineering, biomedical engineering, computer 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-2003, ¶¶23-24. Less work experience may be compensated by a higher level of education and vice versa. *Id.*

IV. Claim Construction

Masimo has proposed constructions for several terms in the Petition. Apple presents the following construction in response to Masimo’s improperly broad construction of the term “embedded in.”

“embedded in” (claims 1, 15) – The term “embedded in” should be given its plain and ordinary meaning, which does not necessarily require an explicit construction. APPLE-2003, ¶¶30-31. However, should the Board determine that the term “embedded in” requires an express construction, consistent with the plain and ordinary meaning of this term, “embedded in” should be interpreted to mean “at least partially set in or partially surrounded by a material.” APPLE-2003, ¶31, *see also* ¶¶27-46. This construction is consistent with the plain and ordinary meaning of the term “embedded in” as that term is used in the ’257 patent.

APPLE-2003, ¶¶31-37. For example, when describing the invention in general, the ’257 patent states that in embodiments where the device includes “a housing forming the exterior surface” that “one or more leads can be **embedded in or adjacent to** the housing.” EX1001, 10:24-29. This passage makes a clear distinction between a lead that is “embedded in” the housing and a lead that is

merely “adjacent to” the housing. APPLE-2003, ¶32. From this discussion in the ’257 patent, it is apparent that it is not sufficient for two components to be merely in parallel contact or adjacent to each other, at least a portion of a first material or component (e.g., the embedded first pad) must be at least partially set in or partially surrounded by a second material or component (e.g., a portion of the enclosure). APPLE-2003, ¶32. Indeed, Masimo’s expert stated that he did not consider distinctions between “embedded in” and “embedded adjacent to” when formulating his construction of the broader term, “embedded.” APPLE-2008, 34:20-35:3, 124:7-16, 126:2.

In another example, in a first arrangement described with respect to FIG. 4B, the ’257 patent describes that “lead 472 of the heart sensor can be *positioned against* the back surface of bezel 460.” EX1001, 9:44-45. The specification then goes on to state that “[a]lternatively, lead 472 can be *placed within the thickness of bezel* 460 (e.g., in a pocket within the bezel wall), but underneath the outer surface of the bezel.” *Id.*, 9:45-48. This passage distinguishes a lead that is embedded in a portion of the enclosure from a lead that is merely “positioned against” or in parallel contact with a portion of the enclosure. APPLE-2003, ¶¶33-35.

In another example, in describing an embodiment in which a lead is included in the touch screen, the '257 patent describes an “additional lead 326 embedded in or behind display 302,” once again indicating a distinction between a lead that is “embedded in” a portion of the enclosure verses a lead that is merely “behind” the portion of the enclosure (without being both behind and embedded in the enclosure). EX1001, 8:40-41; APPLE-2003, ¶36. In another example, the '257 patent indicates that there are multiple ways in which leads “can be coupled to sides 312 and 314 of bezel 310” with one specific manner being that “leads 322 and 324 [are] *embedded directly in* bezel 310.” EX1001, 8:20-24, 8:67-9:1. This once again identifies a distinction between leads that are merely in contact with the bezel 310 of the device housing and leads that are “embedded directly in” the bezel (i.e., at least partially set in or partially surrounded by the bezel 310). APPLE-2003, ¶37.

In addition to these recitations in the '257 patent specification indicating an interpretation of “at least partially set in or partially surrounded by a material” for the term “embedded in,” consistent with the plain and ordinary meaning of this term, the doctrine of claim differentiation also supports such a construction. As the Federal Circuit has recognized “the doctrine of claim differentiation” is based on “the common sense notion that different words or phrases used in separate claims

are presumed to indicate that the claims have different meanings and scope.”

Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir., 2007) (citing *Karlin Tech. Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72 (Fed. Cir. 1999)). Here, claim 1 recites “a first lead comprising a first pad that is embedded *in* a first portion of the enclosure”³ while claim 9 recites “a third lead embedded *with* the display.” Under the doctrine of claim differentiation, the term “embedded in” has a different scope than the term “embedded with.” A POSITA would have recognized that in the context of the ’257 patent, the term “embedded in” has a narrower scope than “embedded with,” with a lead that is “embedded in” a first portion of the enclosure being at least partially set in or partially surrounded by the first portion of the enclosure rather than merely being “embedded with” or adjacent/parallel to the first portion of the enclosure. APPLE-2003, ¶38.

This intrinsic evidence demonstrates that Masimo’s construction is overly broad. Specifically, the second, alternative portion of Masimo’s construction of “placed underneath an exterior surface and against an inner surface” (Pet., 9) is clearly over broad in light of the use of the term “embedded in” in the specification and claims of the ’257 patent as such a construction encompasses two materials

³ Claim 15 includes a similar recitation.

that are merely positioned “adjacent to” or “against” each other such that the two surfaces are parallel rather than the first material being “embedded in” the second material by being at least partially set in or partially surrounded by the second material. APPLE-2003, ¶¶27-30, 39. During his deposition, Masimo’s expert agreed that a first component or object in parallel contact with and positioned under a second component or object would not necessarily indicate that the first component or object is embedded in the second component or object. APPLE-2008, 31:10-33:18, 109:18-110:19.

Notably, Masimo attempts to avoid addressing this distinction by providing a construction for the term “embedded” alone rather than the narrower term “embedded in.” See APPLE-2008, 31:4-8 (Masimo’s expert stating that he “only address[ed] ‘embedded’ in my declaration” rather than the narrower term “embedded in”).

Extrinsic evidence further indicates that the construction advanced by Masimo in the Petition is overly broad. For example, a POSITA would have been aware that in the context of computing devices and computing technology, the term “embedded” means “[t]hat which has been *incorporated into a surrounding mass or enclosure*.” APPLE-2005, 3. This definition demonstrates that the term

“embedded in” requires more than two materials or substrates that are merely positioned adjacent to, parallel, or against each other. *Id.*; APPLE-2003, ¶40.

Standard (non electronics) dictionaries define “embed” as “to enclose closely in or as if in a matrix” or “to make something an integral part of.” APPLE-2006, 3; *see also* APPLE-2007, 3 (“*to envelop or enclose*”); APPLE-2003, ¶41. Indeed, Masimo’s own dictionary definitions support the plain and ordinary construction presented here, similarly defining “embed” as “envelope or enclose.” EX1017, 4; *see also* EX1016, 4; EX1018, 3; APPLE-2003, ¶41. Notably, even if these dictionary definitions were believed to support a broad interpretation for the term “embed” alone, as discussed above, the claim term “embedded in” indicates a narrower scope than that proposed by Masimo in the Petition. APPLE-2003, ¶41.

Masimo’s assertions in the related district court proceeding also demonstrates that the construction proposed by Masimo in the Petition is overly broad. In contrast to the broad construction proposed in this proceeding, in the related district court proceeding, Masimo proposes a much narrower construction for the term “embedded in” for the ’257 patent of “set firmly into and surrounded by material.” APPLE-2004, 57. As is readily apparent, Masimo’s district court construction is much narrower than Masimo’s IPR construction because it requires that a first material be “surrounded by” a second material and does not encompass

arrangements in which a first material merely “form[s] an outer and/or inner surface” of a second material or is “placed underneath an exterior surface and against an inner surface” of the second material, as Masimo proposes in the Petition. APPLE-2003, ¶¶42-43.

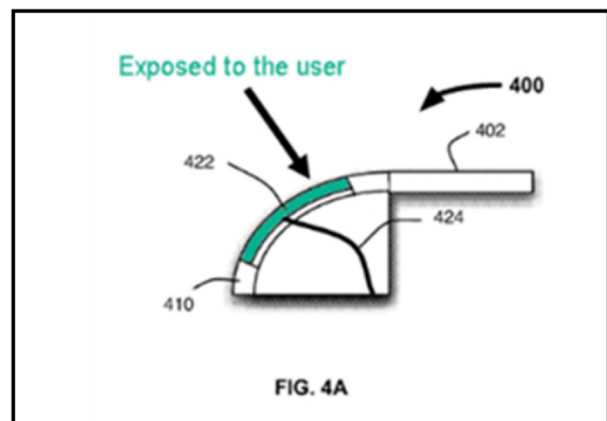
In supporting its narrower construction in the district court proceeding, Masimo asserts that “‘embedded in’ must be construed to be more than merely ‘mounted on.’” APPLE-2004, 58-59, 61. Masimo further asserts that arrangements in which a first material is merely “‘behind,’ ‘embedded along,’ [or] ‘adjacent to’” a second material do not fall within the scope of the term “embedded in.” APPLE-2004, 61. Masimo goes on to distinguish “leads [that] are ‘embedded *along*’ the bezel” from leads that are “embedded in” the bezel/housing. *Id.* (emphasis original). Masimo’s assertions made in the district court proceeding thus directly refute and undermined its proposed construction as presented in the Petition. APPLE-2003, ¶43.

The Board should not permit Masimo to pursue two drastically different claim constructions in the two different forums. The Federal Circuit has been clear that a “patent may not, like a nose of wax, be twisted one way to avoid anticipation and another to find infringement.” *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001); *see also CommScope Techs. LLC v. Dali*

Wireless Inc., 10 F.4th 1289, 1299 (Fed. Cir. 2021). Masimo has advocated for a narrow interpretation of the term “embedded in” in an effort to avoid a finding of infringement in the district court. Masimo should be held to this construction in this IPR proceeding and required to demonstrate how the cited references meet its proffered district court construction for “embedded in.” However, as demonstrated below, under both Masimo’s district court construction, and the proper plain and ordinary meaning of the term “embedded in,” the cited references fail to disclose all of the recited claim limitations. APPLE-2003, ¶44.

To be clear, just as the construction for “embedded” advanced by Masimo in the Petition is overly broad, the construction advanced by Masimo in the district court proceeding is improperly narrow. APPLE-2003, ¶45. For example, the specification discloses embodiments where the leads are *exposed* to a user and are thus not *entirely* “surrounded by material.”

As shown in Figure 4A, the embedded “lead 422” (shown in green) comprising the pad is only partially surrounded by the bezel 410 with a portion of the pad “*exposed to the user during use.*”



EX1001, 9:22–24, Fig. 4A. Apple’s more detailed arguments addressing the flaws

in Masimo's district court construction are entirely consistent with the plain and ordinary meaning of the term "embedded in" addressed here. *See* APPLE-2004, 57-61.

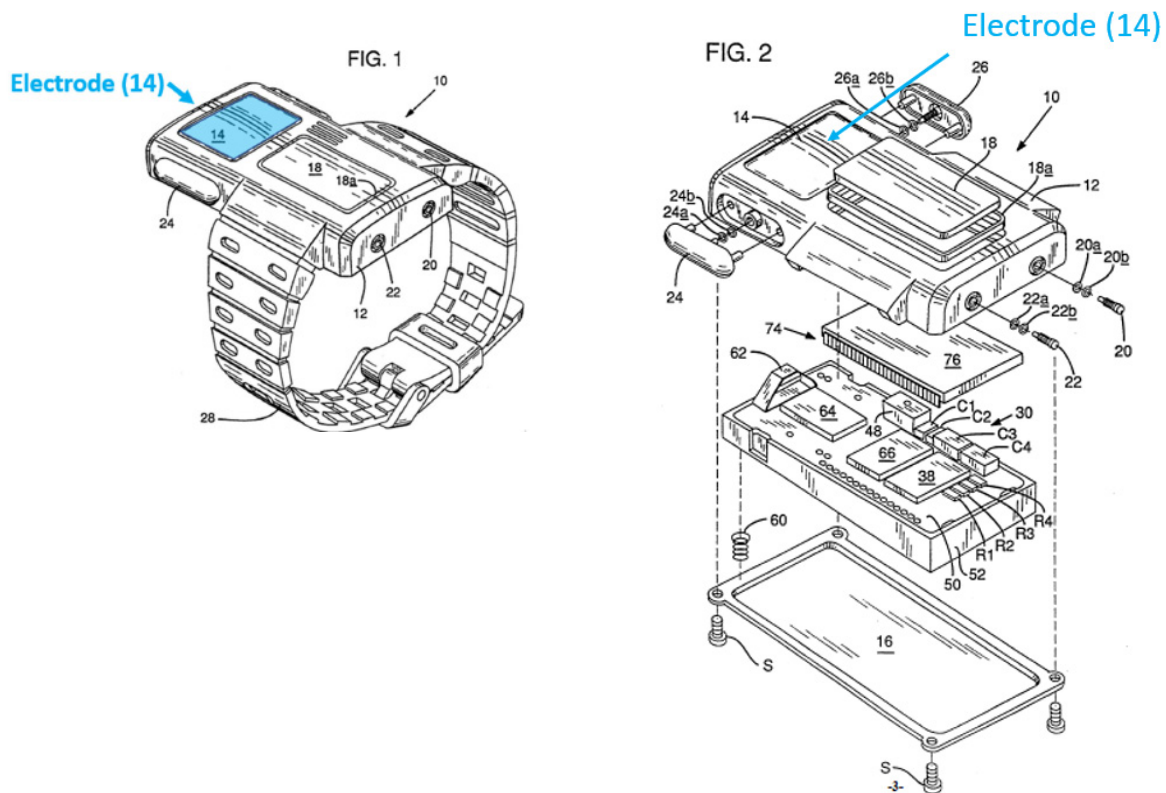
Accordingly, the term "embedded in" should be interpreted to mean "at least partially set in or partially surrounded by a material" which is consistent with the plain and ordinary meaning for this term. APPLE-2003, ¶¶46, 27-45.

