

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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BAZOOKA-FARMSTAR, LLC,  
Petitioner,

v.

NUHN INDUSTRIES LTD.,  
Patent Owner.

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IPR2024-00004  
Patent 11,491,835 B2

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Before MEREDITH C. PETRAVICK, MATTHEW S. MEYERS, and  
BRENT M. DOUGAL, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Claims Unpatentable

Denying Patent Owner's Revised Contingent Motion to Amend  
*35 U.S.C. § 318(a)*

ORDER

Denying Patent Owner's Motion to Exclude

Denying Petitioner's Motion to Exclude

*37 C.F.R. § 42.64(c)*

Granting Motions to Seal and Entering Protective Order

*37 C.F.R. §§ 42.14, 42.54*

## I. INTRODUCTION

### A. *Background and Summary*

Bazooka-Farmstar, LLC (“Petitioner” or “Bazooka”) filed a petition, on October 13, 2023, for *inter partes* review (Paper 2 (“Pet.”)) challenging claims 1–40 of U.S. Patent No. 11,491,835 B2 (Ex. 1001, “the ’835 patent”). *See* 35 U.S.C. § 311. Nuhn Industries Ltd. (“Patent Owner” or “Nuhn”) timely filed a Preliminary Response to the Petition. Paper 9 (“Preliminary Response” or “Prelim. Resp.”). With the Board’s authorization, Petitioner filed a Reply to the Preliminary Response (Paper 10, “Reply”) and Patent Owner filed a Sur-reply to the Reply (Paper 11, “Sur-reply”).

Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of all challenged claims on all grounds presented in the Petition. Paper 12 (“Inst. Dec.” or “Institution Decision”). After institution, Patent Owner filed a Contingent Motion to Amend (Paper 21, “MTA”) as well as a Patent Owner Response (Paper 23 (sealed), Paper 22 (unsealed), “PO Resp.”). Petitioner filed a Reply to Patent Owner’s Response (Paper 34, “Pet. Reply”), and an opposition to Patent Owner’s Motion to Amend (Paper 37, “MTA Opp.”).<sup>1</sup>

On October 15, 2024, pursuant to Patent Owner’s request (*see* MTA 1), we issued Preliminary Guidance on Patent Owner’s Motion to Amend. Paper 39 (“PG”). Patent Owner then filed a Revised Contingent Motion to Amend (Paper 42, “Revised MTA” or “RMTA”), along with a Sur-reply (Paper 40, “PO Sur-reply”). Petitioner opposed Patent Owner’s Revised

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<sup>1</sup> The parties have filed several motions to seal certain briefing and exhibits which we address at the end of this Decision. Papers 20, 30, 70. The parties indicate that they are no longer seeking to keep Papers 34 and 36 under seal. Paper 70, 2.

MTA. Paper 47 (“RMTA Opp.”). Patent Owner filed a reply in support of its Revised MTA. Paper 50 (“RMTA Reply”). Petitioner then filed a Sur-reply related to the Revised Contingent Motion to Amend. Paper 61 (“RMTA Sur-reply”).

Additionally, each party filed a motion to exclude. Petitioner filed a Motion to Exclude Evidence (Paper 53, “Pet. Mot. To Exclude”), Patent Owner filed a Response opposing Petitioner’s Motion (Paper 56), and Petitioner filed a Reply in support of its Motion (Paper 60). Patent Owner filed a Motion to Exclude Evidence (Paper 54, “PO Mot. To Exclude”), Petitioner filed a Response opposing Patent Owner’s Motion (Paper 57), and Patent Owner filed a Reply in support of its Motion (Paper 59). We address the parties’ motions to exclude at the end of this Decision.

On February 13, 2025, we conducted an oral hearing. A copy of the transcript (Paper 71 “Tr.”) is included in the record.

We have jurisdiction under 35 U.S.C. § 6(b), and we issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. As explained below, we conclude that Petitioner has shown by a preponderance of the evidence that claims 1–40 of the ’835 patent are unpatentable. We also determine that Petitioner has established by a preponderance of the evidence that proposed substitute claims 41–80, as set forth in Patent Owner’s Revised Contingent Motion to Amend, are unpatentable.

#### *B. Real Parties in Interest*

Petitioner identifies itself, as well as Eldon C. Stutsman, Inc. and Stutsman Holdings, Inc. as the real parties-in-interest. Pet. 1; *see also* Paper

5, 2. Patent Owner identifies itself and Nuhn Holdings Ltd. as the real parties-in-interest. Paper 4, 2.

*C. Related Matters*

Petitioner and Patent Owner state that the '835 patent, along with related U.S. Patent No. 10,974,557 ("the '557 patent"), U.S. Patent No. 11,358,425 ("the '425 patent"), and U.S. Patent No. 11,541,708 ("the '708 patent") are involved in: *Nuhn Industries Ltd. v. Bazooka Farmstar, LLC*, No. 3:22-cv-00015-SMR (S.D. IA); and *Nuhn Industries Ltd. v. Atlas Ag Services, LLC*, No. 1:23-cv-368-JLS (W.D. NY). Pet. 1; Paper 4, 2–4.

The '425 patent was challenged in IPR2023-01161<sup>2</sup> and the '708 patent is currently being challenged in IPR2024-00098.<sup>3</sup>

*D. The '835 Patent (Ex. 1001)*

The '835 patent is titled, "Amphibious Pumping Vehicle" and "relates to pumps and vehicles equipped for pumping," but more particularly, "to manure pumps and amphibious vehicles equipped for pumping liquid manure, such as animal manure contained in a farm lagoon." Ex. 1001, code (54), 1:24–28. According to the '835 patent,

[m]anure produced during animal husbandry, particularly hog and cattle manure, is transferred by washing to a pit or lagoon for storage prior to removal for land application or further processing. During storage, a crust can develop on the surface of the pit or lagoon that must be disrupted prior to or during removal of the manure. Pumps are employed for this purpose with jets that return a percentage of the manure back to the pit or lagoon in the form of a high volume spray to disrupt the crust and

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<sup>2</sup> A Final Written Decision of IPR2023-01161 was issued on January 27, 2025.

<sup>3</sup> We granted institution for IPR2024-00098 on May 23, 2024.

recirculate the manure. *Pumps for use in recirculating manure from smaller pits are known*; however, these pumps are typically suitable for accessing the pit or lagoon from its edge and are connected to a tractor or similar land vehicle for operational power. They are therefore limited in their ability to recirculate manure to the middle of large lagoons, which are becoming increasing[ly] common as the size of animal husbandry operations increases.

*Id.* at 1:32–48 (emphasis added). Thus, the '835 patent identifies that “there is a need for improved pumps and vehicles equipped for pumping for use with large manure lagoons.” *Id.* at 1:49–51.

Figure 1, reproduced below, shows an embodiment of one such vehicle.

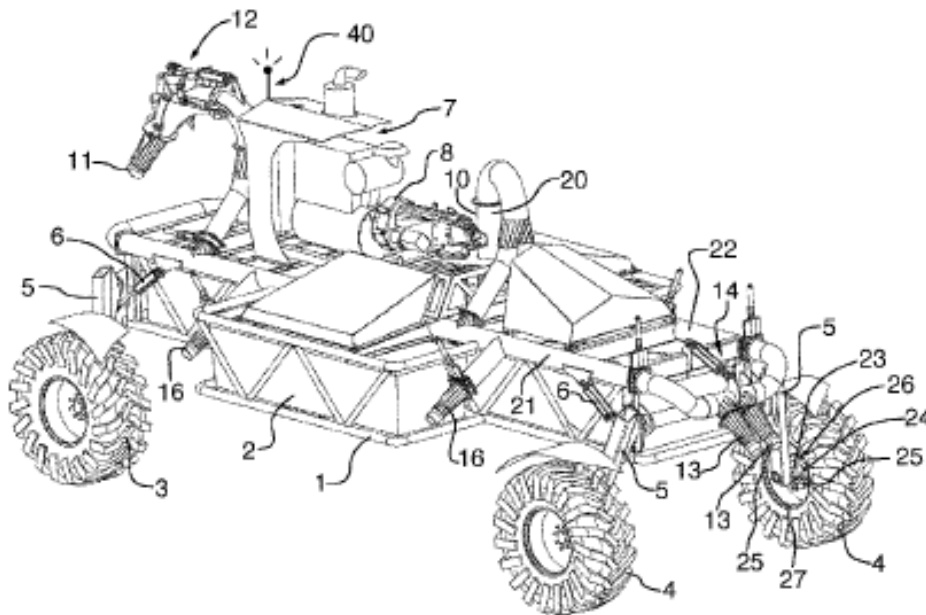


Figure 1 illustrates an amphibious vehicle with the following main components: a buoyant vehicle body (1, 2), a ground engaging propulsion structure of two sets of wheels (3, 4), a power source (7) such as an engine, a plurality of nozzles (11, 13, 16), and a remote control structure (40). Ex. 1001, 5:26–27, 5:36–38, 5:49, 5:53–54, 5:59–60, 7:55–57. The vehicle also

includes a “fluid pump” which is fluidly connected to the nozzles, and a valve used to control flow of fluid from the pump to the nozzles. *Id.* at 5:42–48, 5:63–67.

The ’835 patent describes using the vehicle in a large manure pit or lagoon to break up the crust that develops on top of the pit or lagoon, “prior to removal [of the manure] for land application or further processing.” Ex. 1001, 1:32–37, 1:44–48, 8:18–20. This is done by remotely driving the vehicle into and through the lagoon over remote control; first using the wheels, and then when floating, pumping fluid using the fluid pump to create fluid flow through the various nozzles. *Id.* at 8:5–14. “Once the vehicle is in the desired position, the valves associated with the first fluid nozzle are opened and” this nozzle can be controlled “so that the fluid is sprayed widely to break crusts of material floating on the surface of the lagoon. In this manner, fluid is recirculated and directed to desired locations in the lagoon.” *Id.* at 8:14–21. The manure can then be removed from the lagoon. *Id.* at 8:21–27.

#### *E. Illustrative Claim*

Petitioner challenges claims 1–40 of the ’835 patent. Pet. 3. Challenged claims 1, 17, 39, and 40 are independent. Claim 1 is illustrative, and is reproduced below.

1. An amphibious vehicle comprising:
  - a floatable vehicle body;
  - a ground engaging propulsion structure comprising a plurality of ground engaging elements powered by a hydraulic motor;
  - a hydraulically powered liquid manure mover separate from the ground engaging propulsion structure, the liquid manure

mover positioned within liquid manure when the vehicle is floating;

a power source connected to a hydraulic pump, the power source configured to provide power to both the ground engaging propulsion structure and the liquid manure mover; and,

a wireless remote control configured to enable an operator who is remote from the vehicle to: (1) control the ground engaging propulsion structure; (2) control a flow of liquid manure from a liquid manure pump; (3) control at least one of the speed and direction of the vehicle when the vehicle is ground engaging; and, (4) control at least one of the speed and direction of the vehicle when the vehicle is floating.

Ex. 1001, 8:37–57.

Independent claims 17, 39, and 40 are substantially similar to claim 1 except that claims 17 and 39 recite “(2) control a flow of liquid manure from the liquid manure mover” rather than “. . . from a liquid manure pump.”

Ex. 1001, 9:59–60, 11:21–22. Independent claims 39 and 40 are substantially similar to claims 1 and 17, respectively, except that independent claims 39 and 40 further recite “a ground engaging propulsion structure comprising a set of wheels and wherein each wheel is powered by its own variable speed hydraulic motor.” *Id.* at 11:7–9, 12:5–7.

#### *F. Instituted Grounds of Unpatentability*

We instituted *inter partes* review of all challenged claims based on the seven grounds of unpatentability, which are provided in the table below:

| Claim(s) Challenged | 35 U.S.C. § | Reference(s)/Basis   |
|---------------------|-------------|----------------------|
| 1–10, 13–26, 29–40  | 102         | Carrier <sup>4</sup> |

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<sup>4</sup> US 2012/0185129 A1, published July 19, 2012 (Ex. 1005, “Carrier”).

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>                       |
|----------------------------|--------------------|-------------------------------------------------|
| 1–5, 7–21, 23–40           | 103                | Truxor, <sup>5</sup> Yoon, <sup>6</sup> Carrier |
| 1–5, 7–21, 23–40           | 103                | SenwaTec, <sup>7</sup> Yoon, Carrier            |
| 1–40                       | 103                | Puck, <sup>8</sup> Bryham <sup>9</sup>          |
| 1–40                       | 103                | Puck, Bryham, Bennett II <sup>10</sup>          |

Petitioner also relies on a first declaration of Eric S. Winkel, Ph.D. (Ex. 1004) in support of its contentions, and a second Declaration of Dr. Winkel (Ex. 1110) in support of its arguments.

Patent Owner submits a first declaration of Douglas S. Prairie (Ex. 2004) in support of its Preliminary Response and a second declaration of Mr. Prairie in support of its Response (Ex. 2094). Patent Owner also submits a declaration of Ian Nuhn, the Vice President at Nuhn Industries Ltd., and Inventor of the '835 patent (Ex. 2083 (Under Seal)).

Mr. Nuhn was cross-examined. *See* Ex. 1116 (first deposition transcript of Mr. Nuhn); Ex. 1137 (second deposition transcript of Mr.

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<sup>5</sup> Dorotea Mekaniska AB, Truxor Amphibian Tool Carrier (Ex. 1006, “Truxor”).

<sup>6</sup> KR 10-2013-0016490, published Feb. 18, 2013 (Ex. 1010). Petitioner provides an English language translation (Ex. 1011, “Yoon”).

<sup>7</sup> SenwaTec, Schröder Environment and Water Technology, Light Amphibious Boat/Vehicle “Amphi-King®” SWT-AB380 (Ex. 1012, “SenwaTec”).

<sup>8</sup> US 2014/0112093 A1, published Apr. 24, 2014 (Ex. 1014, “Puck”).

<sup>9</sup> US 7,314,395 B2, issued Jan. 1, 2008 (Ex. 1015, “Bryham”).

<sup>10</sup> US 2021/0331752 A1, published Oct. 28, 2021 (Ex. 1017, “Bennett II”).

Nuhn). Mr. Prairie was cross-examined. *See* Ex. 1117 (deposition transcript of Mr. Prairie).<sup>11</sup>

## II. ANALYSIS

### A. *Principles of Law*

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which that subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of

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<sup>11</sup> The parties indicate that they are no longer seeking to keep Exhibits 1110, 1116, 1117, and 1137 under seal. Paper 70, 3.

nonobviousness when presented. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In analyzing the obviousness of a combination of prior art elements, it can be important to identify a reason that would have prompted one of skill in the art “to combine . . . known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418. A precise teaching directed to the specific subject matter of a challenged claim is not necessary to establish obviousness. *Id.* Rather, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420. Accordingly, a party who petitions the Board for a determination of unpatentability based on obviousness must show that “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (citations omitted).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

*B. Level of Ordinary Skill in the Art*

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention (“POSA” or “POSITA”). *Graham*, 383 U.S. at 13, 17. In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made;

sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962–63 (Fed. Cir. 1986)). “In a given case, every factor may not be present, and one or more factors may predominate.” *Id.*

Petitioner asserts that at the time of the invention, one of ordinary skill in the art “had a bachelor’s degree in mechanical engineering or similar field, and two years of professional experience in marine and off-road vehicles.” Pet. 31 (citing Ex. 1004 ¶¶ 81–82). Petitioner asserts that one of ordinary skill in the art “would have had a working knowledge of fluid pumps and livestock manure” and that “[l]ack of work experience can be remedied by additional education, and vice versa.” *Id.*

Patent Owner disagrees, arguing that a person of ordinary skill in the art “is ‘a livestock farmer or commercial manure applicator familiar with manure agitation equipment or an engineer with at least 2 years of experience designing agricultural equipment and knowledge of manure agitation equipment.’” PO Resp. 8 (emphasis omitted) (quoting Ex. 2094 ¶ 64). To support its argument, Patent Owner identifies problems encountered in the art and prior art solutions to those problems. *Id.* at 8–11.

Patent Owner notes that the ’835 patent “repeatably mentions farming, manure, and the problems encountered when storing animal manure in farm lagoons or pits.” PO Resp. 7; *see also e.g.*, Ex. 1001, 1:33–52. However, according to Patent Owner, “[b]oth the Petition and the Institution Decision fail to address the reality that in the agricultural industry, the end users of manure agitation equipment are highly knowledgeable of its design,

operation, and limitations because they use, ***maintain, and modify it.***” *Id.* at 8 (citing Ex. 2094 ¶ 59).

Petitioner does not directly address Patent Owner’s evidence. Though Petitioner does argue, and we agree, that its definition identifies that one of ordinary skill in would have had “‘a working knowledge of . . . livestock manure’” (Pet. Reply 4 (citing Pet. 31)), which would have included “knowledge of its storage, processing, and use” (*id.* (citing Ex. 1110 ¶ 32)). We determine that this includes knowledge of storing animal manure in farm lagoons or pits.

We determine that Petitioner’s level of skill most closely aligns with the problems and solutions in the ’835 patent and prior art of record. For example, Petitioner’s definition allows for those most familiar with manure agitation equipment – livestock farmers and commercial manure applicators – through the definition’s statement that “[a] POSA would have had a working knowledge of fluid pumps and livestock manure” and that “[l]ack of work experience can be remedied by additional education, and vice versa.” This aligns with the ’835 patent’s focus on farming, manure, and the problems encountered when storing animal manure in farm lagoons or pits. *See e.g.*, Ex. 1001, 1:33–52.

Petitioner’s definition is also not limited to those with agricultural experience. This is consistent with the ’835 patent’s claims being directed to “[a]n amphibious vehicle,” and the technical field which broadly states that the ’835 patent relates to “vehicles equipped for pumping.” Ex. 1001, 1:25–28; 8:37, 9:44, 11:5.

At the same time, Petitioner’s attempt to limit one of ordinary skill in the art’s professional experience to solely “marine and off-road vehicles”

conflicts with these broader statements and is inconsistent with the teachings of the '835 patent. This can be seen in Petitioner's Motion to Exclude. *See generally* Pet. Mot. To Exclude (arguing in part that Mr. Prairie's opinions and testimony should be excluded because he lacks any professional experience in marine vehicles). We preliminarily held that Petitioner's definition "allows for 'those most familiar with manure agitation equipment[']" similar to our finding above. Inst. Dec. 11. However, in its Motion to Exclude, Petitioner argues that its' definition would not allow for those most familiar with manure agitation, but instead requires those with two years of "professional experience with marine vehicles." Pet. Mot. To Exclude 4–5. This is inconsistent with the teachings of the '835 patent.<sup>12</sup> Rather, we determine that one of ordinary skill in the art's professional experience is not limited to marine and off-road vehicles, but would also include agricultural vehicles and machinery. *See e.g.*, Ex. 1001, 1:24–52 (discussing the agricultural background of the invention); Ex. 1014 ¶¶ 1–10 (Puck discussing the agricultural background of its invention; *id.* ¶ 4 ("Prior art methods of agitating the manure include attaching a shaft with a propeller or auger to the power takeoff of a tractor or other farm vehicle resting on the shore."); Exs. 1112–1113 (Manure Manager publications provide extensive evidence of the use of agricultural machinery).

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<sup>12</sup> According to Exhibit 2080, Ian Nuhn, the inventor of the '835 patent, did not have an engineering degree at the time of invention, but was experienced with agricultural manure agitation machinery. There is no cited evidence that he has two years professional experience with marine vehicles either. Thus, it is possible that the inventor would not be considered one of ordinary skill in the art under Petitioner's rigid view of the level of skill in the art.

Thus, for these reasons, we adopt Petitioner’s level of skill in the art as modified below:

a [person of ordinary skill in the art] had a bachelor’s degree in mechanical engineering or similar field, and two years of professional experience in marine and off-road vehicles or agricultural vehicles and machinery. A [person of ordinary skill in the art] would have had a working knowledge of fluid pumps and livestock manure. Lack of work experience can be remedied by additional education, and vice versa.

*Cf.* Pet. 31.

### *C. Claim Construction*

In *inter partes* review, we construe claim terms “using the same claim construction standard” that district courts use to construe claim terms in civil actions under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b). This rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. Under that standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent, including the specification. *See Phillips*, 415 F.3d at 1312–13. “[W]here a party believes that a specific term has meaning other than its plain meaning, the party should provide a statement identifying a proposed construction of the particular term and where the disclosure supports that meaning.” Office Trial Practice Guide, 77 Fed. Reg. 48,756, 48,764 (Aug. 14, 2012); Patent Trial and Appeal Board Consolidated Trial Practice Guide (November 2019)<sup>13</sup> 44.

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<sup>13</sup> *Available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

In our below analysis, we only address the claim construction arguments necessary to resolve the present dispute. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

*I. “Liquid Manure Mover” – Means-Plus-Function*  
*a) Applicable Law*

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112(f).

