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Paper 10
Date: November 29, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ENVIROTAINER AB,
Petitioner,

v.

DOUBLEDAY ACQUISITIONS, LLC,
Patent Owner.

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IPR2022-00864
Patent 7,263,855 B2

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Before KEN B. BARRETT, ERIC C. JESCHKE, and RICHARD H. MARSCHALL, *Administrative Patent Judges*.

JESCHKE, *Administrative Patent Judge*.

# DECISION
Granting Institution of *Inter Partes* Review
*35 U.S.C. § 314*

# I. BACKGROUND

Petitioner, Envirotainer AB, filed a Petition to institute *inter partes* review of claims 1–5, 7–36, 40, and 41 (the "challenged claims") of U.S. Patent No. 7,263,855 B2 (Ex. 1001, "the '855 patent"). Paper 2 ("Pet."). Patent Owner, DoubleDay Acquisitions, filed a Preliminary Response. Paper 7 ("Prelim. Resp."). With our authorization (Ex. 3001), Petitioner filed a Preliminary Reply (Paper 8, "Prelim. Reply") and Patent Owner filed a Preliminary Sur-reply (Paper 9, "Prelim. Sur-reply").

We have authority to determine whether to institute *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2021) ("The Board institutes the trial on behalf of the Director."). *Inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314. Upon consideration of the evidence and arguments in the record, for the reasons below, we determine that the information presented shows a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims. We thus institute *inter partes* review on all challenged claims on all asserted grounds. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); 37 C.F.R. § 42.108(a) ("When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.").

## *A. Related Proceedings*

The parties identify a proceeding in the U.S. District Court for the Northern District of Georgia involving the '855 patent: *DoubleDay*

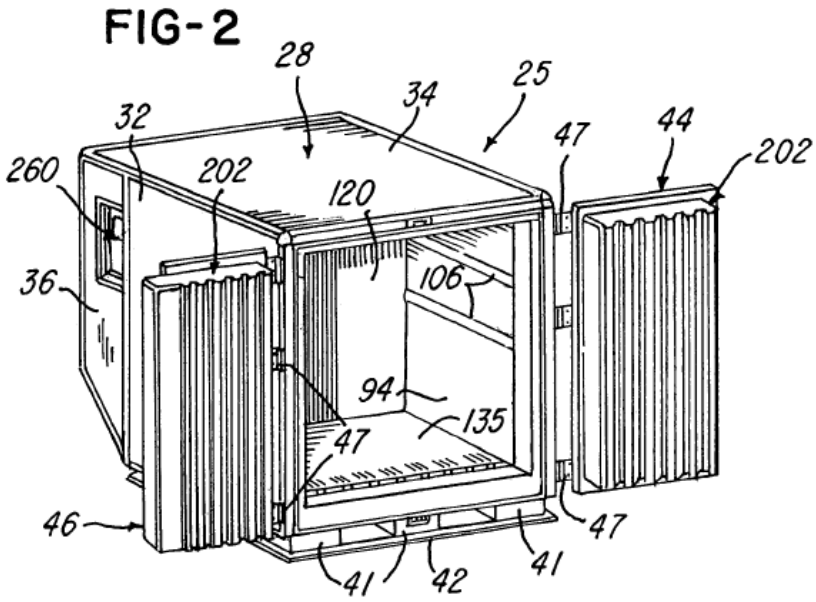
*Acquisitions LLC d/b/a CSafe Global v. Envirotainer AB*, No. 1-21-cv-03749 (N.D. Ga.), filed Sept. 10, 2021 (the "Georgia Litigation"). Pet. 115[1]; Paper 3 (Patent Owner's Mandatory Notice) at 2. The Georgia Litigation also involves U.S. Patent No. 7,913,511 B2 ("the '511 patent").

Petitioner also filed (1) a petition for *inter partes* review of claims 19–21, 23, 26–31, 33, 35–37, and 41 of the '855 patent in IPR2022-00292 ("the '292 IPR"), (2) a petition for claims 1, 2, 7–11, 30, and 31 of the '511 patent in IPR2022-00293 ("the '293 IPR"), and (3) a petition for *inter partes* review of claims 1–19, 39, and 40 of the '511 patent in IPR2022-00851 ("the '851 IPR"). *See* Pet. 115; Paper 3 at 1–2. We previously instituted *inter partes* review in the '292 IPR, the '293 IPR, and the '851 IPR.

*B. The '855 Patent*

The '855 patent relates to cargo containers for transporting temperature-sensitive cargo. Ex. 1001, codes (54), (57).

Figure 2 is reproduced below:




[1] Although this page is identified as "1," it follows page 114.

Figure 2 is a perspective view of a cargo container with the doors in their open positions. Ex. 1001, 2:41–45. Cargo container 25 in Figure 2 includes shell-sub-assembly 50 as well as outer housing 28, which is "formed of sheet aluminum and aluminum corner trim and sometimes referred to as a 'can.'" *Id.* at 3:14–16. Outer housing 28 "includes opposite side walls 32, a removable top wall 34, a rear wall enclosure 36 and a bottom wall 38," shown in Figure 3.[2] *Id.* at 3:16–19. In addition, outer housing 28 is supported by hollow aluminum supports or legs 41, connected to aluminum base plate 42, that are arranged to allow container 25 to be raised with a forklift. *Id.* at 3:19–22. Outer housing 28 also supports swinging door units or assemblies 44/46, each of which are supported by hinges 47. *Id.* at 3:25–28.

[2] In this Decision, we omit emphasis on reference numerals and claim numbers in quotations from the '855 patent and prior art references.

Figure 6 is reproduced below:

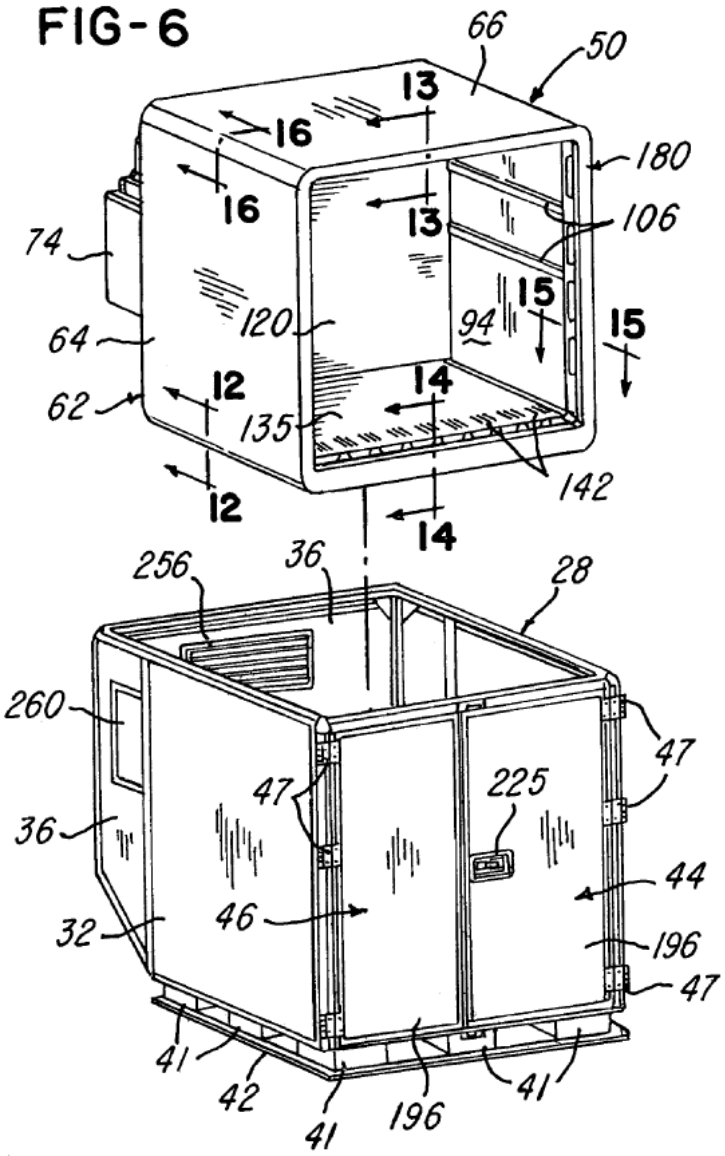



Figure 6 "is an exploded perspective view of the shell sub-assembly before being inserted into the outer housing assembly." Ex. 1001, 2:53–55. Referring to Figure 6, the '855 patent discloses that

> before the top wall 34 of the housing is installed, the housing 28 receives a shell sub-assembly 50[,] which includes a molded composite box-like outer shell 54 (FIGS. 5 & 6) and a molded composite box-like inner shell 56, shown exploded in FIG. 5.

Ex. 1001, 3:29–33.

Figure 5 is reproduced below:

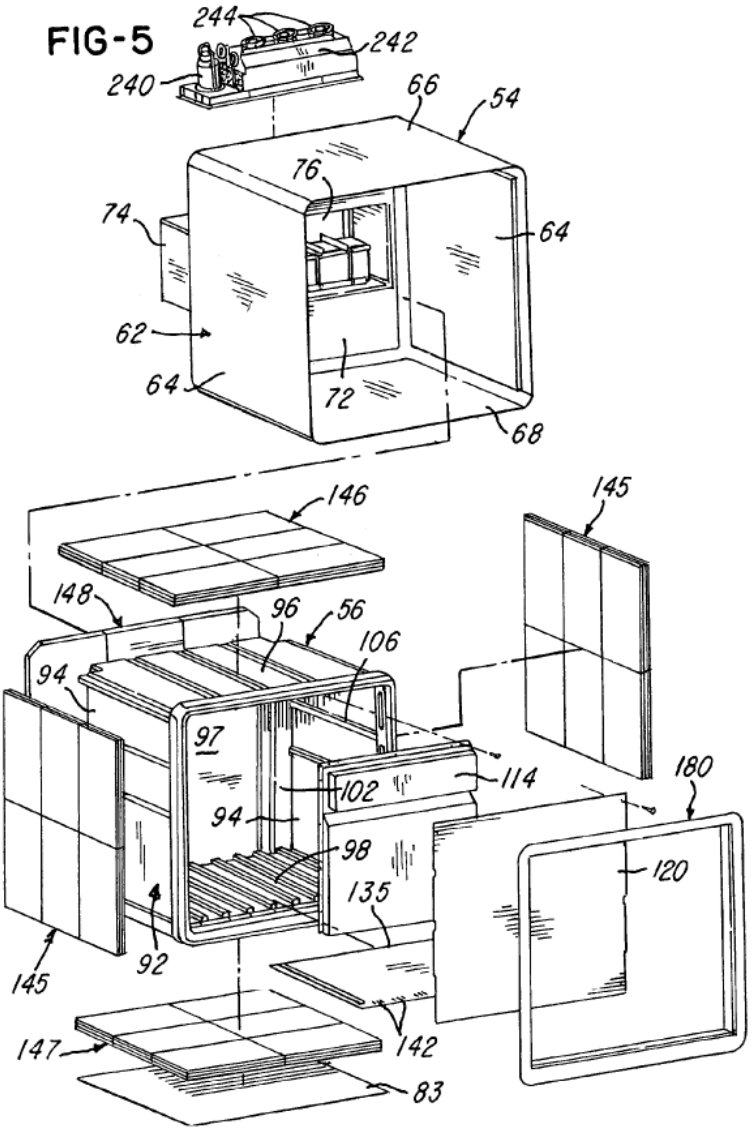
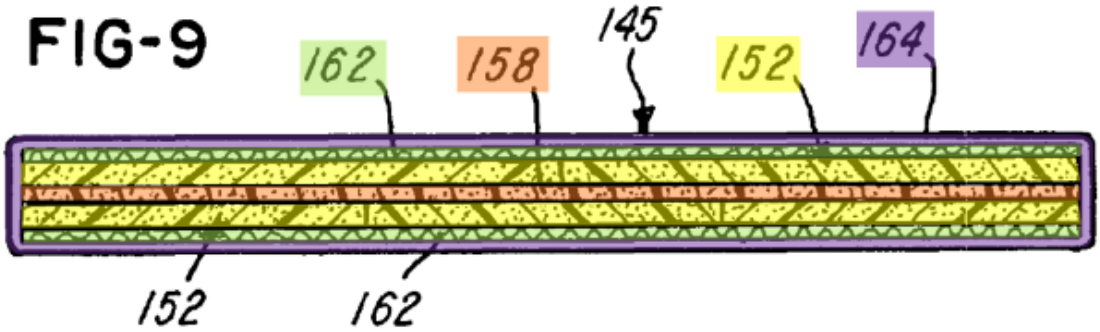



Figure 5 is an exploded view of a shell sub-assembly that is inserted into the outer housing assembly. *See* Ex. 1001, 2:50–52. Figure 5 shows molded composite box-like outer shell 54, which supports refrigeration compressor 240 and condenser 242 with a housing supporting fans 244. *See id.* at 3:29–33, 6:38–42. In addition, Figure 5 shows flat panel thermal insulation cartridges or cassettes 145–148, which "are confined or

sandwiched" between the walls of outer shell 54 and inner shell 56. *Id.* at 4:48–51.

Figure 9 is reproduced below, with highlighting added by Petitioner:




Pet. 4. Figure 9 depicts a cross-section of an assembled insulation cartridge or cassette used in the walls of the shell sub-assembly. Ex. 1001, 2:58–62. In the annotated version of Figure 9, Petitioner added (1) orange highlighting to sheet 158 of expanded polystyrene foam, (2) yellow highlighting to two layers 152 of vacuum insulated panels, (3) green highlighting to two outer sheets 162 of extruded corrugated plastic, and (4) purple highlighting to flexible film 164 of fire-retardant plastic material. *See id.* at 4:62–5:4.