V. Ground 1 Fails to Demonstrate That All Elements of Claims 1-4, 8, 10, 11, and 14 are Disclosed by Mills

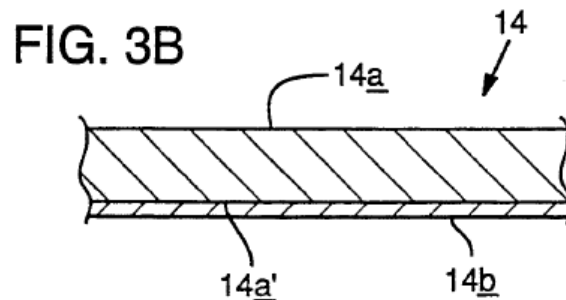
A. Masimo's Inconsistent Mapping of Mills to the Challenged Claims

Masimo's Petition presents inconsistent mappings of Mills to the challenged claims, repeatedly jumping between different theories without identifying which particular mapping is being discussed in any particular paragraph. In particular, the Petition presents numerous contradictory and inconsistent mappings of Mills' upper electrode 14, mapping the electrode 14 to various, distinct structures recited by the claims while jumping between these different mappings throughout its analysis of the claims.

By way of background, the device of Mills includes an upper electrode 14 that is exposed to the outside of the device to allow for direct contact by the palm of a user. EX1006, 6:63-65, 7:13-15, 12:13-19.



Electrode 14 is “formed of a base metal such as stainless steel” 14a with a thin outer “metal-plating” 14b that is “approximately 3-microns” thick applied as a coating on the base metal 14a “by known chemical or physical vapor deposition techniques” as shown in FIG. 3B *Id.*, 3:67-4:10, 4:32-37.



Mills is clear, the outer-plating 14b is “shown in *greatly enlarged thickness* in FIG. 3B relative to that of expanse 14a.” EX1006, 4:4-10.

Returning to the Petition, Masimo presents at least three mappings of the electrode 14 of Mills to the claimed features of claim 1—jumping between these various mappings without specifying which mapping is being addressed at any given time while also failing to demonstrate how any one mapping actually provides all elements of claim 1. APPLE-2003, ¶¶61-70. This confusing and inconsistent mapping of electrode 14 to claim 1 is exemplified by the following contradictory statements taken directly from the Petition in its analysis of elements 1[b(ii)] and 1[b(iii)], respectively:

electrode 14 (first pad)

Pet., 19

electrode 14 (first portion)

Pet., 24

Mills’ electrode 14 cannot provide both the claimed “first pad” and the “first portion of the enclosure” as the claims require that the “first pad is *embedded in* a first portion of the enclosure,” thus indicating that the first pad and the first portion of the enclosure are different structures. APPLE-2003, ¶59. This single example is far from the only material inconsistency in the Petition with respect to how Masimo maps the electrode 14 of Mills to claim 1.

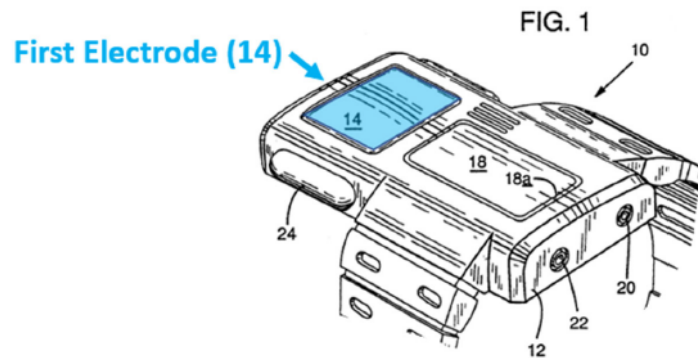
Under 35 USC § 312(a)(3) “[i]t is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that *the initial petition identify ‘with particularity’* the ‘evidence that supports the grounds for the challenge to each claim.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016); *see also Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”); *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 at 15-17 (PTAB March 6, 2019) (designated informative: Aug. 2, 2019). By jumping between various mappings of Mills to the challenged claims, without providing guidance as to which mapping is being discussed at any particular time, Masimo has failed to provide the requisite “particularity.” *See* APPLE-2003, ¶¶61-63.

Each of Masimo’s inconsistent mappings Mills to the claims is identified in detail below, followed by an analysis of how none of Masimo’s proposed mappings provide all elements of claim 1.

1. Masimo’s First Mapping of Mills’ Electrode 14 to Claim 1

In its first mapping of Mills to Claim 1, Masimo identifies the entire electrode 14 as the claimed “first pad” recited in element 1[b(i)]. Pet., 18-19; APPLE-2003, ¶¶71-74. For example, Masimo asserts that “*Electrode 14* of Mills

(Fig. 1, partially reproduced below) *is a pad* that forms part of the first lead of Mills.” *Id.*, 18; *see also* APPLE-2008, 36:21-37:20, 39:9-13, 52:21-53:3.



Pet., 18.

On the following page, Masimo expressly states that “Mills discloses *a first pad - electrode 14*.” Pet., 19. Masimo continues this mapping with element 1[b(ii)], stating “Mills discloses its *electrode 14 (first pad)*.” *Id.* In the first portion of the discussion of 1[b(ii)], Masimo continues to make it clear that it is mapping electrode 14 to the claimed first pad, not the claimed enclosure, by stating that “electrodes, 14 and 16 [are] located on different portions of the enclosure.” Pet., 20. Based on these assertions in the Petition, Masimo makes clear that in this first mapping, Masimo has identified the entire electrode 14 as the first pad. APPLE-2003, ¶¶71-73.

After switching from this mapping to at least two alternative mappings of the electrode 14 to claim 1 (discussed below), Masimo returns to this initial

mapping in addressing element 1[b(v)], stating “the *electrode 14 (pad)* of Mills is configured to detect a first electrical signal of the user’s cardiac signal.” Pet., 26. Then, in addressing element 1[b(vii)], Masimo refers to Mills’ electrode 14 as “first lead 14,” indicating that in this mapping, the entire electrode 14 is considered part of the claimed “first lead” rather than part of the claimed enclosure. Pet., 29; APPLE-2003, ¶74.

Masimo continues this first mapping in element 1[c(i)], stating that “leaf spring 62 is a first connector coupling *electrode 14 (first pad)* to the processor of Mills.” Pet., 31.

2. Masimo’s Second Mapping of Mills’ Electrode 14 to Claim 1

In its second mapping of Mills to Claim 1, Masimo abruptly switches from identifying the entire electrode 14 as the claimed pad to identifying only the stainless-steel expanse 14a of the electrode 14 as the first pad while shifting to identify the 3-micron thick outer-plating 14b as the claimed “first portion of the enclosure.” APPLE-2003, 75-78.

First off, in addressing element 1[a] (“an enclosure”), Masimo does not identify the outer-plating 14b or any other portion of electrode 14 as making up a part of the enclosure. Pet., 16-17. Rather, Masimo expressly identifies only the

housing 12 of Mills as providing the claimed enclosure. *Id.* This mapping is therefore inconsistent with Masimo’s analysis of element 1[a]. APPLE-2003, 76.

Later, while addressing element 1[b(ii)], after initially sticking with the first mapping in discussing “*electrode 14 (first pad)*”—without identifying that it has switched to an alternative mapping—Masimo shifts from its initial mapping to instead refer to “this first pad” as “electrode 14a.” Pet., 19, 22; APPLE-2003, ¶¶75-76. As part of this shift in mapping Mills to claim 1, Masimo now asserts, for the first time that “the exterior surface 14b” constitutes “the first portion of the enclosure.” Pet., 22. As discussed above, Masimo does not identify any portions of the electrode 14 as being part of the enclosure when addressing element 1[a]. *Id.*, 16. Furthermore, just two pages prior to identifying, for the first time, out-plotting 14b as being a part of the enclosure, Masimo makes assertions that the electrode 14 is entirely separate from the enclosure (housing 12), stating that “electrodes, 14 and 16 [are] located on different portions of the enclosure.” Pet., 20. These two disparate mappings appear in the discussion of the same claim element (element 1[b(ii)]) and Masimo does not distinguish these two discussions as separate or alternative mappings. *See* Pet., 19-22.

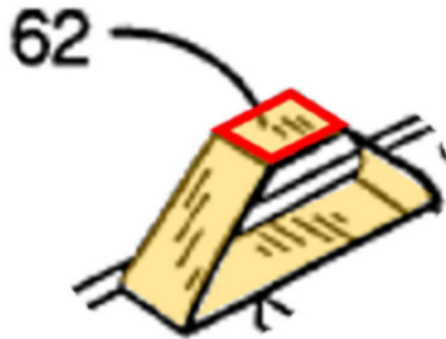
Masimo appears to continue this second mapping in its discussion of element 1[b(iv)]. In the first paragraph of its discussion of element 1[b(iv)], it is

unclear which of the first two mappings Masimo is relying on as it does not specifically identify any particular structure of Mills as corresponding to the claimed “first portion of the enclosure” even though this claim element recites “the first pad is positioned underneath the exterior surface *of the first portion.*” Pet., 24; APPLE-2003, ¶78. Although not clear, it appears that Masimo is relying on its second mapping of the electrode 14 to claim 1 as it refers to expanse 14a and outer-coating 14b separately, stating “embedded lead 14a is underneath or covered by the exterior surface 14b.” *Id.* Once again, Masimo does not distinguish this mapping from the first mapping discussed above.

After element 1[b(iv)], Masimo does not appear to return to this mapping until claim 8, stating that “[h]ousing 12 and outer surface portion 14b of electrode 14 form a pocket into which the inner base metal pad portion 14a underneath the exterior surface 14b of the enclosure.” Pet., 37.

3. Masimo’s Third Mapping of Mills’ Electrode 14 to Claim 1

In its third mapping of Mills to Claim 1, Masimo states that “[t]he top of the trapezoid-shaped leaf spring 62 is a pad” while addressing element 1[b(ii)] and therefore appears to map the top of leaf spring 62 to the claimed first pad. Pet., 23; APPLE-2003, ¶¶79-84.

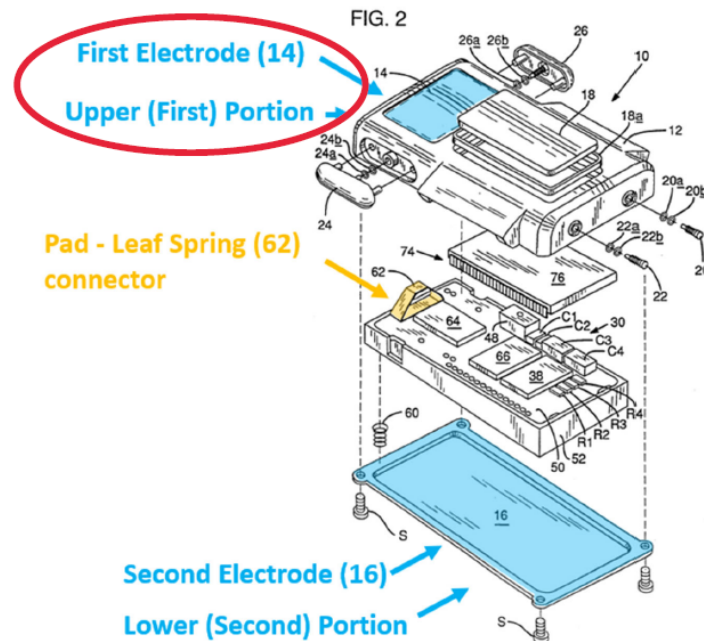


Pet., 23.

However, Masimo never expressly states that the top of the leaf spring 62 maps to the claimed “first pad” and Masimo’s expert refused to make this mapping express under repeated questioning on the topic. APPLE-2008, 43:5-45:2, 46:13-49:7.

For this mapping, Masimo at least arguably indicates that it is presenting an alternative mapping, stating that this analysis is presented “[i]n addition to” the prior analysis. Pet., 22. In this third mapping, Masimo maps the entire electrode 14 to the claimed first portion of the enclosure, stating that “First Electrode (14)” is the “Upper (First) Portion.” Pet., 23. Masimo further describes this third mapping, stating “electrode 14...is a first portion forming part of the exterior surface of Mills” and referring to “*electrode 14 (first portion)*.” Pet., 24; APPLE-2003, ¶¶79, 82-83.