“[U]se of the word ‘means’ in a claim element creates a rebuttable presumption that § 112, para. 6 applies.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 (Fed. Cir. 2015) (en banc) (addressing the pre-AIA version of § 112(f), which is identical to the AIA version). Conversely, “the failure to use the word ‘means’ also creates a rebuttable presumption . . . that § 112, para. 6 does not apply.” *Id.* at 1348. “[T]he essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* If not, then § 112(f) applies. *Id.*

If § 112(f) applies, then the first step in construing the claim limitation is to define the function recited in the claim. *See In re Aoyama*, 656 F.3d 1293, 1296–97 (Fed. Cir. 2011). “Where there are multiple claimed

functions . . . the patentee must disclose adequate corresponding structure to perform all of the claimed functions.” *Media Rights Techs., Inc. v. Cap. One Financial Corp.*, 800 F.3d 1366, 1374 (Fed. Cir. 2015).

The second step is to look at the patent specification and identify the corresponding structure for the claimed function(s). *See Aoyama*, 656 F.3d at 1297. This requires that “the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Id.*

We then construe the claim limitation to cover the corresponding structure, and equivalents thereof. *See* 35 U.S.C. § 112(f).

*b) Analysis*

The parties agree that the term “liquid manure mover” does not have a sufficiently definite meaning to one of ordinary skill in the art, and as such, 35 U.S.C. § 112(f) applies. Pet. 32–34 (citing Ex. 1004 ¶¶ 76–77); PO Resp. 11 (citing Ex. 2094 ¶ 69); PO Sur-reply 7. The parties also agree that the function of the “liquid manure mover” is to move liquid manure. Pet. 35; PO Resp. 11; PO Sur-reply 7. In addition, the parties agree “that the means disclosed in the [S]pecification for ‘liquid manure mover’ is *at least* ‘a pump, a conduit, and a nozzle.’” PO Resp. 11; Pet. 35; PO Sur-reply 7. The parties disagree, however, as to what structure disclosed in the ’835 patent’s Specification corresponds to the “pump.” PO Resp. 11; PO Sur-reply 7.

Petitioner contends that “[a] proper construction of the claim term ‘liquid manure mover,’ in light of the [S]pecification, is ‘a pump, a conduit, and a nozzle.’” Pet. 34. Petitioner explains

[c]laims 1, 17, and 39–40 state that the liquid manure mover is “hydraulically powered,” “separate from the ground engaging propulsion structure,” and “positioned within liquid manure when the vehicle is floating.” Claims 9–16 and 25–32 state that

the liquid manure mover has an adjustable angular orientation and can be connected to a hydraulic cylinder.

*Id.* at 35. According to Petitioner, “[t]he only structure disclosed in the ’835 [p]atent that moves liquid manure, is hydraulically powered, submerged within the liquid manure, and is connected to a hydraulic cylinder with an adjustable angular orientation is the vehicle pumping system comprising the pump, conduits, and nozzle.” *Id.* at 35–36.

Patent Owner disagrees with Petitioner’s proposed construction. PO Resp. 11–14; PO Sur-reply 7–8. Patent Owner argues that “the corresponding structure disclosed in the [S]pecification for a ‘liquid manure mover’ is more appropriately formulated as an ‘immersible liquid manure pump, fluid conduit(s), and fluid nozzle(s).” PO Resp. 11–12 (citing Ex. 2094 ¶ 69).<sup>14</sup> Patent Owner contends that “[t]he [S]pecification of the ’835 [p]atent does not describe a generic pump, but instead describes an immersible manure pump that can handle solid material and that does not have to be primed.” *Id.* at 12 (citing Ex. 1001, 2:65–3:20); PO Sur-reply 7–8.

Patent Owner argues that its position is also supported by the language of claims 1, 17, 39, and 40, “which all require ‘the liquid manure mover [be] positioned within liquid manure when the vehicle is floating.” PO Resp. 12. Patent Owner contends that “the liquid manure pump must be located on the vehicle so that it is positioned within liquid manure when the vehicle is floating in order to satisfy this limitation.” *Id.* According to Patent Owner, that the pump be immersible is an important distinction

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<sup>14</sup> There is no dispute regarding the “fluid conduit(s)” or “fluid nozzle(s).”

because “immersible liquid manure pumps (like the one disclosed in the ‘835 [p]atent) have a different structure from non-immersible liquid manure pumps (like the one disclosed in Puck), which require a different inlet/housing configuration with pump priming structures.” *Id.* at 13 (citing Ex. 1014 ¶ 31; Ex. 2094 ¶ 386).

Petitioner replies arguing that Patent Owner incorrectly asserts that the “liquid manure mover” requires a “pump” that is an “immersible liquid manure pump.” Pet. Reply 5–7. According to Petitioner, “[t]he [S]pecification never says ‘liquid manure pump.’ Rather, it only refers to a ‘pump’ or ‘fluid pump.’” *Id.* at 5 (citing Ex. 1001, 1:58, 3:17). In addition, Petitioner argues that the claims do not require a “liquid manure pump” to be “positioned within liquid manure,” but instead, “only require that the ‘liquid manure mover [be] positioned within liquid manure[.]’” *Id.* at 5–6 (alterations in original) (citing Ex. 1001, 8:44, 9:51, 11:12, 12:10).

On the complete record, and for the reasons set forth in our Institution Decision, we maintain our construction of “a pump, a conduit, and a nozzle,” as the corresponding structure for the “liquid manure mover,” under 35 U.S.C. § 112(f). Patent Owner’s argument that the corresponding structure for the “pump” in a “liquid manure mover” must constitute an “immersible liquid manure pump” (PO Resp. 11–12) confuses the structure of a pump, with merely reciting a function as required by the statute. The fact that a device, such as a pump, performs a function, such as being immersible and/or pumping liquid manure is insufficient to show that one of ordinary skill in the art would understand that a pump denotes a particular structure based on the citations to the Specification provided by Patent Owner.

Although the '835 patent's Specification is replete with reference to a "fluid pump" (*see e.g.*, Ex. 1001, 1:55–62, 2:53–3:20), the Specification never particularly refers to, or identifies, what constitutes a "liquid manure pump." Nor do we see any disclosure in the '835 patent's Specification requiring the "pump" to be immersible. Instead, the Specification discloses that "[t]he fluid pump *may* comprise a pump housing configured for immersion within the fluid" (emphasis added), and notes that "[t]he pump housing *may* comprise a bottom fluid inlet and at least two tangential fluid outlets." Ex. 1001, 2:65–3:1 (emphasis added). To require the "pump" disclosed in the '835 patent's Specification to be an "immersible liquid manure pump" would require us to improperly construe a means-plus-function limitation beyond those structures specifically disclosed in the '835 patent's Specification. *See Micro Chemical, Inc. v. Great Plains Chemical Co., Inc.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999) ("[T]he statute [does not] permit incorporation of structure from the written description beyond that necessary to perform the claimed function."). Thus, the terms "immersible" and "liquid manure" are more appropriately characterized as being related to a potential use or function use rather than structure.

Patent Owner contends that the claims require that "the liquid manure pump must be located on the vehicle so that it is positioned within liquid manure when the vehicle is floating" (PO Resp. 12), but we see nothing in the claims to support this contention. Patent Owner's citation to the Specification also fails to adequately explain what structure requires the pump itself to be "immersible," as opposed to one of the fluid conduits or nozzles being "immersible," or sets forth any specific structure delineating what constitutes a "liquid manure" pump.

While Patent Owner’s commercial embodiments may include an “immersible liquid manure pump” with “different structure from non-immersible liquid manure pumps (like the one disclosed in Puck), which require a different inlet/housing configuration with pump priming structures” (PO Resp. 13), we do not find such a distinction to appear in the independent claims. Instead, claim 1 recites “a hydraulically powered liquid manure mover . . . positioned within liquid manure when the vehicle is floating.” Ex. 1001, 8:43–45. And, because claim 1 requires the “liquid manure mover,” but not the pump itself, to be positioned, i.e., immersed, in the liquid manure, we agree with Petitioner that “[a]ny other component (such as the nozzle or conduit) may be positioned within the liquid manure.” Pet. Reply 6. Here, for example, Petitioner points out that “the ’835 [p]atent describes that the ‘nozzles 13 may be rotated fully downwardly’ into the lagoon to drive the vehicle.” *Id.* (citing Ex. 1001, 7:1–2).

Based on the complete record, Patent Owner has not adequately shown that the corresponding structure for a “liquid manure mover” is an “immersible liquid manure pump, fluid conduit(s), and fluid nozzle(s).” Instead, we agree with Petitioner that the corresponding structure for a “liquid manure mover” is at a minimum “a pump, a conduit, and a nozzle” when properly construed under 35 U.S.C. § 112(f).

## 2. “*Liquid Manure Pump*”

In addition to the “liquid manure mover” recited by claims 1, 17, 39, and 40, claims 1 and 39 also recites “a wireless remote control configured to enable an operator . . . to: . . . (2) control a flow of liquid manure from a

liquid manure pump.” Ex. 1001, 8:50–53, 11:19–22.<sup>15</sup> In the Institution Decision, we preliminarily construed “the term ‘liquid manure pump’ only to the extent that it requires a pump with a structure that is capable of pumping liquid with suspended solids.” Inst. Dec. 18.

Patent Owner argues that our preliminary construction “overgeneralizes and impermissibly broadens the scope of the ‘liquid manure pump’ limitation to no longer require a pump that is capable of pumping liquid manure.” PO Resp. 14. Patent Owner does not dispute that one of ordinary skill in the art “would understand ‘liquid manure’ as being a ‘liquid with suspended solids,’” but argues that “that does not give license to read the words ‘liquid manure’ completely out of the construction for ‘liquid manure pump.’” *Id.* According to Patent Owner, “a ‘liquid manure pump’ should be construed as a ‘pump that pumps liquid manure’ . . . or alternatively a ‘pump with a structure that is capable of pumping liquid manure with suspended solids.’” *Id.* at 15 (citing Ex. 2094 ¶¶ 120–124).

Petitioner disagrees and argues that the ’835 patent’s Specification generically refers to a “‘pump’ or a ‘fluid pump’” and fails to describe the “necessary structural features required for a pump to pump liquid manure.” Pet. Reply 9. According to Petitioner, Patent Owner attempts to characterize

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<sup>15</sup> Whereas independent claims 1 and 39 recite “a wireless remote control configured to enable an operator . . . to: . . . (2) control a flow of liquid manure from *a liquid manure pump*” (Ex. 1001, 8:50–53, 11:19–22) (emphasis added)), claims 17 and 40 do not include such a recitation, and thus, the scope of claims 17 and 40 differs. Claims 17 and 40 instead recite “a wireless remote control configured to enable an operator who is remote from the vehicle to . . . (2) control a flow of liquid manure from *the liquid manure mover*.” *Id.* at 9:57–60 (emphasis added).

the structure for a “liquid manure pump” as whether or not the pump has ““structure that would become clogged and/or damaged by pumping liquid manure”” (*id.* at 8 (citing PO Resp. 16)), but Petitioner argues that “[Patent Owner] and its expert never say *what the required structure is*” (*id.*).

Relying on the declaration testimony of Dr. Winkel, Petitioner contends that one of ordinary skill in the art would appreciate that “[l]iquid manure” [is understood in the literature] as water and manure mixtures with solid contents lower than about 5%.” *Id.* at 9 (citing Ex. 1110 ¶ 65). Petitioner notes that during deposition, Patent Owner’s declarant, Mr. Nuhn did not dispute Dr. Winkel’s opinion regarding the composition of “liquid manure.” *See* Ex. 1116, 256:2–9 (When asked whether “liquid manure contain suspended solids,” Mr. Nuhn responded that “[i]f there are solids in the fluid, [he] would call it liquid manure” and when asked if Mr. Nuhn would consider “one percent total solid content in water” to be “liquid manure,” Mr. Nuhn, again, responded that “[i]f there’s solids in a fluid, I would call it liquid manure”). Thus, Petitioner argues that one of ordinary skill in the art would have understood a “liquid manure pump” to “include high-volume water pumps for pumping water from lakes and streams” (Pet. Reply 7 (citing Ex. 1110 ¶¶ 63–65)) and known that these types of pumps were “capable of pumping fluid-manure mixtures lower than 5% total solids” (*id.* at 10 (citing Ex. 1110 ¶ 65)).

In response, Patent Owner argues that “it is not enough for the pump to simply have “structure that is capable of pumping liquid with suspended solids” because this overlooks th[e] fact that liquid manure is a highly-corrosive, non-Newtonian fluid.” PO Sur-reply 8 (citing Ex. 2094 ¶¶ 114–116, 144). However, other than directing our attention to the ’835

patent’s disclosure of “an exemplary liquid manure pump, which is described as a ‘fluid pump 9 [that] comprises a pump housing 18 with three tangential fluid outlets 19 that are combined into a single fluid conduit 20’” (PO Resp. 16 (citing Ex. 1001, 5:43–45)) and “an ‘example of pump 9 suitable for use with the vehicle [that] is disclosed in co-pending U.S. Patent Application Ser. No. 13/038,189’” (*id.* (citing Ex. 1001, 7:43–45)), Patent Owner is unable to point to any express disclosure in the ’835 patent delineating what structure is required particularly for pumping liquid manure. *Cf.* Ex. 1034, 52 (identifying ten different types of liquid manure handling pumps, e.g., centrifugal, helical screw, piston, that are capable of handling a wide-range of fluid-manure mixtures between 4%–18% total solids).

Instead, Patent Owner argues that “[t]he ’835 [p]atent defines non-limiting embodiments of a liquid manure pump that [one of ordinary skill in the art] would understand as sufficient structure for pumping liquid manure or a liquid with suspended solids.” PO Resp. 16–17 (citing Ex. 2094 ¶ 84). Patent Owner acknowledges that “[t]here is no bright line rule delineating . . . various pump types where one type is universally considered a liquid manure pump and another type is not.” *Id.* at 16 (citing Ex. 2094 ¶ 82). And, “[b]ecause there are no bright-line rules,” Patent Owner suggests that one of ordinary skill in the art would determine if a “pump” is a “liquid manure pump” based on, for example, whether or not the pump was “designed,” “marketed,” and/or “tested and validated” for pumping manure. *Id.* (citing Ex. 2094 ¶ 83). We disagree.

The Federal Circuit has explained that “[i]t is well settled that the recitation of a new intended use for an old product does not make a claim to

that old product patentable.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Thus, there is no requirement that the old product be “designed,” “marketed,” and/or “tested and validated” for pumping manure, as Patent Owner argues.

On the complete record, and for the reasons set forth in our Institution Decision, we continue to construe the term “liquid manure pump” only to the extent that it requires a pump with a structure that is capable of pumping liquid with suspended solids. We determine that it is not necessary to determine what specific structure is required to pump liquid with suspended solids in order to resolve the parties’ dispute because it is undisputed that Puck discloses a “liquid manure pump.” *See* Tr. 55:6–9 (Patent Owner admits that “[t]here’s no dispute that Puck discloses a liquid manure pump”), 10:16–17 (Petitioner stating that “no one disputes that the Puck pump is able to pump liquid manure”). *See also Realtime Data*, 912 F.3d at 1375.

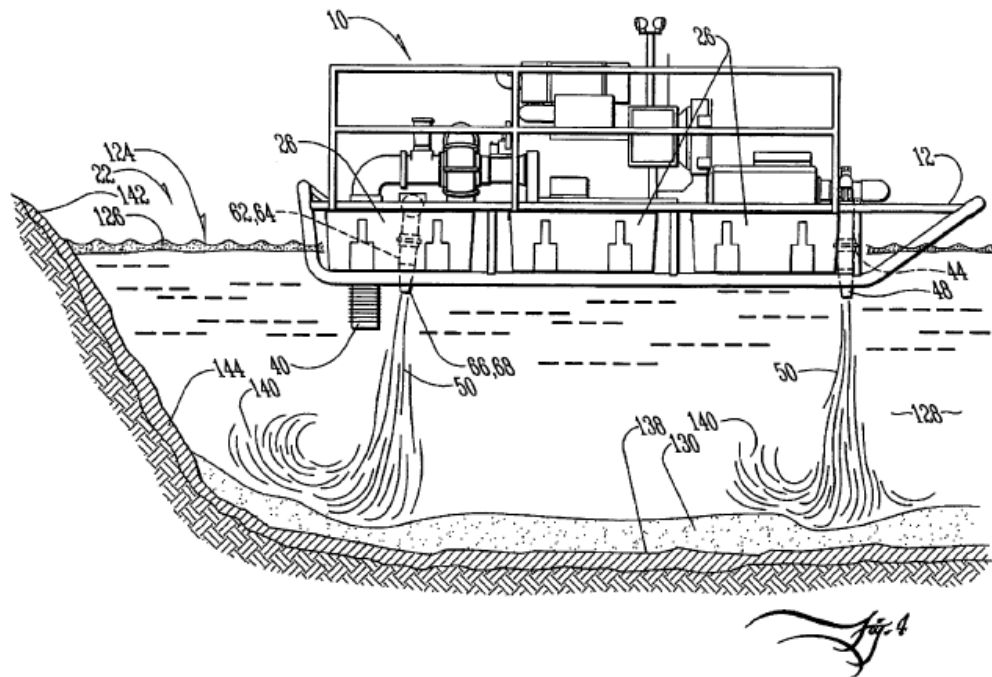
*D. Obviousness over Puck and Bryham (Ground 4:  
Claims 1–40)*

Petitioner contends that claims 1–40 would have been obvious over Puck and Bryham. Pet. 80–101. Petitioner also relies on the testimony of Dr. Winkel to support its arguments. *Id.* (citing Exs. 1004, 1110). Patent Owner responds to Petitioner’s assertions. *See* PO Resp. 61–72 (citing Exs. 2004, 2083, 2094); PO Sur-reply 23–26.

We address Petitioner’s contentions and Patent Owner’s arguments below, beginning with a brief overview of Puck and Bryham and the arguments related to the teachings of Puck and Bryham. We then address the evidence and arguments related to the motivation to combine and secondary considerations.

1. Overview of Puck (Ex. 1014)

Puck is entitled “Floating Manure Agitator” and is directed to a vehicle that floats in a manure lagoon and “may be remotely controlled to agitate manure supernatant into a slurry.” Ex. 1014, codes (54), (57). Puck’s floating manure agitator has a power source coupled to “a liquid manure pump such as a slurry pump” that is “capable of handling both solid and liquid material.” *Id.* ¶ 25. The floating manure agitator (10) is shown on manure lagoon (22) in Figure 4, reproduced below.



The illustrated floating manure agitator (10) in Figure 4 has an intake pipe (40) connected to the slurry pump that directs the liquid manure through downward facing nozzles (48, 66, 68) into the manure lagoon. *Id.* ¶¶ 26–27, 29. In this way, the floating manure agitator can be used “to agitate manure (124), that has separated into crust (126), supernatant (128) and sludge (130), into a slurry (50).” *Id.* ¶ 34.

Puck also teaches that its system can be controlled by remote control.  
Ex. 1014 ¶¶ 31, 35.

### 2. Overview of Bryham (Ex. 1015)

Bryham is entitled “Amphibious Vehicle” and is directed to “an inflatable boat . . . [that] has a self propelled and steerable retractable undercarriage system, enabling the vehicle to enter and exit the water under its own power.” Ex. 1015, codes (54), (57). Figure 1 of Bryham is reproduced below showing the amphibious vehicle.

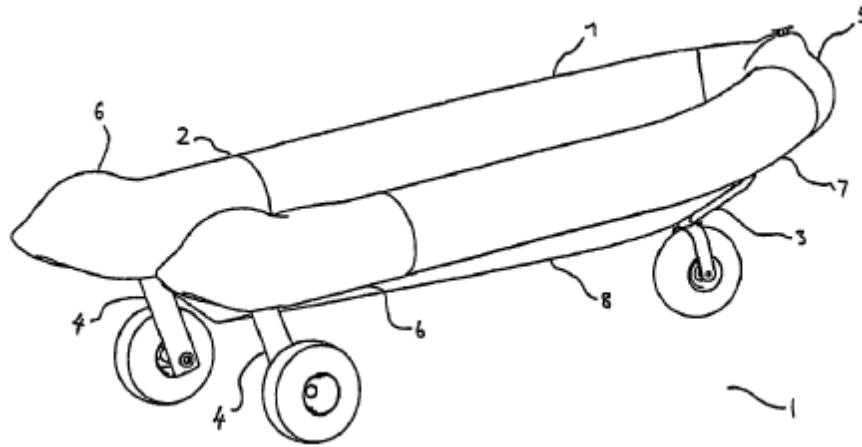


Figure 1 depicts Bryham’s amphibious vehicle that includes an inflatable craft (2) with three undercarriage assemblies (3, 4) including wheels. *Id.* at 11:55–59.