*C. Challenged Claims*

Petitioner challenges claims 1–5, 7–36, 40, and 41, of which claims 1, 19, and 35 are independent. Claims 2–5 and 7–18 depend from claim 1, claims 20–34 depend from claim 19, and claims 36, 40, and 41 depend from claim 35. Independent claim 1 is reproduced below, with alphanumeric designations to identify each clause:

> 1. [**1.Pre**] A cargo container assembly adapted for transporting a temperature sensitive cargo supported by a pallet, [**1.A**] said assembly comprising an outer housing including opposite side walls, a bottom wall, a top wall and a rear wall, said

> housing having a front opening and a moveable door assembly connected to said housing for closing said front opening, [**1.B**] a box-like composite outer shell within said housing and having side, top and bottom walls of resin impregnated fibers and disposed adjacent the corresponding said walls of said housing, [**1.C**] a box-like composite inner shell within said outer shell and having side, top and bottom walls disposed inwardly from the corresponding said walls of said outer shell and defining a cargo receiving chamber, [**1.D**] vacuum insulated panel assemblies confined between the corresponding said side, top and bottom walls of said inner and outer shells, **[1.E]** and a refrigeration system connected to cool said chamber.

Ex. 1001, 8:4–19.[3]

*D. Asserted Grounds of Unpatentability*

Petitioner challenges claims 1–5, 7–36, 40, and 41 on the following grounds:

| Claim(s) Challenged | 35 U.S.C. §[4] | Reference(s)/Basis |
|---|---|---|
| 19–23, 26–28, 34–36, 41 | 103(a) | Sinclair,[5] Feldmeier[6] |

[3] We adopt and apply below Petitioner's designations for the elements of the challenged claims. *See, e.g.*, Pet. 41–47 (showing alphanumerical designations for the language in challenged claim 1).

[4] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. §§ 102, 103 that became effective on March 16, 2013. Pub. L. No. 112-29, §§ 3(b)–3(c), 3(n)(1), 125 Stat. 284, 285–87, 293 (2011). Because there is no dispute that the challenged claims of the '855 patent have an effective filing date before March 16, 2013, we apply the pre-AIA versions of these statutes.

[5] GB 1,117,899, published June 26, 1968 (Ex. 1005, "Sinclair").

[6] International Publication No. WO 03/023157 A1, published March 20, 2003, and certified translation (Ex. 1006, "Feldmeier").

| Claim(s) Challenged | 35 U.S.C. §[4] | Reference(s)/Basis |
|---|---|---|
| 24, 25, 40 | 103(a) | Sinclair, Feldmeier, Ohnishi[7] |
| 1, 7–10, 12, 13, 19, 24–27, 29, 30 | 103(a) | Loeffler,[8] Ohnishi |
| 2–5, 11, 14, 18, 20–22, 28, 31, 34–36, 40, 41 | 103(a) | Loeffler, Ohnishi, Yamamoto[9] |
| 1–5, 9, 10, 12–22, 26, 27, 29–34 | 103(a) | Zupancich,[10] Bosher[11] |
| 7, 8, 24, 25 | 103(a) | Zupancich, Bosher, Ohnishi |

Petitioner supports its challenges with a declaration from Mr. Michael Jobin. Ex. 1003 ("Jobin Decl.").

## II. DISCUSSION

### *A. Discretion Under 35 U.S.C. § 314(a) Based on Multiple Petitions*

#### *1. Legal Framework*

The Board has discretion on whether to institute *inter partes* review. *See SAS Inst.*, 138 S. Ct. at 1356 (explaining that section "314(a) invests the

[7] EP 0 781 714 B1, published Oct. 1, 2003 (Ex. 1007, "Ohnishi").

[8] International Publication No. WO 2004/045987 A2, published June 3, 2004, and certified translation (Ex. 1008, "Loeffler"). Although the first-named inventor is Markus Löffler, we (like the parties) refer to this reference as "Loeffler."

[9] EP 1 045 079 A2, published Oct. 18, 2000 (Ex. 1009, "Yamamoto").

[10] International Publication No. WO 2004/071885 A2, published August 26, 2004 (Ex. 1010, "Zupancich").

[11] US 5,791,150, issued August 11, 1998 (Ex. 1012, "Bosher").

Director with discretion on the question whether to institute review" (emphasis omitted)); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (explaining that under § 314(a), "the PTO is permitted, but never compelled, to institute an IPR proceeding"); *see also* 37 C.F.R. § 42.4(a) ("The Board institutes the trial on behalf of the Director.").

When determining whether to exercise our discretion under § 314(a) because of the filing of multiple petitions addressing the same patent, we may consider the following non-exhaustive factors:

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;

2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;

3. whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;

4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;

5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;

6. the finite resources of the Board; and

7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

*Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 15–16 (PTAB Sept. 6, 2017) (precedential). The *General Plastic* factors are not dispositive, but part of a balanced assessment of the relevant circumstances in a proceeding, including the merits. Consolidated Trial Practice Guide 58 (Nov. 2019), https://www.uspto.gov/TrialPracticeGuide Consolidated ("TPG").

In addition, in deciding whether to exercise discretion to deny institution when a petitioner files two or more petitions challenging the same patent, we consider guidance in the Trial Practice Guide, which provides that "one petition should be sufficient to challenge the claims of a patent in most situations" and that "multiple petitions by a petitioner are not necessary in the vast majority of cases." TPG 59. In such circumstances, a petitioner should provide:

> (1) a ranking of the petitions in the order in which it wishes the Board to consider the merits, if the Board uses its discretion to institute any of the petitions, and (2) a succinct explanation of the differences between the petitions, why the issues addressed by the differences are material, and why the Board should exercise its discretion to institute additional petitions if it identifies one petition that satisfies petitioner's burden under 35 U.S.C. § 314(a).

TPG 59–60. The Trial Practice Guide provides that "the Board recognizes that there may be circumstances in which more than one petition may be necessary" and that "two petitions by a petitioner may be needed, although this should be rare." *Id.* at 59.

*2. Factual Background*

Prior to discussing the arguments, we provide this table, which includes some of the relevant dates in the '292 IPR (which also addressed

the ’855 patent), the Georgia Litigation, and this proceeding, combined and in chronological order:

| Event | Date |
|---|---|
| Filing of the Complaint in the Georgia Litigation | September 10, 2021 (Ex. 2005) |
| Filing of the Petition in the ’292 IPR | December 17, 2021 |
| Filing of the Initial Infringement Contentions in the Georgia Litigation | February 4, 2022 (Ex. 1023) |
| Filing of the Motion for Preliminary Injunction in the Georgia Litigation (alleging an earlier priority date for certain claims of the ’855 patent) | March 3, 2022 (Ex. 1029) |
| Filing of Patent Owner’s Preliminary Response in the ’292 IPR | April 12, 2022 |
| Filing of the Petition in this proceeding | April 26, 2022 |
| Date of Institution in the ’292 IPR | June 8, 2022 |

With the filing of the Petition in this proceeding, Petitioner did not file a separate paper ranking the petitions in this proceeding and the ’292 IPR, but Petitioner did discuss differences between the petitions as well as why the Board should institute this proceeding despite having instituted in the ’292 IPR (*see* Pet. 108–114).

*3. Analysis*

Patent Owner argues that we should exercise discretion and deny the Petition in this proceeding under § 314(a). *See* Prelim. Resp. 9–31; Prelim. Sur-reply 1–7. Petitioner opposes. *See* Pet. 108–114; Prelim. Reply 1–7. Because many of the parties’ arguments on this issue are framed using the *General Plastic* factors, we frame the first part of the analysis similarly. In addition, we address certain arguments that do not fall within the *General Plastic* factors, in a section on “Other Considerations.” For the reasons

discussed below, we are not persuaded that we should exercise discretion to deny institution under 35 U.S.C. § 314(a) based on multiple petitions.

*a. The* General Plastic *Factors*

As to the first *General Plastic* factor—whether the same petitioner previously filed a petition directed to the same claims of the same patent—Patent Owner argues there is "substantial overlap" between the claims challenged in this proceeding (claims 1–5, 7–36, 40, and 41) and in the '292 IPR (claims 19–21, 23, 26–31, 33, 35–37, and 41). Prelim. Resp. 12–13 (quoting *Apple Inc. v. Koss Corp.*, IPR2022-00188, Paper 9 at 9 (PTAB Apr. 14, 2022)). Patent Owner further argues that the mere existence of non-overlapping claims is not relevant "in the absence of a reason why it is necessary for Petitioner to challenge additional claims now." *Id.* at 13 (quoting *Pfenex Inc. v. Glaxosmithkline Biologicals SA*, IPR2019-01478, Paper 9 at 9 (PTAB Feb. 10, 2020)).

Petitioner argues that this factor does not favor denial because Patent Owner chose to assert in the Georgia Litigation additional claims identified after the filing of the Petition in the '292 IPR. Pet. 109 (citing *Volkswagen Grp. of Am., Inc. v. Carucel Invs., L.P.*, IPR2019-01573, Paper 7 at 7 (PTAB Jan. 22, 2020)).

We agree with Patent Owner that there is substantial overlap between the claims challenged in this proceeding and in the '292 IPR. Of the fifteen claims challenged in the '292 IPR, fourteen are also challenged in this proceeding. Based on the overlap in the claims challenged in the '292 IPR and this proceeding, the first factor weighs in favor of exercising our discretion to deny institution.

We turn now to the second *General Plastic* factor—whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it. Patent Owner argues that Petitioner knew or should have known of all of the art asserted in this proceeding when the Petition in the '292 IPR was filed because the current art—all of which are issued patents or patent applications—could have been found with "reasonable diligence." Prelim. Resp. 15–17 (quoting *General Plastic*, Paper 19 at 20). Petitioner states the new references for this proceeding were "expeditiously" identified after Patent Owner asserted new claims and argued an earlier priority date in the Georgia Litigation. Pet. 109–110.

We are persuaded by Patent Owner's argument as to this factor. Petitioner attempts to explain why it searched for additional references after the filing of the Petition in the '292 IPR, but does not explain why it could not have found those same references *in earlier searches* through the exercise of "reasonable diligence." *General Plastic*, Paper 19 at 20. This factor weighs in favor of exercising our discretion to deny institution.

As to the third *General Plastic* factor—whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition—Patent Owner correctly points out that Petitioner had access to Patent Owner's Preliminary Response in the '292 IPR *two weeks prior* to filing the Petition in this proceeding. *See* Prelim. Resp. 17–20.

The weight of this time delay is tempered, however, by the fact that the Preliminary Response in the '293 IPR preceded the filing of the Petition

in the ’851 IPR (which is substantially similar to the Petition in this proceeding, including the prior art asserted) by only two days, which indicates that the Petition in this proceeding is not likely a product of “roadmapping” based on an earlier-filed document. *See, e.g.*, *General Plastic*, Paper 19 at 17 (“The absence of any restrictions on follow-on petitions would allow petitioners the opportunity to strategically stage their prior art and arguments in multiple petitions, *using our decisions as a roadmap*, until a ground is found that results in the grant of review.” (emphasis added)); *see also* Pet. 110–111 (“Petitioner did not wait to use the IPR2022-00292 POPR as a roadmap: it was filed very recently, not considered for this IPR, and Mr. Jobin executed his declaration without ever having seen or discussed it. This is confirmed by ’511 Patent IPR2022-00851, which was filed two days after both POPRs with the same art combinations presented here.”). Overall, this factor weighs slightly in favor of exercising our discretion to deny institution.

We turn now to the fourth and fifth *General Plastic* factors, which we address together. As to the fourth factor—the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition—Patent Owner argues that Petitioner “waited over four months” after filing the Petition in the ’292 IPR to file the Petition in this proceeding. Prelim. Resp. 20–22. According to Patent Owner, Petitioner should have known of all the references relied on in this proceeding prior to filing the Petition in the ’292 IPR. *See id.* at 22. As to the fifth factor—whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent—Patent Owner argues that “Petitioner

provides no explanation whatsoever why – despite knowing or having access to all of the art asserted here at the time of the first petition – ***it delayed four full months*** before asserting this Petition against all but one of the same claims." *Id.* at 24. Petitioner states that this factor does not favor denial because "this Petition is filed within two months of [Patent Owner's] new priority date and four months of IPR2022-00292." Pet. 110.

Although we agree with Patent Owner as to the time elapsed between the Petitions and as to Petitioner's apparent knowledge of the references relied on in this proceeding, we do not find the fourth factor or the fifth factor from *General Plastic* as entirely relevant on the particular facts here. As discussed in more detail below, the primary reason for the Petition in this proceeding is the lack of foreseeability and timing of Patent Owner's argument as to an earlier priority date. In other words, this was *not* a situation in which Petitioner located new prior art and then delayed in filing a second petition, as generally contemplated in the context of these two factors. *See General Plastic*, Paper 19 at 10–11 ("With respect to factors 4 and 5, Petitioner provided no explanation in its Petition or in its Reply to Patent Owner's Preliminary Response of any unexpected circumstances that prompted the new prior art searches, or for the delay."). For that reason, these factors do not weigh heavily in favor of exercising our discretion to deny institution.

We turn now to the sixth and seventh *General Plastic* factors, which we also address together. As to the sixth factor—the finite resources of the Board—Patent Owner argues that "Petitioner similarly ignores that the Board must expend significant resources to oversee and decide ***any*** IPR, regardless of its similarity to other proceedings" and argues that "Petitioner

***has not*** provided such a ranking of the merits of its serial petitions." Prelim. Resp. 25–26. Patent Owner also asserts that the merits of this Petition are "especially weak." *Id.* at 26–27. Patent Owner does not directly address the seventh factor—the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

We agree with Patent Owner that instituting this proceeding would consume at least some additional resources of the Board, but, for the reasons below, we do not agree that the merits of the Petition overall are weak. These two factors weigh against exercising our discretion to deny institution.

