

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REVVO TECHNOLOGIES, INC.

Petitioner,

v.

CEREBRUM SENSOR TECHNOLOGIES, INC.

Patent Owner.

IPR2025-00632

Patent 11,835,421

**CORRECTED PATENT OWNER'S PRELIMINARY RESPONSE
TO PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,835,421**

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LIST OF EXHIBITS

Exhibit No.	Description
2018	Webster's Dictionary Definition of "fitted"
2019	Scheduling Order in <i>Cerebrum Sensor Techs., Inc. and Tire Stickers LLC v. Revvo Techs., Inc.</i> , C.A. No. 24-245 (JLH) (SRF) (D. Del.) (Doc. No. 38)
2020	Revvo's non-infringement contentions in <i>Cerebrum Sensor Techs., Inc. and Tire Stickers LLC v. Revvo Techs., Inc.</i> , C.A. No. 24-245 (JLH) (SRF) (D. Del.) (Doc. No. 100)

I. Introduction

Patent Owner Cerebrum Sensor Technologies, Inc. (“Patent Owner” or “Cerebrum”) respectfully submits this Preliminary Response to the Petition for *inter partes* review (Paper 1, “Petition”) filed by Revvo Technologies, Inc. (“Revvo” or “Petitioner”) against claims 1, 2, 5, 7–12, 20–24, 28, 31–34, 41, 43, 44, 48, and 50–53 (“the challenged claims”) of U.S. Patent No. 11,835,421 B2 (“’421 patent”) (EX1001). The Board should deny institution because Revvo has not met the requirements for institution and its burden of showing a reasonable likelihood of prevailing in proving unpatentability of any of the challenged claims.¹

As a foundational failure by Revvo, the Petition fails to explain why Revvo is pursuing IPR institution based on claim constructions that Revvo has contended are wrong in co-pending federal district court litigation. Thus, the Petition is deficient under 37 C.F.R. § 42.104(b)(3).

As another foundational failure by Revvo under 35 U.S.C. § 325(d), the Petition presents cited references that are merely cumulative of the prior art already considered during prosecution, as is more fully discussed herein.

¹ The Petition is deficient for additional reasons that are not set forth in this Preliminary Response. Patent Owner reserves the right to present additional arguments during trial should review be instituted.

As another foundational failure by Revvo, as discussed further below, the Board should exercise its discretion to deny the Petition because Revvo ignores the most pertinent portion(s) of the cited references which teach away from the challenged claims.²

The '421 patent discloses innovative sensor assemblies for monitoring a dynamic object, and when the dynamic object is a rotating vehicle tire, useful for monitoring the tire's outside diameter, tread depth, pressure, radial load, vehicle

² Revvo should not be permitted to supplement the record to address these fundamental omissions in its Petition. *See Actavis, Inc. v. Research Corporation Technologies, Inc.*, IPR2014-01126, Paper 22 at 13 (PTAB Jan. 9, 2025) (“[A] party may only submit supplemental information after a trial has been instituted (37 C.F.R. § 42.123) while we must decide whether to institute a trial based on ‘the information presented in the petition’ (35 U.S.C. § 314(a)). Because the Petition and the accompanying evidence are insufficient to qualify the LeGall thesis as a § 102(b) prior art, we deny the Petition regarding this ground.”) (denying institution); *see also Nanobebe v. Mayborn*, IPR2023-00465, Paper 21 at 5 (PTAB Aug. 17, 2023) (The Board cannot “simply correct errors and omissions in a petition using supplemental information that results in the addition of a new analysis.”).

camber and/or toe alignment variations, and tire/vehicle location. (*E.g.*, EX1001, *e.g.*, Abstract, 5:23-42, 9:6-15, 15:37-53.) “The combination of the specific sensor assembly configuration and method for affixing the sensor assembly to the vulcanized rubber article, enables use of systems as disclosed herein to obtain information from the sensor assembly to measure, monitor, determine and/or report data relating to such features or parameters ...” (*Id.* at 9:6-15.) The innovative sensor assemblies of the '421 patent include an innovative housing interior, for attachment, fixed placement or installation of the sensor inside the housing. (*E.g.*, *id.* at 4:14-29, 7:41-44, 7:53-61, 10:13-59, 11:34-49, 11:53-59, 12:5-40, 13:52-14:11.) The '421 patent contains 57 claims, including independent Claim 1 and its dependent challenged Claims 2, 5, 7–12, and 20–21; independent Claim 28 and its dependent challenged Claims 31–34; and independent Claim 41 and its dependent challenged Claims 43, 44, 48, and 50–53.

Independent Claim 1, for example, recites a sensor assembly configured for attachment with an object that is rotated in use, which comprises, among other things, a housing comprising an outer surface and an internal cavity that is enclosed within the housing, and an electrical sensor device that is disposed within the internal cavity and attached therein to prevent movement of the device within the internal cavity. (EX1001, Claim 1.) The electrical sensor device can be attached within the

internal cavity by one or more surface features within the cavity that contact the electrical sensor device to retain its position therein. (EX1001, Claim 5.)

For at least the reasons discussed below, all grounds presented by Revvo fail to show a reasonable likelihood of prevailing with respect to any of the challenged claims of the '421 patent.³

With regard to Ground 1, Revvo cites one reference (Yamaguchi-727) with respect to Claims 1, 2, 7-9, 11, 12, and 20-24 of the '421 patent, with Claim 1 being the only independent claim challenged on Ground 1. But this reference fails to disclose at least “an electrical sensor device that is disposed within the internal cavity

³ It is improper to incorporate arguments by reference from other documents into the Petition. 37 C.F.R. § 42.6(a)(3); *see also, e.g., Avant Tech., Inc. v. Anza Tech., Inc.*, IPR2018-00828, Paper 7, at 16-18 (PTAB Oct. 16, 2018). The Board's practice has been to consider only arguments that are expressly set forth in the Petition. *Id.* at 17. For example, “[the] practice of citing the Declaration to support conclusory statements that are not otherwise supported in the Petition also amounts to incorporation by reference.” *Id.* Accordingly, the Board should not consider any arguments made in the Declaration of Isaac Davenport, Ph.D (EX1003) that are not expressly set forth in the Petition. Those arguments are identified and nevertheless discussed herein.

and attached therein to prevent movement of the device within the internal cavity” in Claim Element 1[b]. Revvo ignores the most pertinent portion of Yamaguchi-727 – paragraph [0047]⁴ – that speaks to this issue, and thus fails to carry its burden that a person of ordinary skill in the art (“POSA”) would understand Yamaguchi-727 to teach Claim Element 1[b].⁵ Revvo only acknowledges the mention in Yamaguchi-727 paragraph [0042] of a “circuit board 60 and the housing case 20 are provided with a *positioning means*, which is not shown in the figure, that are mutually fitted with each other.” (Petition at 23 (emphasis added).) Revvo completely ignores paragraph Yamaguchi-727 paragraph [0047], which further describes the positioning means as “positioned so that the battery 70 faces the inner bottom surface 20c of the housing space S, and the measurement direction of the acceleration sensor 66 mounted on the circuit board 60 faces the predetermined direction relative to the housing case 20.” (EX1006.) Thus, Yamaguchi-727 paragraph [0047] only describes some sort of positioning means in the housing to ensure that the acceleration sensor

⁴ Revvo only cites Yamaguchi-727 paragraph [0047] at Page 37 of the Petition, and only with regard to “a portable power source.”

⁵ Patent Owner does not acquiesce to, and reserves the right to address, Revvo’s definition of a POSA. The Petition fails to meet the requirements for institution under any definition of a POSA.

faces a certain direction. There is nothing in paragraph [0047] that indicates any kind of attachment of the electrical sensor device in the internal cavity of the housing.⁶

With regard to Ground 2, Revvo cites two references (Yamaguchi-727 and Yamaguchi-566) with respect to Claims 5, 28, 31-33, 41, 43, 44, 48, and 50-52 of the '421 patent, with Claims 28 and 41 being the only independent claims challenged on Ground 2. Although relying on Yamaguchi-727 as the primary reference for Ground 2, Revvo similarly ignores Yamaguchi-727 paragraph [0047] here again, as was described above for Ground 1, and thus the Petition fails as to Ground 2 as well, as further described below.

As to Claim 28, Ground 2 relies on Yamaguchi-727 whether “alone or combined with Yamaguchi-566.” (Petition at 51.) Even if the Board were to go further, however, and consider Yamaguchi-566, here again, Revvo ignores the most pertinent portion of that cited reference, which is Yamaguchi-566 paragraph [0060], which describes the use of “filler” so that “the module 6 ... is fixed to the housing case 20.” (EX1007.) That teaches away from the “fixed placement therein by one or more surface features of the housing configured to contact the electrical sensor

⁶ Although Yamaguchi-727 paragraph [0042] uses the phrase “mutually fitted,” nowhere does the Petition address the ordinary meaning of “fitted” which does not include “attached.” (EX2018 at 3.) This is further discussed herein.

device” recited in Claim Element 28[b]. Rather, Revvo focuses on parts 20A and 20B in Yamaguchi-566 paragraph [0022] and Figure 2A. (Petition at 52.) But nothing therein describes a “fixed placement” of the electrical sensor device “therein” (i.e., in the housing) “by one or more surface features,” as recited in Claim Element 28[b]. Indeed, as further discussed herein, there is nothing disclosed in Yamaguchi-566 that indicates that parts 20A and 20B prevent any kind of displacement of an electrical sensor device.