### 3. Analysis of Claim 1

Petitioner asserts claim 1 would have been obvious over Puck and Bryham. Pet. 83–89 (citing Exs. 1004, 1014, 1015). Patent Owner contends that Petitioner has failed to establish that limitations [1.3], [1.4], and [1.5] are taught by the references. PO Resp. 61–65; PO Sur-reply 23–26. Patent Owner further contends that there is no motivation to combine Puck and Bryham. PO Resp. 67–72; PO Sur-reply 23–26. Patent Owner still further

contends that its evidence of secondary considerations outweighs Petitioner's evidence of obviousness in view of Puck and Bryham. PO Resp. 27–41; PO Sur-reply 11–18.

Petitioner's contentions regarding the preamble [1.0] and limitations [1.1] and [1.2] are undisputed.

We have reviewed the evidence and arguments provided by the parties and are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claim 1 is unpatentable as obvious over Puck and Bryham.

We use Petitioner's notations to identify the claim elements.

*a) [1.0] An amphibious vehicle comprising:*

Petitioner asserts that “Bryham teaches creating an amphibious vehicle by adding steerable, hydraulically powered wheels to jet boats.” Pet. 83 (citing Ex. 1015, 2:19–45). Petitioner also asserts that Puck discloses “a ‘standard hull’ jet boat for use in a manure lagoon.” *Id.* (citing Ex. 1014, (code (57), ¶ 22). Based on these teachings, Petitioner concludes that one of ordinary skill in the art “would have been motivated to add Bryham’s ground engaging propulsion structure to Puck’s jet boat creating an amphibious vehicle facilitating safer, easier, and better-for-equipment ingress and egress from a manure lagoon.” *Id.* (citing Ex. 1004 ¶ 343).

We find that Petitioner's contentions, which Patent Owner does not dispute, are persuasive in demonstrating that the combination of Puck and Bryham teaches the preamble to the extent it is limiting.

*b) [1.1] a floatable vehicle body;*

Petitioner asserts that “Puck discloses ‘a floating manure agitator [that] is provided with a floating vessel and a power source.’” Pet. 84 (citing Ex. 1014 ¶ 11).

We find that Petitioner’s contentions regarding this limitation, which Patent Owner does not dispute, are persuasive.

- c) [1.2] ground engaging propulsion structure comprising a plurality of ground engaging elements powered by a hydraulic motor;*

Petitioner asserts that “Bryham teaches a ‘ground engagement means’ comprising a set of wheels and a ‘hydraulic motor 108 . . . which can . . . drive the ground engagement means.’” Pet. 84 (citing Ex. 1015, 2:66–67, 16:4–6).

We find that Petitioner’s contentions regarding this limitation, which Patent Owner does not dispute, are persuasive.

- d) [1.3] a hydraulically powered liquid manure mover separate from the ground engaging propulsion structure, the liquid manure mover positioned within liquid manure when the vehicle is floating;*

Petitioner asserts that “Puck discloses a ‘liquid manure pump such as a slurry pump (38).’” Pet. 84 (citing Ex. 1014 ¶ 25). Petitioner points out that the slurry pump in Puck “may be a ‘Cornell Redi-Prime centrifugal pump capable of handling both solid and liquid material’” that is connected to a conduit and nozzle. *Id.* (citing Ex. 1014 ¶¶ 25, 28). Petitioner reproduces Figure 4 of Puck, annotated to depict “nozzles 48, 66, 68 (yellow) and intake pipe 40 (pink) of the pump arranged below the liquid manure surface.” *Id.* at 86 (citing Ex. 1014, Fig. 4).

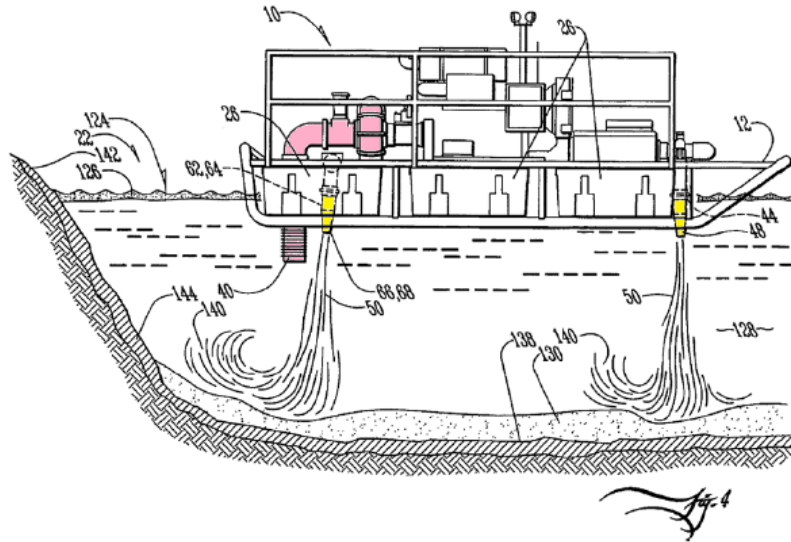


Figure 4, annotated, illustrates a side elevation of Puck’s floating manure agitator on a manure lagoon. Ex. 1014 ¶ 16. Petitioner explains that “[t]he slurry pump, conduits, and nozzles move liquid manure and are a liquid manure mover” and “is separate from the ground engaging propulsion structure.” Pet. 86. Petitioner also asserts that Puck’s “liquid manure pump is ‘[c]oupled to the power source.’” *Id.* (citing Ex. 1014 ¶ 25).

Petitioner contends that “Bryham discloses a hydraulic drivetrain” (Pet. 87 (citing Ex. 1015, 16:1–6)), and

[i]t would have been obvious to use the hydraulic transmission of Bryham to power the liquid manure pump of Puck from the Puck power source, as a hydraulic transmission is one of a finite number of options for transmitting power on a moving vehicle and has a high likelihood of success, given its widespread use for this purpose.

*Id.* (citing Ex. 1015, 16:1–6; *KSR*, 550 U.S. at 421).

In response, Patent Owner argues that Puck fails to disclose “a hydraulically powered liquid manure mover positioned within liquid manure when the vehicle is floating.” PO Resp. 61. According to Patent Owner,

Puck's slurry pump 38 "is mounted high and dry in the vessel hull" and "not 'positioned within liquid manure when the vehicle is floating' as required" by claim 1. *Id.* (citing Ex. 2014, 2–3). In addition, Patent Owner argues that the slurry pump 38 disclosed in Puck is not "an 'immersible liquid manure pump' and therefore does not meet the corresponding structure that the '835 [p]atent specification discloses for the 'liquid manure mover.'" *Id.* at 63 (citing Ex. 2094 ¶ 223).

We have considered Petitioner's arguments and evidence, and Patent Owner's counterarguments and evidence and find, on the complete trial record, that Petitioner demonstrates, by a preponderance of the evidence, that Puck teaches "a hydraulically powered liquid manure mover separate from the ground engaging propulsion structure, the liquid manure mover positioned within liquid manure when the vehicle is floating," as recited by limitation [1.3].

At the outset, we find that there is no dispute as to whether Puck discloses a "liquid manure pump." *See supra* § II.C.2; *see also* Tr. 55:6–9 (Patent Owner admits that "[t]here's no dispute that Puck discloses a liquid manure pump"), 10:16–17 (Petitioner stating that "no one disputes that the Puck pump is able to pump liquid manure"). And, for the reasons discussed above in Section II.C.1.b., we also determine that limitation [1.3] does not require the "liquid manure pump" itself to be "positioned within liquid manure when the vehicle is floating." Instead, limitation [1.3] requires that "the liquid manure mover [be] positioned within liquid manure when the vehicle is floating." Ex. 1001, 8:43–44.

For the reasons discussed above in Section II.C.1.b., we agree with Petitioner that the corresponding structure for a "liquid manure mover" is at

a minimum “a pump, a conduit, and a nozzle” when properly construed under 35 U.S.C. § 112(f), and as such, “[a]ny other component (such as the nozzle or conduit) may be positioned within the liquid manure.” Pet. Reply 6. We also agree with Petitioner that “Puck discloses that the intake pipe and the nozzles are positioned within in the liquid manure when the vehicle is floating.” *Id.* at 24–25 (citing Ex. 1014, Fig. 4).

Therefore, after reviewing the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that Puck teaches the subject matter of limitation [1.3].

*e) [1.4] a power source connected to a hydraulic pump, the power source configured to provide power to both the ground engaging propulsion structure and the liquid manure mover; and;*

Petitioner asserts that “Bryham discloses a hydraulic drivetrain” and “Puck discloses a power source in the form a ‘two-thousand horsepower’ diesel engine and that the ‘slurry pump [(of the liquid manure mover)] is coupled to the power source.” Pet. 87 (citing Ex. 1015, 16:1–6; Ex. 1014 ¶¶ 11, 24–25). According to Petitioner,

[r]ather than loading the vehicle with multiple engines, [one of ordinary skill in the art] would have been motivated to use this high-powered internal combustion engine to power the hydraulic pump, ground engagement means, and the fluid pump of Bryham and Puck—the high-powered engine of Puck would easily power each of these components, and doing so would be cheaper, lighter, and more efficient than providing separate engines for each component.

*Id.* (citing Ex. 1004 ¶ 351).

In response, Patent Owner argues that neither Puck nor Bryham discloses “a ‘power source configured to provide power to **both** the ground engaging propulsion structure and the liquid manure mover,’” as required by

limitation [1.4]. PO Resp. 63. Patent Owner argues that “Petitioner’s sole basis for alleging that this element is met is its expert’s conclusory statement that a POSITA would be motivated to use Puck’s power source to also power the wheels being added from Bryham.” *Id.* at 63 (citing Ex. 1004 ¶ 348). Instead, Patent Owner contends that “Puck’s hydraulic pump 54 is designed to operate hydraulic (linear) actuators 52 and would not have the capability to drive ground engaging wheels, which would require high-volume continuous flow with throttling.” *Id.* at 63–64 (citing Ex. 2094 ¶ 226). According to Patent Owner Puck discloses that its “hydraulic cylinder (52) is coupled to a hydraulic pump (54) that, in turn, is coupled to a 12-volt battery (56)” (*id.* at 64 (citing Ex. 1014 ¶ 27)), and as such, one of ordinary skill in the art “would immediately recognize that a hydraulic pump that is powered by a 12-volt battery, like the hydraulic pump 54 disclosed in Puck, would be insufficient to drive the hydraulically powered wheels of a vehicle” (*id.* (citing Ex. 2094 ¶ 226)).

We have considered Petitioner’s arguments and evidence, and Patent Owner’s counterarguments and evidence and find, on the complete trial record, that Petitioner demonstrates, by a preponderance of the evidence, that the combination of Puck and Bryham teaches “a power source connected to a hydraulic pump, the power source configured to provide power to both the ground engaging propulsion structure and the liquid manure mover,” as recited by limitation [1.4].

In making this determination, we agree with Petitioner that Patent Owner’s argument improperly “focus[es] on Puck’s battery-powered hydraulic pump” rather than the combination of references asserted by Petitioner. Pet. Reply 25. Petitioner does not propose using Puck’s battery-

powered hydraulic pump 54 to power Bryham's wheels; but instead, contends that one of ordinary skill in the art would have used the hydraulic transmission of Bryham to power both the liquid manure pump of Puck and the ground engaging propulsion structure of Bryham using Puck's power source. *See* Pet. 87 (citing Ex. 1015 16:1–6). More particularly, Petitioner suggests that one of ordinary skill in the art

would have been motivated to use [Puck's] high-powered internal combustion engine to power the hydraulic pump, ground engagement means, and the fluid pump of Bryham and Puck—the high-powered engine of Puck would easily power each of these components, and doing so would be cheaper, lighter, and more efficient than providing separate engines for each component.

Pet. 87 (citing Ex. 1004 ¶ 351).

Patent Owner responds arguing that Petitioner's rationale of “realiz[ing] better efficiency and cost savings ignores portions of Puck's disclosure that would have discouraged such an arrangement.” PO Sur-Reply 25 (citing Pet. Reply 25; Ex. 1004 ¶ 351). According to Patent Owner, Petitioner fails to establish that one of ordinary skill in the art would have been motivated to use Puck's power source to power Bryham's wheels because Dr. Winkel's declaration testimony is conclusory and does not actually show or explain why the claimed arrangement would be cheaper, lighter, and more efficient. We disagree.

We find Petitioner's explanation that “rather than loading the vehicle with multiple engines,” it would be “cheaper, lighter, and more efficient” to use “the high-powered engine of Puck [that] would easily power” the claimed components, of limitation [1.4], based on Dr. Winkel's declaration testimony, to be reasonable and supported by the record. *See* Pet. 87 (citing

Ex. 1004 ¶ 351). For example, Bryham discloses that “hydraulic energy can be supplied from a pump 102 powered by an internal combustion engine 85, or an electric motor 106.” Ex. 1015, 16:1–3. And, Puck discloses that its power source 36 (i.e., diesel engine) is “preferably between twenty and two-thousand horsepower.” Ex. 1014 ¶ 24. The fact that Puck and Bryham may also provide additional/alternative means for powering various components (*see, e.g.*, PO Resp. 63–64 (discussing Puck’s battery-powered hydraulic pump 54 in addition to power source 36); PO Sur-reply 25 (discussing same)) does not, without more, undercut Petitioner’s rationale that one engine can be more efficient than multiple engines or otherwise establish that one of ordinary skill in the art would have been discouraged from Petitioner’s proposed arrangement of elements. *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (obviousness does not require incorporating all teachings of one reference into another).

Therefore, after reviewing the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Puck and Bryham teaches or suggests the subject matter of limitation [1.4].

- f) [1.5] a wireless remote control configured to enable an operator who is remote from the vehicle to: (1) control the ground engaging propulsion structure; (2) control a flow of liquid manure from [a liquid manure]<sup>16</sup> pump; (3) control at least one of the speed and direction of the vehicle when the vehicle is ground engaging; and, (4) control at least one of the speed and direction of the vehicle when the vehicle is floating.*

Petitioner asserts that “Puck teaches a vessel with a wireless remote-control that controls the flow of liquid manure from the slurry pump and the speed and direction of the vehicle while it is floating.” Pet. 88 (citing Ex. 1014 ¶¶ 9, 11, 27, 35, 37). Petitioner notes that the remote steering in Puck “is accomplished by a ‘remote control coupled to the steering wheel.’” *Id.* (citing Ex. 1014, claim 9).

Petitioner also notes that Bryham’s amphibious vehicle is controlled by a steering wheel. Petitioner argues that one of ordinary skill in the art “would have recognized that the remote-control steering system would control the speed and direction of the vehicle of Puck with Bryham’s powered, steerable wheels while the vehicle is ground engaging.” Pet. 88 (citing Ex. 1004 ¶ 353). Petitioner adds that it would also be obvious to one of ordinary skill in the art to “configure the remote-control steering system of Puck to control the speed and direction of the ground engagement means of Bryham while the vehicle is ground engaging” in order to “allow the vehicle to enter and exit the lagoon without a user on-board.” *Id.* (citing Ex. 1004 ¶ 354). Relying on the declaration testimony of Dr. Winkel, Petitioner asserts that “[r]emote-control technology is well-known and readily

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<sup>16</sup> Petitioner’s Claim Listing improperly reproduces limitation 1.5 to recite “the fluid pump.” Pet. 112 (Claims Appendix). Limitation 1.5 properly recites “a liquid manure pump.” Ex. 1001, 8:53.

adaptable to power wheeled vehicles,” and thus, concludes that one of ordinary skill in the art “would have been familiar with the use of remote-control technology to power the ground engaging means of Bryham.” *Id.* at 89 (citing Ex. 1004 ¶ 354).

In response, Patent Owner argues that Petitioner’s proposed combination is deficient because Puck’s remote-control system does not control “hydraulic wheel motors.” PO Sur-reply 25–26 (citing Ex. 2094 ¶ 264). Instead, Patent Owner contends that “Puck’s remote-control system is limited to turning the engine on and off, controlling engine speed, turning the nozzles on and off, and controlling nozzle direction.” PO Resp. 64 (citing Ex. 1014 ¶¶ 32–33; Ex. 2094 ¶ 227). Patent Owner argues that modifying Puck’s remote-control system to control Bryham’s steering and drive system would require “substantial modifications to Puck’s remote-control system” and “there is no discussion in the references or even the Winkel Declaration as to how a POSITA could make those modifications to arrive at a successful combination.” *Id.* at 64–65. According to Patent Owner, “just because the art teaches that *some* vehicles can be remote controlled does not mean that *all* vehicles can be remote controlled or that a POSITA would have had a reasonable expectation that Puck’s remote-control could be easily modified to control Bryham’s steering and drive system.” *Id.* at 65 (citing Ex. 2094 ¶ 228).

Petitioner responds arguing that “Puck teaches a ‘wireless receiver’ and ‘wireless transmitter’ allowing its control panel ‘to operate as a wireless remote control, actuated by a remote[-]control system[.]’” Pet. Reply 25 (citing Ex. 1014, ¶ 31). According to Petitioner, “[t]hese components remotely control valves directing fluid flow” (*id.* (citing Ex. 1110

¶¶ 201–202; Ex. 1014 ¶¶ 31, 33)) and one of ordinary skill in the art “would have understood that remote control of Bryham’s wheels (as taught by Bennett-II ([Ex.] 1017)) could be achieved through the valves directing hydraulic fluid to Bryham’s wheel motors.” *Id.* at 25–26 (citing Ex. 1110 ¶¶ 201–202; Ex. 1015, 16:1–11). And, relying on the declaration testimony of Dr. Winkel, Petitioner argues that “[t]he well-known nature of remote control in 2013 is evident from the ’835 [p]atent, which provides no specifics on how the remote control is configured, constructed, or programmed.” *Id.* at 25 (citing Ex. 1110 ¶ 200).

We have considered Petitioner’s arguments and evidence, and Patent Owner’s counterarguments and evidence and find, on the complete trial record, that Petitioner demonstrates, by a preponderance of the evidence, that the combination of Puck and Bryham teaches or suggests “a wireless remote control configured to enable an operator who is remote from the vehicle to: (1) control the ground engaging propulsion structure,” as recited-in-part by limitation [1.5].<sup>17</sup>

At the outset, we note that Patent Owner does not argue that the proposed modification is beyond the ability of one of ordinary skill in the art and we see no reason to determine that it would be. *See KSR Int’l Co.*, 550 at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”). We agree with Petitioner that “[t]he well-known nature of remote control in 2013 is evident from the ’835 [p]atent, which provides no specifics on how the remote control is configured, constructed, or

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<sup>17</sup> We also find that Petitioner’s contentions, regarding the other claimed elements of this limitation, which Patent Owner does not dispute, are persuasive.

programmed.” Pet. Reply 25 (citing Ex. 1110 ¶ 200). During deposition testimony “[w]hen questioned whether [the named inventor, Ian Nuhn], bought off-the-shelf remote-control components to drive his Lagoon Crawler prototype, Mr. Nuhn testified that they had remote control systems for liquid manure tankers, and he worked to program it for the Lagoon Crawler.” Ex. 1110 ¶ 198 (citing Ex. 1116, 142:9–17). Thus, we find the record adequately demonstrates that at the time of the invention, Mr. Nuhn was able to repurpose the remote-control system of one piece of equipment for another piece of equipment.<sup>18</sup>

Moreover, we find the record contains ample evidence of remote-control systems capable of controlling a variety of systems and components. For example, Dr. Winkel testifies that

remote control systems were known in the art and were capable of controlling a variety of systems and components. Specifically, to the operation of wheel motors, Carrier teaches the remote control of a ground engaging propulsion system consisting of wheels driven by hydraulic motors and a series of valves to regulate the flow to control the vehicle. EX1005, ¶¶[0039]–[0045], [0064]–[0065]. Other patents teach the remote control of amphibious vehicles, including Yoon, Carrier, and Bennett-II. A POSA would have understood that the implementation of remote control of an amphibious vehicle and its land-based propulsion system is a straightforward and predictable process.

Ex. 1110 ¶ 199.

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<sup>18</sup> According to Exhibit 2080, Ian Nuhn, the inventor of the ’835 patent, did not have an engineering degree at the time of invention, but was experienced with agricultural manure agitation machinery.

Therefore, after reviewing the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Puck and Bryham teaches or suggests the subject matter of limitation [1.5].