*b. Other Considerations*

We now address the arguments that do not fall specifically within the list of non-exhaustive factors in *General Plastic*, but which are still relevant to the analysis under § 314(a). *See General Plastic*, Paper 19 at 18 (recognizing "that additional factors may arise in other cases for consideration, where appropriate" but that the *General Plastic* factors "at the very least, serve to act as a baseline of factors to be considered in our future evaluation of follow-on petitions"). One circumstance in which more than one petition may be necessary is "when there is a dispute about priority date requiring arguments under multiple prior art references." TPG 59. The Petition in this proceeding presents precisely this scenario.

The record supports that Patent Owner's argument as to an earlier priority date for the challenged claims was first raised on March 3, 2022, more than *two months after* the filing of the Petition in the '292 IPR. If determined to be persuasive, Patent Owner's argument would eliminate four of the five grounds asserted in the '292 IPR (those relying on either Kuhn or

Broussard). *See* Ex. 1029 at 22[12] (arguing that "the invention of challenged claims 1 and 2 predates both Kuhn and Broussard because the subject matter of those claims was conceived and reduced to practice at least as of November 17, 2004, before the priority date of either reference"). The remaining ground in the '292 IPR challenges only claims 19–21, 28, 31, and 35–37 of the '855 patent. *See* IPR2022-00292, Paper 8 (Decision on Institution) at 8–9. The timing of Patent Owner's argument relative to the filing of the Petition in the '292 IPR weighs heavily against exercising our discretion to deny institution.

Although Patent Owner characterizes Petitioner's selection of references for the Petition in the '292 IPR as an "earlier strategic choice to rely on § 102(a) art" (Prelim. Resp. 21), we are more persuaded by Petitioner's view that Petitioner had no reason to *presume* a priority date for the challenged claims earlier than presented on the face of the '855 patent. *See* Pet. 109 ("Petitioner diligently prepared this Petition to address [Patent Owner's] newly identified claims, broad constructions, and alleged earlier priority."). For example, even as of the filing date of Patent Owner's Initial Infringement Contentions in the Georgia Litigation—February 4, 2022—Patent Owner indicated reliance on an alleged priority date of June 8, 2005, which would not antedate either Kuhn or Broussard from the '292 IPR. *See* Ex. 1023 at 4 ("Pursuant to Local Rule 4.1(b)(5), the Asserted Patents are entitled to the benefit of priority of U.S. Patent Application No. 11/147,564, filed on June 8, 2005."), *cited at* Pet. 109. And, as noted in the table above, the filing date of Patent Owner's Initial Infringement Contentions in the

[12] We use the page numbering added by Petitioner (in the bottom right corner of each page).

Georgia Litigation was more than a month *after* the filing date of the Petition in the '292 IPR.

*c. Conclusion*

For these reasons, viewing the *General Plastic* factors and the unique factual scenario here as parts of a balanced assessment, we are not persuaded that we should exercise discretion to deny institution under 35 U.S.C. § 314(a) based on multiple petitions addressing the '855 patent.

*B. Alleged Failure to Satisfy Statutory and Regulatory Requirements*

Patent Owner argues that the Petition should be denied for failure to meet certain statutory and regulatory requirements. *See* Prelim. Resp. 31–41. We address each set of arguments in turn below.

*1. Alleged Failure to Identify the Portions of the Challenged Claims Being Discussed*

As the first of three sets of arguments, Patent Owner asserts that the Petition fails to adequately identify the portions of the challenged claims being discussed, thus leading to a lack of clarity. *See* Prelim. Resp. 33–37. Patent Owner first asserts that the "Petition is drafted in such a way as to make it impossible to follow" in part because "the Petition relies extensively on abbreviations for the limitations of the '855 Patent's claims, such as [1.Pre], [19.B], and [35.D], even though there is no single place in the Petition that spells out which limitation corresponds to each abbreviation." *Id.* at 33.

In the first discussion of each challenged claim, Petitioner identifies each designation along with the related claim language before then using *only* the designation in subsequent discussions of that same claim language. For example, element 19.A is identified with its claim language in the context of the first asserted ground of Sinclair and Feldmeier (*see* Pet. 15)

and then is identified *only* as 19.A in the context of the grounds of Loeffler and Ohnishi (*see* Pet. 53) as well as Zupancich and Bosher (*see* Pet. 104). Although Petitioner *could have*, for example, collected and restated all of the designations in the Claims Appendix at the end of the Petition or restated the claim language linked to each designation with each new asserted ground, we do not view the failure to do so as making the Petition "impossible to follow," as argued (*see* Prelim. Resp. 33) or hindering review in any way.

In this argument, Patent Owner also faults Petitioner for "regularly cit[ing] references by name, rather than by exhibit number or some other mechanism," which Patent Owner characterizes as "a particularly confusing practice here because there are two references that Petitioner simply calls 'Zupancich' – Ex. 1010, a WO publication, and Ex. 1011, a provisional application." Prelim. Resp. 35. We do not view this as "confusing and ambiguous." *Id.* Referring to the references by name adequately identifies them for review. Moreover, Petitioner *expressly identifies* Exhibit 1010 as "Zupancich" and Exhibit 1011 as the "Zupancich Provisional." *See* Pet. 9.

Next, Patent Owner contends that "the Petition frequently uses an '*id*.' citation when multiple references were the last cited. *See, e.g.*, Pet. 14 (end of second paragraph showing '*Id*.' citation following citation to both 'Feldmeier' and Ex. 1003)." Prelim. Resp. 35. We also do not view this as "confusing and ambiguous." *Id.* After a citation to "Feldmeier, Abstract, 2; Ex-1003, ¶168," Petitioner then states: "Indeed, Feldmeier's 'panels are less sensitive, have the simplest possible structure and provide . . . better thermal insulation.' *Id.*, 3." Pet. 14 (underlining added to identify the "*Id.*" citation at issue). Based on both the quote from Feldmeier in the second sentence and the repeated use of the page number rather than paragraphs (as in the

citation to Exhibit 1003), we view as sufficiently clear that the "*Id.*" at issue refers to Feldmeier rather than Exhibit 1003.

Patent Owner also asserts as inadequate Petitioner's practice of relying on earlier discussions of other claim elements for certain later claim elements. *See* Prelim. Resp. 35–37. For example, for element 19.A in the asserted ground of Loeffler and Ohnishi, Petitioner references the earlier discussion of element 1.A. *See* Pet. 53. Given the similar claim language across many of the claims, on the facts here, we do not view this practice as leading to ambiguity as to Petitioner's positions.

*2. Alleged Lack of Clarity Based on the Structure of the Petition*

As its second argument, Patent Owner contends that Petitioner:

> combine[s] an annotated synopsis characterizing each reference to Petitioner's benefit, generalized reasons to combine the references, and an often[-]absent discussion of the references themselves, that together completely blur the line between the actual teachings of each asserted reference, Petitioner's modifications to those teachings, and Petitioner's characterizations of those teachings.

Prelim. Resp. 37. According to Patent Owner, "[t]he result is that the final unpatentability analysis is two or three levels removed from the actual disclosure of the references." *Id.* at 38 (quotations omitted).

In support, however, Patent Owner does not identify *any specific discussions* of the subject matter of the claims, but rather generally cites to the overview of the relied-upon references and the discussion of the reasons to combine for each asserted ground. *See* Prelim. Resp. 37–38 (citing

Pet. 11–15, 32–36, 38–42, 50–53, 61–66, 92–93)[13]. We do not view Patent Owner's generalized argument as adequately identifying a deficiency in the Petition. For example, in the discussion of claim 1 in the asserted ground of Zupancich and Bosher, Petitioner quotes from and specifically cites several teachings from the two relied-upon references. *See* Pet. 72–88; *cf.* Prelim. Resp. 38 ("Petitioner's disjointed web forces the Board to, at times, consider previously-discussed claims, other sections of the Petition, and paragraphs of the expert declaration, all ***while never actually citing or explaining the references themselves***.").

Patent Owner also highlights Petitioner's practice of eliminating spacing between certain words, such as using, for example, "Ex-1003" rather than "Ex. 1003" to cite to the Jobin Declaration. Prelim. Resp. 39; *see, e.g.*, Pet. 2 (citing "Ex-1003, ¶¶126–142"). According to Patent Owner, "doing this reduced the word count by 330 words" and, because "the Petition was only 20 words under the word limit by Petitioner's own (incorrect) count, had the citations been correctly spaced, the Petition would have exceeded the allowed word count." Prelim. Resp. 39. Patent Owner also asserts that Petitioner's certified word count was approximately 64 words low even ignoring the spacing in the exhibits. *See id.* at 39–40 (comparing Patent Owner's word count of 14,044 to Petitioner's word count of 13,980). In the Preliminary Reply, Petitioner again takes the position that its word count of 13,980 was correct, but does not address the citation spacing issue. *See*

[13] These citations appear to have been copied from the Preliminary Response in IPR2021-00851 even though the Petition in that proceeding differs from the Petition in this proceeding. *See* IPR2021-00851, Paper 7 at 34. We understand Patent Owner to have intended in this proceeding to cite the Petition at pages 11–15, 31–35, 37–41, 54–57, 67–72, and 106–107.

Prelim. Reply 7. Patent Owner responded that "Petitioner presented a word count that Patent Owner cannot reconcile with the Petition" (Prelim. Sur-reply 6 n.1) and that, "[e]ven assuming Petitioner's (incorrect) word count, the Petition in this case has a net overage of *310 words*" (*id.* at 6).

We agree with Patent Owner on this issue. The Consolidated Trial Practice Guide provides that "[e]xcessive words in figures, drawings, or images*, deleting spacing between words*, or using excessive acronyms or abbreviations for word phrases, in order to circumvent the rules on word count, may lead to a party's brief not being considered," and states that, "[i]f an opposing party raises a word count limit violation or abuse, the Board will consider such a violation or abuse on a case-by-case basis." TPG 40 (emphasis added).

Here, assuming Petitioner's certification of being 20 words under the 14,000-word limit (*see* 37 C.F.R. § 42.24(a)(1)(i))[14] and Patent Owner's assertion that proper citation format would have added 330 words to the Petition, Patent Owner has not adequately explained how the 310-word net overage amounts to undue prejudice. *See* TPG 40 ("If a party feels that it would suffer undue prejudice from an opposing party's alleged word count limit violation or abuse, that party should raise the issue with the Board promptly after discovering the issue."). Thus, we do not view denying the Petition on this basis as appropriate; instead, we permit Patent Owner an additional 500 words for any Patent Owner Response filed, for a total of 14,500 words. *See* 37 C.F.R. § 42.24(b)(2) (setting 14,000 words as the

[14] *See* TPG 40 ("Except in cases of obvious abuse, the Board will generally accept a party's certification of compliance with word count limits.").

limit for a patent owner response to a petition for *inter partes* review). We also clarify to Petitioner that all future filings *must* use proper citation format with a space between "Ex." and the exhibit number; any future violations may result in the Board not considering the filing. *See* TPG 40.

*3. Assertion that the Jobin Declaration Adds to the Alleged Lack of Clarity in the Petition*

Patent Owner contends that the Petition should be denied due to improperly incorporating by reference aspects of the Jobin Declaration. *See* Prelim. Resp. 40–41 (discussing Pet. 104). As the only example of the alleged improper incorporation, Patent Owner highlights this discussion of element 19.D in the asserted ground of Zupancich and Bosher, which refers to "§ VII.E.2.vi" of the Petition, which is the discussion of element 1.E in the same ground (on pages 87–88). Pet. 104, *discussed at* Prelim. Resp 40–41. The discussion of element 1.E references "§ VII.E.1.iii" of the Petition (on pages 71–72), which cites to paragraph 413 of the Jobin Declaration (among other aspects of the record). *See* Pet. 71–72, 87–88.

Cited paragraph 413 of Jobin Declaration, in turn, provides:

> POSAs had a reasonable expectation of success in the combination as Zupancich discloses a void for insertion of a temperature control system. Zupancich, ¶[087]. Bosher teaches its temperature control system (having a heater and a refrigeration unit) is designed to be added onto an inner chamber of a container, within an outer chamber. Bosher, 2:62–3:12, 7:2–12. Indeed, as the '855 Patent explains, and as I discuss above in the Technical Background (§V.F), refrigeration and heating systems were well-known in these containers, so it was well within a POSA's skill to use one successfully. '855 Patent, 1:6–30 (citing Broussard).

Jobin Decl. ¶ 413. Patent Owner states that paragraph 413 "incorporates by reference yet another section of the declaration (§V.F.) that itself spans 13

paragraphs (six pages), and nine additional references not mentioned in the Petition." Prelim. Resp. 41 (citing Jobin Decl. ¶ 413).

Arguments and information that are not presented and developed in the Petition, but instead are incorporated by reference, are not entitled to consideration, as it is improper to incorporate by reference arguments from one document into another document. *See* 37 C.F.R. § 42.6(a)(3); *Cisco Sys., Inc. v. C-Cation Techs., LLC*, IPR2014-00454, Paper 12 at 7–10 (PTAB August 29, 2014) (informative) (discussing incorporation by reference). We note that Patent Owner does not argue that Petitioner has failed to adequately present a reason to combine Zupancich and Bosher in that asserted ground *absent* the allegedly improperly incorporated discussions in paragraph 413 of the Jobin Declaration. At this stage of the proceeding, we do not view as improper Petitioner's reliance on that paragraph of the Jobin Declaration as part of its reason to combine analysis.

*4. Conclusion*

For these reasons, these arguments by Patent Owner do not present any bases to deny the Petition in this proceeding.

*C. The Level of Ordinary Skill in the Art*

The level of ordinary skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, 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." *Id.*

Petitioner contends, with accompanying declaration testimony, that a person having ordinary skill in the art would have "had at least a Bachelor's degree in mechanical or structural engineering, or related fields, and two years' experience designing structures with comparable mechanical and/or structural elements to the '855 Patent's subject matter." Pet. 10 (citing Jobin Decl. ¶¶ 23–26). Petitioner also states that "[a]dditional experience may compensate for less education." *Id.* (citing Jobin Decl. ¶¶ 23–26).