As to Claim 41, Revvo relies only on Yamaguchi-727 for the step of “installing an electrical sensor device within an internal cavity of a housing” of Claim Element 41[a]. (Petition at 55-56.) Here again, Revvo similarly fails to address Yamaguchi-727 paragraph [0047], as was described above for Ground 1, and thus the Petition fails as to Ground 2 as well.

With regard to Ground 3, Revvo cites three references (Yamaguchi-727 and Yamaguchi-566 and Dodani-859) with respect to dependent Claims 34 and 53 of the ’421 patent. These are dependent claims for which Revvo ignores the most pertinent portions of the prior art as was discussed above for Grounds 1 and 2.

With regard to Ground 4, Revvo cites two references (Yamaguchi-727 and McDonald) with respect to dependent Claim 10 of the ’421 patent. This is a dependent claim for which Revvo ignores the most pertinent portions of the prior art as was discussed above for Grounds 1 and 2.

Accordingly, institution of *inter partes* review of the '421 patent should be denied.

II. The '421 Patent

Among other things, the '421 patent teaches and claims an improved interior of a sensor housing as a component of a sensor assembly for attachment to a rotating object, such as a tire. (EX1001 at 4:14-31.) For example, the '421 patent teaches that “Sensor assembly housings 12 as disclosed herein are constructed to provide the inside or internal cavity 38 configured in a manner to fixedly retain and house the electrical sensor device 40 therein without the need for filling agents or materials.” (EX1001 at 12:41-45.) Put another way, the '421 patent teaches that “A feature of sensor assemblies as disclosed herein is that they do not use or require the use of any such coating or filling agents or materials for any fixturing of the electrical sensor device 40 within the internal cavity 38.” (*Id.* at 13:60-64.)

As further discussed below, cumulative of the prior art considered during prosecution, the Petition presents cited references that still suffer from the same problem of merely relying on filling agents or materials to fixture an electrical sensor device in the housing, rather than a housing interior that provides for such fixturing.

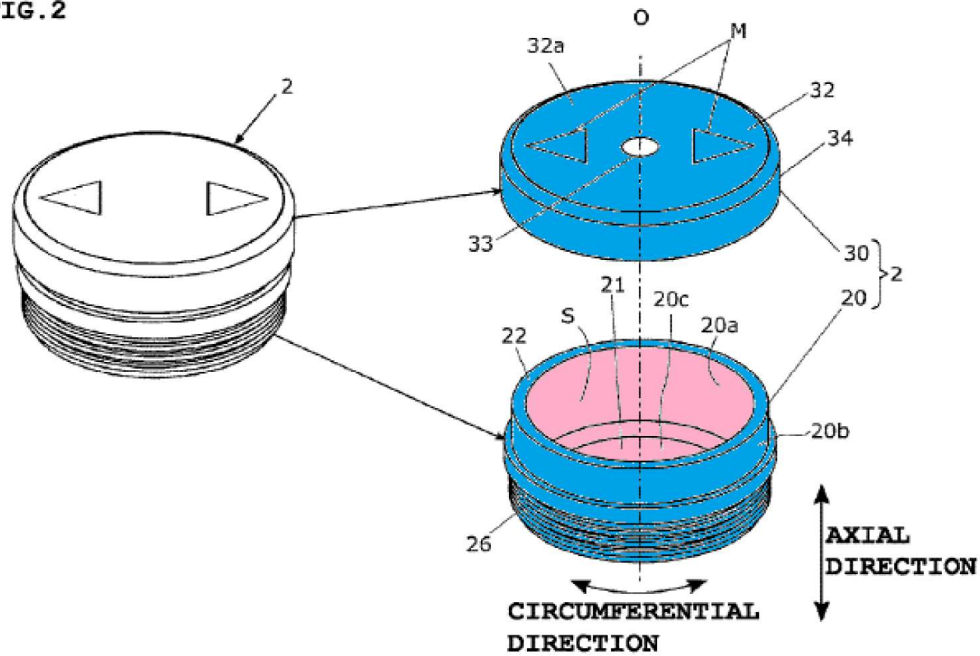
III. The Cited References

A. Yamaguchi-727

Yamaguchi-727 is directed to a functional component in which an electronic component capable of acquiring information inside a tire is housed, with the purported improvement not in the housing interior, but rather in the exterior attachment to the tire. (EX1006, *e.g.*, Abstract, [0006], [0007], [0040], [0044], [0047], and [0085].)

Although Yamaguchi-727 paragraph [0042] mentions a “positioning means,” Revvo admits that the positioning means is “not shown in its figures.” (Petition at 23.) For example, Figure 2 in Yamaguchi-727 does not show any way for the electronic component to be attached, fixedly placed, or installed in the interior of the housing, within the housing case 20 (blue) or otherwise within the housing space S (pink):

FIG. 2

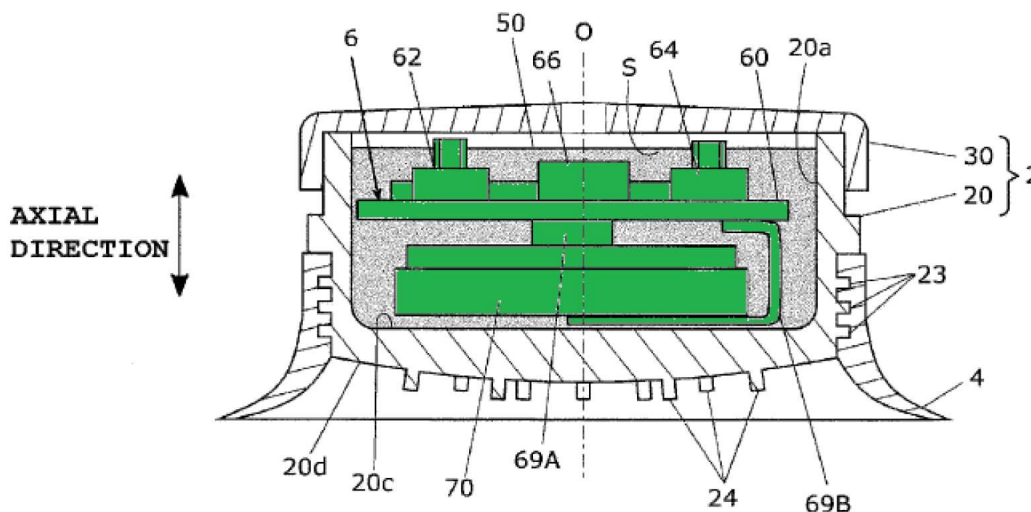


(Petition at 20.)

Rather than disclose any way for the electronic component to be attached, fixedly placed, or installed in the interior of the housing, Figure 5 in Yamaguchi-727 discloses merely suspending the electronic component (green below) in potting material alone (at least grey shading)⁷:

⁷ This is applying, without conceding that, Revvo's argument that only the grey shading is potting material. (Petition at 26.)

FIG. 5



(Petition at 22-23 (“the housing space S is filled with a potting material 50, shown in grey shading in FIG. 5 above”); EX1006 at [0048].)

As was discussed in Section II above, the ’421 patent avoids such reliance on potting material alone and uses a housing interior that provides for attachment (Claim Element 1[b]), fixed placement Claim Element 28[b]), or installing of the electrical sensor device (Claim Element 41[a]).

B. Yamaguchi-566

Yamaguchi-566 is directed to a functional component to be attached inside a tire, for detecting a state of the tire, with the purported improvement not in a housing interior, but rather in the functional component being comprised of multiple substrates. (EX1007, *e.g.*, Abstract, [0006], [0030], [0060].)

The Petition does not rely on Yamaguchi-566 as a primary reference, and for good reason. Yamaguchi-566 teaches away from the challenged claims. For example, Yamaguchi-566 paragraph [0060], ignored by Revvo, teaches that “a filler 50 is filled in the housing space S in which the module 6 is housed ... for example ... synthetic resin such as urethane-based resin or epoxy-based resin.” (EX1007 at [0060].) That “filler” alone is used to ensure that “the module 6 ... is fixed to the housing case 20.” (*Id.*) That use of filler alone teaches away from the '421 patent claims, as was described in Section II above, as the '421 patent uses a housing interior that provides for attachment (Claim Element 1[b]), fixed placement (Claim Element 28[b]), or installing of the electrical sensor device (Claim Element 41[a]).⁸

C. Dodani-859

Dodani-859, which is apparently owned by Revvo, is directed to a tire sensor device. (EX1009 at Abstract and Figure 1.) Dodani refers to a dock, but does not

⁸ Revvo argues that “Yamaguchi-566 also includes FIG. 2A that depicts an exploded view of its functional component that is near-identical to the sensor assembly disclosed in FIG. 6 of the '421 patent.” Putting aside the incorrectness of that statement, notably, however, Figure 6 does not depict the innovative housing interior of the '421 patent, such as depicted in Figure 3 of the '421 patent. (EX1001 at Figure 3.) Thus, Revvo's comparison is false and inapposite.

disclose a housing anywhere. (*Id.* at [0023], [00102], Figure 11B.) Nowhere does Revvo argue that Dodani-859 discloses a housing. Dodani-859 thus fails to supplement the deficiencies identified above for Yamaguchi-727 and Yamaguchi-566.