4. *Motivation to Combine Puck and Bryham*

Petitioner asserts that “Puck describes a cumbersome, manual process of launching a floating manure boat on and off a trailer into a manure lagoon.” Pet. 81 (citing Ex. 1014 ¶¶ 34, 38). Petitioner identifies that “Bryham presents a solution for launching vessels that does not require a user stepping in a lagoon” (*id.* at 82(citing Ex. 1015, 1:17–23)), “which provides strong motivation to add the ground engaging structure of Bryham to Puck’s boat.” *Id.* According to Petitioner, one of ordinary skill in the art “would have been motivated to add the powered, steerable wheels of Bryham to Puck’s boat to solve the problems users, especially single users, faced launching and retrieving Puck’s boat within a toxic manure lagoon.” *Id.* at 80 (citing Ex. 1004 ¶ 333). Petitioner further contends that one of ordinary skill in the art

would have recognized that Puck could be readily modified to include the wheels of Bryham and would have been motivated to do so. [Ex. 1004 ¶¶ ]339–342. This obvious combination provides a reasonable expectation of success in creating a safer, more efficient means of transporting, launching, and retrieving Puck’s boat into a manure lagoon.

*Id.* at 83 (citing Ex. 1004 ¶ 342).

a) *Analysis*

Patent Owner argues that “Petitioner incorrectly asserts that a POSITA would have been motivated to combine the teachings of Puck with

the teachings of Bryham “to make transporting, launching, and retrieving the Puck boat easier, safer and without having to put the trailer (let alone one’s feet) in the corrosive manure lagoon.” PO Resp. 67. More particularly, Patent Owner asserts that one of ordinary skill in the art would not have been motivated to combine Puck and Bryham because none “of these reasons/flaws in Puck’s design are actually supported by Puck’s disclosure.” PO Resp. 67–68 (citing Ex. 2094 ¶ 235). Patent Owner argues first that Puck already discloses a system for launching and retrieving its manure agitation boat “**without backing the trailer** into the manure lagoon.” *Id.* at 68 (citing Ex. 2094 ¶¶ 236–240). Patent Owner argues next that if one of ordinary skill in the art

were concerned about “exposing a trailer (or vehicle) to highly corrosive environments” as Petitioner suggests, they certainly would not have looked to substitute Puck’s trailer, which did not need to be submersed in a manure lagoon, for a ground engaging propulsion structure that would be submersed in a manure lagoon the entire time the manure agitation vehicle was operating in the lagoon.

*Id.* at 69 (citing Ex. 2094 ¶ 240). Thus, Patent Owner concludes that the proposed combination “would not actually solve the alleged problem of equipment exposure to corrosive manure lagoon environments.” *Id.* (citing Ex. 2094 ¶ 241); *see also* PO Sur-reply 23–24 (making similar arguments).

Petitioner disagrees, and contends that during launch, a user would be “at risk of falling or being dragged into the reservoir while [Puck’s manure agitation boat is] sliding or pushed off the trailer,” and then, while retrieving Puck’s manure agitation boat from the lagoon, “a user would need to approach, or wade into the lagoon to secure the trailer’s cable to the vehicle.” Pet. Reply 27–28 (citing Ex. 1110 ¶¶ 214–215). Thus, Petitioner

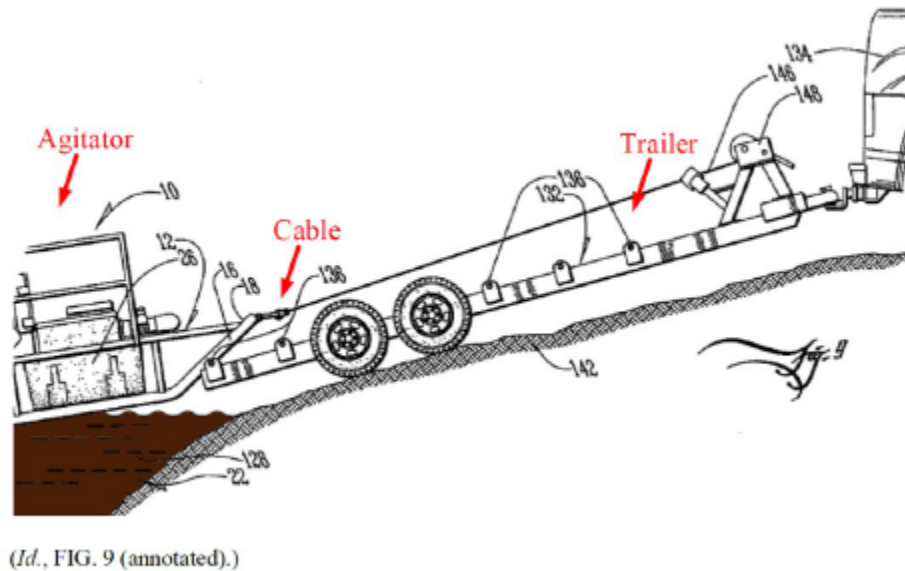
maintains that one of ordinary skill in the art “would have been motivated to make launching and retrieving easier and safer by adding Bryham’s wheels to Puck to remove users from this environment.” *Id.* at 28.

Based on the fully developed trial record, Petitioner shows persuasively that one of ordinary skill in the art would have been motivated to add Bryham’s wheel to Puck’s manure agitation boat in order to make it easier and safer to launch and retrieve Puck’s boat. Petitioner also shows persuasively that one of ordinary skill in the would have been motivated to add Bryham’s wheel to Puck’s manure agitator boat at least because “the Bryham vehicle was designed for use in corrosive environments.” Pet. Reply 28 (citing Ex. 1015, 1:55–58). We credit Dr. Winkel’s declaration testimony that “vehicle trailers are often constructed from less corrosion-resistant materials than the vessels they launch.” *Id.* (citing Ex. 1110 ¶¶ 216–217). We find Dr. Winkel’s declaration testimony to be reasonable and supported by Bryham’s disclosure that environments, such as the sea, are “often highly corrosive to [a] vehicle and trailer.” Ex. 1015, 1:55–58.

We also credit Dr. Winkel’s declaration testimony that “Bryham identifies the difficulties and problems encountered when launching and retrieving a boat using a vehicle and trailer, which are exacerbated without a proper ramp, the same configuration and procedure disclosed in Puck.” Ex. 1004 ¶ 335 (citing Ex. 1015, 1:18–21). For example, Bryham discloses that “at least one of the occupants of the boat usually needs to get their feet wet” when beaching a boat where there is not access to a jetty or wharf. Ex. 1015, 1:17–23.

Patent Owner argues that Puck already discloses a system for launching and retrieving its manure agitation boat from a manure lagoon that

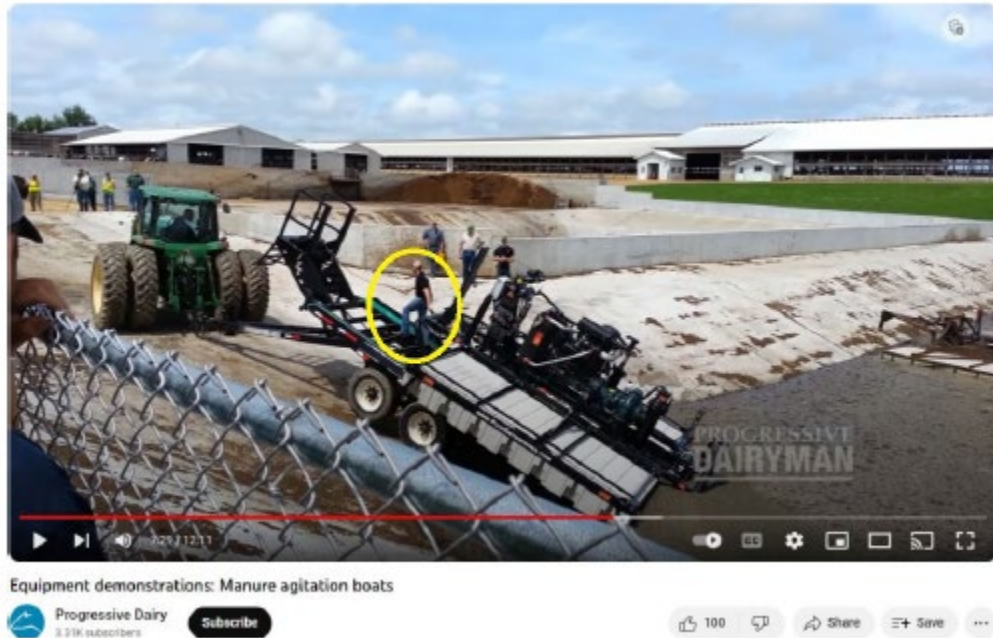
mitigates any safety concerns and prevents the trailer from being exposed to the highly corrosive manure environment. *See* PO Resp. 68 (citing Ex. 2094 ¶¶ 236–240). Patent Owner provides the following copy of Figure 9 of Puck, annotated to identify, a manure agitator boat, cable, and trailer. *Id.* (citing Ex. 1014, Fig. 9).



Annotated Figure 9 illustrates a side perspective view of Puck’s manure agitator boat 12, in manure lagoon 22, being loaded onto trailer 132 by cable 146 connecting the two. Ex. 1014 ¶¶ 34, 38, Fig. 9. Relying on Figure 9 and the declaration testimony of Mr. Prairie, Patent Owner argues that one of ordinary skill in the art would “recognize that the process of launching and retrieving Puck’s boat does not ‘require a user stepping in a lagoon’ or ‘exposing a trailer (or vehicle) to highly corrosive environments’ in a manure lagoon.” PO Resp. 68 (Ex. 2094 ¶¶ 236–240).

Patent Owner’s argument does not undermine Petitioner’s obviousness showing. Instead, we agree with Petitioner that the launching/retrieval process of Puck’s manure agitation boat “*does* put a user

in close proximity to the reservoir.” Pet. Reply 27 (citing Ex. 2008<sup>19</sup>, 6). Petitioner provides the following screenshot found on page 6 of Patent Owner’s Exhibit 2008, annotated to identify, a user in close proximity to a manure reservoir. *Id.* (citing Ex. 2008, 6).



The annotated screen shot found on page 6 of Exhibit 2008 illustrates Puck’s manure agitation boat being launched with a user in close proximity to a manure reservoir. Ex. 2008, 6. In view of the screen shot depicted above, we agree with Petitioner that “a user would need to approach, or wade into the lagoon to secure the trailer’s cable to the vehicle.” Pet. Reply 27–28 (citing Ex. 1110 ¶¶ 214–215). Thus, we find reasonable and supported Dr.

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<sup>19</sup> Mr. Prairie declares that the screenshots found in Exhibit 2008 are from a Progressive Dairyman video that Mr. Prairie personally accessed, viewed, and compiled as Exhibit 2008. Ex. 2094 ¶¶ 26–27. According to Mr. Prairie, the manure agitation boat shown in the screen shot found on page 6 of Exhibit 2008 is “the commercial embodiment of the Puck reference [EX1014].” *Id.* ¶ 29.

Winkel’s declaration testimony that one of ordinary skill in the art “would have been motivated to remove a user from that environment by adding the amphibious wheels of Bryham to the Puck vehicle to make launching and retrieving easier and safer, which is explicitly taught by Bryham.” Ex. 1110 ¶ 214.

In addition, Patent Owner argues that one of ordinary skill in the art “would have recognized that adding hydraulically powered wheels to Puck’s boat would not have solved the problem of retrieving the Puck boat easier and safer” due to known issues with hydraulically powered wheels locking when there is no hydraulic flow in circumstances when the hydraulic pump is not running, the vehicle breaks down, or it runs out of gas. PO Resp. 70 (citing Ex. 2094 ¶ 241). Therefore, if one of ordinary skill in the art were “trying to solve safety problems associated with retrieving Puck’s boat, they would not have looked to add hydraulically powered wheels given that they lock when hydraulic fluid is not flowing and would impede the retrieval of non-running equipment.” *Id.* at 71 (citing Ex. 2083 ¶ 63; Ex. 2094 ¶ 241).

In response, Petitioner argues that one of ordinary skill in the art would not have been discouraged from adding the hydraulic wheels of Bryham to Puck because they “already knew bypass valves could be easily added to address this issue, as detailed in Carrier.” Pet. Reply 28 (citing Ex. 1110 ¶¶ 218–221). According to Petitioner, “[s]uch bypass valves permit movement of the wheels even if the vehicle breaks down.” *Id.*

Based on the fully developed trial record, Petitioner shows persuasively that one of ordinary skill in the art would have been motivated to add Bryham’s wheel to Puck’s manure agitation boat in order to make it easier and safer to launch and retrieve Puck’s boat. In this regard, we credit

Dr. Winkel’s declaration testimony that one of ordinary skill in the art would have already known how to address the known issues with hydraulically powered wheels locking when there is no hydraulic flow. *See* Ex. 1110 ¶ 219 (discussing the integration of a simple bypass valve into the hydraulic circuit); *see also id.* ¶ 220 (citing Ex. 1005 ¶ 42) (discussing Carrier’s addition of a brake valve to lock or unlock wheel motors).

Patent Owner last argues that Petitioner fails to establish a reasonable expectation of success “in in adding Bryham’s wheels to the manure agitation boat disclosed in Puck to achieve the claimed invention.” PO Resp. 71. Patent Owner contends that “manure lagoons – the environment in which Puck’s vessel operates – often have steep and slippery embankments,” and as such, one of ordinary skill in the art “would not have expected the 3-wheel design disclosed in Bryham to provide Puck’s vessel with the capability of traversing these steep and slippery embankments” because it would be unstable, likely to get stuck, and be ineffective in turning the vehicle. *Id.* at 71–72 (citing Ex. 1015, 2; Ex. 2094 ¶¶ 244, 251); *see also* PO Sur-reply 24 (arguing that instability and traction problems are inherent in Bryham’s three-wheeled configuration).

Initially, we note that Patent Owner’s arguments are not persuasive at least because they are premised on Bryham’s amphibious vehicle being limited to its exemplary three-wheel design. However, Bryham teaches more broadly that its amphibious vehicle is “not limited to a boat, jet-boat, an inflatable boat, jet-ski, hydrofoil or air boat” (Ex. 1015, 2:43–45), and further teaches that its “ground engaging means consists of *at least* three wheels” (*id.* at 2:46–47). “[A] reference must be considered for everything it teaches by way of technology and is not limited to the particular *invention*

it is describing and attempting to protect.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1076 (Fed. Cir. 2015) (alteration in original) (quoting *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985)). Thus, regardless of whether Bryham focuses on a 3-wheel design in its exemplary embodiments, we must still consider Bryham’s broader disclosures. In this context, we agree with Petitioner that one of ordinary skill in the art “would have understood that the logical location for Bryham’s wheels would be at each corner of the steel frame 16 of Puck, which is typical for wheels on four-sided vehicles and more stable.” Pet. Reply 29 (citing Ex. 1110 ¶¶ 226–227).

We recognize Patent Owner’s position that, in its Reply, Petitioner “now argues that Bryham’s wheels would be placed at all four corners of the vehicle – an arrangement that is clearly driven by impermissible hindsight.” PO Sur-reply 24–25. However, claim 1 does not require a specific number of ground engaging elements, but rather, more broadly, “a plurality of ground engaging elements” (*see* Ex. 1001, 8:39–41)<sup>20</sup>, and we credit Dr. Winkel’s declaration testimony that “[t]hree-wheel and four-wheel amphibious configurations were known in the art, and a POSA would have been capable of deciding between these design choices and adapting either to the vehicle of Puck” (Ex. 1110 ¶ 227). We find Dr. Winkel’s opinion to be reasonable and supported by the record. For example, although Bryham teaches an embodiment that incorporates a “vee-hull,” Bryham also discloses a number of different watercraft styles that could be utilized with

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<sup>20</sup> Claim 2 recites that “the ground engaging propulsion structure comprises a set of wheels or an endless track” (Ex. 1001, 8:58–60).

its amphibious undercarriage systems that are not just limited to “vee-hulls.” Ex. 1015, 2:43–45. In addition, Puck discloses that its vessel “may alternatively be constructed . . . with a more standard hull.” Ex. 1014 ¶ 22. Thus, we find both references teach that they are not limited to any particular type of hull or boat design, and as such, we conclude that a person of ordinary skill at the time of the invention would have been able to add Bryham’s wheel to Puck’s manure agitation with a reasonable expectation of success. *See KSR Int’l Co.*, 550 at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

Therefore, after reviewing the arguments and evidence, we determine on the full trial record that Petitioner has shown by a preponderance of the evidence that an ordinarily skilled artisan would have had a reason to combine the teachings of Puck and Bryham to achieve the claimed invention with a reasonable expectation of success.

#### 5. *Claim 1: Conclusion*<sup>21</sup>

For the foregoing reasons, we find Petitioner has demonstrated persuasively that the combination of Puck and Bryham teaches or suggests all of the limitations of claim 1, and that one of ordinary skill in the art would have been motivated to make the combination with a reasonable expectation of success. We address *infra*, in Section II.D.7, the parties’ arguments and evidence pertaining to secondary considerations.

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<sup>21</sup> For the sake of convenience, we have organized the Decision by addressing the claim limitations first and later addressing the secondary considerations. We note that our conclusions are in view of the entire record, including taking secondary considerations into account.

6. *Additional Claims 2–40*

Claims 17, 39, and 40 are the other independent claims of the '835 patent. Ex. 1001, 9:44–65, 11:5–12:2, 12:3–22. Claims 17, 39, and 40 are substantially similar, and argued by Patent Owner based on claim 1. *See, e.g.*, PO Resp. 61–65. However, claims 39 and 40 also require the amphibious vehicle to have a ground engaging propulsion structure “wherein each wheel is powered by its own variable speed hydraulic motor.” Ex. 1001, 11:8–10, 12:5–7.

Below, we begin by addressing Patent Owner’s arguments and evidence for claims 39 and 40, and then evaluate Petitioner’s showing as to the remaining claims.

*a) Independent Claims 39 and 40<sup>22</sup>*

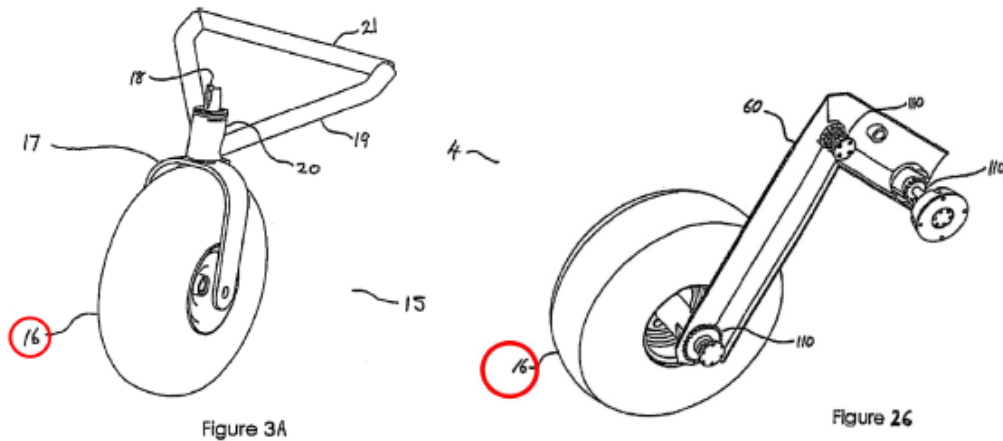
Patent Owner argues Petitioner’s proposed ground of unpatentability for claims 39 and 40 is deficient because “each wheel of the amphibious vehicle described in Bryham is not powered by its own variable speed hydraulic motor.” PO Resp. 65 (citing Ex. 2094 ¶ 229). Patent Owner adds that “the front wheel in Bryham (i.e., the one at the bow that swivels) is not powered at all and therefore is not powered by its own variable speed hydraulic motor.” *Id.* at 65–66 (citing Ex. 1015, Fig. 3A).

In response, Petitioner asserts that Patent Owner’s argument relies on the absence of a hydraulic motor being illustrated in Figure 3A, but ignores the fact that Bryham discloses that “‘one or more of the ground engaging means’ is powered by ‘hydraulic motors.’” Pet. Reply 26 (citing Ex. 1015,

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<sup>22</sup> Patent Owner does not dispute any additional limitations of claims 39 and 40.

6:47–53). Petitioner provides the following copy of Figures 3A and 26 of Bryham, annotated to identify, ground engagement means 16. Ex. 1015, Figs. 3A, 26, 16:6–8.



Annotated Figure 3A illustrates a triangular shaped leg assembly that includes ground engagement means 16. Ex. 1015, 10:6, 16:6–8. Annotated Figure 26 illustrates a “partially cutaway view of the drive train inside leg assembly” that includes ground engagement means 16. Ex. 1015, 10:6, 16:6–8. With reference to the annotated figures above, Petitioner identifies that Bryham discloses “that ‘the hydraulic motor 108 can be mounted directly beside or within the ground engagement means 16.’” Pet. Reply 26 (citing Ex. 1015, 16:6–8).

We have considered Petitioner’s arguments and evidence, and Patent Owner’s counterarguments and evidence and find, on the complete trial record, that Petitioner demonstrates, by a preponderance of the evidence, that the combination of Puck and Bryham teaches or suggests a ground engaging propulsion structure “wherein each wheel is powered by its own variable speed hydraulic motor.”