Masimo continues this “[a]lternative[.]” mapping in addressing element 1[b(iv)], referring to “the pad of leaf spring 62” while expressly identifying the entire electrode 14 as the claimed first portion of the enclosure. Pet., 25.



Pet., 25.

This third mapping is once again inconsistent with Masimo’s analysis of element 1[a], in which Masimo did not identify any portion of electrode 14 as providing part of the enclosure. Pet., 16-17; APPLE-2003, ¶84.

4. Masimo’s Inconsistent Mapping of Mills to the Claimed “enclosure” of Claim 1

Masimo’s Petition further presents inconsistent mappings of Mills to the claimed “enclosure” of Claim 1 (Element 1[a]). As discussed above, in addressing

element 1[a], Masimo identifies only the housing 12 as providing the claimed “enclosure.” Pet., 16-17. This is consistent with Masimo’s first mapping of the electrode 14 to claim 1 in which the entire electrode 14 is mapped to the claimed first pad. APPLE-2003, ¶85.

Masimo later maps “the exterior surface 14b” of electrode 14 to “the first portion of the enclosure,” thereby appearing to map both the housing 12 and outer-plating 14b of electrode 14 to the claimed housing. Pet., 22. As discussed above, Masimo does not identify this mapping as an alternative to the first mapping but rather conflates the two throughout the petition. APPLE-2003, ¶86.

Consistent with Masimo’s third mapping of the electrode 14 to claim 1, Masimo identifies the entire “electrode 14” as “a first portion forming part of the exterior surface of Mills.” Pet., 24. APPLE-2003, ¶¶87-90.

B. None of Masimo’s Mappings of Mills to the ’257 Patent Provide All Elements of Claim 1

As discussed in the pervious section, Masimo’s petition identifies multiple mappings of Mills to the various elements of claim 1. Yet none of these mappings provides all elements of independent claim 1. Specifically, no single mapping in the Petition provides a first pad that meets all requirements for the first pad recited by claim 1. By jumping between various mappings, Masimo violates the

requirement that an IPR petition “must provide an understandable explanation of the element-by-element specifics of the patentability challenges, including the identification of particular portions of prior art on which the petitioner is relying.” *Corephotonics, Ltd. v. Apple Inc.*, 84 F.4th 990 (Fed. Cir. 2023). It is the Petitioner’s responsibility “to ***explain specific evidence that support its arguments***, not the Board’s responsibility to search the record and piece together what may support Petitioner’s arguments.” *Dominion Dealer Solutions, LLC v. Autoalert, Inc.*, IPR2013-00225, Paper 15 4 (PTAB Oct. 10, 2013).

As explained above, Masimo provides several different mappings of Mills to the recitations of claim 1 and asks the Board to piece together a single theory that meets all claim elements from these disparate theories. The Board should decline this invitation. *See e.g., Amazon.com, Inc., et al. v. Avago Technologies General IP (Singapore) PTE. LTD.*, IPR2017-01112, Paper 11 at 13 (PTAB Aug. 23, 2017) (“Petitioner is inviting us to assume the role of archeologist of the record, which invitation we decline.”); *QuantifiCare, Inc. v. The Proctor & Gamble Co.*, IPR2017-02113, Paper 11 at 10 (PTAB March 16, 2018) (“we will not ‘attempt to fit evidence together into a coherent explanation that supports an argument that demonstrates a reasonable likelihood that Petitioner would prevail.’” (quoting

Zetec, Inc. v. Westinghouse Elec. Co., IPR2014-00384, Paper 10 at 15 (PTAB July 23, 2014)));

As discussed below, none of the various mappings presented in the Petition provide every element of claim 1. In fact, as part of its inconsistent mapping and failure to identify when the analysis switches between the various mappings, Masimo fails to even address every element of claim 1 based on any single consistent mapping. APPLE-2003, ¶¶91-92. The petition's analysis of claim 1 is fatally flawed in that it asks both the Board and Patent Owner to sift through the various mappings of Mills to the claims to identify a single coherent theory that meets all of the limitations of claim 1. *Ariosa Diagnostics v. Verinata Health, Inc.*, IPR2013-00276, Paper 43 at 16-17 (Oct. 23, 2014) ("we decline to search through the record and piece together those teachings that might support Petitioner's position.").

As other panels have duly noted, the Board "will not, and cannot, piece together Petitioner's inconsistent and contradictory arguments into a cogent and coherent explanation that supports an obviousness showing." *Facebook, Inc. et al v. Uniloc USA, Inc. et al.*, IPR2017-01524, Paper 7 at 19 (PTAB Dec. 4, 2017) (citing *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380-81 (Fed. Cir. 2016)); see also *Smith & Nephew, Inc. v. Conformis, Inc.*, IPR2017-00545, Paper

8, 12-14 (PTAB July 13, 2017) (“[W]e decline to parse through the Petition and attempt to develop arguments on Petitioner’s behalf...The Board generally... resolves all vagueness and ambiguity in Petitioner’s arguments against the Petitioner[.]”).

As articulated by the Supreme Court’s Justice Alito:

“[I]f a petition fails to state its challenge with particularity—or if the Patent Office institutes review on claims or grounds not raised in the petition—the patent owner is forced to shoot into the dark. The potential for unfairness is obvious.”

Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2154 (2016) (partial concurrence).

When, as here, the “Petitioner changes, midstream, what it previously identified” as mapping to a particular structural element of the claims, such “assertion[s]...lack coherency and consistency” making such assertions “vague and confusing.” *Juniper Networks, Inc. v. Smart Path Connections, LLC*, IPR2022-00815, Paper 9 at 24 (PTAB Oct. 20, 2022) (“[I]t appears that Petitioner changes, midstream, what it previously identified as the hub, and what it previously identified as the network. The assertion here lacks coherency and consistency...”). As was the case in *Juniper Networks*, Masimo here changes, midstream, what it previously identified as the claimed “first pad” and the claimed “first portion of the

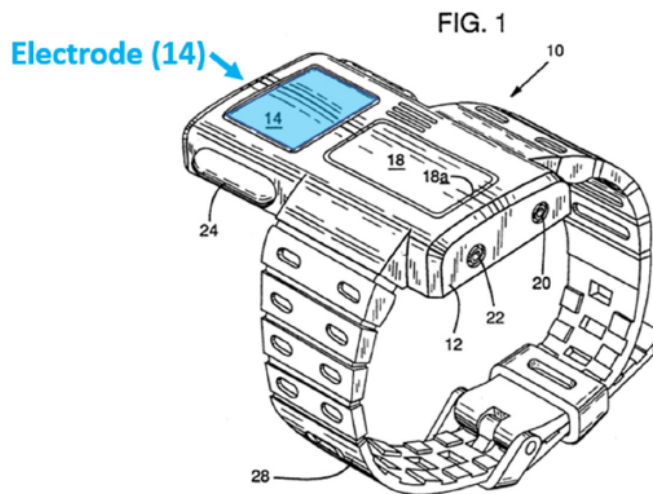
enclosure,” while being unclear as to which particular mapping is being discussed at any given time. This inconsistency is especially damaging to Masimo’s case when it is non-committal in its application of Mills to the claims, such as referring to top of “leaf spring 62” as “a pad” rather than ever expressly identifying the top of leaf spring 62 as the first pad or by asserting that the pad of Mills is “embedded in the device of Mills” rather than specifically embedded in the first portion of the enclosure. Pet., 23; *see Google LLC et al v. AGIS Software Development LLC*, IPR2018-01079, Paper 34 at 72-73 (PTAB Nov. 19, 2019); APPLE-2003, ¶127.

As discussed below, not only do these various inconsistencies render the Petition confusing as to what portions of Mills Masimo intends to read against the various claimed structural elements of claim 1, close inspection of Masimo’s various mappings reveals that no single mapping provides all elements of the claims.

1. Masimo’s First Mapping of Mills to Claim 1 Fails to Provide Elements 1[b(iv)]-1[b(v)]

As addressed in Section V.A.1, *supra*, in Masimo’s first mapping of Mills to claim 1, Masimo identifies the entire electrode 14 as allegedly reading on the claimed “first pad” which makes up at least part of the “first lead.” Pet., 18-20, 26, 29. However, this mapping fails to provide all recitations of claim 1 because the

electrode 14 is not both “embedded in a first portion of the enclosure” and “positioned underneath the exterior surface of the first portion” as required by claim 1. APPLE-2003, ¶¶93-98. For example, immediately after identifying the “electrode 14” as the “first pad,” Masimo includes a reproduction FIG. 1 of Mills demonstrating that the electrode 14 is exposed to the outside of the device, and therefore not “positioned underneath” the housing 12. Pet., 19-20; *see also* Pet., 18 (identifying the electrode 14 as the first pad).



Pet., 19-20 (reproducing FIG. 1 of Mills).

Masimo’s first mapping therefore fails to disclose element 1[b(iv)] because the electrode 14 is not positioned underneath an exterior surface of the housing 12. Indeed, in addressing element 1[b(iv)], Masimo appears to abandon this first

mapping completely, including only analysis of its second and third mappings when discussing this element. *See* Pet., 24-25.

At various points in the petition, when describing other mappings of Mills to claim 1, Masimo asserts that the electrode 14 is the claimed first portion of the enclosure. *See* Pet., 22-23. However, the electrode 14 cannot be both the first pad and the first portion of the enclosure in which the first pad is embedded and which the first pad is “positioned underneath” as required by the claims. APPLE-2003, ¶¶93, 96. “Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (citing *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004); *Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1404-05 (Fed. Cir. 1996)); *see also Kyocera Senco Indus. Tools, Inc. v. ITC*, 22 F.4th 1369, 1382 (Fed. Cir. 2022); *HTC Corp. v. Cellular Communs. Equip., LLC*, 701 Fed. Appx. 978, 982 (Fed. Cir. 2017). Logic also indicates that the electrode 14 cannot read on both the claimed first pad and the first portion of the enclosure because it is physically impossible for the electrode 14 to be embedded in and positioned underneath itself. APPLE-2003, ¶96.

As shown in FIG. 1 of Mills, above, the electrode 14 is exposed to the outside of the device and therefore, in Masimo's first mapping of Mills to claim 1 in which the electrode 14 is mapped to the claimed "first pad" and the housing 12 is mapped to the claimed enclosure. Therefore, Mills fails to disclose that "the first pad is positioned underneath the exterior surface of the first portion" of the enclosure because the electrode 14 is not positioned underneath an exterior surface of the housing 12. APPLE-2003, ¶97. Masimo's first mapping therefore fails to disclose element 1[b(iv)]. This mapping therefore also fails to provide Limitation 1[b(v)] which requires detection "of the user's cardiac signal via the user's skin's contact with the exterior surface *of the first portion of the enclosure.*" APPLE-2003, ¶98.

2. Masimo's Second Mapping of Mills to Claim 1 Fails to Provide Elements 1[b(ii)] and 1[b(iv)]

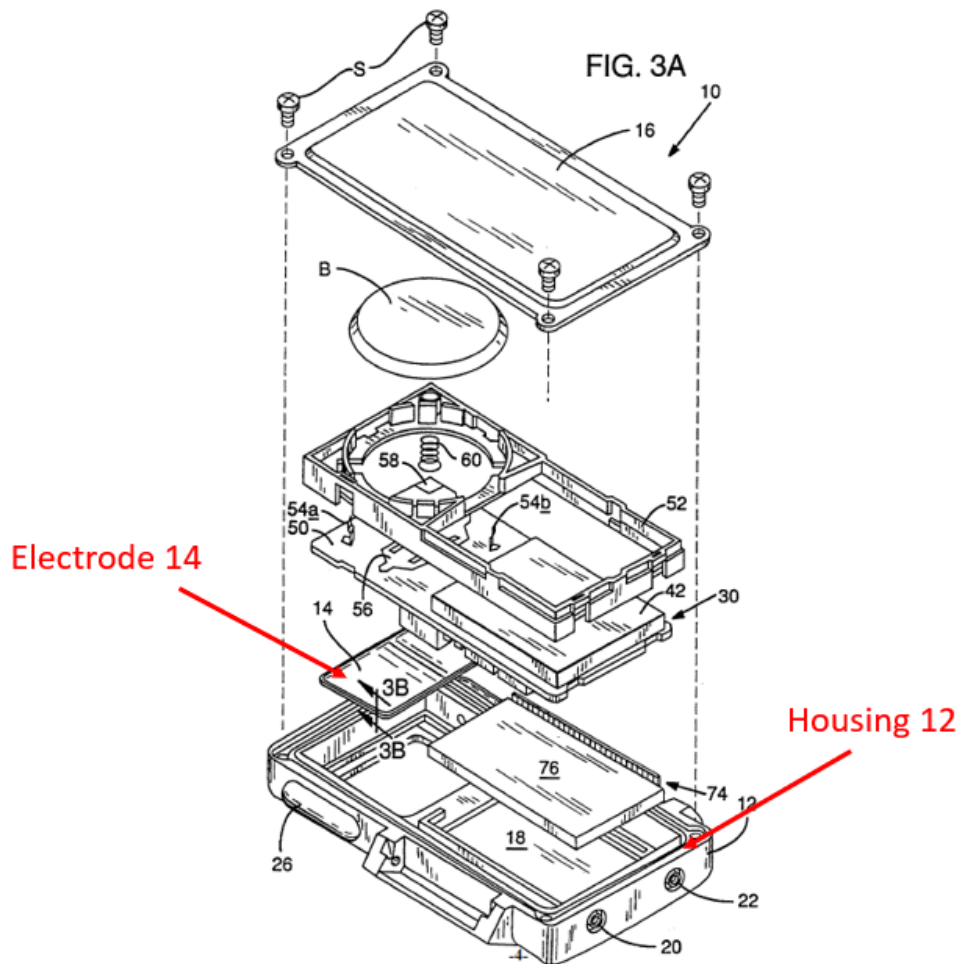
Masimo's second mapping fails to disclose elements 1[b(ii)] and 1[b(iv)] for at least three reasons. APPLE-2003, ¶¶99-116. First, the outer plating 14b of electrode 14 is not a part of the housing/enclosure of Mills' device but rather, an imperceptibly thin coating deposited/plated on the main electrode expanse 14a. APPLE-2003, ¶¶101-107. Second, the main electrode expanse 14a of electrode 14 is not "embedded in" the outer plating 14b but is merely positioned adjacent

to the outer plating 14b. APPLE-2003, ¶¶108-112. Third, the actual recitations of Mills do not support Masimo's second mapping. APPLE-2003, ¶¶113-116.