D. McDonald

McDonald is directed to a component having a filter. (EX1008 at Abstract.) McDonald mentions a housing, but nowhere does Revvo argue that McDonald discloses any way for an electrical sensor device to be attached (Claim Element 1[b]), fixedly placed (Claim Element 28[b]), or installed in the interior of the housing (Claim Element 41[a]). McDonald thus fails to supplement the deficiencies identified above for Yamaguchi-727 and Yamaguchi-566.

IV. The Board Should Exercise Its Discretion to Deny the Petition for Several Reasons Addressed in Cerebrum's Separately Filed Brief.

For the reasons set forth by Patent Owner's separately filed brief, the Board should exercise its discretion to deny the Petition consistent with the Memorandum, "Interim Processes for PTAB Workload Management," dated March 26, 2025, issued by the Acting Under Secretary Stewart of Commerce for Intellectual Property and Acting Director of the United States Patent and Trademark Office.

V. The Petition is Deficient Under 37 C.F.R. § 42.104(b)(3)

The rules regarding the content of a petition, and what claim construction information must be included, are clear: "A petition must set forth "[h]ow the

challenged claim is to be construed.” 37 C.F.R. § 42.104(b)(3). Here, Revvo has filed to meet this foundational requirement in its Petition.

As to independent Claim 1, the Petition fails to set forth a claim construction for the claim element “attached therein to prevent movement of the device within the internal cavity.” (EX1001 at Claim Element 1[b].)

As to independent Claim 28, particularly Claim Element 28[b], the Petition fails to explain why Revvo is not using its proposed claim construction for “fixed/having a fixed placement” in co-pending federal district court litigation, which is “Securely fastened in place and not moving or able to be moved when secured / having a securely fastened placement and not moving or able to be moved when secured.” (EX1017 at 19.) Revvo fails to explain why its position is different in the two proceedings.

Revvo also fails to apply Cerebrum's proposed claim construction for “fixed placement,” which is “plain and ordinary meaning; no construction required.” (Ex. 1017 at 19.) Rather, Revvo purportedly applies a non-final, alternative construction not even presented to or adopted by the district court. (*Id.*) Indeed, Revvo recognizes that the construction is non-final, as Revvo argues that “no claim construction rulings have occurred.” (Petition at 4.) Revvo fails to mention that the parties have not briefed claim construction to the district court. (*Id.* at 4; EX2019.)

Having repeatedly rejected precisely this sort of Petitioner gamesmanship with claim construction by denying institution under 37 C.F.R. § 42.104(b)(3), the Board should also do so here. *See Orthopediatrics Corp. v. K2M, Inc.*, IPR2018-01546, Paper 10 (PTAB Feb. 14, 2019); *10x Genomics, Inc. v. President and Fellows of Harvard College*, IPR2023-01299, Paper 15 (PTAB Mar. 14, 2024).

As to independent Claim 41, the Petition fails to set forth a claim construction for the claim element “installing an electrical sensor device within an internal cavity of a housing.” (EX1001 at Claim Element 41[a].)

Revvo's failure to meet these basic requirements warrants denying institution, and Revvo should be left with the consequences of its strategic choice to not straightforwardly address claim constructions in its Petition. *See Orthopediatrics*, IPR2018-01546, Paper 10 at 11; *10x Genomics*, IPR2023-01299, Paper 15 at 13.

VI. The Petition Should Be Denied Under 35 U.S. Code § 325(d)

Revvo's own arguments show that the cited references are merely cumulative of the prior art already considered during prosecution. Revvo argues that “The applicant distinguished the closest prior art reference (Saito) from the Challenged Claims because its sensor components were fully encapsulated in resin.” (Petition at 4-5.) But, as was discussed above, Yamaguchi-566 discloses such full encapsulation in resin, in paragraph [0060] which is utterly ignored by Revvo. That paragraph teaches that “a filler 50 is filled in the housing space S in which the module 6 is

housed ... for example ... synthetic resin such as urethane-based resin or epoxy-based resin.” (EX1007 at [0060].) Emphasizing this full encapsulation in Yamaguchi-566, nowhere does the Petition argue that Yamaguchi-566 discloses the “unfilled open space” in Claim Element 1[c], the “open space” in Claim 31, or the “opening extending from an outer surface of the housing to the internal cavity” in Claim Element 41[c].

Also ignored by Revvo, the applicant distinguished the prior art on other grounds as well during prosecution. For example, the applicant argued that the prior art “fails to expressly or implicitly disclose the that the housing comprises one or more surface features configured to contact the electrical sensor device to prevent movement of the electrical sensor device within the housing internal cavity as presently recited in Applicant’s amended independent claim 28.” (EX1002 at 266.) Cumulative of that prior art, Yamaguchi-727 fails to disclose any such “surface features” for “fixed placement” of the electrical sensor device in the housing; rather, as was discussed in Section III.A, Yamaguchi-727 relies on ensuring that “the housing space S is filled with a potting material 50 ... Whereby, the entire module 6 is covered with the potting material 50.” (EX1007 at [0048].)

The cumulative nature of the cited references in the Petition is more fully discussed herein.

VII. The Petition Fails to Show a Reasonable Likelihood of Prevailing on Any of the Challenged Claims

For an *inter partes* review to be instituted, a petition must “show[] that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). For at least the reasons discussed below, the Petition and supporting evidence fail to show that there is a reasonable likelihood that Revvo will prevail with respect to any of the independent challenged claims 1, 28 or 41, and thus the Petition should be denied.

A. None of the Cited References Discloses Certain Limitations of Independent Claims 1, 28 and 41⁹

Institution should be denied because the Petition fails to specify where each element of independent Claims 1, 28 and 41 is found in the cited references, as required by 37 C.F.R. § 42.104(b)(4). *See also id.* §§ 42.104(b)(5), 42.22(a)(2); 35 U.S.C. § 312(a)(3); *Amazon Web Servs., Inc. v. Saint Regis Mohawk Tribe*, IPR2019-00103, Paper 22 at 15-19 (PTAB May 10, 2019). Because the remaining challenged claims all depend from either independent Claims 1, 28 or 41, Revvo's obviousness

⁹ Again, the Petition is deficient for additional reasons that are not set forth in this Preliminary Response. Patent Owner reserves the right to present additional arguments during trial should review be instituted.

conclusions set forth in Grounds 1-4 with respect to the dependent claims also fails for at least the reasons set forth with respect to Claims 1, 28 and 41.

1. None of the Cited References Discloses the Claim Element 1[b] “attached therein to prevent movement of the device within the internal cavity” and Substantially the Same Art and Arguments Regarding Claim 1 Were Previously Before the Office

Claim Element 1[a] recites “a housing comprising an outer surface and an internal cavity that is enclosed within the housing.” (EX1001 at 30:23-24.) With regard to the housing internal cavity, Claim Element 1[b] recites, among other things, “an electrical sensor device that is disposed within the internal cavity and attached therein to prevent movement of the device within the internal cavity.” (*Id.* at 30:25-27.) None of the references cited in the Petition disclose the limitation “attached therein to prevent movement of the device within the internal cavity.”

a. The Petition Ignores the Most Pertinent Portion of Yamaguchi-727 Which Teaches Away from Claim Element 1[b]

Revvo quotes a portion of Yamaguchi-727 paragraph [0042] which states: “circuit board 60 and the housing case 20 are provided with a *positioning means*, which is not shown in the figure, that are mutually fitted with each other. Whereby, a measurement direction of the acceleration sensor 66 relative to the housing case 20 is defined.” (Petition at 23 (emphasis added).) But, inexplicably, nowhere in the

Petition does Revvo acknowledge the existence of Yamaguchi-727 paragraph [0047], which further describes the “positioning means”:

The module 6 configured as mentioned above is housed in the housing case 20 in the state that the battery 70 is connected to the circuit board 60, and *positioned* so that the battery 70 faces the inner bottom surface 20c of the housing space S, and the measurement direction of the acceleration sensor 66 mounted on the circuit board 60 faces the *predetermined direction relative to the housing case 20*.