In making this determination, we agree with Petitioner that Patent Owner's position fails to appreciate the full disclosure of Bryham. We also credit the declaration testimony of Dr. Winkel who states that one of ordinary skill in the art would have understood Bryham to disclose "embodiments where both the front and rear wheels (reference number 16), would have a hydraulic motor mounted directly beside or within it. Nowhere does Bryham teach that powered wheels were limited to two rear wheels." Ex. 1110 ¶ 208. Dr. Winkel's opinion is supported by reference to "[a]n archived webpage of Bryham's commercial embodiment [that] confirms the all-terrain nature of the vehicle and its ability to navigate steep embankments." *Id.* ¶ 209 (citing Ex. 1134, 1). More particularly, Exhibit 1134 describes that "[w]ith the front and two rear wheels driving, Sealegs can scale steep river banks and beachheads" and identifies that "[t]his new option is available on Sealegs amphibious boats built from May 2010 onward and means that an additional wheel motor is added to the front wheel." Ex. 1134, 1; *see also id.* (describing "easier maneuvering with AWD activated").

Therefore, after reviewing the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Puck and Bryham teaches or suggests the subject matter of claims 39 and 40.

*b) Claims 2–16 and 18–38*

Claims 2–16 depend from claim 1 and claims 18–38 depend from claim 17. Ex. 1001, 8:58–9:43, 9:65–11:4.

Petitioner contends that the additional limitations of dependent claims 2–16 and 18–38 are rendered obvious by the combination of Puck and

Bryham. Pet. 89–100 (citing Exs. 1014, 1015). Petitioner also relies on the testimony of Dr. Winkel to support its arguments. *Id.* (citing Ex. 1004).

Patent Owner does not make any specific arguments regarding these claims. Instead, Patent Owner states simply that “Puck in combination with Bryham does not render any of these dependent claims obvious for at least the same reasons described above,” with respect to claim 1. PO Resp. 66.

After our review of Petitioner’s assertions and the supporting evidence, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Puck and Bryham teaches or suggests the subject matter of claims 2–16 and 18–38.

7. *Alleged Objective Evidence of Nonobviousness  
(Secondary Considerations)*

Patent Owner argues that Petitioner’s arguments for obviousness are outweighed in light of Patent Owner’s evidence of secondary considerations, such as commercial success, long-felt need, copying, unexpected results, praise, licensing, and industry skepticism. PO Resp. 27–40; PO Sur-reply 11–18. Petitioner argues that Patent Owner has not established a nexus between the merits of the claimed invention and the objective evidence. Pet. Reply 13–18.

Objective indicia of nonobviousness may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, industry praise, and expert skepticism. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012). Objective indicia are only relevant to the obviousness inquiry if there is a nexus between the claimed invention and the objective indicia of nonobviousness. *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017). A rebuttable

presumption of nexus applies only “when [a patent owner] shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with [the claims].’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus. Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). On the other hand, a patent owner is not entitled to a presumption of nexus if the patented invention is only a component of a commercially successful machine or process. *Id.* (reaffirming the importance of the “coextensiveness” requirement).

Applying *Fox Factory*, the Board uses a two-step analysis in evaluating nexus between the claimed invention and objective evidence of nonobviousness, also referred to as secondary considerations. *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential) (“*Lectrosonics*”). We consider whether Patent Owner has demonstrated “that its products are coextensive (or nearly coextensive) with the challenged claims,” resulting in a rebuttable presumption of nexus. *Id.* If not, that “does not end the inquiry into secondary considerations”; “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* (quoting *Fox Factory*, 944 F.3d at 1373–75).

According to Patent Owner, “there is a causal nexus between the claims as a whole and secondary considerations evidence regarding of Nuhn’s overall manure lagoon agitation vehicle.” PO Resp. 40–41 (citing *Medtronic, Inc. v. Teleflex Innovations S.A.R.L.*, 70 F.4th 1331, 1338 (Fed. Cir. 2023)). More particularly, Patent Owner argues that “[t]he claims of the

‘835 [p]atent cover Nuhn’s overall manure lagoon agitation vehicle, embodied in the Crawler X model, which is a unique combination and arrangement of components that work together in synergy to form the claimed invention as a whole.” PO Resp. 40 (citing Ex. 2094 ¶¶ 300–326).

Petitioner contends that Patent Owner has not demonstrated that its product is coextensive or nearly coextensive with the challenged claims. Pet. Reply 13–14. Petitioner contends that “[n]early all of Nuhn’s secondary considerations evidence is tied to its earlier Gen 1–3 products” or related to features found on Nuhn’s Crawler X model that do not appear in the claims of the ‘835 patent. *Id.* at 13 (citing Ex. 1110 ¶¶ 257–258).

We agree with Petitioner that Patent Owner has not met its burden to establish a nexus between the objective evidence and the merits of the claimed invention for the reasons given by Petitioner. We find many of Mr. Prairie’s alleged correspondence rely on features that may be embodied in the Crawler X product, but do not appear in the claims, and as such, are insufficient to establish a rebuttable presumption of nexus.

Although we do not require the Patent Owner to prove perfect correspondence to meet the coextensiveness requirement, “what we do require is that the patentee demonstrate that the product is essentially the claimed invention.” *See Fox Factory*, 944 F.3d at 1373; *see also Teva Pharms. Int’l GmbH v. Eli Lilly & Co.*, 8 F.4th 1349, 1361 (Fed. Cir. 2021) (discussing the “spectrum” of coextensiveness, from one in which unclaimed features are insignificant, which might not disturb the presumption, to one in which a critical feature is unclaimed, which would not show coextensiveness). Here, we find the record demonstrates that many of the

features identified by Mr. Prairie as being embodied in the Crawler X product are not coextensive with the claims of the '835 patent.

For example, Mr. Nuhn identifies the “Crawler X” as “a vehicle with four wheels.” Ex. 2094 ¶ 303 (citing Ex. 2047, 42); *see also* Ex. 2094 ¶ 308 (“the parts catalog for the Crawler X shows that it has four wheels and four hydraulic motors powering each wheel”). However, four wheels is not a feature found in the claim 1 or any other claim of the '835 patent. *See, e.g.*, Ex. 1001, 8:39–40 (exemplary claim 1 recites “a plurality of ground engaging elements”); 8:58–60 (“wherein the ground engaging propulsion structure comprises a set of wheels or an endless track”).

As for the claimed “hydraulically powered liquid manure mover,” Mr. Nuhn testifies that “[t]he Crawler X includes a liquid manure pump with a semi-open impeller design that is specially designed for the harsh manure lagoons and pumping liquid manure therein.” Ex. 2094 ¶ 312 (citing Ex. 2047, 36). Mr. Nuhn testifies that “the liquid manure pump is positioned along the underside of the floatable vehicle body such that it is position[ed] within the liquid manure when the vehicle is floating.” *Id.* ¶ 314 (citing Ex. 2046, 2). Thus, Mr. Nuhn concludes that “it is [his] opinion that Nuhn’s Crawler X has “a hydraulically powered liquid manure mover separate from the ground engaging propulsion structure, the liquid manure mover positioned within liquid manure when the vehicle is floating” as recited in Claims 1, 17, 39, 40 of the ‘835 [p]atent.” *Id.* ¶ 316. However, as discussed above in Section II.C.1.b., none of these claims require the liquid manure pump to be positioned “within the liquid manure when the vehicle is floating.” Instead, claims 1, 17, 39, and 40 require “the liquid manure mover [to be] positioned within liquid manure when the vehicle is floating”

(see Ex. 1001, 8:42–45, 9:49–52, 11:11–14, 12:8–11), which does not require the pump itself to be “positioned within the liquid manure when the vehicle is floating.”

Based on the foregoing evidence, we find that the unclaimed features identified by the Petitioner and Mr. Prairie are not insignificant, and as such, Patent Owner has not established a rebuttable presumption of nexus. In making this determination, we give weight to Dr. Winkel’s declaration testimony that because the ’835 [p]atent does not claim features that Nuhn describes as “material” or essential to the synergy of the alleged invention, the ’835 [p]atent claims are not coextensive with the Lagoon Crawler X.” Ex. 1110 ¶ 262. However, even if we do not determine that a presumption of nexus attaches, Patent Owner may still establish nexus by showing “that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Fox Factory*, 944 F.3d at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)); *Lectrosonics* at 33. With this in mind, we address the provided evidence of secondary considerations.

*a) Commercial Success*

Patent Owner contends that the claims of the ’835 patent cover Patent Owner’s “current generation of Lagoon Crawler, the Crawler X.” PO Resp. 29–30 (citing Ex. 2094 ¶¶ 300–326). Relying on the declaration testimony of Mr. Nuhn to establish evidence of commercial success, Patent Owner asserts that it “has sold over 112 Crawler X Lagoon Crawlers since 2022, generating over \$22 Million in revenue.” *Id.* at 30 (citing Ex. 2083 ¶ 25). According to Patent Owner, “[t]his is a huge number of sales in just a few years considering the niche nature of this market.” *Id.*

Patent Owner asserts that in 2014, Puck Enterprises “had roughly 95% of the market share in North America for manure pumping boats” (PO Resp. 30 (citing Ex. 2083 ¶ 27), but with its “Lagoon Crawlers, Nuhn quickly eclipsed Puck Enterprises as the market leader in manure pumping ‘boats’ and has maintained its position at the top of the market ever since” (*id.*). Patent Owner argues “[s]etting aside Bazooka’s infringing sales, Nuhn’s Lagoon Crawler held more than 90% of the market share for manure agitation ‘boats’ in North America in 2023, whereas Puck Enterprises’ market share in 2023 is estimated at less than 10%.” *Id.* (citing Ex. 2083 ¶ 27). According to Patent Owner, “[t]here is also a direct nexus or link between the commercial success of Nuhn Crawler X Lagoon Crawler and the subject matter of the Challenged Claims.” *Id.* at 31 (citing Ex. 2046 (Brochure for Nuhn’s Crawler X); Ex. 2047 (Parts Catalog for the MY2022 of Nuhn’s Crawler X); Ex. 2094 ¶¶ 300–326).

Petitioner counters arguing that “Nuhn’s only evidence purportedly tied to its Crawler X is its sales numbers; but because the Crawler X includes unclaimed features Nuhn describes as “material” and “directly contribut[ing] to the new and unexpected results and commercial success,” Nuhn fails to establish that those sales numbers have nexus to the ’835 patent. Pet. Reply 13–14 (citing MTA 15–20; Ex. 1110 ¶¶ 259–276). We agree with Petitioner.

As we noted above in connection with our evaluation of the evidence of nexus, there is insufficient evidence that the alleged commercial success is tied to the elements of the ’835 patent—either individually or as a whole. “[I]f the commercial success is due to an unclaimed feature of the device,” or “if the feature that creates the commercial success was known in the prior

art, the success is not pertinent.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006). However, even if we accepted Patent Owner’s contention that there is a nexus between the invention claimed in the ’835 patent and the sales of “over 112 Crawler X Lagoon Crawlers since 2022, generating over \$22 Million in revenue,” the evidence of commercial success would remain weak because there is no evidence before us of relative market share establishing that Crawler X Lagoon Crawler were a commercial success. *See, e.g., In re Applied Materials, Inc.*, 692 F.3d 1289, 1300 (Fed. Cir. 2012) (“An important component of the commercial success inquiry in the present case is determining whether [Patent Owner] had a significant market share relative to all competing [products] based on the merits of the claimed invention.”). That is, Patent Owner does not provide adequate evidence allowing us to evaluate how the sales numbers relate to the overall industry—the record neither reflects the scope of that industry nor Nuhn’s place within the entire industry. *Cf. In re Huang*, 100 F.3d at 140 (noting that “evidence related solely to the number of units sold provides a very weak showing of commercial success, if any”). Not all markets have sales and market share information readily available; but we also do not have evidence as to whether this is the case here.

Further, Patent Owner provides no evidence to help us determine what is the relevant market. We do not know whether the market should be limited to manure agitation boats, or whether all manure agitation devices (such as pit pumps) should be considered.

Because of the constraints on how we can characterize these numbers in view of the market generally, we can at best give this evidence some weight.

*b) Long Felt Need*

Patent Owner asserts that the '835 patent satisfied a long-felt but unresolved need in related to “the time-consuming job of breaking up the crust formed on a manure lagoon and mixing / agitating the contents of the manure lagoon to achieve a homogeneous mixture prior to pump out and subsequent ground application as fertilizer.” PO Resp. 31 (emphases omitted) (citing Ex. 2094 ¶ 105). According to Patent Owner, the '835 patent

solved this decades long problem that went unsolved, producing an amphibious, remotely operated and controlled, vehicle configured to crawl through an agricultural manure lagoon, acting like an icebreaker that could chew through the solid crust of the lagoon, all while agitating / mixing the contents of a manure lagoon in an efficient and timely manner – the impact of which has been revolutionary within the livestock farming industry.

PO Resp. 31–32.

In response, Petitioner contends that the long-felt need identified by Patent Owner was already solved, as evidenced by the prior art. Pet. Reply 14–15. According to Petitioner “Puck’s and Sundstrom’s products could already “break[] up the crust (126)” and “form [a] slurry (50).” *Id.* (citing Ex. 1014 ¶ 36; Ex. 1110 ¶¶ 277–280).

Patent Owner replies arguing that “[e]xisting floating agitation boats did not fulfill the industry’s long-felt need.” PO Sur-reply 13. And, according to Patent Owner, the unrebutted evidence demonstrates that the this long-felt need was only satisfied by “Nuhn’s Lagoon Crawler, [which] quickly overtook Puck as the market share leader.” *Id.* at 13–14 (citing Ex. 2083 ¶¶ 11–15, 17–20, 27, 38; Ex. 2067, 2).

Based on the fully developed trial record, we are not persuaded that Patent Owner provides adequate evidence to establish a long-felt but unresolved need. Establishing long-felt need requires objective evidence that an art-recognized problem existed in the art for a long period of time without solution. *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988); *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1379 (Fed. Cir. 1983). Establishing long-felt need also requires objective evidence that the invention satisfies the long-felt need. *In re Cavanagh*, 436 F.2d 491, 496 (CCPA 1971).

Being a difficult, but solved problem is very different from being an unsolved problem. As shown by Puck, the “the time consuming” problem of “breaking up the crust formed on a manure lagoon and mixing / agitating the contents of the manure lagoon to achieve a homogeneous mixture prior to pump out and subsequent ground application as fertilizer” (PO Resp. 31 (emphases omitted) (citing Ex. 2094 ¶ 105)) has been previously solved. *See e.g.*, Ex. 1014, code (57); Ex. 1124, 01:04–01:28; *see also* Pet. Reply 14–15 (arguing that “Nuhn’s ‘long-felt need’ was already solved”). Though Patent Owner has developed another way to address the problem, it has not established that there is a long-felt and previously unsatisfied need.

Thus, there is insufficient evidence to establish that the ’835 patent solved a long-felt, previously unmet need.

*c) Copying by Others*

Patent Owner argues next that Petitioner copied Nuhn’s Lagoon Crawler with its Wolverine Agitation Boat. PO Resp. 32–33. According to Patent Owner, Petitioner’s parent company, Stutsman, “is a distributor and service center for Nuhn’s Lagoon Crawlers,” “began buying Lagoon

Crawlers from Nuhn in 2015 and has continued to purchase them ever since,” and had one of its service mechanics present during development of Bazooka’s Wolverine to provide advice on the design. *Id.* at 32 (citing Ex. 2083 ¶¶ 69–70, 75). Patent Owner argues that “[t]he sheer similarity between Nuhn’s Lagoon Crawler and Bazooka’s Wolverine leaves little doubt that Bazooka copied Nuhn’s Lagoon Crawler.” *Id.* at 33. Thus, Patent Owner concludes that it has established “copying by showing that an accused copier had access to the patented product combined with substantial similarity to the patented product.” *Id.* at 32 (citing *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010)).

Petitioner disputes Patent Owner’s allegations of copying. Pet. Reply 15. Petitioner contends that “Nuhn’s only copying ‘evidence’ comes from Ian Nuhn’s recollection of a discussion with a mechanic in 2021. [Ex. 2083 ¶¶ 74–75]. But Ian Nuhn’s declaration does not provide the name—let alone a declaration—of this mechanic.” *Id.* According to Petitioner, “Bazooka developed the Wolverine before Nuhn released the Crawler X—the only product covered by the ’835 [p]atent” and “the Wolverine is *not* a copy of the Lagoon Crawler.” *Id.* Instead, Petitioner argues that “[t]he Wolverine utilizes propellers—not nozzles—for propulsion and agitation.” *Id.* (citing Ex. 2096, 1; Ex. 1001, 3:56–57 (“[T]he vehicle does not comprise a propeller.”)).

Based on the fully developed trial record, we are not persuaded that Patent Owner provides adequate evidence to establish copying. Instead, we agree with Petitioner that Ian Nuhn’s declaration testimony regarding his interactions with a service mechanic “around summer 2021” is insufficient to establish copying. Pet. Reply 15 (citing Ex. 2083 ¶ 75). For example,

Mr. Nuhn states that “[t]he only conclusion I can draw from the Stutsman mechanic’s explanation is that he understood Bazooka was copying Nuhn’s patented Lagoon Crawler and felt uneasy about being involved in Bazooka’s activities.” Ex. 2083 ¶ 75. However, Mr. Nuhn’s unsubstantiated conclusion is not persuasive evidence.

We also are not presented with adequate evidence that the Wolverine Agitation Boat is covered by any of the claims of the ’835 patent. With merely a picture, we have insufficient evidence to determine whether Petitioner copied the patented product, or the extent of any potential copying. In Sur-reply, and for the first time, Patent Owner argues that Petitioner overlooks “the comparison made by Nuhn’s expert.” PO Sur-reply 14 (citing Ex. 2094 ¶¶ 335–354). However, Patent Owner never referred to or advanced this testimony in the arguments of its Patent Owner Response. There is no obligation for either party to address evidence that could have been relied on but was not. Further, a party is not required to advance the same position as it’s declarants. Thus, we do not assume that evidence not relied on by a party is the position of that party. We decline to consider these late arguments.

And, even if this were probative evidence of similarity, “[n]ot every competing product that arguably falls within the scope of a patent is evidence of copying” because “[o]therwise every infringement suit would automatically confirm the nonobviousness of the patent.” *Iron Grip Barbell Co. v. USA Sports Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). Indeed, our reviewing court’s “case law holds that copying requires evidence of efforts to replicate a specific product.” *Wyers*, 616 F.3d at 1246. Other than the declaration testimony of Mr. Nuhn, the Vice President of Nuhn (Ex. 2083

¶ 3) and the sole inventor of the '835 patent (Ex. 1001, code (72)), regarding his impressions of a discussion with a service mechanic in 2021 (Ex. 2083 ¶¶ 74–75), Patent Owner has presented no such evidence here.

Thus, we determine that Patent Owner has not presented persuasive evidence of copying.

*d) Unexpected Results*

Patent Owner argues that “[t]he claimed arrangement of elements produced a new and unexpected result that revolutionized the agricultural farming industry.” PO Resp. 34. According to Patent Owner,

[w]hen the claimed vehicle first enters a manure lagoon, the combination of the churning ground engaging elements (e.g., wheels) and the displacement of the floatable vehicle body disrupts the crust and creates a “pocket” or opening in the crust within which the vehicle can start to operate without clogging the liquid manure mover or liquid manure pump.

*Id.* at 34–35 (citing Ex. 2083 ¶¶ 30–31; Ex. 2094 ¶ 331). In addition, Patent Owner asserts that “the ability of the ground engaging elements to chew through the crust / sludge of a manure lagoon resulted in surprising efficiency gains” that “gave the Lagoon Crawler superior agitation performance to four (4) tractor-mounted manure agitation pumps.” *Id.* at 37 (citing Ex. 2083 ¶ 33).

Petitioner replies arguing that Patent Owner’s unexpected results were already known in the prior art. Pet. Reply 15. In response, to Patent Owner’s contention that “its product unexpectedly replaces four shore-mounted pumps,” Petitioner argues that Puck already disclosed similar efficiency gains back in 2011. *Id.* (citing Ex. 1124, 01:04–01:28). Petitioner also contends that Truxor and SenwaTec already disclosed wheels that “break crust and create a ‘pocket’” (*id.* at 16 (citing Ex. 1110 ¶¶ 281–283))

and “[t]he only difference from Truxor/SenwaTec *in the claims* is remote control [functionality], and that feature was in fact added to both Truxor and SenwaTec” (*id.* (citing Ex. 1031, 184:7–185:7; Ex. 1032, 109:16–113:14)). Petitioner adds that “providing remote control is not an unexpected result of adding a remote control.” *Id.* (citing Ex. 1110 ¶ 278).