In Masimo's second mapping, Masimo alleges that the stainless-steel expanse 14a of the electrode 14 reads on the claimed "first pad" and that outer plating 14b reads on the claimed "first portion of the enclosure." *See* Pet., 22, 24; *Supra*, Section V.A.2. This mapping fails to provide all elements of claim 1 and is also not supported by the actual disclosures of Mills.

a. Mills' "metal-plating composition 14b" is not part of the enclosure

The outer plating 14b of electrode 14 is not and cannot conceivably be considered a portion of the housing or enclosure of Mills' apparatus 10. APPLE-2003, ¶¶101-107. First off, as shown in FIG. 3A of Mills, the electrode 14 (which includes both expanse 14a and outer plating 14b) is a separate component from the housing 12 that is affixed to the housing 12.



EX1006, FIG. 3A (annotated)

The outer coating 14b is not part of the housing/enclosure of Mills' apparatus 10 but rather is an imperceptibly thin coating "plated" on the main expanse 14a of electrode 14 "by known chemical or physical vapor deposition techniques." EX1006, 4:32-39; APPLE-2003, ¶¶101-102. As shown in FIG. 3A, above, after this outer coating is plated on the electrode 14, the electrode is affixed to the housing 12. The outer plating 14b is not a portion of the housing/enclosure

that the expanse 14a is “embedded in” as required by the claims, but rather, the outer plating 14b (“composition 14b”) is a thin layer plated on the main body of electrode 14 (“expanse 14a”) using “known chemical or physical vapor deposition techniques.” APPLE-2003, ¶¶101-102; EX1006, 4:32-39. Masimo’s assertion that the expanse 14a of electrode 14 is somehow “embedded in” a thin coating applied to the expanse 14a stretches the breadth of the claims beyond reason.

Additionally, although FIG. 3B appears to indicate that the outer plating 14b has a perceptible thickness sufficient to provide structural integrity, Mills is clear that FIG. 3B is not drawn to scale stating that “composition 14b [is] ***shown in greatly enlarged thickness*** in FIG. 3B relative to that of expanse 14a.” EX1006, 4:4-7. Indeed, in situations in which the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. *See Hockerson-Halberstadt, Inc. v. Avia Group Int’l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). Here, where Mills is express that FIG. 3B ***is not*** to scale, it cannot be used to support an argument that outer plating 14b has sufficient integrity to form a part of the enclosure of Mills’ apparatus 10. *See* APPLE-1008, 62:11-65:1 (Masimo’s expert stating that he had not considered whether the layer 14b has the structural integrity to stand alone as part of the enclosure).

Furthermore, Mills *does* give express dimensions for the outer plating 14b, disclosing that it is “approximately 3-microns (0.003-inc) thick.” EX1006, 4:32-35. Three microns is less than a sixtieth of the thickness of a sheet of paper. APPLE-2003, ¶¶103-104. There is no reasonable interpretation of Mills under which a POSITA would have considered the outer plating 14b of electrode 14 to be a portion of the enclosure distinct from the electrode 14a. A POSITA would have understood that Mills’ coating 14b cannot stand alone to form a portion of the housing 12 in the absence of the main body of electrode 14. APPLE-2003, ¶106. Indeed, Mills’ disclosure is consistent with description provided by the ’257 Patent, which also applies “a conductive coating” *to its leads* as opposed to the enclosure of the device. APPLE-2003, ¶106; EX1001, 9:4-13. A three-micron thick coating, applied to a component that Masimo does not allege is part of the housing/enclosure in this second mapping⁴, if affixed to the housing 12 on its own, separate from the expanse 14a, would not have the structural integrity to support

⁴ As discussed in Section V.A.2, *supra*, in its second mapping, Masimo alleges that the expanse 14a of electrode 14 is not part of the housing but rather reads on the claimed “first pad” while alleging that outer plating 14b of electrode 14 is part of the enclosure.

other components or even retain its own structure without immediately shattering. APPLE-2003, ¶106. It is therefore completely unreasonable for Masimo to allege that the three-micron thick outer plating 14b comprises part of the enclosure while simultaneously alleging that the expanse 14a is a first pad, separate from the enclosure. *Id.* A POSITA would have recognized that Mills' coating 14b was part of the electrode, not part of its enclosure. *Id.*

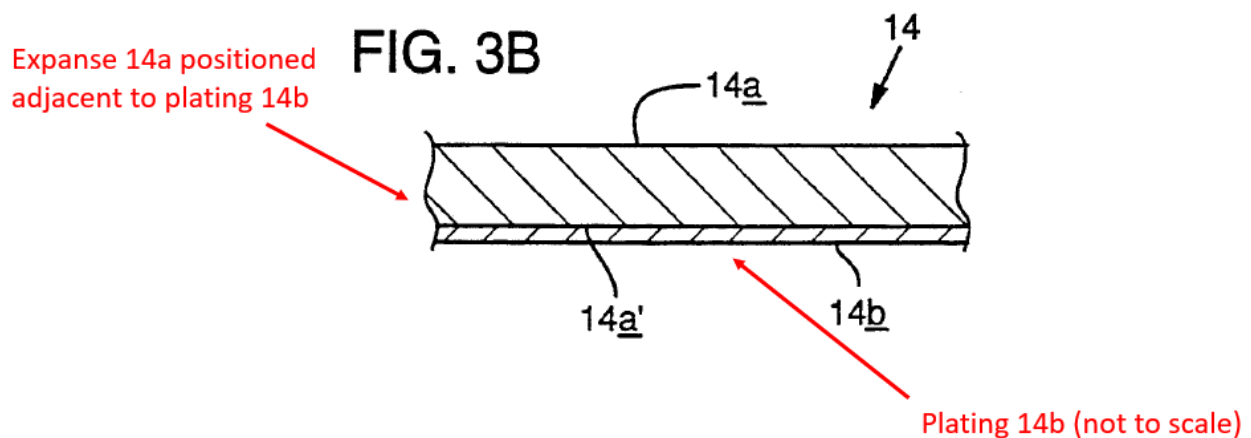
Furthermore, interpreting claim 1's recitations of "an enclosure" and a distinct "first pad that is embedded in a first portion of the enclosure" to read on a multi-layered electrode (as Masimo has done here) stretches the meaning of claim 1 beyond any reasonable interpretation. APPLE-2003, ¶107. The claims mean what they say, the claimed electronic device includes "an enclosure" and a separate "first pad that is embedded in a first portion of the enclosure." Mills' multi-layered electrode 14 having a main expanse 14a and a three-micron thick "metal-plating composition 14b" is exactly what Mills describes it as: a multi-layered electrode, not an enclosure and separate first pad embedded in the enclosure. *See* APPLE-2008, 56:22-57:3.

b. Mills' electrode expanse 14a is not "embedded in" the "metal-plating composition 14b"

As a second reason that Masimo's second mapping fails to disclose elements 1[b(ii)] and 1[b(iv)], even if the outer plating 14b of electrode 14 is considered to be part of the enclosure and the main expanse 14a of electrode 14 is considered a separate "first pad" (an improper reading of Mills' disclosures, as discussed in the previous section), the expanse 14a is not "embedded in" outer plating 14b and therefore Mills fails to disclose element 1[b(ii)] under Masimo's second mapping of Mills to claim 1. APPLE-2003, ¶¶108-112.

As discussed in Section IV, *supra*, the proper scope of the plain and ordinary meaning of the term "embedded in" is "at least partially set in or partially surrounded by a material." As previously discussed, the '257 patent draws a clear distinction between leads that are "embedded in" a housing and leads that are embedded "adjacent to the housing." EX1001, 10:24-29, 9:44-48; APPLE-2003, ¶¶32, 39, 109.

As FIG. 3B shows, the expanse 14a is not "embedded in" the metal-plating composition 14b but rather merely positioned parallel to the metal-plating composition 14b. APPLE-2003, ¶¶110-111.



EX1006, FIG. 3B, 3:67-4:10, 4:32-39.

Mills discloses that the expanse 14a and metal-plating composition 14b are parallel surfaces positioned such that the expanse 14a is merely adjacent to the metal-plating composition 14b, and not embedded in the metal-plating composition 14b, stating that the composition 14b “[p]lat[es] an outer, skin-contactable region or surface 14a’ of expanse 14a.” EX1006, 4:4-10. Mills go on to describe that this “metal-plating composition 14b” is plated on the expanse 14a “by known chemical or physical vapor deposition techniques.” *Id.*, 4:32-39. Masimo’s expert agreed that “I don’t see anything in Mills explicitly saying that 14a is embedded in 14b” and that the two layers are merely flat, parallel surfaces. APPLE-2008, 58:22-62:1. There is simply no disclosure in Mills of expanse 14a being “at least partially set in or partially surrounded by” the metal-plating composition 14b. APPLE-2003, ¶¶109-112. Similarly, there is no disclosure that the expanse 14a is “set firmly into

and surrounded by” the metal-plating composition 14b, as Masimo’s district court construction would require. APPLE-2003, ¶112. Therefore, for this additional reason, Masimo’s second mapping of Mills to claim 1 fails to disclose elements 1[b(i)]-1[b(ii)] (“a first lead comprising a first pad *embedded in* a first portion of the enclosure.”).

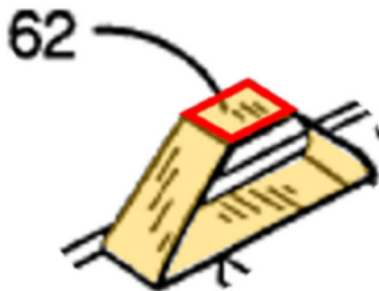
c. Mills does not support Masimo’s second mapping

Finally, the actual disclosures of Mills simply do not support Masimo’s second mapping, and therefore all arguments based on this second mapping should be disregarded. APPLE-2003, ¶¶113-116. Although Masimo is not express in this assertion, the Petition appears to imply that the outer plating 14b is part of the enclosure based on Mills statement that electrode 14 is “integrally molded” in housing 12. Pet., 19-20 (citing EX1006, Fig. 1; 3:8-11). However, Masimo cannot have it both ways. Either Mills statement that the electrode 14 is “integrally molded” into the housing means that the entire electrode 14 is part of the enclosure (not only outer coating 14b) or that none of the electrode 14 is part of the enclosure (the correct reading of Mills’ disclosures). There is no disclosure in Mills of the outer plating 14b being integrally molded in the housing 12 with the expanse 14a being a separate component, and indeed, Mills discloses the exact opposite. EX1006, 4:32-39. Either the entire electrode 14 is part of the enclosure, or the

entire electrode 14 is not part of the enclosure. APPLE-2003, ¶¶115-116. The actual disclosures of Mills simply do not support Masimo's second mapping. *Id.*

3. Masimo's Third Mapping of Mills to Claim 1 Fails to Provide Elements 1[b(ii)] and 1[b(iv)]

In the third mapping, Masimo alleges that “[t]he top of the trapezoid-shaped leaf spring 62 is a pad”⁵ while asserting that the entire electrode 14 reads on the claimed first portion of the enclosure. Pet., 23-24 (referring to “electrode 14 (first portion)”); *Supra*, Section V.A.3. The Petition includes a view of FIG. 2 of Mills with the top portion of the leaf spring 62 annotated:

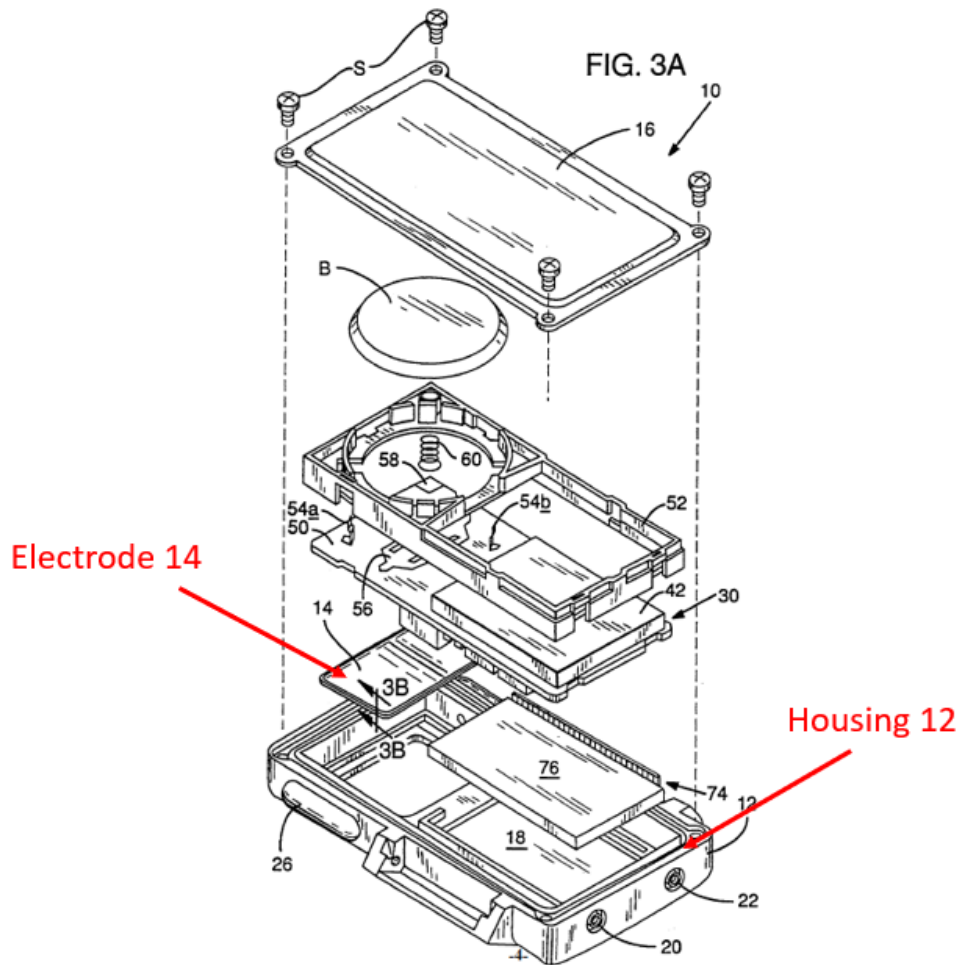


Pet., 23.

⁵ As discussed in Section V.A.3, *supra*, the Petition never expressly maps the top of leaf-spring 62 to the claimed “first pad” but rather more vaguely alleges that the top of leaf spring 62 is a pad. *See e.g.*, Pet., 23.

Masimo presents this mapping as allegedly “[a]lternatively” providing certain claim elements “[i]n addition to” the first two mappings (which the Petition conflates with each other). Pet., 25, 22.

Masimo’s third mapping fails to disclose elements 1[b(ii)] and 1[b(iv)] for multiple reasons. APPLE-2003, ¶¶117-128. First, the Petition fails to demonstrate that electrode 14 is part of the housing 12. APPLE-2003, ¶¶118-119. The housing 12 and electrode 14 are separate components:



EX1006, FIG. 3A (annotated)

In addressing element 1[a] (“an enclosure”), Masimo identifies only the housing 12 of Mills as providing the claimed enclosure. As shown in FIG. 3A above, electrode 14 is not part of the housing 12. Masimo appears to attempt to distract from this fact by referring to the electrode 14 as only the “first portion” in its third mapping rather than using the full claim language which recites “a first portion *of the enclosure*.” However, the claims do not merely require that the first pad be embedded in a first portion of the device, it requires that the first pad “is embedded in a first portion *of the enclosure*.” In presenting this third, “[a]lternative[.]” mapping, Masimo does not identify what disclosures of Mills support its assertion that the electrode 14 reads on the claimed “first portion of the enclosure” nor does Masimo ever expressly allege that the first electrode is actually part of the enclosure/housing. *See e.g.*, Pet., 22-25.

Mere innuendo and suggestion is not sufficient for Masimo demonstrate that this third “[a]lternative[.]” mapping of Mills provides elements 1[b(ii)] and 1[b(iv)]. With respect to this third mapping, by failing to clearly articulate whether and/or how it believes that the electrode 14 is part of the housing of Mills device, Masimo fails to meet its burden to “identify ‘with particularity’ the ‘evidence that supports

the grounds for the challenge to each claim.”” *Intelligent Bio-Sys.*, 821 F.3d at 1369.

Second, even if the electrode 14 is considered part of the housing of Mills’ device, the top portion of the leaf spring 62 is not “embedded in” the electrode 14 but rather positioned behind and parallel/adjacent to the electrode 14 so as to contact the electrode 14. APPLE-2003, ¶¶120-128. Elements 1[b(i)]-1[b(ii)] require that the “first pad...is ***embedded in*** a first portion of the enclosure.” As discussed in Section, V.A.3, *supra*, in this third, alternative read, Masimo identifies “[t]he top of the trapezoid-shaped leaf spring 62 [as] a pad” and alleges that “electrode 14...is a first portion forming part of the exterior surface of Mills.” Pet., 23-24 (“electrode 14 (first portion)”). Masimo further alleges that “[t]he pad ***is pressed against*** the inner wall of electrode 14 in Mills.”⁶ Pet., 23. However, it is not sufficient for the first pad to be simply “pressed against” and parallel to the first portion of the enclosure, the claims require that the first pad be “***embedded in***” the first portion of the enclosure. APPLE-2003, ¶¶122-124. Masimo’s expert confirmed that in Mills device the flat surface of the top of the leaf spring 62

⁶ The figures of Mills do not actually show this configuration.

merely contacts the flat surface of the electrode 14, and is therefore not embedded in the electrode 14. APPLE-2008, 103:10-104:4.

As discussed in Section IV, *supra*, the proper scope of the plain and ordinary meaning of the term “embedded in” is “at least partially set in or partially surrounded by a material.” Therefore, even under Masimo’s framing of the relationship of the leaf spring 62 to the electrode 14, this third mapping of Mills to claim 1 fails to disclose Elements 1[b(i)]-1[b(ii)] because the top of the leaf spring 62 being merely “pressed against” the electrode 14 such that the top of the leaf spring 62 is positioned parallel to electrode 14 does not constitute the leaf spring 62 being “embedded in” the electrode 14 by being partially surrounded by the electrode 14. APPLE-2003, ¶¶123-127. Similarly, the top of the leaf spring 62 is not “set firmly into and surrounded by” the electrode 14, as Masimo’s district court construction would require. Indeed, Mills describes the leaf spring 62 as being “slidably yielding” and therefore a POSITA would have recognized that the top of the leaf spring would not have been “embedded in” the electrode 14 to allow for relative, sliding motion between the two components. EX1006, 4:67-5:3; APPLE-2003, ¶124.

In fact, the Petition does not even allege that the top of leaf spring 62 is embedded in the electrode 14 but rather, more vaguely alleges that “[t]he pad” is

“embedded in *the device* of Mills.” Pet., 23. However, it is not sufficient that the top of the leaf spring 62 be merely embedded in “*the device* of Mills,” the claims require that the top of the leaf spring 62 be embedded in the electrode 14, which Masimo has unambiguously identified as the claimed “first portion” in this third mapping of Mills to claim 1. Pet., 24-25; APPLE-2003, ¶¶124-126.

For at least these reasons, Masimo’s third mapping of Mills to claim 1 fails. As demonstrated in this and the proceeding sections, none of Masimo’s three mappings of Mills to claim 1 demonstrates that the device of Mills includes a “first pad” that is both “embedded in a first portion of the enclosure” and positioned underneath the exterior surface of the first portion” as required by the claims. For at least this reason, Ground 1 fails.

4. Masimo’s Third Mapping of Mills to Claim 1 Fails to Provide Element 1[c(i)]

The Petition additionally fails to identify how the third mapping of Mills to claim 1 provides Element 1[c(i)]. APPLE-2003, ¶¶129-132. This is because, after introducing this third mapping with addressing element 1[b(ii)], the Petition simply does not address how the third mapping, in which Masimo identifies the top portion of leaf spring 62 as allegedly providing “a pad” provides the claimed “first connector *coupled to the first pad.*” APPLE-2003, ¶130. In analyzing Element

1[c(i)], Masimo appears to revert to its first mapping, asserting that “leaf spring 62 is a first connector coupling electrode 14 (first pad) to the processor of Mills.” Pet., 31. Masimo does not identify any other components of Mills device as allegedly providing the claimed “first connector” other than the leaf spring 62. *Id.*, 31-32. During his deposition, Masimo’s expert confirmed that in analyzing Element 1[c] he only identified that “the leaf spring 62 is the connector for the electrode 14” and that he had not identified any other connectors. APPLE-2008, 73:12-75:13. Masimo’s third mapping of Mills to claim 1 therefore fails to provide Element 1[c(i)] because the same portion of leaf spring 62 cannot provide both the claimed first pad and the claimed first connector as these are two separate claim recitations. “Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.... In the absence of any evidence to the contrary, ***we must presume that the use of...different terms in the claims connotes different meanings.***” *Becton, Dickinson*, 616 F.3d at 1254 (citing *Engel Indus*, 96 F.3d at 1404-05 (concluding that when a claim provides for two separate elements, “***they logically cannot be one and the same.***”)); see also *Kyocera Senco*, 22 F.4th at 1382; *HTC Corp.*, 701 Fed. Appx. at 982. Masimo’s therefore fails to demonstrate that the first pad in its

third mapping is “coupled to” an electrical connector “configured to provide the first electrical signal detected by the first pad to the processor” in the device.

C. The Petition Fails to Demonstrate that Mills Provides Claim 3

Masimo asserts that claim 3 is taught because the housing 12 of Mills is made from a molded plastic that is an electrical insulator and that the housing 12 “separates its *two electrodes* 14, 15.”⁷ Pet., 34-35. However, claim 3 does not recite that the first and second pads are electrically isolated but rather specifies that “the *first portion* is electrically isolated from the *second portion*.” EX1001, 12:53-54. These recitations draw their antecedent basis from claim 1 and therefore are referring to the “first portion of the enclosure” and the “second portion of the enclosure” recited in claim 1. *Id.*, 12:26-27, 12:36. Masimo’s assertions with respect to claim 3 are therefore irrelevant to the actual claim language. The Petition fails to demonstrate that Mills meets claim 3 because Masimo has failed to identify which portion of Mills’ housing 12 that it considers to be the claimed “second portion of the enclosure” and therefore has not demonstrated that the

⁷ The numeral “15” here appears to be a typographical error. Patent Owner assumes that Masimo meant to refer to electrodes 14 and 16 of Mills.

second portion of the enclosure is electrically isolated from the first portion of the enclosure. APPLE-2003, ¶¶134-138.

Turning back to Masimo's analysis of Element 1[b(vii)], Masimo asserts that "[e]lectrode 16 of Mills is embedded in housing 12." Pet., 28. It therefore appears that Masimo has mapped "housing 12" to the claimed "second portion of the enclosure." APPLE-2003, ¶¶136-137. However, Masimo has not demonstrated the housing 12 is electrically isolated from any of the various components of Mills' apparatus 10 that Masimo maps to the claimed "first portion of the enclosure" across the various mappings of the Petition discussed above.

As discussed in Section V.A.1, in its first mapping, Masimo identifies the housing 12 as the claimed "first portion of the enclosure," asserting that "electrode 14 (first pad) is 'integrally molded' (*i.e.*, embedded) into the housing." Pet., 19. However, in neither its analysis of Element 1[b(vii)] nor its analysis of Element 1[b(ii)] addressing its first mapping does Masimo identify which parts of housing 12 it considers to be the first and second portions and therefore the Petition fails to identify that the first and second portions of the housing 12 are electrically isolated. APPLE-2003, ¶¶136-137.

As discussed in Sections V.A.2-3, *supra*, in its second and third mappings, Masimo asserts that either the outer coating 14b of electrode 14 or all of electrode

14 provides the claimed first portion of the enclosure. *See e.g.*, Pet., 22-25.

However, once again, because Masimo fails to identify which portion of housing 12 it considers to be the “second portion” in these two mappings, the Petition fails to demonstrate that the first portion is electrically isolated from the second portion, as required by claim 3. APPLE-2003, ¶138. For these reasons, the Petition fails to demonstrate that Mills provides claim 3.