(EX1007 at [0047] (emphasis added).)¹⁰ Clearly, the reason that Revvo ignores Yamaguchi-727 paragraph [0047] is that,¹¹ rather than further describing the “positioning means” as a way for attachment of an electrical sensor device in the

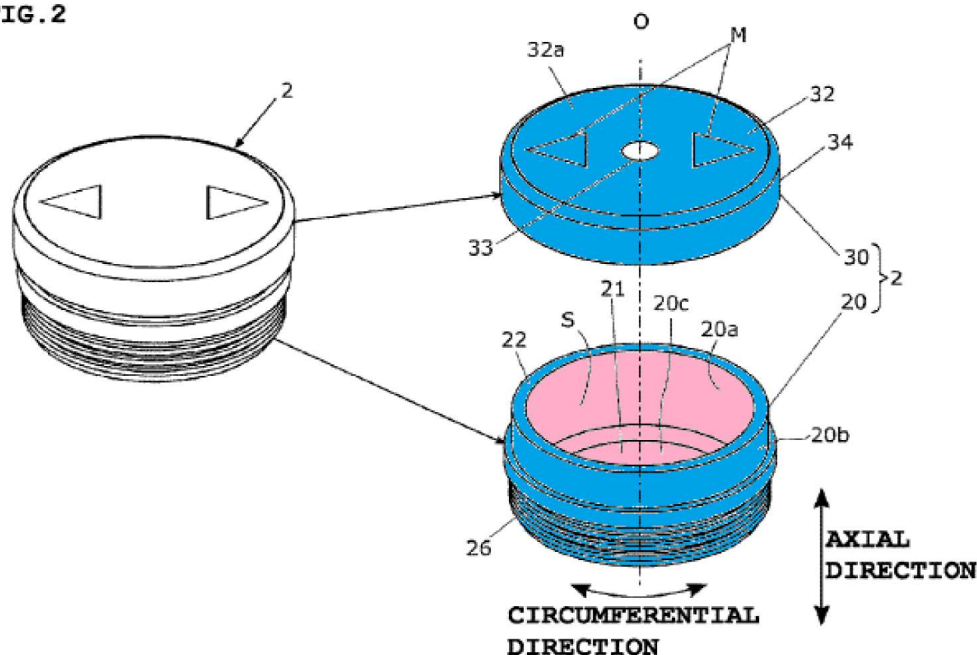
¹⁰ The Petition discusses Yamaguchi-727 paragraph [0034], but that is merely a discussion of markings on the outside of the housing, not any positioning means inside of the housing. (Petition at 33.)

¹¹ Revvo’s proffered expert also ignores Yamaguchi-727 paragraph [0047], and thus his testimony should be ignored. *See TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1358 (Fed. Cir. 2019) (“Conclusory expert testimony does not qualify as substantial evidence.”)

housing interior, paragraph [0047] merely describes that the sensor is “positioned” to face the “predetermined direction relative to the housing case 20.”¹²

This is confirmed by other portions of Yamaguchi-727. Figure 2 in Yamaguchi-727 shows an empty housing interior, with no way for the sensor to be attached within the housing case 20 (blue) or otherwise within the housing space S (pink):

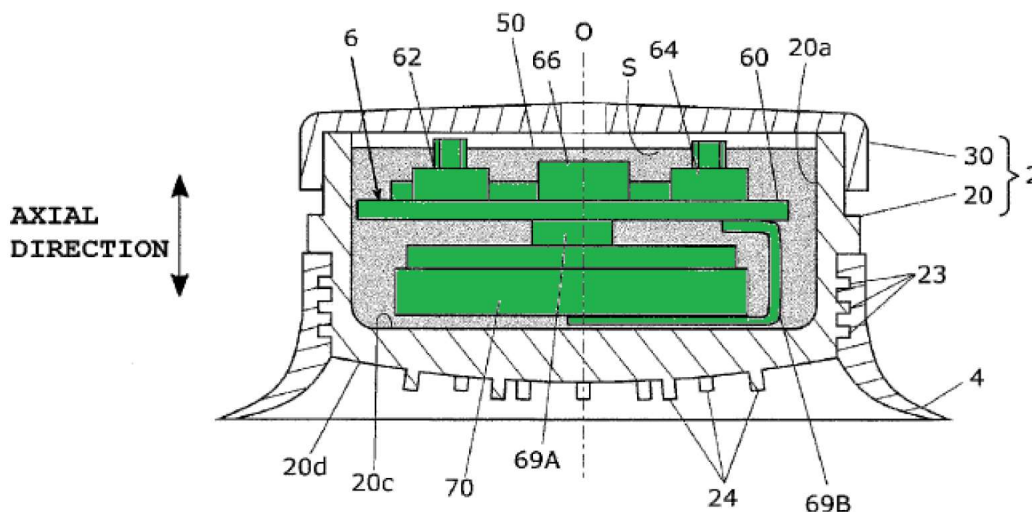
FIG. 2



(Petition at 20.) Instead of any way for attachment therein as claimed, Yamaguchi-727 discloses suspending the electronic component (green below) in potting material alone (at least grey shading):

¹² For purposes of this response only, this response refers to the sensor and circuit board in Yamaguchi-727 as the “sensor.”

FIG. 5



(Petition at 22-23; EX1006 at [0048].)

Revvo places undue reliance on use of the phrase “mutually fitted” in Yamaguchi-727 paragraph [0042]. (Petition at 23 and 47.) But, conspicuously nowhere does the Petition or Revvo’s expert address the ordinary meaning of “fitted.” (*Id.*; EX1003 at ¶¶ 83, 127, 139, and 146.) That is because the ordinary meaning of “fitted” does not include “attached.” (*See, e.g.*, EX2018 at 3 (“to be correctly adjusted to or shaped for”).) Revvo and its expert thus fail to address that the circuit board 60 and the housing case 20 in Yamaguchi-727 may be “mutually fitted” such that circuit board fits within the housing case without attachment therein. (EX1003 at ¶¶ 83, 127, 139, and 146.)

Yamaguchi-727 thus fails to disclose the limitation “attached therein to prevent movement of the device within the internal cavity” of Claim Element 1[b].

**b. The Petition Does Not Put Forward Other References
for Claim Element 1[b]**

The Petition only relies on Yamaguchi-727 for Claim Element 1[b]:

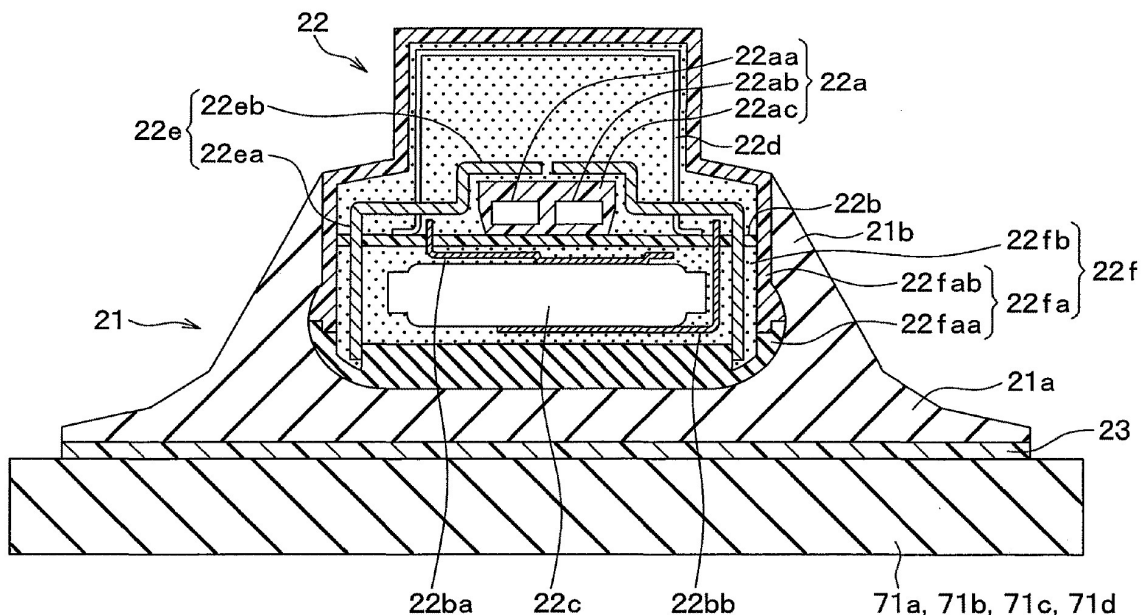
Ground	Claim(s)	Basis for Challenge Under § 103
1	1, 2, 7-9, 11, 12, 20-24	Yamaguchi-727
2	5, 28, 31-33, 41, 43, 44, 48, 50-52	Yamaguchi-727 in view of Yamaguchi-566
3	34, 53	Yamaguchi-727 in view of Yamaguchi-566 in further view of Dodani-859
4	10	Yamaguchi-727 in view of McDonald

(Petition at 4.)