Based on the fully developed trial record, we are not persuaded that Patent Owner establishes a difference between its alleged “unexpected results” and the closest prior art. “To be particularly probative, evidence of unexpected results must establish that there is a difference between the results obtained and those of the closest prior art, and that the difference would not have been expected by one of ordinary skill in the art at the time of the invention.” *Bristol-Meyers Squibb Co. v. Teva Pharms. USA, Inc.*, 752 F.3d 967, 977 (Fed. Cir. 2014). Also, “[w]hen assessing unexpected properties, . . . we must evaluate the significance and ‘kind’ of expected results along with the unexpected results.” *Id.*

Here, we find the record establishes that the results alleged by Patent Owner as unexpected, were in fact, expected and known results in the art. We credit Dr. Winkel’s declaration testimony that one of ordinary skill in the art “would have understood that an amphibious vehicle would be heavy enough to break through a crust on a lagoon and could assist in agitating the material contained in the lagoon. Once again, this is the same result that was realized by the use of the SenwaTec product in manure reservoirs.” Ex. 1110 ¶ 279.

Patent Owner does not dispute Dr. Winkel’s declaration testimony, but instead argues that there is “no evidence that Truxor or SenwaTec had ever been used in an animal manure lagoon.” PO Sur-reply 15. Patent

Owner's argument, however, is not based on a limitation appearing in the claims. Thus, we find Patent Owner's evidence of alleged unexpected results does not weigh in favor of nonobviousness because it does not establish a difference between the results and the closest prior art and does not establish that such a difference would have been unexpected by a person of ordinary skill in the art.

Thus, there is insufficient evidence to establish unexpected results of the '835 patent.

*e) Praise By Others*

Patent Owner argues that its "patented Lagoon Crawlers have been extensively praised for innovation in printed publications and have received industry awards." PO Resp. 38 (citing Ex. 2083 ¶¶ 34–52). Patent Owner includes eighteen articles and a television segment to support its argument. *Id.* at 38–39 (citing Exs. 2061–2074, 2080).

In response, Petitioner argues that "All Nuhn's cited articles were published before Nuhn released its Crawler X." Pet. Reply 17. According to Petitioner, the evidence cited by Patent Owner all "describe Nuhn's Gen 1–3 products—which are not covered by the '835 [p]atent claims." *Id.* (citing Ex. 1137, 219:22–220:15). Thus, Petitioner takes the position that "[e]ven if considered, praise is irrelevant if not attributable to the material differences between the patented product and the prior art. *Id.* (citing *Asyst Techs., Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008)).

Based on the fully developed trial record, we are not persuaded that Patent Owner establishes the requisite showing that the alleged industry praise has a nexus to the claimed invention. In making this determination, we agree with Petitioner that most, if not all, of the proffered evidence

appears to directed to earlier commercial embodiments of Patent Owner's Lagoon Crawler, as opposed to the Lagoon Crawler X. *Cf.* PO Resp. 30 ("Nuhn's current generation of Lagoon Crawler, the Crawler X, practices the '835 [p]atent claims.").

We acknowledge that Patent Owner has demonstrated that Nuhn's Lagoon Crawlers have generated publicity over the years. However, most of the cited articles are from newspapers or other publications talking generally about the Crawler and Patent Owner's participation in various trade shows (Ex. 2062, 2; Ex. 2063, 1; Ex. 2064<sup>23</sup>, 1; Ex. 2067, 2), or Nuhn's unveiling of the 100th Crawler off the production line and expansion of their facility (Ex. 2069, 9; Ex. 2070, 52; Ex. 2071, 1; Ex. 2072<sup>24</sup>, 3; Ex. 2074, 26). Patent Owner also offers evidence showing that its Lagoon Crawler was featured during Extreme Machine Week on the Discovery Channel in 2015 (Ex. 2080; Ex. 2073, 1), won an innovation award at the Farm Progress Show in 2013 (Ex. 2061, 20; Ex. 2063, 1; Ex. 2064), and was featured in Diesel Progress's "Newsmaker[s] of the Year 2014, Innovative Uses of Horsepower" series (Ex. 2068, 1, 28).

We also recognize Mr. Nuhn's declaration testimony that he was invited to speak about the Lagoon Crawler during the New Products session "at the 30th Annual AMC (Ag Machinery Conference) Engineering Conference in Waterloo, Iowa" on May 7, 2015. Ex. 2083 ¶ 36; *see also* Ex. 2065, 4 (conference brochure listing Mr. Nuhn's presentation). Mr. Nuhn

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<sup>23</sup> This appears to be the same article as Exhibit 2063, but in a different newspaper.

<sup>24</sup> This appears to be the same article as Exhibit 2071, but in a different newspaper.

was awarded a “Certificate of Service” based at least in part on his providing this presentation (Ex. 2066; Ex. 2083 ¶ 37) and Nuhn’s Lagoon Crawler was also featured on the front page of the conference brochure (Ex. 2065, 1).

In view of this evidence, Petitioner argues “that any success is due to [the Lagoon Crawler’s] appearance.” Pet. Reply 14. Petitioner argues that it is the “massive wheels [and] the brilliant red paint job” rather than the claimed features, that have resulted in its success. *Id.* (quoting Ex. 2067, 2). Petitioner argues that Mr. Nuhn’s own statement that he “think[s] because we made it look the way it does people are proud to fork over that kind of change[.]” *Id.* (citing Ex. 2068, 30). Thus, Petitioner concludes that “Nuhn’s Lagoon Crawler ‘praise’ relates to the bright red paint job, knobby tires, and jacked-up-Ferrari look.” *Id.* at 17; Ex. 2064, 1.

Although the Lagoon Crawler’s appearance may have influenced the amount of publicity it received, we agree with Patent Owner when it states that “[m]ost farm tractors sport bright paint and large knobby tires, but they do not receive the level of media attention that Nuhn’s invention received.” PO Sur-reply 17. We do not agree that appearance alone would be sufficient for Patent Owner’s Crawler to receive an innovation award from the Farm Progress Show, or to be featured in Diesel Progress’s “Newsmaker[s] of the Year 2014, Innovative Uses of Horsepower” series.

At the same time, we note that there is no evidence, from the Farm Progress Show, or otherwise providing the details of the innovation award, other than that it was awarded to the prototype Lagoon Crawler. Thus, we do not know if there were any particular details of the Lagoon Crawler that set it apart, or if it was the general concept that was found to be innovative. Patent Owner does not identify any praise due to specific features that are

present in the claims. Industry praise that is general or directed towards unclaimed features, or that is simply a result of pre-existing market share, will not carry significant weight in demonstrating non-obviousness.

In view of the above, we determine that the industry did praise Patent Owner for the perceived innovations in the industry for its Lagoon Crawler product, and as such, we give some weight this evidence some weight.

*f) Licensing*

Patent Owner argues that “[t]he success of Nuhn’s patented Lagoon Crawler was so substantial that the previous market share leader in manure pumping boats – Puck Enterprises – reached out to Nuhn and sought a license to Nuhn’s Lagoon Crawler patents.” PO Resp. 39 (citing Ex. 2083 ¶¶ 64–67). Although not referred to by Patent Owner, Mr. Nuhn’s declaration testimony refers to email he received from Puck Enterprises. Ex. 2083 ¶ 65 (citing Ex. 2075). According to Mr. Nuhn, the email “indicates to [him] that Puck Enterprises wanted to license Nuhn’s Lagoon Crawler technology—including the ‘835 [p]atent—for purposes of commercializing a new Puck branded manure agitation boat.” *Id.* ¶ 66 (citing Ex. 2075).

Based on the fully developed trial record, we are not persuaded that Patent Owner establishes evidence of licensing. At the outset, we note that neither Patent Owner, nor Mr. Nuhn, point us to any evidence that the ‘835 patent has been licensed. And, whether Mr. Nuhn believed that Puck Enterprises wanted to license the ‘835 patent does nothing to demonstrate nonobviousness because even if there was evidence that the ‘835 patent was licensed, the Federal Circuit has held that the mere fact that a patent has been licensed is insufficient for purposes of commercial success without

additional evidence of the importance of the claimed invention within the license which is also absent on the record. *See Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d at 1539.

Thus, there is insufficient evidence to establish licensing of the patented invention.

*g) Skepticism*

Patent Owner argues that the Lagoon Crawler “went against conventional wisdom at the time it was introduced.” PO Resp. 39. To support its argument, Patent Owner relies on the testimony of Mr. Nuhn where he states that there were individuals who expressed skepticism with various aspects of the Lagoon Crawler. *Id.* at 39–40 (citing Ex. 2083 ¶¶ 53–60).

In response, Petitioner argues that Patent Owner’s alleged skepticism is unsupported. Pet. Reply 16. We agree with Petitioner.

Mr. Nuhn identifies a number of different groups of individuals who expressed skepticism. Ex. 2083 ¶¶ 53–60. And, while Mr. Nuhn states that there were individuals at various trade shows who expressed concerns with various aspects of the Lagoon Crawler (*id.* ¶¶ 54, 56–57), whether one or more individuals may have been skeptical about certain aspects of the product does not mean that Patent Owner “went against conventional wisdom” or that the “industry” was skeptical that the Lagoon Crawler would function as advertised. We note that Mr. Nuhn’s testimony concerning trade show attendees is unsubstantiated, and therefore entitled to little weight. We also note that it is unclear as to whether the skepticism was directed to earlier generations of Patent Owner’s commercial products or the Crawler X.

Similarly unsubstantiated, is Mr. Nuhn’s testimony that “some of our customers . . . told [Patent Owner] that they would never buy a Lagoon Crawler . . . . But now these skeptical customers each own a couple of Lagoon Crawlers.” Ex. 2083 ¶ 59. Mr. Nuhn also testifies that his father said he should be “focus[ed] . . . on more important matters” when working on the prototype. Ex. 2083 ¶ 55. However, this general statement could be interpreted many ways and is too vague to support Patent Owner’s position that the Lagoon Crawler “went against conventional wisdom.”

Finally, Mr. Nuhn cites “Mr. Koscamp—the dairy farmer whose manure lagoon was pumped by the Lagoon Crawler in the Discovery Channel segment” as saying he “‘need[ed] to be sold on this’ because he ‘never thought it could be done.’” Ex. 2083 ¶ 60 (citing Ex. 2080). Mr. Nuhn argues this is also evidence of skepticism. *Id.* Again, one person’s individual skepticism and the only skepticism that is substantiated, does not evidence that Patent Owner “went against conventional wisdom” or that the “industry” was skeptical that the Lagoon Crawler would function as advertised.

Thus, there is insufficient evidence to establish that Patent Owner “went against conventional wisdom” or that the “industry” was skeptical that the Lagoon Crawler would function as advertised.

#### 8. *Conclusion for Ground 4*

We have considered all of the arguments and evidence adduced at trial. For the reasons explained, we find Petitioner has persuasively demonstrated that the combination of Puck and Bryham teaches or suggests all limitations of claims 1–40 and that one of ordinary skill in the art would

have been motivated to combine the references to achieve the claimed invention with a reasonable expectation of success. We also find that the value of Patent Owner's objective evidence of nonobviousness is weak in comparison to the evidence regarding the prior art under the first three *Graham* factors.

Accordingly, we find Petitioner has shown by a preponderance of the evidence that claims 1–40 of the '835 patent would have been obvious over the combination of Puck and Bryham.

*E. Other Proposed Grounds under 35 U.S.C. §§ 102 and 103  
(Grounds 1–3 and 5)*

As noted previously, Petitioner presents a number of other grounds of unpatentability of the challenged claims. *See e.g.*, Pet. 36–38. However, as we have determined that claims 1–40 are unpatentable as obvious over Puck and Bryham, it is unnecessary to address the additional grounds. *See* 35 U.S.C. § 318(a). Thus, there is no additional dispute to resolve between the parties regarding these claims, and we decline to separately address these additional asserted grounds of unpatentability.

### III. REVISED MOTION TO AMEND

*A. Introduction*

Under 35 U.S.C. § 316(d)(1) and 37 C.F.R. § 42.121(a), Patent Owner moves to replace claims 1–40 of the '835 patent with proposed substitute claims 41–80. RMTA 1–3. The motion is contingent on our determination that claims 1–40 are unpatentable. *Id.* Because we determine that claims 1–40 have been shown to be unpatentable for the reasons explained above (*see* Section II), we address Patent Owner's Revised Motion to Amend.

In the proceeding before us, Patent Owner requested preliminary guidance from the Board in its Motion to Amend. *See* MTA 1. After Petitioner filed its Opposition to the Motion to Amend, the Board issued Preliminary Guidance. *See* Paper 39. Patent Owner then elected to file a Revised Motion to Amend, which we address herein. For the reasons provided below, we determine that Petitioner has proven that the proposed substitute claims would have been obvious, and for that reason, we deny Patent Owner's Contingent Motion to Amend.

*B. Proposed Substitute Claims*

Patent Owner submits the following proposed substitute claim 41 (with added material underlined, strike-outs to indicate text removed from original claim 1, and bracketed material to identify limitations<sup>25</sup>):

41. [41.0] An amphibious vehicle, comprising:

[41.1] a floatable vehicle body with a front, a rear, an underside and a longitudinal centerline;

[41.2] ground engaging propulsion structure comprising a plurality of ground engaging elements powered by at least one hydraulic motor;

[41.3] a hydraulically powered liquid manure mover separate from the ground engaging propulsion structure, the liquid manure mover including an immersible liquid manure pump that is hydraulically powered, at least one fluid conduit, and at least one fluid nozzle, the immersible liquid manure pump of the liquid manure mover including a substantially vertical drive shaft powering an impeller that is positioned in a pump housing and draws liquid manure in through a bottom fluid opening in the pump housing, the pump housing and the impeller of the immersible liquid manure pump are positioned along the

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<sup>25</sup> We use Petitioner's designations to refer to the claim elements of the proposed substitute claims. *See e.g.*, for claim 41, RMTA Opp. 9–16.

underside of the floatable vehicle body at a location that is rearward of the front of the floatable vehicle body and forward of the rear of the floatable vehicle body such that the immersible liquid manure pump of the liquid manure mover is positioned within liquid manure when the vehicle is floating and has a constant angular orientation relative to the floatable vehicle body;

a power source connected to a hydraulic pump, the power source configured to provide power to both the ground engaging propulsion structure and the liquid manure mover; and[[,]]

a wireless remote control configured to enable an operator who is remote from the vehicle to: (1) control the ground engaging propulsion structure; (2) control a flow of liquid manure from [[a]] the immersible liquid manure pump; (3) control at least one of the speed and direction of the vehicle when the vehicle is ground engaging; and[[,]] (4) control at least one of the speed and direction of the vehicle when the vehicle is floating,

wherein components of the vehicle that are submerged when the vehicle is floating are spaced from and positioned to each side of the pump housing and are spaced from and positioned directly forward of and directly rearward of the pump housing along the longitudinal centerline of the floatable vehicle body to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump.

RMTA, Claims Appendix.

### *C. Procedural Requirements*

“Before considering the patentability of any substitute claims, . . . the Board first must determine whether the motion to amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121.” *Lectrosonics*, Paper 15 at 4.

First, we consider whether the Revised Motion to Amend proposes a reasonable number of substitute claims. 35 U.S.C. § 316(d)(1)(B). We

apply “a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim.” *Lectrosonics*, Paper 15 at 4–5 (citing 37 C.F.R. § 42.121(a)(3)).

Patent Owner proposes forty substitute claims (41–80) for forty original claims. RMTA 1–10. More particularly, Patent Owner “proposes only one substitute claim for each conditionally canceled claim.” *Id.* at 1. Petitioner does not challenge Patent Owner’s assertion. *See generally* RMTA Opp. Thus, Patent Owner has proposed a reasonable number of substitute claims.

Second, we consider whether the proposed substitute claims respond to a ground of unpatentability involved in this trial. *Lectrosonics*, Paper 15 at 5–6. Patent Owner asserts that proposed substitute claims “are patentable over the prior art record” and discusses and distinguishes “not just the closest primary reference(s), but also the closest secondary references that might be deemed material to the claimed features.” RMTA 11. Patent Owner’s amendment responds to Petitioner’s ground of unpatentability for at least independent claims 1, 17, 39, and 40, which previously did not require the combination of limitations presented in proposed substitute claims 41, 57, 79, and 80. Petitioner does not argue otherwise. *See generally* RMTA Opp. Thus, Patent Owner’s Motion to Amend responds to at least one ground of unpatentability.

Third, we consider the breadth of the substitute claims because “[a] motion to amend may not present substitute claims that enlarge the scope of the claims of the challenged patent or introduce new subject matter.” *Lectrosonics*, Paper 15 at 6–8; 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii). Patent Owner asserts that the proposed substitute claims

narrow the scope of the original claims. RMTA 1–3. For example, Patent Owner asserts that proposed substitute independent claim 1 adds listed limitations (1)–(3) on page 2 of the Revised Motion to Amend and proposed substitute independent claims 57, 79, and 80 add various combinations or similar limitations of listed limitations (1)–(3). *Id.* Petitioner does not argue otherwise. *See generally* RMTA Opp. Thus, we determine that the language added by the proposed substitute claims narrows, and does not enlarge, the scope of the claims.

Patent Owner further asserts that proposed substitute claims 41–80 are fully supported by the original disclosure in U.S. Provisional Application 61/867,598, filed on August 19, 2013 (“’598 provisional”). RMTA 3–4 (citing Ex. 2081). Patent Owner provides citations to the ’598 provisional to demonstrate written description support for each limitation in the proposed substitute claims. *Id.* at 4–10 (citing Ex. 2081).

Petitioner first argues that the Revised Motion to Amend “fails to comply with the regulatory requirements of 37 C.F.R. § 42.121” which “requires a motion to amend to both identify the support for each element in the original disclosure in the application for the patent and in the earlier-filed disclosure for which the benefit of the earlier filing date is sought.” RMTA Opp. 24. In this regard, Petitioner argues that the Revised Motion to Amend does not “cite instances in U.S. Patent Application No. 17/201,100 (the application for the ’835 Patent) where support for its substitute claims can be found,” nor provides a copy the application. *Id.*

In response, Patent Owner argues that “the provisional application and subsequent applications all share substantially the same specification.”

RMTA Reply 12 (citing Ex. 2106 ¶¶ 66–67; Exs. 2109–2114 (emphasis omitted)).

Petitioner argues that the although Patent Owner “belatedly files various documents with tracked changes, which it alleges to be comparisons between its provisional application and its various non-provisional continuation applications” (Exs. 2109–2114), Patent Owner “still fails to even submit a copy of U.S. Application No. 17/201,100, the ’789 PCT, or any of the other applications which matured into any of the parent patents for the ’835 [p]atent.” RMTA Sur-reply 15.

Paragraph (b) of 37 C.F.R. § 42.121 states:

Any motion to amend claims must include a claim listing, which claim listing may be contained in an appendix to the motion, show the changes clearly, and the motion must set forth:

- (1) The support in the original disclosure of the patent for each proposed substitute claim; and
- (2) The support in an earlier-filed disclosure for each claim for which the benefit of the filing date of the earlier-filed disclosure is sought.

37 C.F.R. § 42.121(b). Although belatedly submitted, Exhibits 2109–2114 indicate, as Patent Owner asserts, that “the provisional application and subsequent applications all share substantially the same specification” and Petitioner does not dispute Patent Owner’s assertion. RMTA Reply 12. The regulatory requirements of 37 C.F.R. § 42.121 include a showing of support via citation to the earlier-filed applications, but does not require providing a copy of the applications themselves. For these reasons, we are not persuaded by Petitioner’s argument that the Revised Motion to Amend “fails to comply with the regulatory requirements of 37 C.F.R. § 42.121” which “requires a motion to amend to both identify the support for each element in

the original disclosure in the application for the patent and in the earlier-filed disclosure for which the benefit of the earlier filing date is sought.” RMTA Opp. 24.

Petitioner next argues that support is not provided for two claim limitations: (1) “the pump housing is mounted to the underside of the floatable vehicle body” (for claims 79 and 80), and (2) “to keep floating solid material away from the bottom fluid opening in the pump housing of the immersible liquid manure pump” (for independent claims 41, 57, 79, and 80). RMTA Opp. 22–24.

In regard to limitation (1) concerning the pump housing being mounted to the underside of the floatable vehicle body, Petitioner contends that cited paragraphs 19 and 24 refer to Figures 3 and 8 but these figures only show the positioning of the fluid pump, rather than a mounting to the underside of the vehicle body and that Mr. Nuhn testifies that the CAD files which the ’835 Figures are derived from show no such mounting. RMTA Opp. 22–23. Petitioner argues that the pump is instead, attached to the frame at the top of the vehicle body. *Id.* at 23 (citing Ex. 1174 ¶¶ 115–120).