Patent Owner does not dispute Petitioner's proposed definition of the level of ordinary skill in the art, which appears consistent with the record at this stage of the proceeding, including the prior art. *See GPAC Inc.*, 57 F.3d at 1579. For purposes of this Decision, we adopt the definition of the level of ordinary skill in the art proposed by Petitioner.

*D. Claim Construction*

In *inter partes* reviews, the Board interprets claim language using the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner discusses four claim construction issues as to constructions that Patent Owner allegedly "implicitly advanced" in the Georgia Litigation. Pet. 6–7. First, Petitioner asserts that Patent Owner alleged that "the 'outer housing' of claim 1 can be met by the outer shell's outer surface." Pet. 6 (citing Ex. 1023 (Patent Owner's preliminary infringement contentions in the Georgia Litigation) at 8–9). Second, Petitioner asserts that Patent Owner alleged that "[t]he 'moveable door assembly' of [1.A] and [19.A] can be met by the same door assembly." Pet. 7 (citing Ex. 1023 at 10, 58–59). Third, Petitioner argues that Patent Owner alleged that "two layers of the same multi-layered wall can be the claimed 'outer' and 'inner' shells, and the 'disposed inwardly' limitation, found in all independent Challenged Claims, can be met by one layer of a wall being inwardly located from another layer of the same wall." *Id.* (citing Ex. 1023 at 11–17, 58–60). Fourth, Petitioner argues that Patent Owner alleged that "the 'substantially flat insulation layers each having a plurality of [VIPs]' limitations of Claims 2 and 20 are met by a single VIP layer."[15] *Id.* (citing Ex. 1023 at 23–24). Patent Owner does not expressly address these claim construction issues in the Preliminary Response.

At this stage of the proceeding and based on the current record, we need not construe explicitly any of the claim language discussed in this section or any other claim terms because doing so would not change the outcome of the analysis below. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that "we need only construe terms 'that are in controversy, and only to the extent

[15] "VIPs" refers to vacuum insulated panels.

necessary to resolve the controversy'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).[16]

### *E. Asserted Obviousness of Claims 19–23, 26–28, 34–36, and 41 Based on Sinclair and Feldmeier*

Petitioner asserts that claims 19–23, 26–28, 34–36, and 41 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Sinclair and Feldmeier. Pet. 1, 11–31. Patent Owner provides arguments specifically addressing this asserted ground. Prelim. Resp. 43–48. We first summarize aspects of the relied-upon references.

#### *1. Sinclair*

Sinclair "relates to containers, and in particular to thermally insulated containers suitable for use in the transport of refrigerated goods." Ex. 1005 at 1, ll. 9–12.

[16] Claim construction, in general, is an issue that may be addressed further at trial. Claim construction will be determined at the close of all the evidence and after any hearing. The parties are expected to assert all of their claim construction arguments and evidence in the Petition, Patent Owner's Response, Petitioner's Reply, Patent Owner's Sur-reply, or otherwise during trial, as permitted by our rules.

Figure 1 of Sinclair is reproduced below:

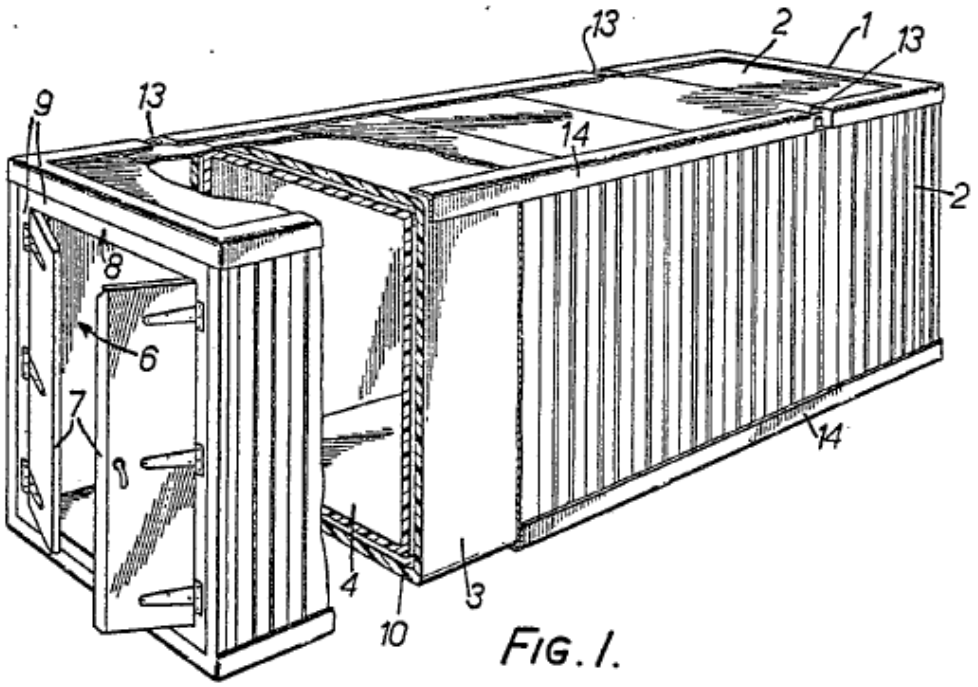



FIG. 1.

Figure 1 depicts "a perspective view of one container, with part broken away. Ex. 1005 at 2, ll. 11–12. Specifically, the depicted container "comprises an exterior casing 1 of box-like form which is rectangular in plan view and has substantially square ends one of which is closed and the other of which is open." *Id.* at 2, ll. 19–24. Sinclair discloses that exterior casing 1 "is externally metal clad at 2 and provided with an internal layer of thermal insulation, which may for example be a sprayed-on synthetic foam material 3." *Id.* at 2, ll. 24–27. In addition, Sinclair provides that "removable interior casing 4 of similar shape to the exterior casing 1 is dimensioned to fit within the latter" and that air space 10 "provides additional thermal insulation." *Id.* at 2, ll. 31–33, 42–47.

Figure 2 is reproduced below:

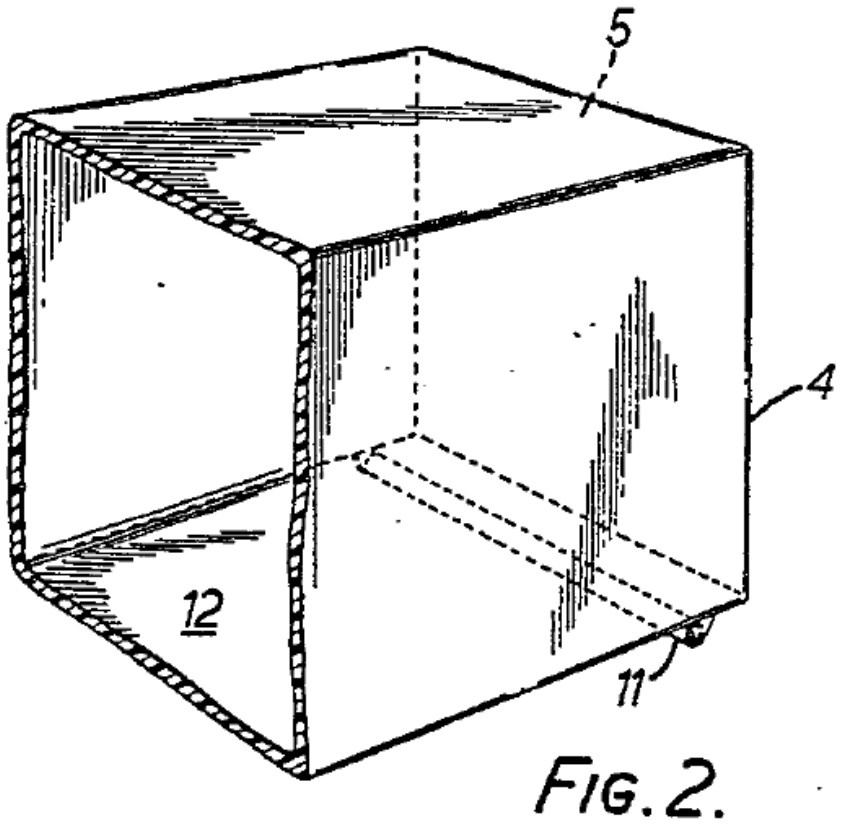



FIG. 2.

Figure 2 depicts a perspective view of interior casing 4. Ex. 1005 at 2, ll. 13–15, 31–33. Sinclair discloses that the container "may as usual be used in conjunction with a refrigeration plant to maintain a desired low temperature within the interior casing." *Id.* at 1, ll. 79–82.

*2. Feldmeier*

Feldmeier "relates to a panel for wall constructions that perform thermal insulation tasks." Ex. 1006 at 3.[17]

[17] For Feldmeier, we cite to the page numbers added by Petitioner prior to filing in this proceeding (at the bottom right corner of each page) rather than the page numbers native to Feldmeier (at the top of each page).

Figure 1 of Feldmeier is reproduced below:

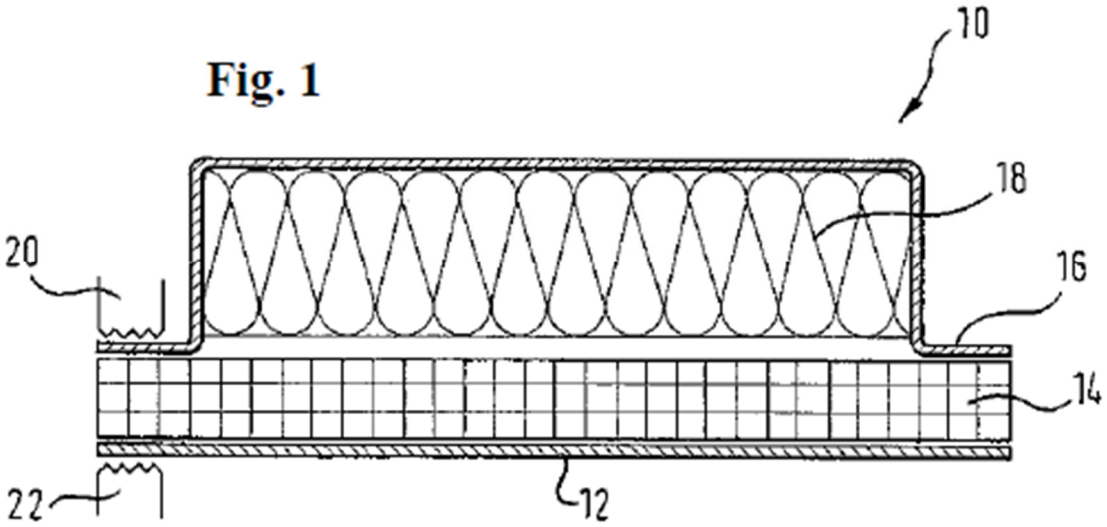



Figure 1 depicts a sectional view of a panel structure "with the vacuum insulation element arranged towards the outside." Ex. 1006 at 8. The panel structure shown in Figure 1 includes outer cover 12, vacuum insulated panel 14, inner cover 16, and insulating element 18. *Id.* at 10–11.

*3. Analysis*

*a. Independent Claims 19 and 35*

For independent claims 19 and 35, Petitioner contends that the proposed combination of Sinclair and Feldmeier discloses each limitation. Pet. 1, 13–20, 29–30. Patent Owner argues (1) that Petitioner fails to show that the proposed combination discloses an "outer shell" and an "inner shell," of the materials recited by claims 19 and 35, and (2) that Petitioner fails to show how or why one of ordinary skill in the art would have modified Sinclair to include insulating material "confined between" the walls of the "inner and outer shells," as recited in claim 19 and, according to Patent Owner, implicitly required by claim 35. *See* Prelim. Resp. 43–48. We address these arguments in turn.

*(1) The "Resin Impregnated Fibers" Limitations*

Independent claim 19 requires that the "cargo container assembly" includes a "composite outer shell" having walls "of resin impregnated fibers" and a "composite inner shell within said outer shell." *See* Ex. 1001, 9:46–47, 9:49–50. Independent claim 35 requires "making a cargo container assembly" by, among other steps, "forming a . . . composite outer shell" having walls "of resin impregnated fibers" and "forming a . . . composite inner shell" having walls "of resin impregnated fibers." *See id.* at 11:8–14.[18]

To address these limitations, Petitioner states that "Sinclair's exterior casing can be comprised of 'laminated glass-fibre reinforced synthetic resin" and states that "[l]aminated fiber reinforced resin is 'fiberglass,' a composite structure containing combined plastic resin and glass fibers, *i.e.*, 'resin impregnated fibers.'" Pet. 16 (citing Ex. 1005, 1:49–56; Jobin Decl. ¶ 178). According to Petitioner, Sinclair also teaches "an interior casing made of composite 'laminated glass-fibre reinforced synthetic resin." Pet. 17 (citing Ex. 1005, 1:49–56, 2:66–87; Jobin Decl. ¶¶ 182–184).[19]

Patent Owner argues that Petitioner relies *only* on Sinclair for this requirement (as opposed to Feldmeier, the combination of Sinclair and Feldmeier, or modifying Sinclair in some way), and asserts that Sinclair does

[18] We refer to these limitations—along with similar language in claim 1 discussed below (*see* § II.G.3.a.1)—together as the "resin impregnated fibers" limitations.

[19] Although the "inner shell" of claim 19 need only be "composite" rather than of "resin impregnated fibers," Petitioner relies on the alleged disclosure as to "resin impregnated fibers" to address the "composite" requirement. *See* Pet. 17.

*not* disclose *both* an inner *and* outer shell of "resin impregnated fibers." *See* Prelim. Resp. 44–45.