**c. Substantially the Same Art and Arguments
Regarding Claim 1 Were Previously Before the Office**

Yamaguchi-727 is also cumulative to the references and arguments considered by the Patent Office during prosecution with regard to Claim 1, including Claim Element 1[b]. *See* 35 U.S.C. § 325(d). Specifically, the Examiner cited a similar filler or potting configuration described in Saito (EX1005) before allowing the claims of the '421 patent. (EX1002 at 65-67, 265-267, and 415-416.) Saito's potting configuration is illustrated in its Figure 3 below, which was cited by the Examiner (see dotted portions below):

FIG. 3



(EX1005 at Figure 3; EX1002 at 415.) The applicant specifically distinguished Saito on the argument that:

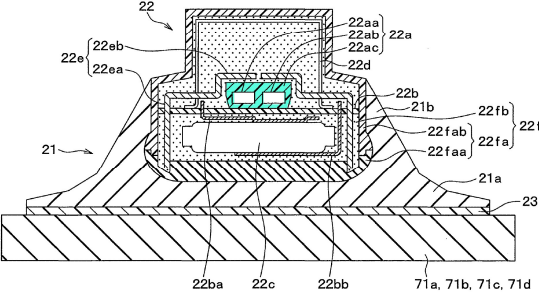
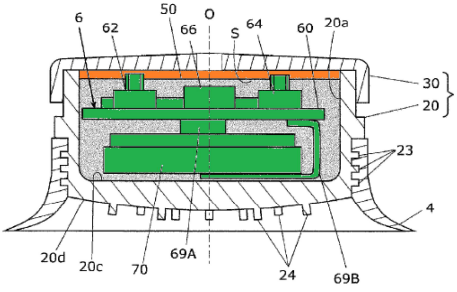
Saito discloses that the sensor components disposed in the accommodation structure (22f) are ***filled with the resin sealing portion (22fb)***, which is clearly illustrated in FIG. 3, to protect the sensor components, i.e., the sensor components are encapsulated within the accommodation structure by the resin sealing portion. Accordingly, Saito fails to expressly or implicitly disclose the feature that the housing internal cavity includes an unfilled open space above or below the

electrical sensor device disposed inside the internal cavity as presently
recited in Applicant's amended *independent claim 1*.

(EX1002 at 266 (emphasis added).)

Revvo fails to distinguish Yamaguchi-727, with its similar filler or potting configuration, from Saito or explain how the Examiner erred in a manner material to the patentability of Claim 1. This is ground for denial of the Petition. *See Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8-9 (PTAB Feb. 13, 2020) (precedential). At most, Revvo argues that Yamaguchi-727 “lack[s] Saito’s fully potted configuration.” (Petition at 4-5.) But nowhere does the Petition provide any explanation for its argument that Saito is “fully potted” or that Yamaguchi-727 allegedly lacks such a “fully potted” configuration.

Certainly, the Petition also ignores, for example, Saito’s references to a terminal exposed from the resin. (EX1005 at [0030] (“The sensor chip 22a is mounted on the circuit board 22b through a terminal (not shown) *exposed from the molding resin 22ac*.”), [0036] (“A desired position of a circuit pattern provided on the circuit board 22b and a terminal *exposed from the molding resin 22ac* are electrically connected to each other.”) (emphasis added).) This similarity to Yamaguchi-727, according to Revvo’s own argument, is depicted below:

Saito	Yamaguchi-727
FIG. 3 	FIG. 5 
(EX1005 at Figure 3) “exposed from the molding resin 22ac” (depicted in blue)	(Petition at 26 (arguing that “Temperature sensor 62 and pressure sensor 64 protrude above the portion of housing space S (above module 6) that is not filled by potting material 50 (in orange above).”).¹³

At least because none of the cited references discloses Claim Element 1[b], and because substantially the same art and/or arguments regarding these elements were previously before the Office, the Board should not institute IPR.

¹³ This is depicted without conceding that the Petition correctly describes the orange portion. (Petition at 26 (arguing that “the portion of housing space S (above module 6) that is not filled by potting material 50 (in orange above).”).)

2. None of the Cited References Discloses the Claim Element 28[b] “having a fixed placement therein by one or more surface features of the housing configured to contact the electrical sensor device” and Substantially the Same Art and Arguments Regarding This Configuration Were Previously Before the Office

Claim Element 28[a] recites “a housing comprising an outer structure that defines an open internal cavity therein.” (EX1001 at 32:27-28.) With regard to the housing internal cavity, Claim Element 28[b] recites, among other things, “an electrical sensor device disposed within the internal cavity and having a fixed placement therein by one or more surface features of the housing configured to contact the electrical sensor device.” (*Id.* at 32:29-33.) None of the references cited in the Petition disclose the limitation “having a fixed placement therein by one or more surface features of the housing configured to contact the electrical sensor device.”

a. The Petition Ignores the Most Pertinent Portion of Yamaguchi-727 Which Teaches Away from Claim Element 28[b]

As was discussed and depicted in Section VII.A.1.a, Revvo quotes a portion of Yamaguchi-727 paragraph [0042] regarding a “positioning means.” (Petition at 23 (emphasis added).) But, inexplicably, nowhere in the Petition does Revvo acknowledge the existence of Yamaguchi-727 paragraph [0047], which further describes the “positioning means” as merely that the sensor is “positioned” to face the “predetermined direction relative to the housing case 20,” rather than a way for

a “fixed placement therein by one or more surface features of the housing” as recited in Claim Element 28[b]. (EX1006 at [0047].) This is confirmed by Yamaguchi-727 Figure 2, which shows an empty housing interior, with no way for fixed placement by one or more surface features of the housing case 20 (blue) or otherwise within the housing space S (pink). (Petition at 20 (depicting EX1006 at Figure 2 with colors).) Instead of any such way for fixed placement by one or more surface features of the housing, Yamaguchi-727 merely discloses suspending the electronic component (green) in potting material alone (at least grey shading). (Petition at 22-23; EX1006 at [0048].)

Revvo places undue reliance on use of the phrase “mutually fitted” in Yamaguchi-727 paragraph [0042]. (Petition at 23 and 47.) But, conspicuously nowhere does the Petition or Revvo’s expert address the ordinary meaning of “fitted.” (*Id.*; EX1003 at ¶¶ 83, 127, 139, and 146.) That is because the ordinary meaning of “fitted” does not include “fixed.” (*See, e.g.*, EX2018 (“to be correctly adjusted to or shaped for”).)¹⁴

¹⁴ Nor do Revvo or its expert address that Yamaguchi-727 indicates that “fitting” and “fixing” are two different things. (EX1006 at [0034] (The cap 30 configured as described above is integrated with the housing case 20 by a *fitting* and *fixing* means or the like, which is not shown in the figure, in a state in which the attachment marks

Yamaguchi-727 thus fails to disclose the limitation “fixed placement therein by one or more surface features of the housing” of Claim Element 28[b].

b. The Petition Ignores the Most Pertinent Portion of Yamaguchi-566 Which Teaches Away from Claim Element 28[b]

Revvo quotes a portion of Yamaguchi-566 paragraph [0022] which states: “On the inner peripheral surface 20a of the peripheral wall part 22, a concave part 20A recessed outwardly in the radial direction relative to the axis O and a plurality of convex parts 20B protruding toward the direction of the axis O and extending along the axis O are formed so as to *position the module 6* housed in the housing space S at a predetermined position.” (EX1007 at [0022] (emphasis added); Petition at 52.) But, inexplicably, nowhere in the Petition does Revvo acknowledge the existence of Yamaguchi-566 paragraph [0060], which further describes how the module 6 is suspended in the housing with a “filler”:

Next, a *filler 50 is filled in the housing space S in which the module 6 is housed* and by letting the filler 50 to harden, the basic substrate 60 and the expansion substrate 80 are fixed, and the expansion substrate

M provided on the outer side surface 32a are oriented in a predetermined direction with respect to the housing case 20.”) (emphasis added).)

80 and the battery 100 are fixed. *As a result, the module 6* composed of the basic substrate 60, the expansion substrate 80 and the battery 100 which are fixed to each other by the filler 50 *is fixed to the housing case 20*, and the through hole 29 provided in the bottom part 21 is closed.

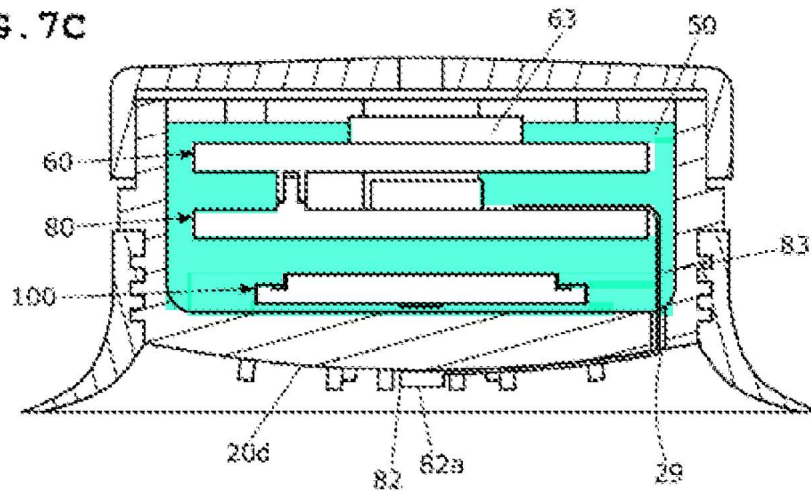
(EX1007 at [0060] (emphasis added).) Clearly, the reason that Revvo ignores Yamaguchi-566 paragraph [0060] is that, rather than describing the “position” means as a way for “fixed placement therein by one or more surface features of the housing,” paragraph [0060] merely describes that “filler” alone is used for suspending the sensor in the housing.¹⁵

This is confirmed by other portions of Yamaguchi-566. Figure 7C in Yamaguchi-566, also ignored by Revvo,¹⁶ shows “filler 50” alone is used for suspending the sensor in the housing:

¹⁵ For purposes of this response only, this response refers to the module 6 in Yamaguchi-566 as the “sensor.”