D. The Petition Fails to Demonstrate that Mills Provides Claim 4

Similar to its arguments with respect to Claim 3, Masimo’s analysis of Claim 4 in the petition merely demonstrates that the electrode 14 of Mills is electrically isolated from the electrode 16. For the reasons discussed with respect to Claim 3, *supra*, the Petition fails to demonstrate that the first portion of the enclosure and the second portion of the enclosure are separated by a third portion of the enclosure that is insufficient to transmit the first electrical signal from the first pad to the second pad because the Petition does not adequately identify what portion of housing 12 Masimo considers to read on the claimed “second portion of the enclosure.” APPLE-2003, ¶¶139, 134-138; *Supra*, Analysis of Claim 3.

E. The Petition Fails to Demonstrate that Mills Provides Claim 10

In addressing claim 10, Masimo asserts that “electrode 16...*is part of the second portion of the enclosure.*” Pet., 39. First off, Masimo provides no analysis

or reasoning as to what makes electrode 16 part of housing 12 and therefore part of the enclosure. APPLE-2003, ¶140.

Secondly, in its analysis of Elements 1[b(vi)]-1[b(vii)], Masimo unmistakably identifies the electrode 16 of Mills as providing the claimed second pad. Pet., 27-28 (discussing “second pad, electrode 16”). The electrode 16 cannot provide both the claimed “second pad” and the claimed “second portion of the enclosure” because claim 1 requires that the “second pad...*is embedded in a* second portion of the enclosure.” APPLE-2003, ¶¶141-142. Electrode 16 cannot be embedded in itself. Furthermore, “[w]here a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” *Becton, Dickinson*, 616 F.3d at 1254; *see also Kyocera Senco*, 22 F.4th at 1382; *HTC Corp.*, 701 Fed. Appx. at 982. Claim 1 clearly recites the “second pad” and the “second portion of the enclosure” as distinct structural elements, with the second pad being embedded in the second portion of the enclosure. Mills’ electrode 16 therefore cannot be read on both the second pad and the second portion of the enclosure of claim 1. APPLE-2003, ¶141. The Petition therefore fails to explain how “the second lead is configured to detect the second electrical signal of the user’s cardiac signal via the user’s contact *with the second portion of the enclosure*” as recited by Claim 10.

Additionally, Masimo clearly identifies the housing 12 as the claimed second portion of the enclosure in which electrode 16 is embedded. Pet., 28-30. Later, Masimo argues that the housing is made from a “well-known electrical insulator[.]” Pet., 34-35; EX1006, 6:40-43; EX1003, ¶68. The Petition therefore fails to identify how Mills discloses claim 10 because the second portion of the enclosure identified by Masimo (all or a portion of housing 12) is an electrical insulator and therefore cannot provide electrical connectivity from the user’s contact to the second lead. APPLE-2003, ¶142.

VI. Ground 2 Fails to Demonstrate That All Elements of Claims 1-4 and 8-22 are Provided by Markel in View of Mills

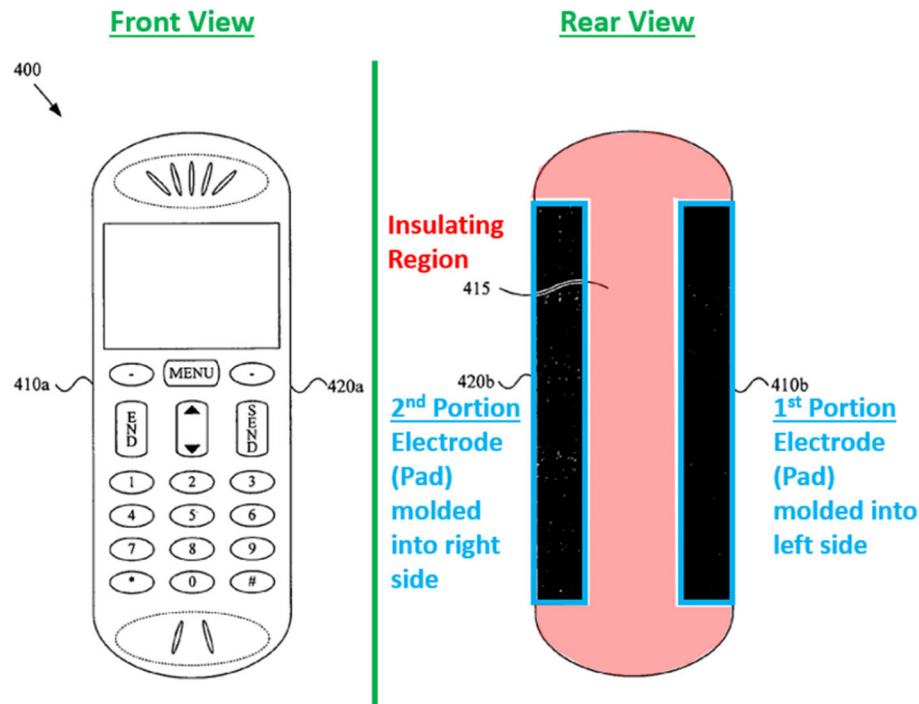
A. The Markel-Mills Combination Fails to Provide All Elements of Claim 1

Masimo’s lack of clarity or identification with particularity how the cited references provide all recitations of the challenged claims continues in Ground 2. Just as with Ground 1, in Ground 2, Masimo presents multiple mappings of the Markel-Mills combination to Claim 1 and abruptly shifts between mappings without any indication that it has shifted its mapping or that it has presented alternative theories of the case. APPLE-2003, ¶143.

Briefly, in its first mapping of Markel-Mills to Claim 1, Masimo maps the claimed enclosure to a main body portion 110 in Markel. Pet., 41-42. APPLE-

2003, ¶¶144-146. More specifically, Masimo states that “[a] POSITA would understand...that Markel discloses an *enclosure*” because Markel discloses that “the *main body portion 110* ‘may comprise the portion of the MCD 100 that is generally held in the hand,’” and that “the device ‘may comprise a primary casing or housing for the user interface device.’” Pet., 41-42.

Masimo continues this first mapping by asserting that the electrode located on a region 410b of the exterior of Markel’s device provides the claimed “first pad,” stating that “[a] first electrode ‘placed on or molded into the region 410b’” indicates “that Markel describes a first pad formed of conductive plastic embedded in a first portion of the enclosure.” Pet., 42. Masimo follows this statement with a confusing, annotated version of Markel’s Figure 4 in which it labels the region 410b as both the “1st Portion” and the “Electrode (Pad).” *Id.*, 43.



Annotated FIG. 4 of Markel as presented at Pet., 43.

Therefore, in this first mapping, Masimo appears to identify the device casing as the enclosure and the electrode 410b as the first pad. APPLE-2003, ¶¶146-147.

The Petition then abruptly shifts to a second mapping in which it argues that Mills would have been applied to Markel such that “[t]he top of the trapezoid-shaped leaf spring 62 is a pad.” Pet., 46. As in Ground 1, the Petition does not expressly identify the top of the leaf spring 62 as the claimed first pad, but rather “a pad.” *Id.* Masimo continues this second mapping with respect to Elements

1[b(ii)]-1[b(iii)], stating that “the *pad region 410b is a first portion of the exterior surface* of the enclosure of the device 400.” Pet., 48-49 (discussing “the *electrodes/first portion 410b* exterior surface of Markel.”); APPLE-2003, ¶¶148-151.

As discussed below, neither of these mappings of Markel-Mills provides all limitations of claim 1.

1. *Markel’s Electrode 410b Cannot be the “first pad” of Claim 1*

In its first mapping, Masimo identifies the electrode 410b as “a first pad.” Pet., 42-43; APPLE-2003, ¶152. However, electrode 410b cannot be the “first pad” of Claim 1 because electrode 410b is positioned on the outer surface of Markel’s housing and therefore is not “positioned *underneath* the exterior surface of the first portion” of the enclosure as required by Element 1[b(iii)].⁸ APPLE-2003, ¶¶152-153. Indeed, Masimo appears to abandon its first mapping of the Markel-Mills combination in its analysis of Element 1[b(iii)], stating:

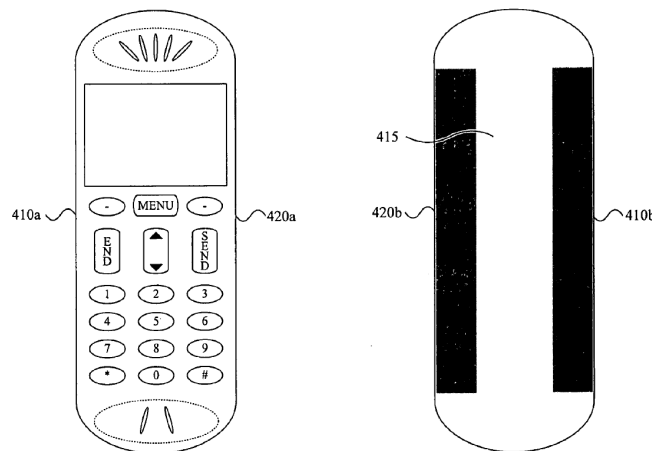
The combined device of Markel and Mills as discussed above would include *the pad of leaf spring 62 positioned*

⁸ Masimo changes its claim element numbering between Grounds 1 and 2. In this brief, Patent Owner adopts the different element numbering schemes for the different Grounds to align with the Petition.

underneath the electrodes/first portion 410b exterior surface of Markel. Accordingly, this limitation would have been obvious in view of Markel and Mills.

Pet., 49.

This first mapping fails because Markel is clear that the “first and second electrodes [are] *disposed on* a main body portion 110” rather than being positioned *underneath* the body portion 110 (alleged *enclosure*). EX1005, [0045] (describing FIG. 4). There is no suggestion in Markel of embedding the electrodes 410b or 420b *underneath* an exterior portion of the device. APPLE-2003, ¶¶153-154.



EX1005, FIG. 4.

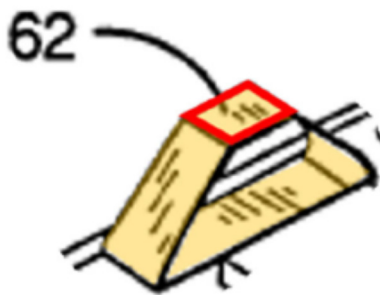
In a further example, Markel describes placement of the electrodes “*on side or rear portions of the main body portion 100*” to “provide **for electrode contact with a user’s hand.**” EX1005, [0043]; *see also* APPLE-2008, 84:19-85:6

(Masimo's expert confirming that the electrodes 410b, 420b are on the exterior of the device to allow a user "to touch the electrode in 410b.") A POSITA would have understood from Markel's teaching that if the electrode had been placed underneath the exterior portion of the housing, it would not "provide for electrode contact with a user's hand" as Markel describes. APPLE-2003, ¶154.

For at least these reasons, Masimo's first mapping of Markel-Mills to Claim 1 fails.

2. Masimo's Second Mapping of Markel-Mills to Claim 1 Fails to Provide Elements 1[b(i)]

As discussed above, in its second mapping of Markel-Mills to claim 1, Masimo identifies "[t]he top of the trapezoid-shaped leaf spring 62" of Mills as "a pad" and that "the pad at region 410b is a first portion of the exterior surface of the enclosure." Pet., 46, 48-49; APPLE-2003, ¶156.



Pet., 46.

In describing the proposed combination of Markel and Mills, Masimo asserts that the “top pad portion” of the leaf spring 62 of Mills “is placed underneath an exterior surface material and *against an inner wall* of the exterior surface material.” Pet., 48. However, it is not sufficient that the top of Mills leaf spring 62 be merely “placed...against” the first portion of the enclosure but rather Element 1[b(i)] requires that the “first pad...*is embedded in* a first portion of the enclosure.” APPLE-2003, ¶¶157-159.

As discussed in Section IV, *supra*, the proper scope of the plain and ordinary meaning of the term “embedded in” is “at least partially set in or partially surrounded by a material.” Therefore, even under Masimo’s framing of the relationship of Mills’ leaf spring 62 to Markel’s electrode 410b in the proposed combination, this second mapping of Markel-Mills to claim 1 fails to disclose Element 1[b(i)] because the top of the leaf spring 62 being merely “placed...against” and parallel to an inner surface of electrode 410b (Pet., 48) does not constitute the leaf spring 62 being “embedded in” the electrode 410b. APPLE-2003, ¶¶157-159. Markel does not describe any specific geometry for the portion of electrode 410b that faces an interior of Markel’s device and Masimo does not propose any modification or implementation for the inner face of the electrode 410b as allegedly obvious. APPLE-2003, ¶161. Indeed, Masimo’s expert

confirmed that “Markel does not get into the details of how...the inside of the electrodes” are configured. APPLE-2008, 86:15-21, 112:10-13. Masimo merely alleges that the electrode 410b would have “an inner wall.” Pet., 48. Furthermore, as discussed in Section V.B.3, *supra*, there is no disclosure in Mills of the leaf spring 62 being “embedded in” an electrode or any other component. There is simply no disclosure or suggestion in either Markel or Mills of a pad being “embedded in” the electrode 410b because it is not at least partially surrounded by the electrode 410b. APPLE-2003, ¶¶160-163, 165. Masimo also does not demonstrate that the leaf spring 62 is “set firmly into and surrounded by” the electrode 410b, as Masimo’s district court construction would require.