At this stage of the proceeding, the record more strongly supports Patent Owner's view that Sinclair discloses that *only one* of the "exterior casing" *or* the "interior casing"—i.e., the identified "outer shell" and "inner shell," respectively—is made of "resin impregnated fibers." *See* Prelim. Resp. 44–45.[20] As noted by Patent Owner, Sinclair expressly states: "Either of the casings may provide the main structural strength . . . and the other casing may be manufactured from laminated glass-fibre reinforced synthetic resin." Ex. 1005, 1:43–55, *quoted at* Prelim. Resp. 44–45. On the current record, we preliminarily determine, in line with Patent Owner's argument, that Sinclair discloses *two alternative embodiments*: (1) one embodiment with a "metal clad" exterior casing and an inner casing "mainly for insulating purposes" (Ex. 1005, 2:19–24, 2:47–40) and (2) another embodiment that is "generally similar to the first container with the exception that the structural fabrication is provided by the interior casing 4 instead of the exterior casing 1, the latter being mainly for insulation purposes" (*id.* at 2:82–87). *See* Prelim. Resp. 44–45. At this stage of the proceeding, we preliminarily agree with Patent Owner that, "in neither embodiment does Sinclair teach a container that has ***both*** an inner and an outer casing made of composite or 'of resin impregnated fibers.'" *Id.* at 45.

[20] At this stage, Patent Owner does not challenge that Sinclair discloses the use of "resin impregnated fibers" in at least one of the "casings."

*(2) The Reasons to Combine Sinclair and Feldmeier*

Independent claim 19 recites "vacuum insulated panel assemblies confined between the corresponding said side, top and bottom walls of said inner and outer shells." Ex. 1001, 9:53–55. Independent claim 35 requires "making a cargo container assembly" by, among other steps, "locating vacuum insulated panel assemblies adjacent the side, top, rear and bottom walls of the inner shell" and "inserting the inner shell and vacuum insulated panel assemblies into the outer shell." *Id.* at 11:15–18.[21]

In the discussion of the reasons to combine Sinclair and Feldmeier, Petitioner states that "Sinclair discloses double-casing containers designed to protect cargo from damage, and insulation in the clearance between casings" and adds that, although "Sinclair does not expressly disclose VIPs, [persons of ordinary skill in the art] had reason to consider Feldmeier's robust 'panel structures' (which include VIPs) to provide 'outstanding thermal insulation properties.'" Pet. 13–14 (citing Ex. 1005, 1:31–66; Jobin Decl. ¶ 168) (quoting Ex. 1006, code (57) & page 2). According to Petitioner, persons of ordinary skill in the art:

> had reason to use VIPs instead of Sinclair's synthetic sheets for insulation based on finite insulation solutions and design cost and need considerations. VIPs were known to provide greater insulation at a fraction of the weight and/or thickness of other solutions. Ex-1001, 4:63-5:2 (citing Ex-1018). Switching out other insulation forms for VIPs, such as Feldmeier's, was mere routine optimization where POSAs reasonably expected success.

[21] We refer to these limitations together as the "combined between" limitations.

Pet. 14 (citing Jobin Decl. ¶¶ 168–173). Petitioner states that replacing Sinclair's insulation with Feldmeier's VIPs would "increase heat flow resistance and reduce reliance on Sinclair's cooling system." *Id.* (citing Jobin Decl. ¶¶ 168–173). Petitioner adds that Feldmeier's "panel structures" are durable and that persons of ordinary skill in the art would have "understood these advantages were especially suited for Sinclair's container, which is susceptible to damage during transportation or loading." Pet. 14–15 (citing Jobin Decl. ¶ 171–172). According to Petitioner, persons of ordinary skill in the art would have "had reason to implement Feldmeier's 'panel structure' between Sinclair's casings to provide increased insulation, while still protecting the VIPs from damage (particularly when inserting the interior Sinclair casing)." Pet. 15 (citing Jobin Decl. ¶¶ 168–173).

Patent Owner argues that Petitioner has not explained how or why one of ordinary skill in the art would have modified Sinclair based on Feldmeier to locate the "vacuum insulated panel assemblies" as recited in the "confined between" limitations. *See* Prelim. Resp. 46–48.[22] Specifically, Patent Owner argues that "the Sinclair structure is incompatible with placing VIPs" as allegedly proposed by Petitioner because of the rollers on the internal casing in Sinclair that allow the internal casing to be rolled into the external casing. *See id.* at 46–47 (citing Ex. 1005, 1:57–64). According to Patent Owner, Petitioner "does not explain how, if VIPs were inserted into Sinclair's air gap (where the rollers are located), the fragile VIPs would not be damaged when the inner casing was 'rolled' into the outer casing." *Id.*

[22] Although the limitations at issue from claim 35 are slightly different, we note that Petitioner relies on the discussion of element 19.C (which recites "confined between") as to the "locating" step in 35.C. *See* Pet. 30.

at 47. Patent Owner states, "[f]or example, if the rollers roll over the VIPs, . . . the weight of the container (even worse if loaded) would likely compress and break a VIP or at least rupture the vacuum seal, the critical feature of VIP performance" and that, "[a]lternatively, placing VIP between the rollers would either create, at the rollers, undesirable heat paths that Sinclair sought to eliminate in the first place or inhibit the ability to maintain the vacuum seal, defeating the very purpose of VIPs." *Id.*

The alleged technical issues raised by Patent Owner as to the proposed combination are fact-intensive and, at this point, the record on these issues is incomplete. Moreover, Petitioner has not had the opportunity to respond to the specific arguments raised by Patent Owner. We will consider the full record on these issues, as developed during trial and if raised again by Patent Owner, as part of our analysis in the final written decision. Because the Petition shows a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims based on at least one of the asserted grounds (*see* § II.I.3.a.), we include claims 19 and 35 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*b. Claims 20–23, 26–28, 34, 36, and 41*

For claims 20–23, 26–28, 34, 36, and 41, Petitioner contends that the proposed combination of Sinclair and Feldmeier discloses each limitation. Pet. 1, 13–15, 20–29, 31. Patent Owner does not present any arguments specifically addressing claims 20–23, 26–28, 34, 36, and 41 in the context of this asserted ground not addressed above. *See* Prelim. Resp. 43–48. We include claims 20–23, 26–28, 34, 36, and 41 in the context of this asserted

ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*F. Asserted Obviousness of Claims 24, 25, and 40 Based on Sinclair, Feldmeier, and Ohnishi*

Petitioner asserts that claims 24, 25, and 40 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Sinclair, Feldmeier, and Ohnishi. Pet. 1, 31–37. Patent Owner does not present any arguments specifically addressing claims 24, 25, and 40 in the context of this asserted ground, but rather, relies on the same arguments presented as to the prior ground. *See* Prelim. Resp. 43–48. We include claims 24, 25, and 40 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*G. Asserted Obviousness of Claims 1, 7–10, 12, 13, 19, 24–27, 29, and 30 Based on Loeffler and Ohnishi*

Petitioner asserts that claims 1, 7–10, 12, 13, 19, 24–27, 29, and 30 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Loeffler and Ohnishi. Pet. 1, 37–54. Patent Owner provides arguments specifically addressing this asserted ground. Prelim. Resp. 48–55. We first summarize aspects of the relied-upon references.

*1. Loeffler*

Loeffler discloses air cargo containers for transporting temperature-sensitive goods. Ex. 1008, 3:3–20, 5:4–6.[23]

Figure 5 of Loeffler is reproduced below:

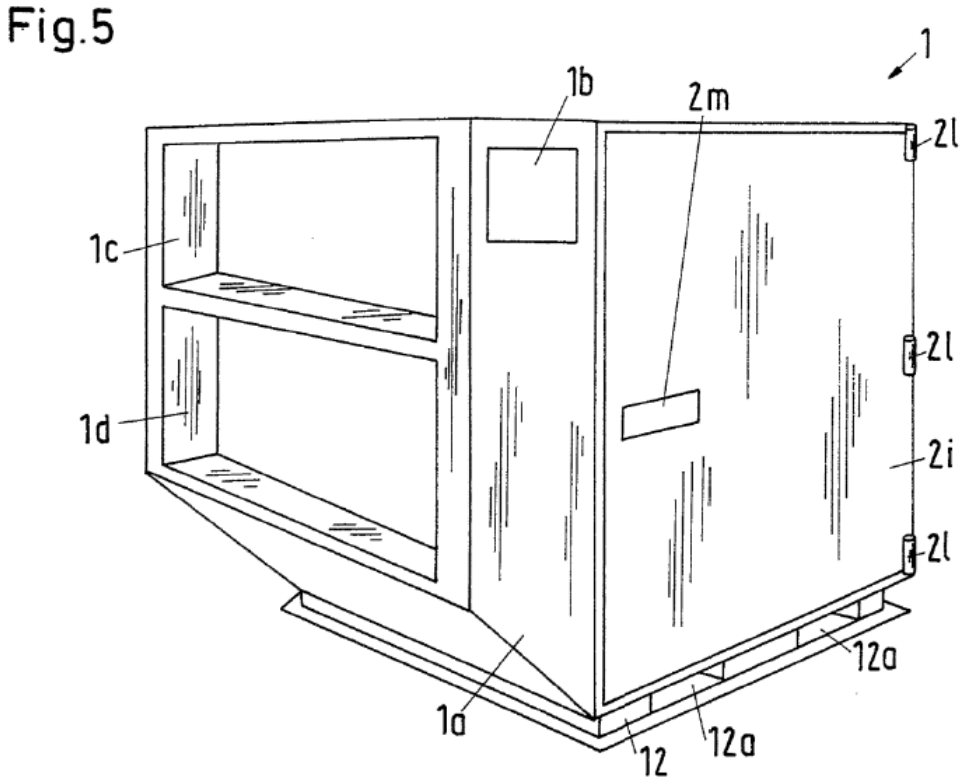



Figure 5 depicts a perspective view of an air cargo container with a refrigeration unit. Ex. 1008, 8:33–34. The depicted container has an insulated housing 2 and cavities 1c and 1d for an air conditioning system and power supply. *Id.* at 14:17–26.

[23] For Loeffler, we cite to the page numbers added by Petitioner prior to filing in this proceeding (at the bottom right corner of each page) rather than the page numbers native to Loeffler (at the top of each page).

Figure 6 is reproduced below:

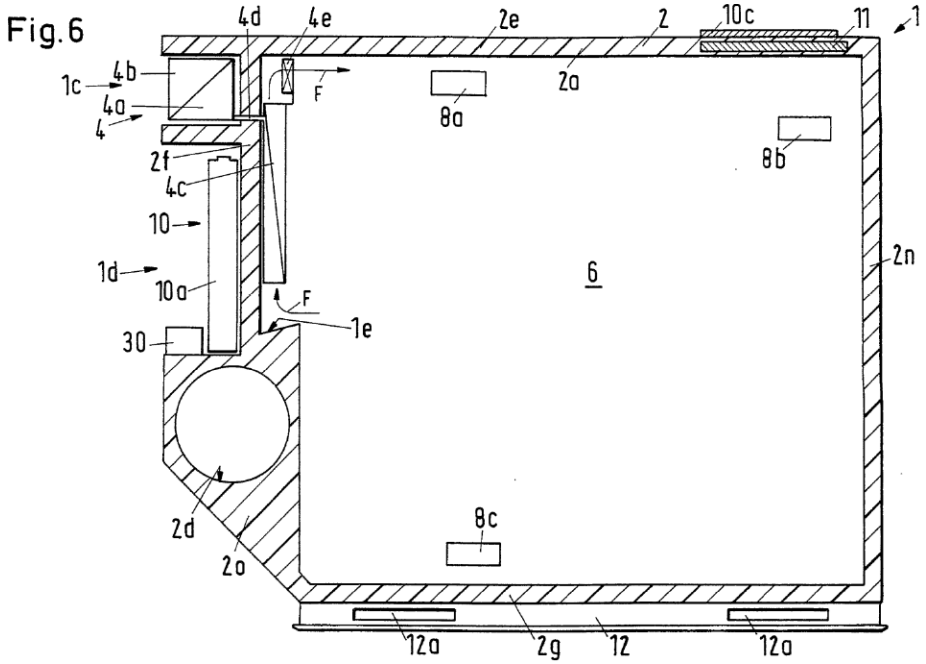



Figure 6 depicts a cross-sectional view of the air cargo container in Figure 5 above. Ex. 1008, 14:31–32. The cargo container shown includes air conditioning system 4 as well as insulated housing 2, which is "designed as an expanded single shell 2a," and is defined by top panel 2e, front panel 2f, bottom panel 2g, side panel 2h, loading opening 2i, and rear panel 2n. *Id.* at 14:31–34, 15:2–6. Loeffler discloses that "[i]t may also prove advantageous to expand vacuum insulation units 11 containing a partial vacuum into the container wall, in particular into the top panel 2e, in order to insulate the interior 6 exceptionally well against solar radiation coming from above." *Id.* at 15:26–29.

*2. Ohnishi*

Ohnishi teaches "a cargo container formed using FRP (fiber reinforced plastics) which is suitable as a container for freezing, refrigerating, cold insulating or heat insulating in uses such as marine

containers, truck containers, train containers and air containers." Ex. 1007 ¶ 1.