¹⁶ Revvo's proffered expert also ignores Yamaguchi-566 paragraph [0060] and Figure 7C (EX1003), and thus his testimony should be ignored. *See TQ Delta*, 942 F.3d at 1358.

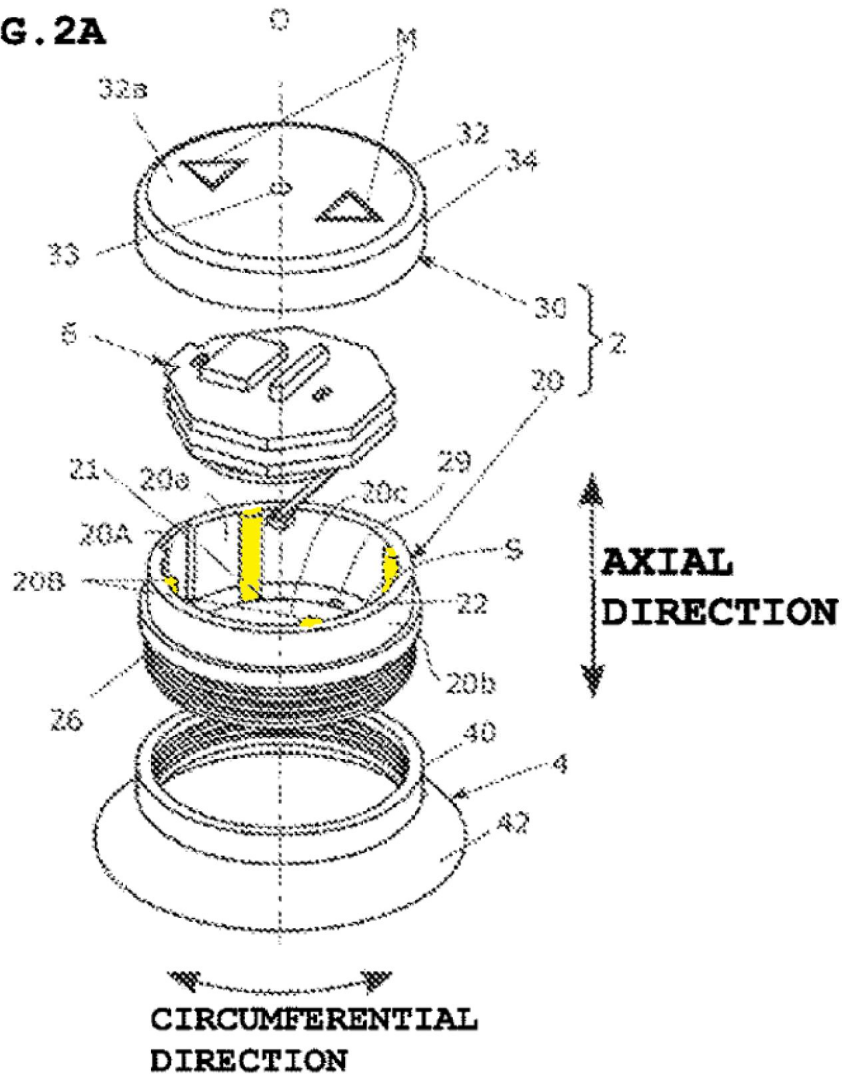
FIG. 7C



(EX1006 at Figure 7C.) Thus, Yamaguchi-566 uses filler alone rather than “fixed placement therein by one or more surface features of the housing.”

Going back to Revvo’s myopic focus on Yamaguchi-566 paragraph [0022] and Figure 2A, as can be clearly seen and is described, Yamaguchi-566 describes the module 6 as a “roughly octagonal shape”:

FIG. 2A



(Petition at 45; EX1006 at Figure 2A, [0030].) But nowhere does Yamaguchi-566 disclose that the “roughly octagonal shape” of module 6 is sized such that the sides of the roughly octagonal shape engage the “convex parts 20B” (highlighted in yellow above) in a manner that prevents rotation of the module 6 in the circumferential (or radial) direction. (EX1007 at [0022].) Nowhere does the Petition address the size of module 6 in Yamaguchi-566. Instead, the Petition and Revvo’s expert merely provide a conclusory argument that the convex parts 20B “prevent[] radial

displacement of module 6 about axis O.” (Petition at 52 (citing EX1007 at [0022], FIG. 2A; EX1003 ¶152.) Such conclusory argument and testimony should be ignored.¹⁷ See *TQ Delta*, 942 F.3d at 1358. Revvo’s expert fails to address that the convex parts 20B may merely be present for orientation purposes rather than to engage a module 6 to prevent rotation of the module 6 in the circumferential (or radial) direction. (EX1003 ¶152.)

¹⁷ Revvo argues that “The ribs and groove in Yamaguchi-566 are not functionally different than the positioning posts identified in Patent Owner’s infringement contentions.” (Petition at 52.) That argument lacks credibility because the positioning posts in Revvo’s infringing product are not placed along the periphery or the circumference of the housing, as in Yamaguchi-566, but rather elsewhere interior to the Revvo housing. (EX1015 at 111-113.) Indeed, Revvo concedes that the structure of its products are substantially different from Yamaguchi-566 when it says its products have “holes in a printed circuit board of a sensor assembly that are mutually aligned with posts in a housing.” (Petition at 51.) As the holes are “in [the] printed circuit board,” the “mutually aligned” posts are in the interior of the housing, rather than on the circumference. (*See id.*) Thus, unlike Yamaguchi-566, there is no doubt that Revvo’s interior (not circumferential) posts prevent radial (or circumferential) movement of the sensor board. (*Id.*)

Moreover, nowhere does the Petition actually apply the “fixed placement” language of Claim Element 28[b]. Rather, Revvo attempts to argue an alternative claim construction not even put forward or adopted in the co-pending district court litigation, which is “not displaceable in at least one direction.”¹⁸ (Petition at 11, 51-52.) Yet again, however, nowhere does the Petition actually apply that non-final, alternative claim construction. (*Id.* at 51-52.) Rather, Revvo attempts to apply – and do so by mischaracterization of – Cerebrum’s infringement contentions.¹⁹ (*Id.*) That fails to satisfy Revvo’s burden of applying the claim language as construed.²⁰ *See*

¹⁸ As was discussed above, this construction is a non-final, alternative construction not even finally presented to or adopted by the district court. (EX1017 at 19.)

¹⁹ Revvo mischaracterizes Cerebrum’s infringement contentions when it argues that Cerebrum has “taken the position in its infringement contentions that holes in a printed circuit board of a sensor assembly that are mutually aligned with posts in a housing are *sufficient* to satisfy this limitation.” (Petition at 51 (emphasis added).) Revvo utterly ignores the full context in which Revvo’s products satisfy this limitation. (EX1015 at 111-113 et al.)

²⁰ Notably, Revvo is trying to have it both ways – arguing that that the infringement contentions support the Petition, while seemingly not conceding that infringement. (Petition at 51-52.) Indeed, Revvo has taken the position in the district court

R.J. Reynolds Vapor Company v. U.S. Smokeless Tobacco Company LLC, IPR2021-00477, Paper No. 15 at 15 (PTAB Aug. 6, 2021) (“Petitioner does not accurately describe Patent Owner’s position in its infringement contentions. Although Patent Owner quoted from Petitioner’s patent as evidence that Petitioner’s product infringes—Petitioner has not sufficiently shown that Patent Owner was proposing that quotation as a construction of the term ‘non-hermetic seal’ or ‘a moisture barrier and a non-hermetic seal.’ To the contrary, Patent Owner explicitly stated during the district court proceeding that it was relying on the plain and ordinary meaning of the term. Petitioner has not offered any evidence that its proposed construction is a plain and ordinary meaning.”) (denying institution).

Yamaguchi-566 thus fails to disclose the limitation “fixed placement therein by one or more surface features of the housing” of Claim Element 28[b].

c. The Petition Does Not Put Forward Other References for Claim Element 28[b]

The Petition only relies on Yamaguchi-727 in view of Yamaguchi-566 for Claim Element 28[b]:

litigation that its products do not meet the limitation “having a fixed placement therein by one or more surface features of the housing configured to contact the electrical sensor device.” (EX2020 at Page 93 of 97.)