In response, Patent Owner argues that Figure 8 shows, and the Specification explains, that the liquid manure pump may be mounted to the underside of the floatable vehicle body by linear actuator 35 or “a lever structure of the vehicle.” RMTA Reply 11–12 (citing Ex. 1001, 3:5–11, Fig. 8; Ex. 2106 ¶¶ 67–72).

The portion of the Specification cited by Patent Owner states:

The vehicle may comprise structure configured to cause raising and lowering of the fluid pump, especially the fluid pump housing, relative to the vehicle body. For example, a hydraulically or electrically driven linear actuator may be

provided on the vehicle and configured to raise and lower the fluid pump. This may be accomplished via a telescoping structure or a lever structure of the vehicle.

Ex. 1001, 3:5–11. We do not see, and Patent Owner does not adequately explain, how this supports Patent Owner’s position above.

Instead, we agree with Petitioner that the claim language at issue concerns the “pump housing,” not the “liquid manure pump.” RMTA Sur-reply 5. Petitioner argues that to the contrary, Patent Owner’s declarant, Mr. Prairie, conceded that the shielding to which the actuator is mounted to as shown in in Figure 2 is located at the top side of the vehicle. *Id.* (citing Ex. 1181, 57:13–59:9, 64:11–23). Petitioner also argues that “Mr. Prairie testified that the pump lever structure would be configured like the lever structure of the wheels (connected to the sides of the buoyant elements)” and thus, concedes there is no disclosure that the lever structure is mounted to the underside of the floatable vehicle body. *Id.* at 6 (citing Ex. 1181, 65:20–66:12, 107:1–108:13). We agree with these contentions.

Accordingly, we determine that Patent Owner’s cited support along with Figure 8 do not disclose new limitation (1) of claims 79 and 80, namely, “the pump *housing is mounted to the underside* of the floatable vehicle body.”

In regard to limitation (2), which impacts all of the proposed substitute independent claims, concerning keeping the floating solid material away from the bottom fluid opening of the pump housing of the immersible liquid manure pump, Petitioner contends that in essence, this is a negative functional limitation. RMTA Opp. 23. Petitioner argues that the Specification “provides no teaching or rationale describing this claimed functionality or how it is achieved” while noting that “depending on the strength of the pump, size of the submerged components or the

characteristics of the floating material, floating solid material may be drawn below the submerged components into the bottom fluid opening of the pump.” *Id.* at 24 (citing Ex. 1174 ¶¶ 125–127).

In response, Patent Owner argues that the language of limitation (2) “does not describe the absence of a structural feature or the absence of a function, but rather positively recites the function of the claimed structure.” RMTA Reply 12 (emphasis omitted, citing Ex. 2106 ¶¶ 73–74). Regardless of whether limitation (2) is considered a negative functional limitation, we agree with Petitioner that the Specification “provides no teaching or rationale describing this claimed functionality or how it is achieved” such that Patent Owner fails to meet its burden of showing the newly added language, as proposed, is supported by the original disclosure. RMTA Opp. 24. As an example, concerning limitation (2), Patent Owner points to the ’598 provisional’s paragraphs 5, 9, 10, 19, 20, 24, 34, 38. RMTA 5 (citing Ex. 2081).

We note that Patent Owner proposes a substantial amount of language added to the challenged claims and merely refers to certain paragraphs of the ’598 provisional without explanation. As Petitioner points out, “[t]he burden should not be placed on the Board to sort through [Patent Owner’s patent] and the original disclosures of the [non-provisional] application . . . for which benefit is sought, to determine whether each proposed substitute claim is supported.” RMTA Opp. 25 (quoting *See CBS Interactive Inc. v. Helferich Patent Licensing, LLC*, IPR2013-00033, Paper 122, 53–54 (PTAB Mar. 3, 2014)). None of the above cited paragraphs disclose—and Patent Owner does not adequately explain how the ’598 provisional discloses—any structure of the amphibious vehicle as claimed for allowing

floating solid material to be kept away from the bottom fluid opening in the pump housing of the immersible liquid manure pump. Thus, Patent Owner fails to meet its burden to show that the proposed substitute independent claims are supported by the original disclosures.

Based on the above, we find that Patent Owner's Revised Motion to Amend does not meet the requirements of 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121.

Although we can deny the Revised Motion to Amend for the above reasons, we also find that Petitioner has met its burden of persuasion on the alleged unpatentability of the proposed substitute claims. *See Lectrosonics*, Paper 15 at 4 (stating that “the burden of persuasion ordinarily will lie with the petitioner to show that any proposed substitute claims are unpatentable by a preponderance of the evidence”); *see also Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc) (holding the Board must assess the patentability of proposed substitute claims “without placing the burden of persuasion on the patent owner”); Rules of Practice to Allocate the Burden of Persuasion on Motions to Amend in Trial Proceedings Before the Patent Trial and Appeal Board, 85 Fed. Reg. 82,923 (Dec. 21, 2020). In the analysis below, we assess whether the proposed substitute claims “are unpatentable by a preponderance of the evidence based on the entirety of the record” before us. *Lectrosonics*, Paper 15 at 4.

#### *D. Claim Construction*<sup>26</sup>

##### *1. “Along the Longitudinal Centerline”*

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<sup>26</sup> To the extent there is a disagreement regarding what Petitioner believes is Patent Owner's “new claim construction for ‘directly rearward’ in its Reply” (RMTA Sur-reply 3), we note that Patent Owner does not explicitly provide

Petitioner contends that the new claim term “along the longitudinal centerline” (for claims 41 and 57) should be interpreted as “on or next to the longitudinal centerline” because this term does not require mathematical precision and the ’835 patent equates it to the phrase “substantially in the middle of the vehicle.” RMTA Opp. 2–3 (citing Ex. 1001, 7:52–54; Ex. 1174 ¶ 13).

Patent Owner contends that “along” means “at a point or points on” and “next to” means “to the right and left of” such that “along the longitudinal centerline” should be interpreted as “on the longitudinal centerline.” RMTA Reply 3 (citing Ex. 2106 ¶¶ 41, 45; Ex. 1175, 1).

Petitioner replies that contrary to the position taken by Patent Owner, Merriam-Webster also defines “along” as “in a line matching the length and direction of” such that it would be understood as a line that is on or next to something. RMTA Sur-reply 2 (citing Ex. 1175, 1; Ex. 1174 ¶ 13). Petitioner argues that its definition is in line with common phrases such as “walking along the river” or “a house along the river” which cannot mean walking on a river or a house in the river, respectively. *Id.* (citing Ex. 1174 ¶ 13). Petitioner argues that Patent Owner’s declarant, Mr. Prairie, agreed that portions of the side of the ’835 patent’s buoyant element could be understood as “along the underside of the floatable vehicle body.” *Id.* at 2–3 (citing Ex. 1181, 136:2–16).

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a claim construction for this term in the claim construction section of its Reply (RMTA Reply 3–4), and we provide our analysis regarding this term in our analysis below.

We do not agree with Petitioner’s argument relative to Mr. Prairie’s statement concerning “along the underside of the floatable vehicle” because the term at issue here is “along the longitudinal center line.” As to Petitioner’s reference to the ’835 patent’s disclosure, the cited passage reads: “The center of gravity is located along the longitudinal centerline of the vehicle, substantially in the middle of the vehicle.” Ex. 1001, 7:52–54. This passage relates only to the center of gravity and does not define “longitudinal centerline of the vehicle” as “substantially in the middle of the vehicle” and Petitioner does not direct us to any other disclosure in the ’835 patent to support its position. Accordingly, we reject Petitioner’s proffered definition and construe the term “along the longitudinal center line” as “on the longitudinal centerline.”

2. *“Liquid Manure Pump”*

Petitioner contends that claim term “liquid manure pump” should be construed as “a pump with a structure capable of pumping liquid with suspended solids.” RMTA Opp. 3.

Patent Owner responds arguing that this claim term includes “manure,” rather than just liquid with suspended solids, which is different because liquid manure is highly corrosive and acts as a non-Newtonian fluid when pumped. RMTA Reply 3–4 (citing Ex. 2106 ¶¶ 49, 60–65; Ex. 1004 ¶ 120; Ex. 1049, 5; Ex. 1050, 8).

To the extent Patent Owner argues that we should construe “liquid manure pump” to mean a pump that can handle “highly corrosive” material and “non-Newtonian fluid[s],” we disagree, and find such a construction to be unnecessarily restrictive. How well a pump could handle such a type of a fluid is another matter and Patent Owner has not shown persuasively that

one of ordinary skill in the art would understand the '835 patent to require such features for a “liquid manure pump.” Accordingly, we construe, as we did above in Section II.C., the claim term “liquid manure pump” only to the extent that it requires a pump with a structure that is capable of pumping liquid with suspended solids. *See Realtime Data*, 912 F.3d at 1375.

*E. Whether the Proposed Substitute Claims Fail to Comply with the Written Description Requirement under 35 U.S.C. § 112(a)*

As discussed above under Section III.C. “New Matter,” with respect to the procedural requirements associated with a motion to amend, the portions of the '835 provisional cited by Patent Owner are not adequate to satisfy the written description requirement. We therefore ultimately agree with Petitioner’s § 112(a) arguments. RMTA Opp. 11–12; RMTA Sur-reply 3–6.

*F. Whether the Proposed Substitute Claims Would Have Been Obvious*

Petitioner argues that the proposed substitute claims are unpatentable as obvious based on a similar combination of references set forth in the Petition for the corresponding original claims with the exception of two new references. RMTA Opp. 1–21. The chart below summarizes the challenge to the proposed substitute claims.

| <b>Proposed Substitute Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>                                           |
|------------------------------------------------|--------------------|---------------------------------------------------------------------|
| 41–80                                          | 103(a)             | Puck, Puck Boat, <sup>27</sup> Bryham, Manure-Manager <sup>28</sup> |

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<sup>27</sup> Video exhibits: (1) Exs. 1121–1126, (2) Exs. 1160–1161, and (3) Exs. 1163–1168; and (4) the testimony of Mr. Puck (Exs. 1121, 1158) (“Puck Boat”).

<sup>28</sup> MANURE Manager, Vol. 9, No. 1, Annex Publishing & Printing Inc., January/February 2011 (Ex. 1112, “Manure-Manager”).

Petitioner also relies on addition declaration testimony from Dr. Winkel (Exs. 1111, 1174 (under seal)) to support its contentions.

Having considered the record as a whole, we discern in the proposed amendments some patentable distinction as compared to the claims they are intended to replace. However, because we have determined already that Petitioner has demonstrated by a preponderance of the evidence that claims 1–40 of the ’835 patent are unpatentable, we also rely on our analysis from above with respect to Patent Owner’s arguments in support of the proposed substitute claims.

Petitioner asserts that proposed substitute claims 41–80 are unpatentable as obvious under 35 U.S.C. § 103 over the combined teachings of Puck, Puck Boat, Bryham, and Manure-Manager. RMTA Opp. 3–21.

### *1. Overview of Newly Cited References*

#### *a. Overview of Puck Boat*

According to Petitioner, “Puck Boat is a commercial embodiment of the [] vehicle described in Puck ([Ex.] 1014)” that “was publicly used and sold before the effective filing date of the ’835 Patent.” RMTA Opp. 2 (citing Ex. 1121 ¶¶ 4–11; Ex. 1158, 70:7–16, 82:1–91:5, 97:3–98:8; Ex. 2083 ¶ 12). Petitioner asserts that the Puck Boat is depicted and described by the following video exhibits: (1) Exs. 1121–1126, (2) Exs. 1160–1161, and (3) Exs. 1163–1168; and by (4) the testimony of Mr. Puck (Exs. 1121, 1158). *Id.*

*b. Overview of Manure-Manager*

According to Petitioner, “Manure-Manager describes Nuhn’s commercial embodiment (the ‘Nuhn Pump’) of the ’758 [p]atent ([Ex.] 1028) (incorporated-by-reference into the ’835 [p]atent).” RMTA Opp. 1–2 (citing Ex. 1001, Figs. 3, 5; Ex. 1112, 27).

A Figure on page 27 of Manure-Manager is reproduced below.



A portion of the Figure above depicts a “G-Force Vertical Pit Pump” and is described as a pump that “features dual ported and tapering housing, as well as a tapered fan.” Ex. 1112, 27.

*2. Proposed Substitute Claim 41*

With respect to the preamble ([41.0]) and limitations [41.1], [41.2], and [41.5], Petitioner asserts that Puck and Bryham disclose the features as discussed in the Petition. RMTA Opp. 9 (citing Pet. 83–89).

With respect to limitation [41.3], Petitioner asserts that one of ordinary skill in the art would have been motivated to substitute Puck's pump with the Nuhn Pump (the pump depicted above in Manure-Manager) "to take advantage of Nuhn's self-described improved efficiency and manure pumping capabilities of the Nuhn Pump, which is an immersible pump that includes a drive shaft powering an impeller in a housing with a bottom fluid inlet." RMTA Opp. 10 (citing Ex. 1112, 27; Ex. 1174 ¶ 68). According to Petitioner, the drive shaft "would be oriented substantially vertically when the Nuhn Pump is implemented on [the Puck Boat] to pump liquid manure." *Id.* Petitioner further asserts that one of ordinary skill in the art "would have located the Nuhn Pump in the same location in which the Puck Boat's intake pipe was arranged, as the vehicle already includes an access point through which the pump could extend into the manure lagoon." *Id.* (citing Ex. 1174 ¶¶ 69–71). Petitioner asserts that "[t]he pump housing and impeller would be positioned along the underside of the floatable vehicle body, rearward of the front of the vehicle and forward of the rear of the vehicle body" and "[l]ike the Puck intake pipe, when mounted in this orientation, the Nuhn Pump, including its housing and drive shaft, would have a constant, substantially vertical, angular orientation relative to the vehicle body." *Id.* at 10–11.

With respect to limitation [41.4], Petitioner asserts that "Bryham describes a hydraulic transmission that utilizes a hydraulic pump to drive the hydraulic fluid." RMTA Opp. 12 (citing Ex. 1015, 2:66–67, 16:1–6).

With respect to limitation [41.6], Petitioner asserts that one of ordinary skill in the art "would have understood it to be obvious to have arranged the Nuhn Pump intake in the same location as Puck's intake pipe

when substituting the Nuhn Pump for Puck’s pump.” RMTA Opp. 13. Petitioner further asserts that one of ordinary skill in the art “would have understood it to be obvious to position the rear nozzles and yoke rearward of the pump intake to provide space for the Nuhn Pump housing, as taught by the Puck Boat.” *Id.* at 14 (citing Ex. 1125, 0:45). Petitioner takes the position that “[r]eplacing Puck’s intake with the Nuhn Pump housing would place it along the longitudinal centerline of the vehicle with the yoke and nozzles directly behind it.” *Id.* Petitioner also asserts that “[w]hen submerged, each of the yoke and nozzles function to keep floating solid material away from the bottom opening of the pump.” *Id.* at 15 (citing Ex. 1158, 111:1–112:17; Ex. 1174 ¶ 83).

As to motivation to combine, Petitioner asserts that one of ordinary skill in the art “would have understood the substitution of the Puck pump for the Nuhn Pump to be a matter of design choice.” RMTA Opp. 3 (citing Ex. 1174 ¶¶ 31–40; Ex. 1158, 71:18–73:2; 248:8–12).

### 3. *Analysis*

Patent Owner asserts that “[t]he Substitute Claims are patentable over the prior art record.” RMTA 11; *See generally* RMTA Reply. More particularly, Patent Owner argues that the question “is not whether there is some *possible* justification or rationale for Petitioner’s modifications, but rather whether the record demonstrates that a POSITA would have made such modifications when facing known problems in the art.” RMTA Reply 4.

Patent Owner argues that although “Petitioner argues that a POSITA would have added Bryham’s wheels to Puck to avoid placing Puck’s trailer

or one's feet in a manure lagoon when launching and retrieving Puck's boat," "[t]his problem did not actually exist because Puck's trailer is designed so the boat can be launched and retrieved without backing the trailer into the manure lagoon." RMTA Reply 3–4 (citing PO Resp., 67–72). Patent Owner further argues that one of ordinary skill in the art "concerned with exposing a trailer to highly corrosive manure would not have added Bryham's wheels to Puck's boat due to corrosion, instability, traction, and steering problems." *Id.* at 4 (citing Ex. 2106 ¶¶ 118–125).

However, as discussed above in greater detail (*see* § II.G.4), Patent Owner's arguments are unpersuasive because even if manure is "highly corrosive" and even if Puck's trailer is designed so the boat can be launched and retrieved without backing the trailer into the manure lagoon, that does not negate a user's desire to avoid backing the trailer into the manure lagoon for launching the boat. Patent Owner's arguments do not persuade us that Petitioner's reasons for combining the teaching of Puck and Bryham lacks rational underpinning as they are supported by Dr. Winkel's declaration testimony. *See, e.g.*, Ex. 1111 ¶¶ 48–78; Ex. 1174 ¶¶ 31–65.

Patent Owner contends that "[a]dding Nuhn's Pit Pump [as taught by Manure-Manager] to Puck would result in the manure pump being spaced below the underside of the floatable vehicle body by a considerable distance – rather than along the underside of the floatable vehicle body." RMTA Reply 5.

Here, Patent Owner's contention appears to rest on Petitioner's failure to determine the appropriate length of Nuhn's Pit Pump or how would be positioned in order to combine the teachings of Puck and Manure Manager. Patent Owner's argument equates to a bodily incorporation argument but the

principle for the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference but rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Further, the Supreme Court has emphasized that “the [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418. As noted by the Court in *KSR*, “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 421. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. Nothing in the record suggests that Petitioner’s proposed combination of known prior art elements according to their known functions would involve more than routine engineering efforts, i.e., determining the proper positioning or length of the pump for the boat.

Patent Owner argues that Puck and others mount their pumps to a top deck rather than the underside of a floatable vehicle body. RMTA Reply 7 (citing Ex. 1156, 1; Ex. 1159, 3; Ex. 2106 ¶¶ 293–294, 349–350). However, we agree with Petitioner that adding another mounting point between the pump housing and the vehicle underside would have been obvious. Here, Petitioner argues that Dr. Winkel explains that “centrifugal pumps, such as the Nuhn Pump, are known to produce vibrations, which can be caused by the power source, rotational imbalance of the impeller, and hydrodynamic effect” and such effects would be negated by “adding another mounting

point between the pump housing and the vehicle underside.” RMTA Sur-reply 8 (citing Ex. 1174 ¶ 108).

Patent Owner contends that it is illogical to discard the pivot structure and pivot functionality of Nuhn’s Pit Pump when adding it to Puck as Petitioner suggests in order to have a constant angular orientation of the vertical drive shaft relative to the floatable vehicle body, and such suggestion is based on improper hindsight. RMTA Reply 7–8.

We are unpersuaded by this line of argument. As Petitioner argues, having a drive shaft that is vertical with a constant angular orientation relative to the floatable vehicle body is not foreclosed by the use of a lever mounted pump because “Nuhn’s expert’s testimony [indicates] that a lever mounted pump is the only type of pump that meets the “mounted to the underside” requirement. RMTA Sur-reply 9 (citing Ex. 1181, 64:5–23). We agree with Petitioner that “the pivotability functions would not be necessary when implementing the Nuhn Pump on Puck” because “[n]owhere is pivotability described as being a required feature for the Nuhn Pump.” *Id.* (citing Ex. 1174 ¶ 63).

Patent Owner argues that the combined teachings of Puck and Manure-Manager (Nuhn’s Pit Pump) would not result in components or portions of the vehicle from being positioned forward and rearward of the pump housing along the longitudinal centerline. RMTA Reply 8–9. Particularly, Patent Owner contends that Puck’s rear nozzle yoke is forward of the intake pipe, Puck Boat’s rear nozzle yoke is rearward of the intake pipe, and Nuhn’s Pit Pump is designed to swing up and down. *Id.* (citing Ex. 2106 ¶¶ 141–143). Patent Owner contends that one of ordinary skill in the art would therefore have positioned the rear nozzle yoke forward of

Nuhn’s Pit Pump in a similar manner as in Puck so there would be no interference with the pivoting of the pump. *Id.* at 9 (citing Ex. 2106 ¶ 156). And to use the arrangement of Puck Boat, Patent Owner argues, the rear nozzle yoke would end up being spaced above the top surface of the buoyant elements rather than being submerged. *Id.*

Petitioner replies arguing that Patent Owner concedes that Puck Boat discloses its rear nozzle rearward of the pump intake and one of ordinary skill in the art would be motivated to use this arrangement rather than the arrangement of Puck when adding the Nuhn pump “so the pump could be kept closer to the center of the vehicle, thereby increasing the stability of the vehicle.” RMTA Sur-reply 10 (citing Ex. 1174 ¶¶ 46, 81; Ex. 1158, 73:20–74:19). Petitioner argues that contrary to Patent Owner’s argument, during operation, the rear yoke would be positioned below the surface of the lagoon, and that the nozzle, which is a “component” of the rear nozzle yoke, is submerged and positioned along the longitudinal centerline and rearward of the pump housing, as required for claim 41. *Id.* (citing RMTA Opp. 15–16).