Figure 6 of Ohnishi is reproduced below:

FIG. 6

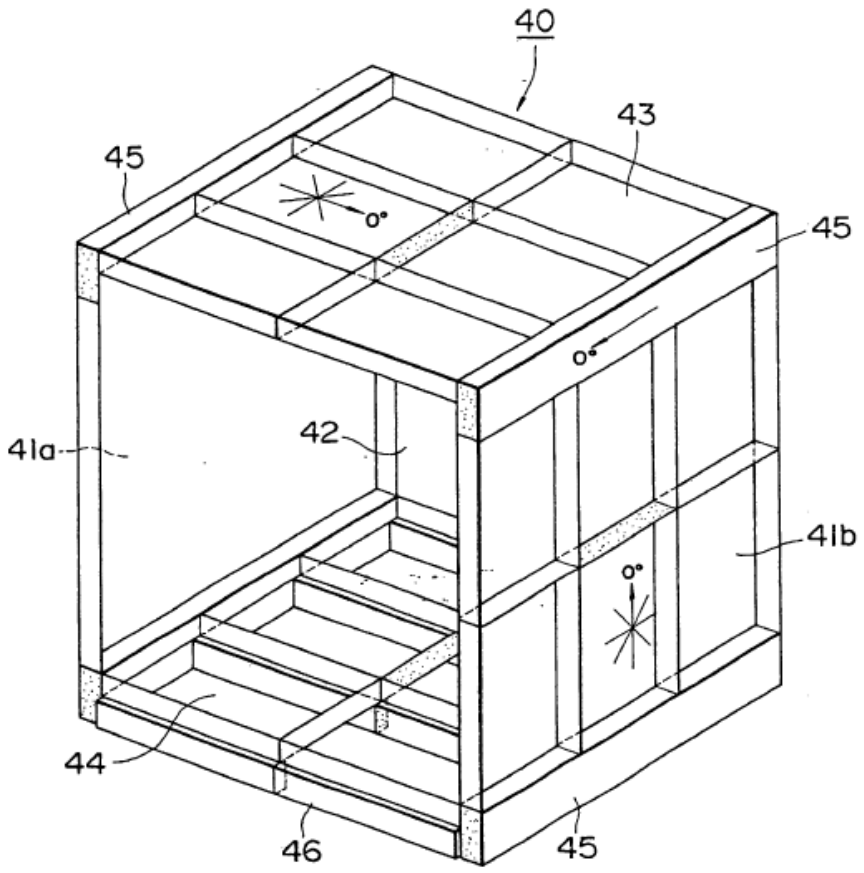



Figure 6 is a perspective view of a cargo container. Ex. 1007 ¶ 33. Container 40 in Figure 6 includes side walls 41a and 41b, rear wall 42, roof wall 43, and floor wall 44, and a door on the front side (not shown). *Id.* ¶ 65. Ohnishi discloses that "[e]ach wall is formed as a sandwich panel

including a core and FRP skins, and at least two walls adjacent to each other are formed integrally." *Id.*

Figure 7 of Ohnishi is reproduced below:

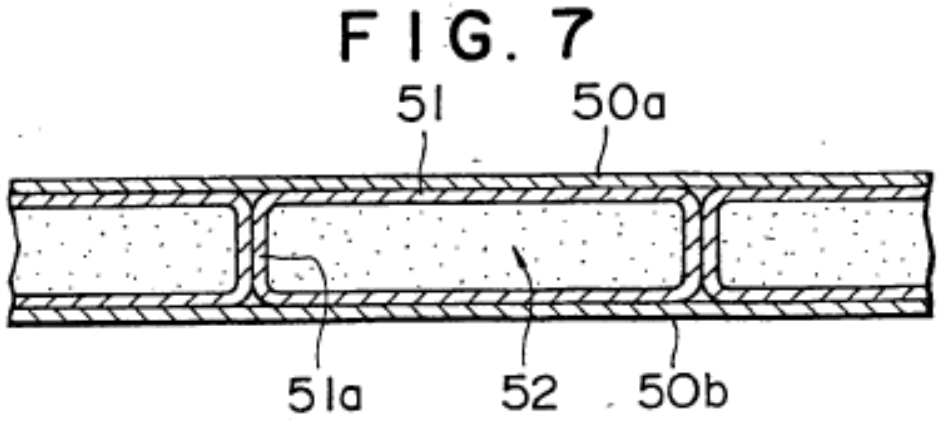



Figure 7 is a partial sectional view of a sandwich panel of the container in Figure 6. Ex. 1007 ¶ 33. Ohnishi's sandwich panel uses "[w]eb forming FRP members 51" between FRP skins 50a and 50b, and around polyurethane foam core 52. *Id.* ¶¶ 30, 66.

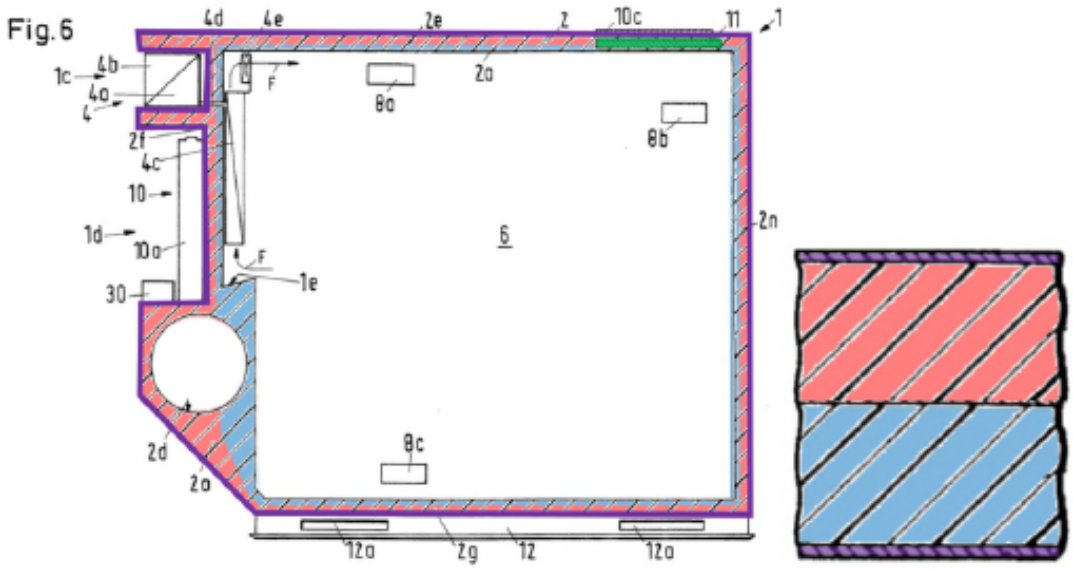
*3. Analysis*

*a. Independent Claims 1 and 19*

For independent claims 1 and 19, Petitioner contends that the proposed combination of Loeffler and Ohnishi discloses each limitation. Pet. 1, 40–47, 53. Patent Owner (1) argues that Petitioner fails to show that the proposed combination discloses an "outer shell" and an "inner shell," of the materials recited by claims 1 and 19, and (2) Petitioner fails to show how the combination discloses or renders obvious the requirement for "vacuum insulated panel assemblies confined between the corresponding said side, top, and bottom walls of said inner and outer shells" in claims 1 and 19. *See* Prelim. Resp. 48–55. We address these arguments in turn.

*(1) The "Resin Impregnated Fibers" Limitations*

Independent claims 1 and 19 both require that the "cargo container assembly" includes a "composite outer shell" having walls "of resin impregnated fibers" and a "composite inner shell within said outer shell." *See* Ex. 1001, 8:10–12, 8:13–14, 9:46–47, 9:49–50. To address these limitations, Petitioner relies on Loeffler modified by Ohnishi. *See* Pet. 44–47 (citing Jobin Decl. ¶¶ 287–297). In support, Petitioner provides the following annotated version of Figure 6 of Loeffler and a modified version of Figure 2 of Loeffler:




Pet. 45, 46. Figure 6 depicts a cross-sectional view of the air cargo container in Figure 5. Ex. 1008, 14:31–32. In the annotated version of Figure 6 here, Petitioner added (1) blue shading to the inner portion of housing 2, (2) red shading to the outer portion of housing 2, (3) purple shading on the outer edge of housing 2, and (4) green shading to vacuum insulation unit 11. Pet. 43, 45. Figure 2 depicts a magnification of housing 2. *See* Ex. 1008, 9:10–13. The modified version of Figure 2 depicts a red structure and a blue structure between two thinner purple structures. Pet. 45, 46.

Referencing the claim construction discussion, Petitioner states that Patent Owner "alleges two layers of the same multi-layered wall can comprise the claimed 'outer' and 'inner' shells" and then Petitioner identifies the blue region in the annotated figure as an "inner shell" and the red region as an "outer shell." Pet. 44–46 (citing Pet. 6–7). Then, referencing the discussion of the reasons to combine, Petitioner states that one of ordinary skill in the art would have "had reason to modify Loeffler with Ohnishi's reinforced fiber panels to create a stronger, more durable container." Pet. 45 (citing Jobin Decl. ¶ 290; Pet. 40–41); *see also* Pet. 46 (citing Jobin Decl. ¶¶ 296) (similar statement for the "inner shell").[24] In addition to the discussion of reasons to modify Loeffler based on Ohnishi, Petitioner discusses why there would have been a reasonable expectation of success in the modification. *See* Pet. 40–41 (citing Jobin Decl. ¶¶ 275–278). For claim 19, Petitioner references the discussions of claim 1. *See* Pet. 53.

Patent Owner presents two arguments as to why Petitioner has allegedly failed to show that the proposed combination satisfies the "resin impregnated fibers" limitation in claim 1. *See* Prelim. Resp. 48–51. First, Patent Owner argues that Loeffler *alone* does not satisfy the "resin impregnated fibers" limitation, in part because "what Loeffler calls a 'shell' is insulation, not a composite shell nor made of resin impregnated fibers as required in the '855 claims." Prelim. Resp. 49; *see also id.* at 48–48 (entire argument). Petitioner, however, does not rely solely on Loeffler, but rather

[24] Although the "inner shell" of claims 1 and 19 need only be "composite" rather than of "resin impregnated fibers," Petitioner relies on the alleged modification with Ohnishi's "resin impregnated fibers" to address the "composite" requirement. *See* Pet. 17.

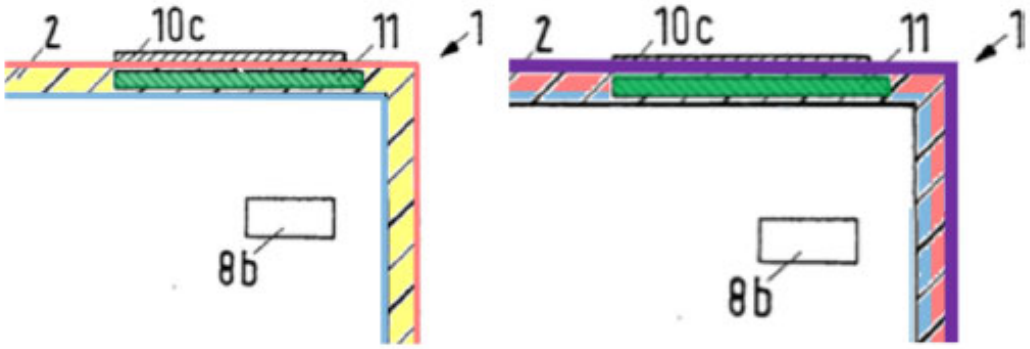
on Loeffler as modified by Ohnishi for the "resin impregnated fibers" limitation, as discussed above. *See* Pet. 44–47; *see also* Pet. 45 (Petitioner stating that one of ordinary skill in the art would have "had reason to modify Loeffler with Ohnishi's reinforced fiber panels to create a stronger, more durable container" (citing Jobin Decl. ¶ 290; Pet. 40–41)).

Second, Patent Owner acknowledges that "Petitioner purports to rely on Ohnishi to modify Loeffler" as to these limitations, but argues that "all Petitioner says is [one of ordinary skill in the art] could modify Loeffler with Ohnishi 'to create a stronger and more durable container.'" Prelim. Resp. 50 (quoting Pet. 45) (citing Pet. 40–41). According to Patent Owner, "Petitioner provides no explanation of what modification is being made (*e.g.*, whether to modify Loeffler's 'covers' or 'shells' in some manner) and that alone shows that Petitioner has failed show a reasonable likelihood of demonstrating obviousness." *Id.* In addition, Patent Owner contends that "Petitioner argues that [one of ordinary skill in the art] would be motivated to use Ohnishi's non-metal material for container ***exteriors*** and proposes to modify the '855 claims ***outer housing*** (Pet., 40), not the foam insulation that Petitioner points to as the claimed inner and outer shells (Pet., 44–46)" and "[t]hus, Petitioner has failed to even address how or why [one of ordinary skill in the art] would replace Loeffler's foam insulation elements with anything from Ohnishi." Pet. 50. Patent Owner also argues that Petitioner provides "no explanation of why or how [one of ordinary skill in the art] would be motivated to try to insert a composite between the already arranged inner and outer covers (including around the corners), as would be required by Petitioner's combination." *Id.*

We disagree with Patent Owner's summary of Petitioner's proposed reasons to modify Loeffler based on Ohnishi and the argument that the proposed modification lacks clarity. As summarized above, we understand Petitioner to propose modifying the blue and red regions of housing 2 in Loeffler (Figure 6) to construct those portions with Ohnishi's reinforced fiber panels and to retain Loeffler's outer cover (in purple in the annotated figures above). *See, e.g.*, Pet. 40 (discussing how one of ordinary skill in the art would have "understood *constructing Loeffler's housing with Ohnishi's composite resin impregnated fibers* would strengthen the housing, improve stability, and decrease weight" (emphasis added) (citing Jobin Decl. ¶¶ 275–278); *see also* Pet. 42–43 (discussing reliance on Loeffler's metal outer cover, shown in purple). On this issue, we note that, at this stage of the proceeding, Patent Owner has not substantively challenged the "Reasons to Combine" section of the Petition as to this asserted ground and, instead, challenges one statement as to the reasons to combine in the discussion of element 1A. *See* Pet. 40–41; *see also* Prelim. Resp. 50 (quoting Pet. 45).

*(2) The "Confined Between" Limitations*

Independent claims 1 and 19 each recites "vacuum insulated panel assemblies confined between the corresponding said side, top and bottom walls of said inner and outer shells." Ex. 1001, 8:16–18, 9:53–55. To address these limitations, Petitioner states that "Loeffler teaches VIP assemblies (green) confined between the corresponding inner and outer shells." Pet. 47 (citing Ex. 1008, 9:18–24, 15:26–29). Petitioner also provides these two annotated versions of portions of Figure 6 of Loeffler:




Pet. 47. Figure 6 overall depicts a cross-sectional view of the air cargo container in Figure 5. Ex. 1008, 14:31–32. In the left annotated version of a portion of Figure 6, Petitioner added (1) blue shading to the inner edge of housing 2, (2) red shading to the outer edge of housing 2, (3) yellow shading to housing 2, and (4) green shading to vacuum insulation unit 11. Pet. 47. In the right annotated version of a portion of Figure 6, Petitioner added (1) blue shading to the inner portion of housing 2, (2) red shading to the outer portion of housing 2, (3) purple shading to the outer edge of housing 2, and (4) green shading to vacuum insulation unit 11. Pet. 47.