Ground	Claim(s)	Basis for Challenge Under § 103
1	1, 2, 7-9, 11, 12, 20-24	Yamaguchi-727
2	5, 28, 31-33, 41, 43, 44, 48, 50-52	Yamaguchi-727 in view of Yamaguchi-566
3	34, 53	Yamaguchi-727 in view of Yamaguchi-566 in further view of Dodani-859
4	10	Yamaguchi-727 in view of McDonald

(Petition at 4.)

d. Substantially the Same Art and Arguments Regarding Claim 28 Were Previously Before the Office

As was already discussed above in VII.A.1.c, Yamaguchi-727 is cumulative to the references and arguments considered by the Patent Office during prosecution; specifically, Yamaguchi-727 is cumulative to Saito with regard to their use of fillers alone, as was addressed during prosecution.

Yamaguchi-566 is also cumulative to the references and arguments considered by the Patent Office during prosecution with regard to Claim 28, including Claim Element 28[b]. *See* 35 U.S.C. § 325(d). Specifically, the Examiner cited a similar “filler” or potting configuration described in Saito (EX1005) before allowing the claims of the '421 patent. (EX1002 at 65-67, 265-267, and 415-416.) Saito's potting configuration is illustrated in its Figure 3, which was cited by the Examiner. (EX1005 at Figure 3; EX1002 at 415.) The applicant specifically distinguished Saito on the argument that:

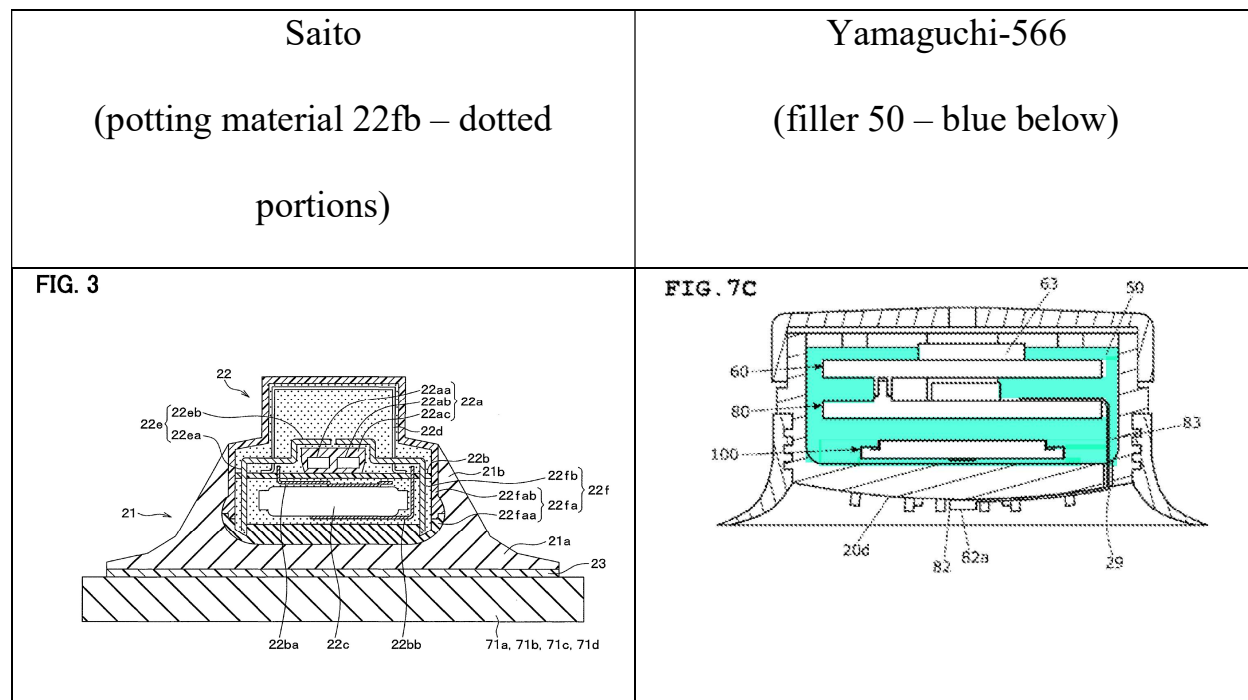
Saito discloses a tire-mounted sensor comprising an accommodation structure (22f – with reference to FIG. 2) to accommodate the respective components of the sensor so as to be ***covered with the resin sealing portion*** (22fb). Paragraph [0046] recites the housing 22fa configures an accommodation chamber that accommodates the different components of the sensor. While Saito discloses the feature of an accommodation structure to accommodate the different components of the sensor, Saito fails to expressly or implicitly disclose the that the housing comprises one or more surface features configured to contact the electrical sensor device to prevent movement of the electrical sensor device within the housing internal cavity as presently recited in Applicant's amended ***independent claim 28***.

(EX1002 at 266 (emphasis added).)

Revvo fails to distinguish Yamaguchi-566, with its similar filler configuration, from Saito or explain how the Examiner erred in a manner material to the patentability of Claim 28. This is ground for denial of the Petition. *See Advanced Bionics*, IPR2019-01469, Paper 6 at 8-9. At most, Revvo argues that Yamaguchi-566 “lack[s] Saito’s fully potted configuration.” (Petition at 4-5.) But nowhere does the Petition provide any explanation for its argument that Saito is

“fully potted” or that Yamaguchi-566 lacks a “fully potted” configuration.²¹ Certainly, the Petition also ignores, for example, Saito’s references to a terminal “exposed from the resin,” as was discussed above in Section VII.A.1.c. (EX1005 at [0030], [0036].)

In any event, both Yamaguchi-566 and Saito depict suspending a sensor in potting alone, as depicted below:



²¹ Rather, the Petition only attempts to explain that Yamaguchi-727 is not fully potted. (Petition at 25-27 and 54.)

(EX1005 at Figure 3, [0041] (“Specifically, the accommodation structure 22f has a structure in which a resin sealing portion 22fb made of a flexible potting material or the like is provided inside the housing 22fa.”), [0030] (“The sensor chip 22a is mounted on the circuit board 22b through a terminal (not shown) <i>exposed from the molding resin 22ac</i>.”), [0036] (“A desired position of a circuit pattern provided on the circuit board 22b and a terminal <i>exposed from the molding resin 22ac</i> are electrically connected to each other.”) (emphasis added))	(EX1007 at Figure 7C, [0060] (“Next, a filler 50 is filled in the housing space S in which the module 6 is housed and by letting the filler 50 to harden, the basic substrate 60 and the expansion substrate 80 are fixed, and the expansion substrate 80 and the battery 100 are fixed. As a result, the module 6 composed of the basic substrate 60, the expansion substrate 80 and the battery 100 which are fixed to each other by the filler 50 is fixed to the housing case 20, and the through hole 29 provided in the bottom part 21 is closed ... [T]he filler 50 may be <i>filled</i> up to a position <i>not reaching the upper surface of the sensor unit 61</i>, for example, so as not to block the air intake hole provided in the sensor unit 61”) (emphasis added))
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At least because none of the cited references discloses Claim Element 28[b], and because substantially the same art and/or arguments regarding these elements were previously before the Office, the Board should not institute IPR.

3. None of the Cited References Discloses the Claim Element 41[a] “installing an electrical sensor device within an internal cavity of a housing” and Substantially the Same Art and Arguments Regarding This Configuration Were Previously Before the Office

Claim Element 41[a] recites “installing an electrical sensor device within an internal cavity of a housing.” (EX1001 at 34:7-8.) None of the references cited in the Petition discloses this limitation.

a. The Petition Ignores the Most Pertinent Portion of Yamaguchi-727 Which Teaches Away from Claim Element 41[a]

As was discussed and depicted in Section VII.A.1.a, Revvo quotes a portion of Yamaguchi-727 paragraph [0042] regarding a “positioning means.” (Petition at 23 (emphasis added).) But, inexplicably, nowhere in the Petition does Revvo acknowledge the existence of Yamaguchi-727 paragraph [0047], which further describes the “positioning means” as merely that the sensor is “positioned” to face the “predetermined direction relative to the housing case 20,” rather than a way for “installing an electrical sensor device within an internal cavity of a housing” as recited in Claim Element 41[a]. (EX1006 at [0047].) This is confirmed by Yamaguchi-727 Figure 2, which shows an empty housing interior, with no way for

installing an electrical sensor device within an internal cavity of the housing case 20 (blue) or otherwise within the housing space S (pink). (Petition at 20 (depicting EX1006 at Figure 2 with colors).) Instead of any such way for installing an electrical sensor device within an internal cavity of the housing, Yamaguchi-727 merely discloses suspending the electronic component (green) in potting material alone (at least grey shading). (Petition at 22-23; EX1006 at [0048].)

Revvo places undue reliance on use of the phrase “mutually fitted” in Yamaguchi-727 paragraph [0042]. (Petition at 23 and 47.) But, conspicuously nowhere does the Petition or Revvo’s expert address the ordinary meaning of “fitted.” (*Id.*; EX1003 at ¶¶ 83, 127, 139, and 146.) That is because the ordinary meaning of “fitted” does not include “installing.” (*See, e.g.*, EX2018 (“to be correctly adjusted to or shaped for”).)