Lastly, Patent Owner argues that the limitation requiring components or portions of the vehicle being directly rearward of the pump means that the components or portions of the vehicle must be behind the pump housing and be substantially the same height and lateral position as the pump housing. RMTA Reply 10 (citing Ex. 2106 ¶¶ 192, 318, 374). Patent Owner contends that the rear nozzle yoke of Puck Boat modified with a shortened boom arm of Nuhn’s Pit Pump would not result in this requirement. *Id.* at 10–11.

We reject Patent Owner’s claim construction for the term “directly rearward” as being substantially the same height and lateral position as the

pump housing. We agree with Petitioner that the '835 patent does not define the term “directly rearward” as being the three-dimensional arrangement as argued by Patent Owner. RMTA Sur-reply 3–4. Patent Owner does not direct us to any portions of the '835 patent to support its proffered construction. Consequently, we are not persuaded by Patent Owner's contention that the modified Puck Boat would not have submerged components or portions of the vehicle that are positioned directly rearward of the pump housing.

And to the extent Patent Owner argues that the combination of cited art would not result in submerged components or portions of the vehicle from keeping floating solid material away from the bottom fluid opening of the pump housing, such argument is unavailing for the reasons argued by Petitioner. RMTA Sur-reply 12–13 (citing RMTA Reply 11). We agree with Petitioner that, contrary to Patent Owner's argument, a rear nozzle yoke would function to push floating solid material at the surface of a lagoon away from the area adjacent to a Nuhn Pump inlet that is installed on the Puck Boat. *Id.* Patent Owner does not provide any argument to the contrary.

For the foregoing reasons, we find Petitioner has demonstrated persuasively that the combination Puck, Puck Boat, Bryham, and Manure Manager teaches or suggests all of the limitations of proposed substitute claim 41. In view of the evidence of record, we determine that Petitioner has shown by a preponderance of the evidence that one of ordinary skill in the art would have been motivated to replace Puck's pump with Nuhn's Pit Pump according to the teachings of Manure Manager in the location of Puck's original pump with a reasonable expectation of success.

*4. Claims 42–80*

Petitioner explains that the combination of cited art would have rendered claims 42–80 obvious in a similar manner discussed above. RMTA Opp. 16–21. Patent Owner does not provide specific argument with regard to these claims. Instead, Patent Owner relies primarily on arguments presented for claim 41 above for claims 42–80. RMTA Reply 4–12. And, to the extent any differences between claim 41 and the features appearing in claims 42–80 may exist, our analysis addresses those features above when addressing proposed substitute claim 41.

Therefore, after our review of the arguments and evidence, we determine that Petitioner has shown by a preponderance of the evidence that the combination of Puck, Puck Boat, Bryham, and Manure Manager teaches or suggests proposed substitute claims 42–80.

IV. PATENT OWNER’S MOTION TO EXCLUDE

Patent Owner filed a Motion to Exclude the declaration of Reidar Olofsson (Ex. 1008) and the declaration of Ansgar Lonnemann (Ex. 1013). PO Mot. To Exclude 1. Patent Owner also moves to exclude the declarations of Dr. Winkel (Exs. 1004, 1110, 1111, 1174). *Id.* Petitioner filed an Opposition (Paper 57) and Patent Owner filed a Reply to the Opposition (Paper 59). Patent Owner, as the moving party, has the burden to establish that it is entitled to the requested relief. 37 C.F.R. §§ 42.20(c), 42.62(a). We address each of Patent Owner’s arguments in turn.

*1. Exhibits 1008 and 1013*

Patent Owner moves to exclude Petitioner’s exhibits 1008 and 1013. PO Mot. To Exclude 1–11. Exhibit 1008 discusses the Truxor reference and

“pertains to Ground 2 of the Petition.” *Id.* at 1. Exhibit 1013 discusses the SenwaTec reference and “pertains to Ground 3 of the Petition.” *Id.*

As noted above, we do not reach the Ground 2 and 3 involving the Truxor or SenwaTec references. Thus, exhibits 1008 and 1013 play no part in our reasoning and were not relied upon by the Board in reaching our Decision. Patent Owner’s Motion to exclude exhibits 1008 and 1013 is therefore dismissed as moot.

2. *Declarations of Dr. Winkel*  
(Exs. 1004, 1110, 1111, 1174)

Patent Owner also moves to exclude Petitioner’s exhibits 1004, 1110, 1111, and 1174 pertaining to the declaration testimony of Dr. Winkel. PO Mot. To Exclude 11–15. According to Patent Owner, Dr. “Winkel’s declarations are deficient and should be excluded because Winkel is not a qualified as a POSITA under Patent Owner’s definition and/or because Winkel offers opinions and testimony that are outside the scope of his qualifications, experience, and expertise.” *Id.* at 11. We address each of Patent Owner’s arguments in turn.

a. *Whether Winkel is Qualified as a POSITA*

Patent Owner argues, that under its definition of one of ordinary skill in the art, Dr. Winkel is not qualified as a POSITA because he “lacks ‘at least two years of experience designing agricultural equipment and knowledge of manure agitation equipment’ as Patent Owner’s definition requires.” PO Mot. To Exclude 12 (citing Prelim. Resp. 32; Ex. 2004 ¶ 64).

Petitioner responds arguing that Patent Owner’s “definition is wrong because it improperly restricts the field of pertinent art.” Paper 57, 13. Petitioner points out that “the PTAB already rejected Nuhn’s definition for

this reason.” *Id.* (citing Inst. Dec. 11). In addition, Petitioner argues that Patent Owner’s definition “attempt[s] to constrict the ‘pertinent art,’ i.e., the pertinent technology, to a particular subset of individuals who use the pertinent technology, rather than the pertinent technology itself.” *Id.* at 12 (citing *CaptionCall, LLC v. Ultratec, Inc.*, IPR2013-00549, Paper 71 at 11 (PTAB Mar. 3, 2015)).

We agree with Petitioner. As discussed above, we rejected Patent Owner’s proposed definition as being too limiting, and determined that Petitioner’s level of skill most closely aligns with the problems and solutions in the ’835 patent and prior art of record. *See* § II.B. Here, as Petitioner points out, “[t]he ’835 [p]atent title and abstract do not even mention manure, but instead focus on the pumping and propulsion features of the “Amphibious Pumping Vehicle.” Paper 57, 12 (citing Ex. 1001).

Thus, Patent Owner’s argument<sup>29</sup>, that Dr. Winkel does not meet Patent Owner’s strict and limited view of the level of skill in the art, is not based on the level of skill adopted herein, and is therefore moot.

*b. Dr. Winkel’s Deposition Testimony*

Patent Owner argues that Dr. Winkel’s “opinions on the properties of liquid manure and the characteristics and capabilities of liquid manure

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<sup>29</sup> To the extent Patent Owner’s arguments made in its Motion or Reply in support of its Motion can be read as additional argument as to the level of skill in the art, these arguments were waived when not presented in the Response or Sur-reply in response to the related arguments in the Petitioner Reply. *See* 37 CFR §§ 42.23 (“A reply may only respond to arguments raised in the corresponding . . . patent owner response.”), 42.64(c) (a Motion to Exclude is to “explain [a previously made] objection.”).

pumps should still be excluded because they are outside the scope of his experience and expertise.” PO Mot. To Exclude 13.

However, we need not decide Patent Owner’s motion to exclude certain portions of Dr. Winkel’s delectation testimony related to the characteristics of liquid manure and liquid manure pumps (*see* PO Mot. To Exclude 15) because there is no dispute that Puck discloses a “liquid manure pump.” *See supra* § II.C.2 (“We determine that it is not necessary to determine what specific structure is required to pump liquid with suspended solids in order to resolve the parties’ dispute because it is undisputed that Puck discloses a “liquid manure pump.” *See* Tr. 55:6–9 (Patent Owner admits that “[t]here’s no dispute that Puck discloses a liquid manure pump”), 10:16–17 (Petitioner stating that “no one disputes that the Puck pump is able to pump liquid manure”)). Thus, we need not rely on Dr. Winkel’s declaration testimony to support our determination that Puck discloses a “liquid manure pump.” Accordingly, Patent Owner’s motion to exclude is dismissed as moot.

#### V. PETITIONER’S MOTION TO EXCLUDE

Petitioner filed a Motion to Exclude, in whole or in part, the declarations of Mr. Prairie (Exs. 2004, 2094, 2099, 2106) and Mr. Nuhn (Ex. 2083). Pet. Mot. To Exclude 1. Petitioner also moves to exclude “the written description support chart (EX2108) and provisional application comparisons (EX2109-EX2115), submitted and relied upon by Patent Owner . . . in its Patent Owner’s Response and Revised Motion to Amend.” *Id.* Patent Owner filed an Opposition (Paper 56) and Patent Owner filed a Reply to the Opposition (Paper 60). Petitioner, as the moving party, has the

burden to establish that it is entitled to the requested relief. 37 C.F.R. §§ 42.20(c), 42.62(a). We address each of Petitioner’s arguments in turn.

*1. Declarations of Mr. Prairie*

Petitioner moves to exclude the testimony of Mr. Prairie based on his asserted lack of professional experience with marine vehicles, and based on certain responses in his deposition. Pet. Mot. To Exclude 1–8. We address each argument in turn.

*a. Professional Experience with Marine Vehicles*

Petitioner argues that a person of ordinary skill in the art is limited to someone with professional experience in marine vehicles. Pet. Mot. To Exclude 3–4. As previously discussed, we rejected this argument as being too limiting and as excluding those “most familiar with manure agitation equipment – livestock farmers and commercial manure applicators.” *See supra* § II.B. Rather, we determined that Petitioner’s position “is inconsistent with the teachings of the ’835 patent” and that one of ordinary skill in the art includes “two years of professional experience in marine and off-road vehicles or agricultural vehicles and machinery.” *Id.*

Thus, Petitioner’s argument<sup>30</sup> that Mr. Prairie does not meet Petitioner’s strict and limited view of the level of skill in the art, is not based on the level of skill adopted herein, and is therefore moot.

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<sup>30</sup> To the extent Petitioner’s arguments can be read as additional argument as to the level of skill in the art, these arguments were waived when not presented in the Reply in response to the related arguments in the Patent Owner Response (PO Resp. 7–11). *See* 37 CFR §§ 42.23 (“A reply may only respond to arguments raised in the corresponding . . . patent owner response.”), 42.64(c) (a Motion to Exclude is to “explain [a previously made] objection.”).

*b. Mr. Prairie's Deposition Testimony*

Petitioner argues that “Mr. Prairie’s declaration should also be excluded because, as shown through his deposition testimony, he lacks the requisite knowledge of or familiarity with fluid pumps and liquid manure.” Pet. Mot. To Exclude 5. Petitioner argues that such knowledge is required under either party’s level of skill of a POSA. *Id.*

Petitioner’s argument is based entirely on its characterization of Mr. Prairie’s responses to attorney questioning in his deposition. Pet. Mot. To Exclude 6–8. Petitioner characterizes his responses as inadequate, and therefore asserts that he is not qualified to discuss fluid pumps and liquid manure from the perspective of a POSA. *Id.*

Petitioner acknowledges that their argument does not address or consider his actual experience in fluid pumps and liquid manure. Paper 60, 3 (“Regardless of his resume, . . .”). We note that Mr. Prairie has extensive experience with both. Not only is Mr. Prairie an agricultural engineer, but Mr. Prairie testifies that he grew up on a livestock farm and has personally worked many times at the dairy farm of his in-laws over the last 25 years, including “working with their manure systems.” Ex. 2004 ¶¶ 4–5. He testifies that the dairy farm has a manure lagoon, and has employed manure agitation equipment and floating manure agitators. *Id.* ¶ 4. Thus, Mr. Prairie has first-hand experience with manure lagoons, liquid manure, and the considerations surrounding manure handling. *See also* Paper 56, 7–8.

Further, Mr. Prairie is “a lecturer at South Dakota State University” and is responsible for courses that “involve every aspect of the design, operation, service, and ownership of agriculture machinery systems, including livestock manure management technologies.” Ex. 2004 ¶ 6. His

resume notes that this includes, (presumably teaching courses in) “Ag Power and Machinery, Fluid Power Systems, Instrumentation and Controls.” Ex. 2005, 1. Mr. Prairie also states that he has experience in the “design of high horsepower trash pumps.” Ex. 2004 ¶ 7.

It is unclear why these experiences alone are not sufficient to establish “a working knowledge of fluid pumps and livestock manure,” as required by Petitioner’s proposed level of skill in the art. Pet. 31 (citing Ex. 1004 ¶¶ 81–82), which we have adopted herein (*see supra* § II.B).

For these reasons, we deny Petitioner’s Motion to Exclude the declarations of Mr. Prairie (Exs. 2004, 2094, 2099, 2106).

2. *Declaration of Mr. Nuhn (Ex. 2083)*

Petitioner also moves to exclude the declaration testimony of Mr. Nuhn (Ex. 2083). Pet. Mot. To Exclude 1. In particular, Petitioner argues that Mr. Nuhn’s declaration with regard to secondary considerations of non-obviousness “introduces inadmissible hearsay.” *Id.* at 2, 8–14.

In our analysis of the secondary considerations with respect to Puck and Bryham, we determine that they are insufficient to overcome the strong case of obviousness. Thus, even if we were to exclude Mr. Nuhn’s testimony it would have no impact on our decision. Thus, Petitioner’s Motion to Exclude Mr. Nuhn’s testimony is moot.

3. *Exhibits 2108 and 2109–2115*

Petitioner argues that “Nuhn’s written description support chart (EX2108) and provisional application comparisons (EX2109–EX2115) should be excluded because they are filed in violation of 37 C.F.R. §§ 42.121(b).” Pet. Mot. To Exclude 14–15.

Patent Owner responds arguing that

In both Patent Owner’s Conditional Motion to Amend (Paper 21) and Patent Owner’s Revised and Conditional Motion to Amend (Paper 42), Patent Owner identified support for the substitute claims in U.S. Provisional Application No. 61/867,598 (‘598 Application). The ‘598 Application has substantially the same specification as each subsequent application in the ‘835 [p]atent’s priority chain. Thus, the citations to the ‘598 Application provide the requisite support under 37 C.F.R. § 42.121.

Paper 56, 14. Thus, Patent Owner takes the position that Exhibit 2108 through Exhibit 2115 “were filed with Patent Owner’s Reply (Paper 50) to demonstrate the lack of substance and futility of Petitioner’s arguments, are proper rebuttal evidence, and therefore should not be excluded.” *Id.*

On Sur-reply, Petitioner argues that

Nuhn’s additional evidence is “rebuttal evidence” only in the sense that it presents a new alternative argument in support for its motion to amend. But under 37 CFR § 42.121(b), Nuhn should have identified its support for its amendments in its motion to amend—not in various exhibits to its Reply brief.

Paper 60, 5.

A motion to exclude should be directed to the admissibility of evidence. *See* 37 C.F.R. § 42.64; TPG 79 (“A motion to exclude must explain why the evidence is not admissible (e.g., relevance or hearsay) but may not be used to challenge the sufficiency of the evidence to prove a particular fact.”). According to the Trial Practice Guide, a motion to exclude is not a vehicle to “address arguments or evidence that a party believes exceeds the proper scope of reply or sur-reply.” TPG 79. Rather, “[i]f a party believes that a brief filed by the opposing party raises new issues, is accompanied by belatedly presented evidence, or otherwise exceeds the

proper scope of reply or sur-reply, it may request authorization to file a motion to strike.” *Id.* at 80. Patent Owner did not file a motion to strike.

Petitioner’s Motion to Exclude does not address the admissibility of Exhibit 2108 through Exhibit 2115. Rather, it argues that the exhibits should be excluded because they are filed in violation of 37 C.F.R. §§ 42.121(b). Pet. Mot. To Exclude 14–15. Thus, we find that Petitioner’s Motion to Exclude does not state a proper basis for excluding evidence and, therefore, we deny the motion for that reason.

#### VI. THE PARTIES’ JOINT MOTION TO SEAL AND ENTRY OF PROTECTIVE ORDER

Patent Owner filed a Motion to Seal the Patent Owner Response (Paper 23), Exhibit 2059, Exhibits 2075–2078, and Exhibit 2083, along with a Proposed Protective Order (Ex. 2089). Paper 20. Petitioner filed an Opposition to Patent Owner’s Motion to Seal where it did not oppose Patent Owner sealing the aforementioned Paper 23 and Exhibits, but did oppose Patent Owner’s Proposed Protective Order (Ex. 2089). Paper 27, 1. The parties’ filed a Joint Motion to Seal where “Patent Owner requests the Board grant that Motion (Paper 20) for the reasons discussed in Paper 20” and Petitioner indicates that it “does not oppose Patent Owner’s request.” Paper 70, 1. The parties also move to seal Exhibits 1172 and 1173 along with

portions of Exhibits 1174<sup>31</sup> and 1174<sup>32</sup>. *Id.* at 2.<sup>33</sup> The parties filed a Joint Proposed Amended Protective Order (Ex. 1079).

The parties do not oppose each other's motions. Because Petitioner and Patent Owner have shown good cause to protect certain confidential information in this proceeding (*see* Papers 20, 30), we grant the parties' requests that these documents remain under seal. We also enter in this proceeding the parties' jointly agreed upon Protective Order (Ex. 1079).

## VII. CONCLUSION<sup>34</sup>

For the foregoing reasons, we determine that Petitioner has shown by a preponderance of the evidence that the challenged claims are unpatentable, as summarized in the below table. We also deny Patent Owner's Revised Motion to Amend, as also summarized below.

A summary of our conclusions appears in the charts below:

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<sup>31</sup> The parties move to seal pages 80–81 of Mr. Nuhn's declaration containing screen captures from "proprietary CAD files (EX1172–1173)." Paper 70, 2.

<sup>32</sup> The parties move to seal page 172, lines 24–25, page 173, lines 3–18, and page 174, lines 1, 13, and 15 "contain[ing] testimony related the amount of money Nuhn has spent on advertising." Paper 70, 2.

<sup>33</sup> The parties no longer request to maintain Papers 34 and 36, along with Exs. 1110, 1116, 1117, and 1137 under seal. Paper 70, 1.

<sup>34</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

| <b>Claims</b>              | <b>35<br/>U.S.C. §</b> | <b>Reference(s)/Basis</b>   | <b>Claims<br/>Shown<br/>Unpatentable</b> | <b>Claims<br/>Not Shown<br/>Unpatentable</b> |
|----------------------------|------------------------|-----------------------------|------------------------------------------|----------------------------------------------|
| 1–40                       | 103                    | Puck, Bryham                | 1–40                                     |                                              |
| 1–10,<br>13–26,<br>29–40   | 102 <sup>35</sup>      | Carrier                     |                                          |                                              |
| 1–5,<br>7–21,<br>23–40     | 103                    | Truxor, Yoon,<br>Carrier    |                                          |                                              |
| 1–5,<br>7–21,<br>23–40     | 103                    | SenwaTec, Yoon,<br>Carrier  |                                          |                                              |
| 1–40                       | 103                    | Puck, Bryham,<br>Bennett II |                                          |                                              |
| <b>Overall<br/>Outcome</b> |                        |                             | 1–40                                     |                                              |

| <b>Motion to Amend Outcome</b>                     | <b>Claims</b> |
|----------------------------------------------------|---------------|
| Original Claims Proposed to be Replaced            | 1–40          |
| Substitute Claims Proposed in the Amendment        | 41–80         |
| Substitute Claims: Revised Motion to Amend Granted | None          |
| Substitute Claims: Revised Motion to Amend Denied  | 41–80         |
| Substitute Claims: Not Reached                     | None          |

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<sup>35</sup> As explained above, because we determine that the challenged claims are unpatentable under one ground, we decline to address the remaining grounds.

### VIII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, claims 1–40 of U.S. Patent No. 11,491,835 B2 are held unpatentable;

ORDERED that Patent Owner’s Revised Contingent Motion to Amend is denied with respect to claims 41–80;

ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2;

ORDERED that to the extent they are not moot, the parties’ Motions to Exclude (Papers 53–54) are denied; and

ORDERED that Patent Owner’s Motion to Seal (Paper 20) and the parties’ Joint Motion to Seal (Paper 70) are *granted*, and that the parties’ agreed upon Protective Order identified as Exhibit 1079 is entered in this proceeding;

FURTHER ORDERED that this Decision is filed under seal, designated as “For Board and Parties Only” as it discusses and cites to the documents under seal; and within five (5) business days from the entry of this Decision, Patent Owner and Petitioner jointly file a proposed redacted version of this Decision for public entry into the record.

IPR2024-00004  
Patent 11,491,835 B2

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