Patent Owner presents two overall arguments as to the "confined between" limitations. *See* Prelim. Resp. 51–55. First, Patent Owner argues that Loeffler "acknowledges the existence of VIPs" in the second passage cited by Petitioner, but Patent Owner argues that Loeffler only discloses those VIPs in the location of the green structure, not "between the corresponding said side, top and bottom walls of said inner and outer shells" as recited. *See id.* at 52–53.

We do not agree with this argument by Patent Owner. The second passage cited by Petitioner provides:

> It may also prove advantageous to expand vacuum insulation units 11 containing a partial vacuum into the container wall, in

> particular into the top panel 2e, in order to insulate the interior 6 exceptionally well against solar radiation coming from above.

Ex. 1008, 15:26–29, *cited at* Pet. 47. In one of the cited paragraphs of Dr. Jobin's testimony, he states, referring to the same annotated versions of a portion of Figure 6 above, that "Loeffler's VIP assemblies are expanded into the space confined between the corresponding side, top, and bottom walls of the inner and outer shells." Jobin Decl. ¶ 298, *cited at* Pet. 47 (citing Ex. 1008, 9:18–24, 15:26–29). At this stage of the proceeding, we understand these aspects of the record as presenting the position that one of ordinary skill in the art would have understood the passage from page 15 of Loeffler above as disclosing the use of VIPs between *all* the recited walls (i.e., the "side, top, and bottom," and, *in particular*, disclosing the use of VIPs in the specific location shown in the annotated versions of Figure 6. In other words, we view these aspects of the records as presenting the position that Loeffler discloses locating VIPs in several locations "into the container wall," not just those of the preferred embodiment shown in Figure 6. The parties should develop this issue at trial as appropriate.

Second, Patent Owner argues that Petitioner has not explained how or why one of ordinary skill in the art would have modified Loeffler based on Ohnishi to satisfy the "confined between" limitations recited in claims 1 and 19. *See* Prelim. Resp. 51–55. Specifically, Patent Owner argues that "Loeffler is incompatible with using VIPs in all the walls" in that "[i]f one were to try to push VIPs into the gaps between Loeffler's inner and outer covers 2b and 2c, including around corners where the sides meet the top or bottom, the VIPs would be destroyed." *Id.* at 51–52, 53. Patent Owner contends that "many of the features extolled in Loeffler are not compatible with VIPs because there are structures in and on the walls (where the VIPs

would be located) that could damage the VIPs" and that "Loeffler describes ducts, sensors and fixtures in or on the walls that would pose significant risk to VIPs embedded in the walls." *Id.* at 54 (citing Ex. 1008). According to Patent Owner, "any combination with Loeffler cannot simply use VIPs" because "significant modifications must be made." *Id.*

As an initial matter, the position that Loeffler is "incompatible" with VIPs (Prelim. Resp. 51–52) conflicts with Patent Owner's statement that the passage on page 15 of Loeffler cited by Petitioner (Pet. 47) "acknowledges the existence of VIPs" (Prelim. Resp. 52). In addition, we question whether the proposed modification involves "push[ing] VIPs into the gaps between Loeffler's inner and outer covers 2b and 2c, including around corners where the sides meet the top or bottom," as argued by Patent Owner. Prelim. Resp. 53. Indeed, the section of the Petition addressing reasons to combine (*see* Pet. 40–41) does not reference covers 2b and 2c from Loeffler. Further, the alleged technical issues raised by Patent Owner as to the proposed combination are fact-intensive and, at this point, the record on these issues is incomplete. Petitioner has not had the opportunity to respond to the specific arguments raised by Patent Owner. We will consider the full record on these issues, as developed during trial, as part of our analysis in the final written decision.

Because the Petition shows a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims based on at least one of the asserted grounds (*see infra* § II.I.3.a.), we include claims 1 and 19 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*b. Claims 7–10, 12, 13, 24–27, 29, and 30*

For claims 7–10, 12, 13, 24–27, 29, and 30, Petitioner contends that the proposed combination of Loeffler and Ohnishi discloses each limitation. Pet. 1, 40–41, 48–52, 53–54. Patent Owner does not present any arguments specifically addressing claims 7–10, 12, 13, 24–27, 29, and 30 in the context of this asserted ground not already addressed above. *See* Prelim. Resp. 48–55. We include claims 7–10, 12, 13, 24–27, 29, and 30 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*H. Asserted Obviousness of Claims 2–5, 11, 14, 18, 20–22, 28, 31, 34–36, 40, and 41 Based on Loeffler, Ohnishi, and Yamamoto*

Petitioner asserts that claims 2–5, 11, 14, 18, 20–22, 28, 31, 34–36, 40, and 41 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Loeffler, Ohnishi, and Yamamoto. Pet. 2, 54–67. Patent Owner relies on the same arguments presented as to the prior asserted ground. Prelim. Resp. 48–55. We first summarize aspects of Yamamoto.

*1. Yamamoto*

In this asserted ground, Petitioner relies on Yamamoto, in addition to Loeffler and Ohnishi (summarized above (*see supra* § II.G.1–2)). Yamamoto "relates to a wall including a vacuum insulation panel (member)

to be used in a heat insulating transportation container of a vehicle enabling cold reservation and refrigeration." Ex. 1009 ¶ 1.

Figure 1 of Yamamoto is reproduced below:

Fig. 1

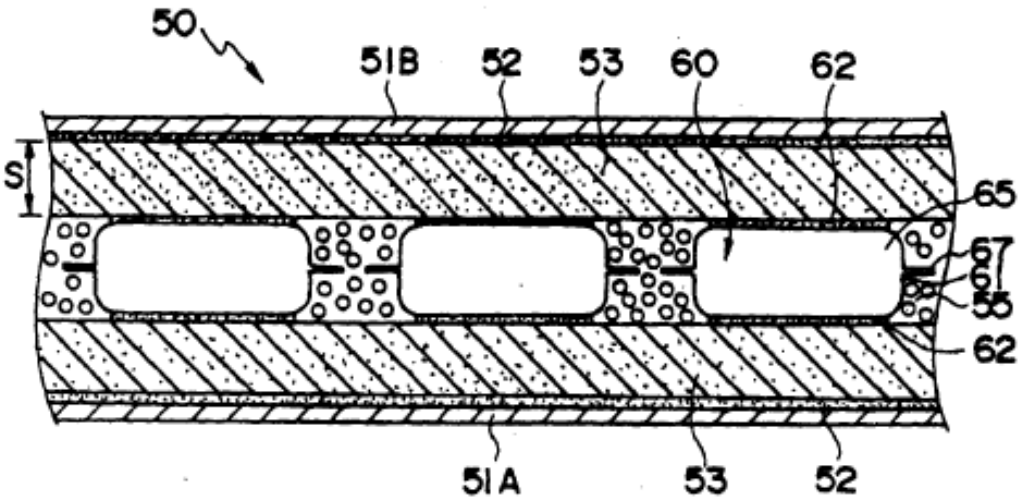



Figure 1 is a cross-sectional view of a heat insulating wall. Ex. 1009 ¶ 5. Depicted wall 50 "comprises a first panel 51A and a second panel 51B acting as an outer panel and an inner panel, a slab material 53 made of a heat insulating material, and a vacuum insulation member 60." *Id.* ¶ 8.

*2. Analysis*

*a. Independent Claim 35*

For independent claim 35, Petitioner contends that the proposed combination of Loeffler, Ohnishi, and Yamamoto discloses each limitation. Pet. 2, 56–57, 66. Patent Owner argues (1) that Petitioner fails to show that the proposed combination discloses an "outer shell" and an "inner shell," both of "resin impregnated fibers" as recited in claim 35, and (2) that Petitioner fails to show how the combination discloses or renders obvious

the requirement for "vacuum insulated panel assemblies" located as recited in claim 35. *See* Prelim. Resp. 48–55. We address these arguments in turn.

*(1) The "Resin Impregnated Fibers" Limitation*

Independent claim 35 requires "making a cargo container assembly" by, among other steps, "forming a . . . composite outer shell" having walls "of resin impregnated fibers" and "forming a . . . composite inner shell" having walls "of resin impregnated fibers." Ex. 1001, 11:8–14. To address these limitations, Petitioner relies on Loeffler modified by Ohnishi in the same manner summarized above in the context of the asserted ground based on Loeffler and Ohnishi. *See* Pet. 66 (citing Pet. 44–47 (citing Jobin Decl. ¶¶ 287–297)); *see also* § II.G.3.a.1).

Patent Owner relies on the same arguments presented in the context of the asserted ground based on Loeffler and Ohnishi, which we disagree with for the same reasons discussed above. *See* § II.G.3.a.1; Prelim. Resp. 48–51.

*(2) The Reasons to Combine Loeffler, Ohnishi, and Yamamoto*

Independent claim 35 requires "making a cargo container assembly" by, among other steps, "locating vacuum insulated panel assemblies adjacent the side, top, rear and bottom walls of the inner shell" and "inserting the inner shell and vacuum insulated panel assemblies into the outer shell." Ex. 1001, 11:15–18. To address the "locating" limitation, Petitioner references page 47 of the Petition and its discussion of the alleged "VIP assembles" shown in green in the annotated versions of portions of Figure 6 of Loeffler summarized above (*see* § II.G.3.a.2). *See* Pet. 66 (citing "§ VII.C.2.v" for element 35.C). To address the "inserting" limitation, Petitioner states that "Loeffler creates its multiple shells one at a time and locates VIP assemblies, *i.e.*, Yamamoto's VIP wall structure, adjacent the

inner shell." *Id.* (citing Pet. 44–47; Jobin Decl. ¶¶ 390–391). According to Petitioner, one of ordinary skill in the art would have "understood this rendered obvious the claimed 'inserting the inner shell and [VIP] assemblies' step." *Id.*

In the discussion of the reasons to further modify Loeffler, as modified by Ohnishi, with Yamamoto, Petitioner states that "Loeffler contemplates VIPs between its shells" and adds that one of ordinary skill in the art would have "had reason to look to Yamamoto for a more advanced VIP construction: it teaches improved VIPs with superior ('quadrupled') insulating properties, within a foam and panel structure for enhanced protection." Pet. 56 (citing Ex. 1008, 13:26–29, claim 10; Jobin Decl. ¶ 344; Ex. 1009, 2:12–3:3, 3:32–53, 4:47–6:37, 8:35–40). According to Petitioner, one of ordinary skill in the art would have also "had reason to modify Loeffler's insulation because Yamamoto teaches its VIP configuration solves problems specific to mobile containers, such as Loeffler's air cargo containers." *Id*. (citing Ex. 1009, 3:23–53, 4:47–58). Thus, Petitioner states, one of ordinary skill in the art would have "had reason to adapt Loeffler's insulation (including VIPs) within its shells to include Yamamoto's multiple VIP structure." *Id.* (citing Jobin Decl. ¶¶ 345–346). Petitioner also provides reasons one of ordinary skill in the art would have reasonably expected success in the modification. *See* Pet. 56–57 (citing Jobin Decl. ¶¶ 344–347).

Patent Owner relies on the same arguments presented in the context of the asserted ground based on Loeffler and Ohnishi, which we disagree with for the same reasons discussed above. *See* § II.G.3.a.2; Prelim. Resp. 51–55.

Because the Petition shows a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims based on

at least one of the asserted grounds (*see infra* § II.I.3.a.), however, we include claim 35 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*b. Dependent Claims 2–5, 11, 14, 18, 20–22, 28, 31, 34, 36, 40, and 41*

Petitioner asserts that claims 2–5, 11, 14, 18, 20–22, 28, 31, 34, 36, 40, and 41 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Loeffler, Ohnishi, and Yamamoto. Pet. 2, 56–65, 67. Patent Owner does not present any arguments specifically addressing claims 2–5, 11, 14, 18, 20–22, 28, 31, 34, 36, 40, and 41 in the context of this asserted ground. *See* Prelim. Resp. 48–55. We include claims 2–5, 11, 14, 18, 20–22, 28, 31, 34, 36, 40, and 41 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*I. Asserted Obviousness of Claims 1–5, 9, 10, 12–22, 26, 27, and 29–34 Based on Zupancich and Bosher*

Petitioner asserts that claims 1–5, 9, 10, 12–22, 26, 27, and 29–34 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Zupancich and Bosher. Pet. 2, 67–105. Patent Owner provides arguments specifically addressing this asserted ground. Prelim. Resp. 55–59. We first summarize aspects of the relied-upon references.

*1. Zupancich*

Zupancich discloses "an insulated cargo container." Ex. 1010 ¶ 2.