Yamaguchi-727 thus fails to disclose the limitation “installing an electrical sensor device within an internal cavity of a housing” of Claim Element 41[a].

b. The Petition Ignores the Most Pertinent Portion of Yamaguchi-566 Which Teaches Away from Claim Element 41[a]

As was discussed and depicted in Section VII.A.2.b, Revvo quotes a portion of Yamaguchi-566 paragraph [0022] regarding a “position” means. (EX1007 at [0022] (emphasis added); Petition at 52.) But, inexplicably, nowhere in the Petition does Revvo acknowledge the existence of Yamaguchi-566 paragraph [0060], which

further describes how the module 6 is merely suspended in the housing with a “filler,” rather than describing the “position” means as a way for “installing an electrical sensor device within an internal cavity of a housing.” (EX1007 at [0060] (emphasis added).) This is confirmed by other portions of Yamaguchi-566. Figure 7C in Yamaguchi-566, also ignored by Revvo, shows “filler 50” is used for suspending the sensor in the housing. (EX1006 at Figure 7C.) Thus, Yamaguchi-566 merely uses filler alone rather than “installing an electrical sensor device within an internal cavity of a housing.”

Moreover, as was discussed above in Section VII.A.2.b,²² nowhere does Yamaguchi-566 disclose that the “roughly octagonal shape” of module 6 is sized such that the sides of the roughly octagonal shape engage the “convex parts 20B” (highlighted in yellow above) in a manner that prevents rotation of the module 6 in the circumferential (or radial) direction, (EX1007 at [0022]), and nowhere does the Petition address the size of module 6 in Yamaguchi-566.

As discussed above, Yamaguchi-566 thus fails to disclose the limitation “installing an electrical sensor device within an internal cavity of a housing” of Claim Element 41[a].

²² Revvo’s arguments regarding Yamaguchi-566, including paragraph [0022] and Figure 2A, fail for the reasons discussed in Section VII.A.2.b.

c. The Petition Does Not Put Forward Other References for Claim Element 41[a]

The Petition only relies on Yamaguchi-727 in view of Yamaguchi-566 for Claim Element 41[a]:

Ground	Claim(s)	Basis for Challenge Under § 103
1	1, 2, 7-9, 11, 12, 20-24	Yamaguchi-727
2	5, 28, 31-33, 41, 43, 44, 48, 50-52	Yamaguchi-727 in view of Yamaguchi-566
3	34, 53	Yamaguchi-727 in view of Yamaguchi-566 in further view of Dodani-859
4	10	Yamaguchi-727 in view of McDonald

(Petition at 4.)

d. Substantially the Same Art and Arguments Regarding Claim 41 Were Previously Before the Office

Yamaguchi-727 and Yamaguchi-566 are also cumulative to the references and arguments considered by the Patent Office during prosecution with regard to Claim 41, including Claim Element 41[a]. *See* 35 U.S.C. § 325(d). Specifically, the Examiner cited a similar “filler” or potting configuration described in Saito (EX1005) before allowing the claims of the '421 patent. (EX1002 at 65-67, 265-267, and 415-416.) Saito's potting configuration is illustrated in its Figure 3, which was cited by the Examiner. (EX1005 at Figure 3; EX1002 at 415.) The applicant specifically distinguished Saito on the argument that:

As noted above, Saito discloses a tire-mounted sensor construction comprising sensor components disposed in the accommodation structure that is filled with the resin sealing portion (22fb) for purposes of protecting the sensor components. Accordingly, Saito also necessarily fails to disclose the feature that the housing comprises an opening extending from an outer surface of the housing to the internal cavity as presently recited in Applicant's amended ***independent claim 41***, which is not surprising given the intent and purpose of Saito to have a resin filled accommodation structure (22f), i.e., the feature of an opening in the housing would be inconsistent and ***incompatible with the resin filled housing of Saito***.

(EX1002 at 266 (emphasis added).)

As was already discussed above in Section VII.A.1.c and Section VII.A.2.d, Yamaguchi-727 and Yamaguchi-566 are cumulative to the references and arguments considered by the Patent Office during prosecution; specifically, Yamaguchi-727 and Yamaguchi-727 are cumulative to Saito with regard to their use of fillers alone, as was addressed during prosecution. This is ground for denial of the Petition. *See Advanced Bionics*, IPR2019-01469, Paper 6 at 8-9.

At least because none of the cited references discloses Claim Element 41[a], and because substantially the same art and/or arguments regarding these elements were previously before the Office, the Board should not institute IPR.

B. Revvo Fails to Show That a POSA Would Have Combined the Cited References to Arrive at the Claimed Invention

Revvo fails to show that a POSA would have combined and modified the teachings of the cited references to arrive at the invention claimed in independent Claims 1, 28 or 41. Because the remaining challenged claims all depend from these claims, Revvo's obviousness conclusions with regard to these claims also fails.

"[C]onclusory assertion . . . about general knowledge in the art without evidence on the record" is insufficient to show obviousness. *See K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014). Obviousness requires the identification of a reason that would have motivated a POSA to make the necessary modification to arrive at the invention. *K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014); *InTouch Techs., Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014); *see also In re Stepan Co.*, 868 F.3d 1342, 1345-46 (Fed. Cir. 2017) (obviousness requires finding both that a skilled artisan would have been motivated to combine the teachings of the prior art and that the skilled artisan would have had a reasonable expectation of success in doing so).

As discussed above in Section VII.A.1.a, the Petition fails to specify where the Claim Element 1[b] is disclosed in the cited references. Indeed, none of the cited references discloses this claim limitation. Revvo also fails to show that this missing limitation would have been obvious. In fact, as was discussed above in Section VII.A.1.a, the only cited reference for Claim 1, Yamaguchi-727, teaches away from Claim Element 1[b] in portions of Yamaguchi-727 ignored by the Petition. Nowhere does the Petition argue that Yamaguchi-727 could be modified to reach Claim Element 1[b].

As discussed above in Section VII.A.2.a and Section VII.A.2.b, the Petition fails to specify where the Claim Element 28[b] is disclosed in the cited references. Indeed, none of the cited references discloses this claim limitation. Revvo also fails to show that this missing limitation would have been obvious. In fact, as was discussed above in Section VII.A.2.a and Section VII.A.2.b, the only cited references for Claim 28, Yamaguchi-727 and Yamaguchi-566, teach away from Claim Element 28[b] in portions of Yamaguchi-727 and Yamaguchi-566 ignored by the Petition. Nowhere does the Petition argue that Yamaguchi-727 or Yamaguchi-566 could be modified to reach Claim Element 28[b]. Nowhere does the Petition argue how the combination of Yamaguchi-727 and Yamaguchi-566 would be modified to reach Claim Element 28[b]. (Petition at 41-42.)

As discussed above in Section VII.A.3.a and Section VII.A.3.b, the Petition fails to specify where the Claim Element 41[a] is disclosed in the cited references. Indeed, none of the cited references discloses this claim limitation. Revvo also fails to show that this missing limitation would have been obvious. In fact, as was discussed above in Section VII.A.3.a and Section VII.A.3.b, the only cited references for Claim 41, Yamaguchi-727 and Yamaguchi-566, teach away from Claim Element 41[a] in portions of Yamaguchi-727 and Yamaguchi-566 ignored by the Petition. Nowhere does the Petition argue that Yamaguchi-727 or Yamaguchi-566 could be modified to reach Claim Element 41[a]. Nowhere does the Petition argue how the combination of Yamaguchi-727 and Yamaguchi-566 would be modified to reach Claim Element 41[a]. (Petition at 41-42.)

For at least the reasons above, the Petition has not shown that Claim Elements 1[b], 28[b] and 41[a] would have been obvious.

VIII. Conclusion

For at least the reasons discussed above, Cerebrum respectfully requests that the Board deny the Petition for *inter partes* review.

Respectfully submitted,

Dated: June 24, 2025

By: /Christopher D. Bright/
Christopher D. Bright
Reg. No. 46,578

Counsel for Patent Owner

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Corrected Patent Owner's Preliminary Response contains, as measured by the word-processing system used to prepare this paper, 8,583 words. This word count does not include the items excluded by 37 C.F.R. § 42.24.

Respectfully submitted,

Dated: June 24, 2025

By: /Christopher D. Bright/
Christopher D. Bright
Reg. No. 46,578

Counsel for Patent Owner

CERTIFICATE OF SERVICE

I certify that on June 24, 2025, I caused to be served a true and correct copy of the foregoing Corrected Patent Owner's Preliminary Response by electronic means at the following addresses of record:

Orion Armon (Reg No. 65,421)

E-mail: oarmon@cooley.com

Jennifer Volk-Fortier (Reg No. 62,305)

E-mail: jvolkfortier@cooley.com

Dustin M. Knight (Reg. No. 76,239)

Email: dknight@cooley.com

Adam M. Pivovar (*pro hac vice* to be filed)

Email: apivovar@cooley.com

Reuben Chen (*pro hac vice* to be filed)

Email: rchen@cooley.com

Respectfully submitted,

Dated: June 24, 2025

By: /Christopher D. Bright/
Christopher D. Bright
Reg. No. 46,578
Counsel for Patent Owner