Furthermore, Mills describes the leaf spring 62 as being “slidably yielding” which would have further indicated to a POSITA that the top of the leaf spring would not have been “embedded in” the electrode 410b in the proposed combination to allow for relative, sliding motion between the two components. EX1006, 4:67-5:3; APPLE-2003, ¶164.

For these reasons, Ground 2 fails with respect to claim 1 and its dependent claims.

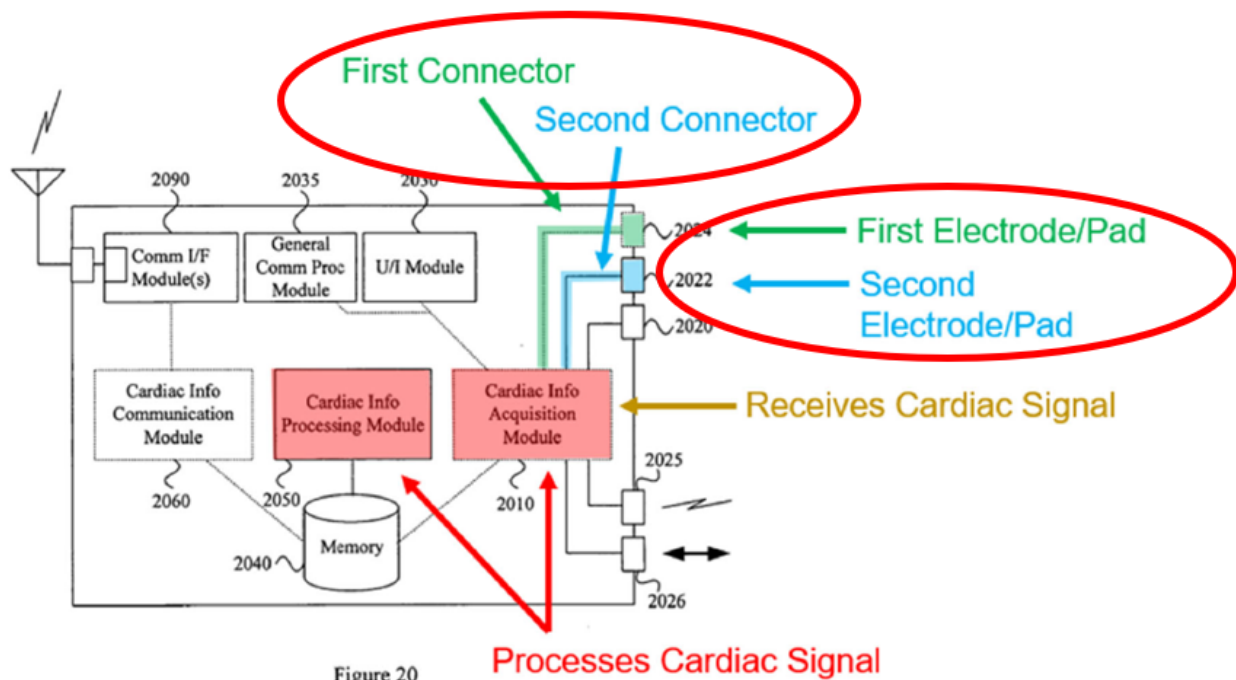
3. Masimo's Second Mapping of Markel-Mills to Claim 1 Fails to Provide Element 1[c]

In its analysis of Element 1[c], Masimo abruptly shifts back to the first mapping and does not even present a theory as to how its second mapping of Markel-Mills would meet Element 1[c]. APPLE-2003, ¶¶167-173. For example, in addressing Element 1[c], the Petition states:

Markel discloses a *first and second lead* configured as a *first and second pad*, respectively, on *a portion of the exterior housing*, and the first and second pads each connected to a processor, as shown in annotated Figs. 4 and 20 below.

Pet., 52.

Masimo then presents an annotated version of FIG. 20 with the external electrodes clearly identified as corresponding to the claimed first and second pads while identifying connecting wires connecting the electrodes 2022 and 2024 to the Cardiac Info Acquisition Module 2010:



Pet., 53.

In other words, in addressing Element 1[c], Masimo reverts to a mapping in which one of the external electrodes of Markel (which are not positioned underneath the exterior surface of a first portion of the enclosure) allegedly reads on the claimed first pad and identifies the connectors disclosed by Markel as allegedly providing the claimed “first connector.” Pet., 51-53; APPLE-2003, ¶¶168-172. In its analysis of Element 1[c], Masimo does not even attempt to describe how the leaf spring 62 of Mills (which allegedly provides “a pad” in Masimo’s second mapping) is connected to the processor via a first connector. APPLE-2003, ¶¶169, 172-173. Indeed, in describing the proposed Markel-Mills

combination, Masimo describes the leaf spring 62 of Mills as replacing the connectors of Markel. Pet., 47 (“Leaf springs are well known electrical connectors”). Yet in its analysis of Element 1[c], Masimo abandons this modification and refers to the connectors of Markel as allegedly providing the claimed first and second connectors. There is simply no description in the Petition of how the connectors of Markel would be arranged in the proposed combination to couple the leaf spring 62 to Markel’s processor. Pet., 51-53; APPLE-2003, ¶¶172-173. Indeed, Masimo provides no discussion of Mills’ leaf spring 62 in its analysis of Element 1[c].

For this additional reason, Markel-Mills combination described in the Petition fails to provide all elements of Claim 1.

B. The Petition Fails to Demonstrate that Markel-Mills Provides Claim 2

Masimo provides two theories regarding how Markel provides Claim 2, the first based on Figure 4 and the second based on Figure 5. Pet., 54-56. Masimo’s first theory fails because Figure 4 shows both electrodes 410b and 420b positioned along the back side of the device and does not provide side views demonstrating that either of electrodes 410b and 420b contain any portion positioned on the sides

of the device such that the electrodes 410b and 420b are positioned on opposite sides of the device. APPLE-2003, ¶¶175-176.

Masimo's second theory fails because it is based on a completely different embodiment of Markel from Masimo's analysis of Claim 1 (from which Claim 2 depends). Pet., 55-56. The Petition contains no description of how the embodiment of Figure 5 would be combined with the embodiment of Figure 4 (and Mills) to provide all elements of Claim 1. *Id.* For example, the Petition contains no discussion of how a first pad would be both embedded in and positioned underneath Markel's electrode 510 (identified by Masimo as "1st Portion"). Pet., 55-56; APPLE-2003, ¶177. The electrode 510 of Markel is substantially different from the electrodes 410b and 420b of Figure 4 because "first electrode 510 [is] positioned on a send button." EX1005, [0046]. Masimo provides no explanation of how this electrode would work with Mills' leaf spring 62 or how this configuration would provide all elements of claim 1. APPLE-2003, ¶¶177-178.

**C. The Petition Fails to Demonstrate that Markel-Mills Provides
Claim 9**

Masimo alleges that Markel-Mills discloses claim 9 because "Markel discloses that an electrode may be integrated or embedded into the touch screen of display 140." Pet., 58-59. However, Masimo has not even attempted to

demonstrate that the Markel-Mills combination discloses or suggests “wherein at least a portion of the exterior surface of the enclosure forms at least a portion of an exterior surface of the electronic device *behind* the display” as recited by Claim 9. There is simply no discussion of this portion of Claim 9 in the Petition. Pet., 58-59; APPLE-2003, ¶¶179-181. The petition must specifically identify where the cited references disclose each and every element of the challenged claims. *See Microsoft Corp. v. Global Touch Solutions, LLC*, IPR2015-01024, Paper 11 at 7 (PTAB Sept. 23, 2015). It is the Petitioner’s responsibility “to *explain specific evidence that support its arguments*, not the Board’s responsibility to search the record and piece together what may support Petitioner’s arguments.” *Dominion Dealer*, IPR2013-00225, Paper 15 at 4.

Due to this failure, the Petition fails to show obviousness of Claim 9.

**D. The Petition Fails to Demonstrate that Markel-Mills Provides
Claim 10**

In its analysis of Claim 10 (and Claim 1), Masimo maps the electrode 420b of Markel to the claimed “second pad.” Pet., 60. Masimo further asserts that the user may contact the electrodes 410b and 420b. *Id.* However, Claim 10 does not require user contact with the second pad but rather recites “the user’s contact *with the second portion of the enclosure*.” The electrode 420b is an externally exposed

electrode (EX1005, FIG., 4, [0043], [0045]) and therefore it does not detect the second electrical signal due to user contact with a second portion “*of the enclosure*” but rather by direct user contact with the electrode 420b itself. The Petition therefore fails to demonstrate that Markel-Mills provides claim 10. APPLE-2003, ¶¶182-183.

E. The Petition Fails to Demonstrate that Markel-Mills Provides Claim 12

Claim 12 recites “wherein *the first portion* of the enclosure is a bezel.” As discussed above, in its first mapping of Markel-Mills to claim 1, Masimo identifies the portion of enclosure surrounding electrode 410b as allegedly providing the claimed “first portion of the enclosure” while in its second read, Masimo identifies the electrode 410b as allegedly providing the first portion of the enclosure. Section VI.A, *supra*; Pet., 42-43, 48-49; APPLE-2003, ¶¶143-150. In addressing Claim 12, Masimo completely abandons both of these mappings of Markel-Mills and switches to identifying a completely different portion of Markel’s device as allegedly corresponding to the claimed first portion of the enclosure. Pet., 62; APPLE-2003, ¶¶185-186. This slight of hand by Masimo should not be permitted.

Specifically, in addressing Claim 12, Masimo asserts that Markel discloses embodiments in which “an electrode may be disposed on a border of the display.”

Pet., 62. Yet this assertion is made with respect to Markel's discussion of FIG. 15. *Id.* Masimo makes no attempt to describe how the embodiment of Figure 15 would be combined with the embodiment of Figure 4 or how the embodiment of Figure 15 meets all elements of Claim 1. For example, Masimo makes no attempt to demonstrate how the electrodes 1530 or 1531 would be positioned "underneath the exterior surface of the first portion" as required by claim 1 from which claim 12 depends. APPLE-2003, ¶186.

Furthermore, Masimo has not demonstrated how the electrode 410b of Markel (the alleged "first portion of the enclosure" in Masimo's second mapping (Pet., 48-49)) "is a bezel" as required by Claim 12. APPLE-2003, ¶187. At most, Masimo has demonstrated that the display of the embodiment of Markel's Figure 15 includes a bezel. *Id.* Masimo has not even identified whether it is reading the electrodes identified in its annotated version of Figure 15 on the claimed "first portion of the enclosure" or the claimed "first pad." Pet., 62; APPLE-2008, 130:5-132:5 (Masimo's expert admitting that he did not "get into those details" regarding mapping the electrodes of Figure 15 to the claims).

It is well established that "the expedited nature of IPRs bring with it an obligation for petitioners to *make their case in their petition.*" *Intelligent Bio-Systems*, 821 F.3d at 1369-70; *See also, Cf. DeSilva v. DiLeonardi*, 181 F.3d 865,

866-67 (Fed. Cir. 1999); *Amazon.com*, IPR2017-01112, Paper 11 at 13. Masimo has failed to make its case in the Petition with respect to Claim 12 and therefore the Ground 2 fails with respect to Claim 12.

F. The Petition Fails to Demonstrate that Markel-Mills Provides Claim 13

Masimo’s analysis of Claim 13 fails for the same reasons as Claim 12, *supra*. Specifically, in its analysis of Claim 1, Masimo maps the claimed “second portion of the enclosure” to either the region around electrode 420b or alternatively to electrode 420b itself. Pet., 50. Yet, as with Claim 12, in analyzing Claim 13, Masimo abandons these mappings and rather broadly alleges that the display of a different embodiment of Markel includes a bezel having electrodes. Pet., 63. The Petition fails to disclose Claim 13 for the reasons discussed above with respect to Claim 12. APPLE-2003, ¶¶185-190.

G. Masimo’s Analysis of Claim 15 Improperly Mixes Different Embodiments of Markel

Masimo’s analysis of Claim 15 combines different embodiments of Markel based (addressing different classes of computing devices) while “fail[ing] to explain sufficiently *why* one skilled in the art would have found it obvious to combine those teachings.” See e.g., *Abiomed, Inc. v. Maquet Cardiovascular, LLC*, IPR2017-01204, Paper 8 (PTAB October 23, 2017). For example, the

embodiments of FIGs. 1-10 of Markel describe “various aspects of...a mobile communication device” while the embodiments in FIGs. 11-15 relate to a general computing device such as “a desktop computer, laptop or notebook computer.” EX1005, [0060]-[0062].

In addressing Element 15[c(i)], Masimo relies on the mobile device embodiments of Markel depicted in FIGs. 4-5. Pet., 66-68. Yet in addressing Element 15[c(iii)], after briefly mentioning that FIG. 1, Masimo abruptly shifts to the general computing device embodiment of FIG. 15 as allegedly providing the claimed “second lead embedded in the display screen.” Pet., 75-76. The device of FIG. 15 is not a portable telephone like the embodiments shown in Markel’s FIGS. 4 and 5 but rather “*computer* display device.” EX1005, [0078]; APPLE-2003, ¶¶191-193.

Masimo’s Petition does not acknowledge that it is drawing disclosures from different embodiments involving different devices having significantly different display screen sizes and makes no attempt to identify why a POSITA would have been motivated to combine these embodiments or have a reasonable expectation of success. APPLE-2003, ¶193.

**H. The Petition Fails to Demonstrate that Markel-Mills Provides
Claim 19**

Masimo's analysis of Claim 19 fails for similar reasons as those discussed with respect to Claim 12, *supra*. In analyzing Claim 19, Masimo abandons its claim 15 mappings and rather broadly alleges that the display of a different embodiment of Markel includes a bezel having electrodes. Pet., 80-81. Masimo does not identify how any of the portions of Markel's device on which electrodes 410b, 510, or 520 (its claim 15 mapping) are positioned in "a bezel" as required by Claim 19. APPLE-2003, ¶¶195-199. At most, Masimo has demonstrated that the display of Markel's Figure 15 embodiment includes a bezel. APPLE-2003, ¶197. Masimo has not even identified whether it is reading the electrodes identified in its annotated version of Figure 15 on the claimed "first portion of the enclosure" or the claimed "first pad." Pet., 80-81.

Masimo then points to yet another completely different embodiment (Figure 2) depicting buttons having electrodes, yet does not explain how this embodiment would be integrated with the embodiments of Figure 15, 4, and 5. Pet., 80-81; APPLE-2003, ¶¶198-199.

Patent Owner should not have to respond to Petitioner's incomplete mapping argument, and the Board should "decline to attempt to fill in the blanks for

Petitioner.” *Askeladden L.L.C. v. Encoditech LLC*, IPR2017-00452, Paper 8 at 21 (PTAB May 22, 2017); *see also Google LLC v. Uniloc USA, Inc.*, IPR2017-02082, Paper 10 at 12 (PTAB Mar. 29, 2018) (“It is not our role to pick a theory for Petitioner.”).

I. The Petition Fails to Demonstrate that Markel-Mills Provides Claim 20

In its analysis of claim 15, Masimo alternatively maps each of electrode 410b of FIG. 4 and electrodes 510 and 520 of FIG. 5 of Markel as reading on the claimed first lead. Pet., 67-68. These mappings fail because claim 20 requires detection of the first electrical signal “via the user’s contact *with the first portion of the enclosure.*” APPLE-2003, ¶¶201-203. Masimo alternatively reads the electrodes 410b, 510, and 520 on the claimed ‘first lead’ and not on the “first portion of the enclosure” in which the electrodes 410b, 510, and 520 are embedded. As Markel discloses, the electrical signal is detected via “electrode contact with a user’s hand” and not contact with the surrounding enclosure in which the electrodes are embedded. EX1005, [0043], [0049]-[0050]. Therefore, in Masimo’s mappings of electrodes 410b, 510, and 520 to the claimed “first lead” the electrical signal is detected through the user’s contact with the electrode/lead,

not through “contact *with the first portion of the enclosure*” as required by claim 20. APPLE-2003, ¶202. These mappings therefore fail to provide claim 20.

Furthermore, as discussed in Section VI.A.2, *supra*, in Masimo’s alternative mapping, the top of the leaf-spring 62 is not “embedded in” the electrode but rather “placed...against” an inner surface of electrode 410b and therefore this mapping fails to provide Element 15[c(i)] and therefore cannot be relied upon to satisfy Claim 20. Pet., 48; APPLE-2003, ¶¶203, 162-163.

J. The Petition Fails to Demonstrate that a POSITA Would Have Applied Mills to Markel in the Proposed Manner

Masimo relies upon impermissible hindsight in its Markel-Mills combination, fails to provide details regarding the device alleged to result from the combination, and fails to demonstrate that a POSITA would have had a reasonable expectation of success in combining the teachings of the two references.

For its alleged motivation to combine, Masimo relies primarily on its expert declaration to assert that “[a] POSITA seeking to implement Markel’s device would look to Mill’s *[sic]* disclosure for ways to internally connect the electrodes of Markel to internal electronic components using pads” without corroborating evidence. *Id.*, 47-48.

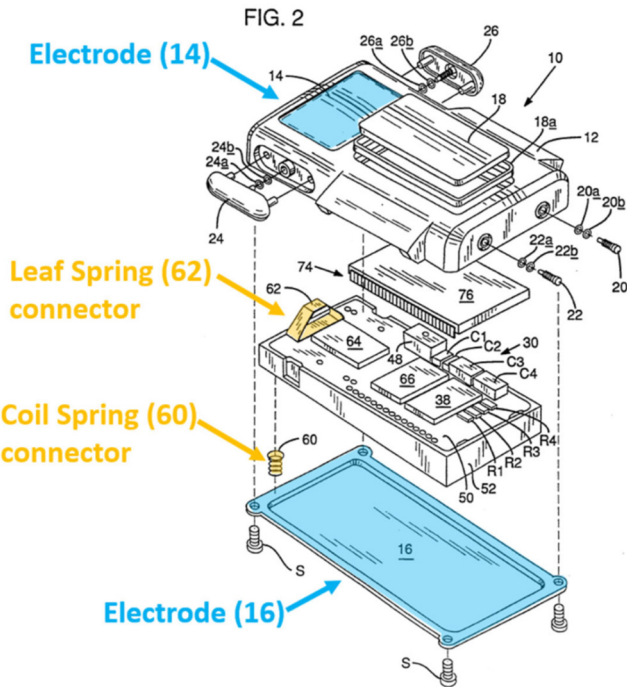
However, Masimo and its expert fail to demonstrate that they are relying upon anything other than hindsight-based reconstruction of the claims, at least because the relied-upon “motivation” is merely a suggestion by Masimo that a POSITA *could* have combined teachings of the two references, rather than a demonstration that the POSITA actually *would* have combined the teachings of the two references. *See In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971); *In re Dembiczak*, 175 F. 3d 994, 999 (Fed. Cir. 1999); *In re Gartside*, 203 F.3d 1305, 1319 (Fed. Cir. 2000); APPLE-2003, ¶¶204-218.

In supporting its conclusory assertions regarding alleged motivation, Masimo relies upon a declaration that merely reproduces arguments presented within the Petition, without corroborating evidence. The lack of corroboration for Masimo’s proposed combination further highlights that the combination is offered based on nothing other than impermissible hindsight. *See, e.g., Xerox Corp., et. al. v. Bytemark, Inc.*, IPR2022-00624 Pap. 9 (PTAB Aug. 24, 2022)(precedential); *Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000); *In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011).

Furthermore, there are stark differences between the positioning of the electrodes in Markel as compared to electrode positioning in Mills that make incorporation of Mills leaf spring 62 into Markel’s device more than “*a mere*

rearrangement of known mechanical components in known ways in a complementary device,” as Masimo insists. Pet., 48; APPLE-2003, ¶¶210, 212-215.

As shown in FIG. 2 of Mills, the two electrodes 14 and 16 in Mills are positioned on opposite sides of a frontal plane of housing 12, and PCB 50 is positioned parallel to the two electrodes. Markel’s FIG. 4, however, presents a significantly different configuration, in which “first electrode [is] placed on the left side portion 410..., and a second electrode [is] placed on the right side portion 420.” EX1005, [0045]. Thus, more than “*a mere rearrangement of known mechanical components in known ways*” would be required to use “the leaf spring 62 taught by Mills to connect the electrodes 410b, 420b of Markel to internal processing components taught by Markel.” Petition, 47-48; APPLE-2003, ¶¶213-215.



Pet., 46.

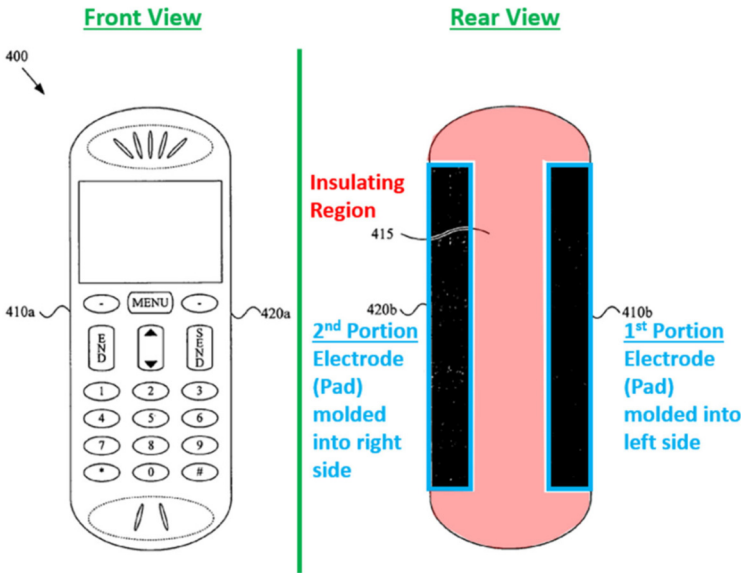


Figure 4

Pet., 43.

For example, in Mills, all of the electrodes 14 and 16, the leaf spring 62's top surface, and the PCB 50 are formed on *parallel* planes. Those parallel planes are different frontal planes that are *perpendicular to a side plane that extends along the width of Mills device*. See FIG. 2 of Mills above; APPLE-2003, ¶214.

Masimo asserts that “[a] POSITA seeking to implement Markel's device would look to Mill's [*sic*] disclosure for ways to internally connect the electrodes of Markel to internal electronic components using pads.” Petition, 47. By that logic, a POSITA following Mills' configuration, would have placed the electronic components of Markel on a PCB, and the PCB in between the two electrodes 410b/420b of Markel. APPLE-2003, ¶215. Furthermore, by following Mills, the POSITA would have placed the PCB in *parallel to the two electrodes* to supposedly connect the electrodes to the PCB by leaf springs. *Id.* However, in such a modified configuration of Markel, the PCB would be in parallel to—not perpendicular to—the width side of Markel's device 400. *Id.* But such configuration would no longer follow Mills' configuration, where the PCB plane is perpendicular to the width side of Mills' device. *Id.*

Further, this orientation would require an increase in the width dimension of Markel's device to enclose the PCB between the front and the rear surfaces of the

device. But this would result in a bulky device that is “cumbersome and inconvenient,” which is what Markel seeks to avoid. *See* EX1005, [0002].

Further, placing the PCB perpendicular to the front and rear surfaces (and parallel to the side electrodes) would complicate electrical connections of the PCB to user-interface components (e.g., bottoms, display, etc.) implemented on the front surface of device 400 in Markel. EX1005, [0034]; APPLE-2003, ¶216.

If a POSITA alternatively orients the PCB to be perpendicular to the width side (i.e., parallel to the front and rear surfaces) of Markel’s device, the POSITA would require details beyond those provided by Mills on how to connect Markel’s electrodes 410b/420b to such an oriented PCB. APPLE-2003, ¶217.

VII. CONCLUSION

For at least the reasons discussed above, the challenged claims are patentable over Grounds 1 and 2.

Respectfully submitted,

Date: January 22, 2024

/Patrick J. Bisenius/
Patrick J. Bisenius, Reg. No. 63,893
Fish & Richardson P.C.
60 South Sixth Street
Minneapolis, MN 55402
T: 202-783-5070
F: 877-769-7945

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 Response to Petition totals 13,989, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

Date: January 22, 2024

/Patrick J. Bisenius/
Patrick J. Bisenius, Reg. No. 63,893
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
T: 202-783-5070
F: 877-769-7945

CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4), the undersigned certifies that on January 22, 2024, a complete and entire copy of this Patent Owner's Response and its accompanying exhibits were provided via email to the Petitioners by serving the correspondence email addresses of record as follows:

Jarom D. Kesler (Reg. No. 57,046)
Ted M. Cannon (Reg. No. 55,036)
Philip M. Nelson (Reg. No. 62,676)
Irfan A. Lateef (Reg. No. 51,922)
Benjamin J. Everton (Reg. No. 60,659)

KNOBBE, MARTENS, OLSON & BEAR, LLP
2040 Main Street, 14th Floor
Irvine, CA 92614
Telephone: (949) 760-0404
Facsimile: (949) 760-9502

E-mail: MasimoIPR-257@knobbe.com

/Crena Pacheco/
Crena Pacheco
Fish & Richardson P.C.
60 South Sixth Street
Minneapolis, MN 55402
pacheco@fr.com