Figure 1 of Zupancich is reproduced below:

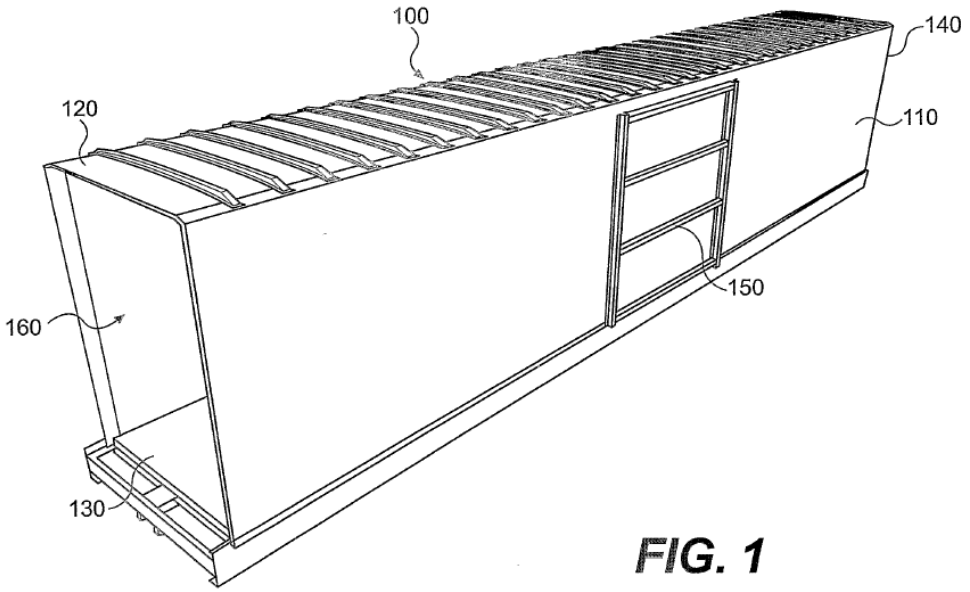



FIG. 1

Figure 1 is an isometric view of an insulated or refrigerated boxcar. Ex. 1010 ¶ 13. Boxcar 100 includes wall panels 110, roof 120, floor 130, end walls 140, and door 150. *Id.* ¶ 46. Zupancich discloses that "[w]all panels 110, roof 120, floor 130, and end walls 140 combine to form an enclosure 160." *Id.* In addition, Zupancich discloses the possibility of a "void to allow for insertion of a refrigeration unit." *Id.* ¶ 87.

Figure 2A is reproduced below:

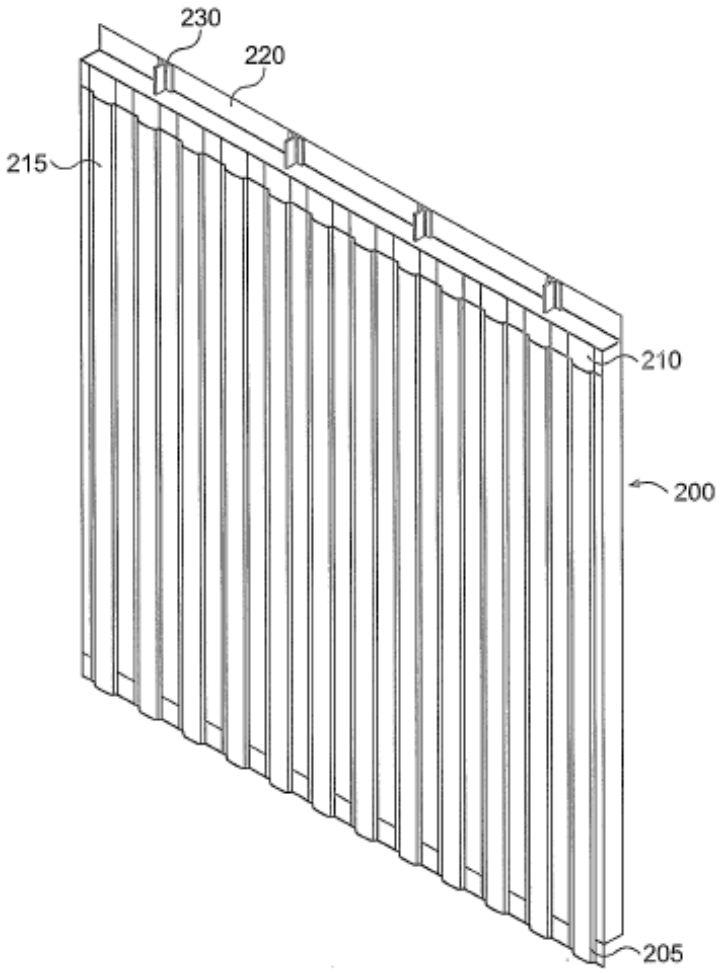



FIG. 2A

Figure 2 depicts an isometric view of an insulated wall panel. Ex. 1010 ¶ 14. Zupancich discloses that, "in one implementation, an insulated wall panel 200 includes an interior panel 205, an insulation layer 210, an exterior panel 220, and structural members 230." *Id.* ¶ 49. Interior panel 205 and exterior panel 220 each may be constructed of "fiber-reinforced plastics." *Id.* ¶¶ 50, 55.

Figure 2H is reproduced below:

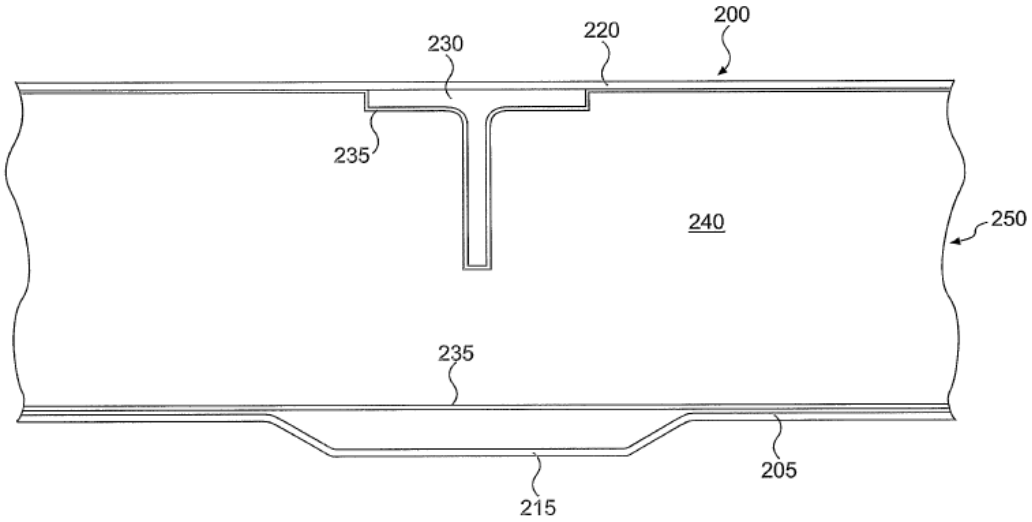



FIG. 2H

Figure 2 depicts "an enlarged top view of a portion of an insulated wall panel." Ex. 1010 ¶ 21. Insulated wall panel 200 includes interior panel 205, exterior panel 220, and vacuum insulated panel 250. *Id.* ¶ 57.

*2. Bosher*

Bosher discloses "pallet based refrigerated transportation systems." Ex. 1012, 1:5–8.

Figure 8 of Bosher is reproduced below:

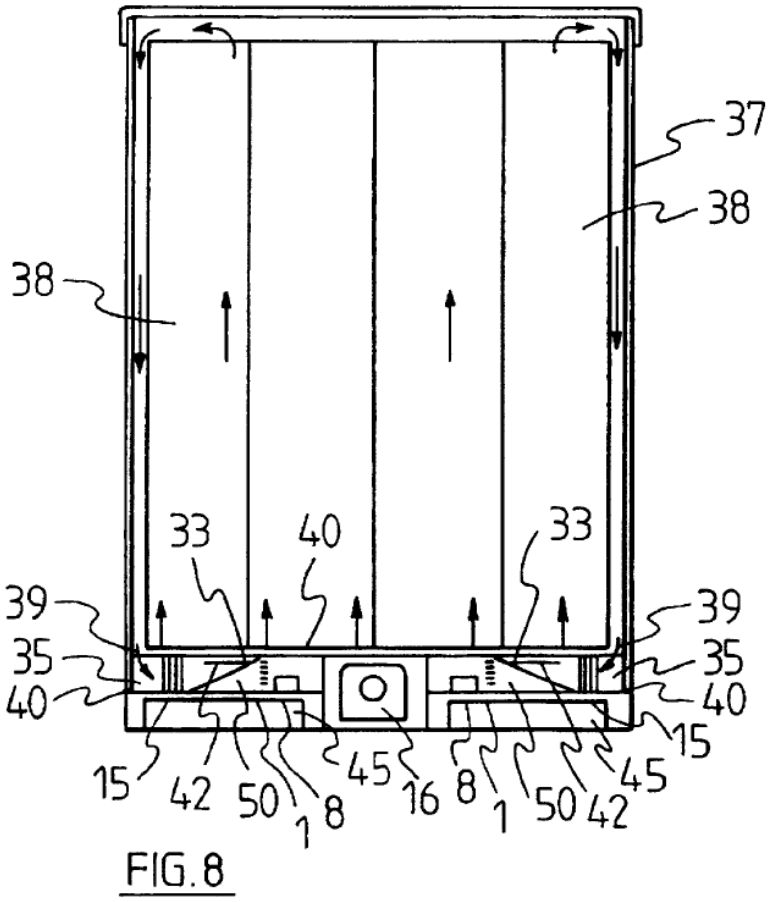


FIG. 8

Figure 8 depicts a side view of a refrigeration unit and a pallet. Ex. 1012, 4:25–29. Depicted refrigeration unit 1 includes exhaust fans 8, condenser intakes 9, condenser 10, and compressor 16. *Id.* at 5:63–65.

*3. Analysis*

*a. Independent Claims 1 and 19*

For independent claims 1 and 19, Petitioner contends that the proposed combination of Zupancich and Bosher discloses each limitation. Pet. 2, 71–88, 104. To support its arguments, Petitioner identifies certain passages in the cited references and explains the significance of each passage with respect to the corresponding claim limitation. *Id.* Petitioner also articulates reasons to combine the relied-upon aspects of Zupancich and

Bosher. Pet. 71–72. Patent Owner (1) argues that Petitioner has not shown that Zupancich discloses "a box-like . . . outer shell" "having side, top and bottom walls" and "a box-like . . . inner shell within said outer shell and having side, top and bottom walls" as recited in claims 1 and 19 and (2) argues that Petitioner has not shown that Zupancich is prior art to the challenged claims. *See* Prelim. Resp. 55–59.

We have reviewed Petitioner's contentions with respect to claims 1 and 19, and for the reasons below, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claims 1 and 19 would have been obvious based on Zupancich and Bosher. We address in turn below each of Patent Owner's arguments.

*(1) The "Shell" Limitations*

Independent claims 1 and 19 both recites "a box-like . . . outer shell" "having side, top and bottom walls" and "a box-like . . . inner shell within said outer shell and having side, top and bottom walls." Ex. 1001, 8:10–11, 8:13–14, 9:46–47, 9:49–51 (together, the "shell" limitations). As the recited "outer shell," Petitioner identifies "at least a portion of exterior panel 220" shown in Figures 2A and 2H above, and in Figure 2F. *See* Pet. 77–78 (highlighting exterior panel 220 in Figures 2A, 2F, and 2H in red). As the recited "inner shell," Petitioner identifies interior panel 205 in wall panel 200 shown in Figures 2A and 2H above, and in Figure 2F. *See* Pet. 79–82 (highlighting interior panel 205 in Figures 2A, 2F, and 2H in blue); *see also* Pet. 104 (citing Pet. 76–82 for elements 19.A and 19.B). Petitioner also states that "[e]ach of Zupancich's walls—side, top, and bottom—includes exterior panels that 'combine to form an enclosure 160,' which is 'box-like.'" Pet. 78 (citing Ex. 1010, Figs. 1 & 2H, ¶¶ 46–48; Ex. 1011 at 5–13,

29–31; Jobin Decl. ¶¶ 424); *see also* Pet. 81 (citing Jobin Decl. ¶ 430 as to why the identified "inner shell" is also "box-like").

Patent Owner argues that Petitioner has not shown that Zupancich discloses the "shell" limitations. *See* Prelim. Resp. 55–56. Specifically, Patent Owner argues that Petitioner addresses the "shell" limitations "solely by discussing the side walls in Zupancich and claiming that this disclosure alone discloses the limitations." *Id.* at 55 (citing Pet. 76–82, 104). Stated differently, Patent Owner asserts that, although the "shell" limitations "expressly require a top and bottom with particular attributes, in addition to the sides, Petitioner ***never*** addresses the floor and roof disclosed in Zupancich or how these might meet the claimed inner and outer shell top and bottom in its discussion of those claim limitations ([Petitioner] calls 1.B and 1.C)." *Id.* According to Patent Owner, Petitioner "misreads a single passage in paragraph [048] of Zupancich to argue that the same structure of the sidewalls in Zupancich can be used in the floor and bottom." *Id.* at 56 (citing Pet. 78, 81). Patent Owner argues that the relevant passage in paragraph 48 indicates that "its invention covers any combination of what it describes as the walls, roof and floor – not that the parts are interchangeable" and that "Petitioner never cites nor discusses the description of the separate roof or floor structures in Zupancich" as to the "shell" limitations. *Id.*

As noted by Patent Owner, Petitioner *does* rely on teachings related to "insulated *wall* panel 200" (Ex. 1010 ¶ 49 (emphasis added)) as to the "shell" limitations (*see* Pet. 76–82), but we do not agree with Patent Owner that those teachings do not apply to the recited "top and bottom walls."

Paragraph 48 of Zupancich provides as follows, with the passage highlighted by Patent Owner shown in italics:

> Implementations of wall panels 110, roof 120, floor 130, end walls 140, and door 150 consistent with embodiments of the invention are described in detail below. It should be understood that *any combination of the wall panels 110, roof 120, floor 130, end walls 140, and door 150 described below might be used to construct a cargo container consistent with the present invention*.

Ex. 1010 ¶ 48 (emphasis added). The next paragraph and several following then discuss certain insulated *wall* panels shown in Figures 2A–2H, relied upon by Petitioner as to the "shell" limitations. *See* Ex. 1010 ¶¶ 49–57. Zupancich then provides separate discussions of other panels: sidewalls in Figures 3A–3C (*id.* ¶¶ 58–60); floors in Figures 4A–4C (*id.* ¶¶ 61–71); roofs in Figures 5A–5D (*id.* ¶¶ 72–80); doors in Figures 6A–6I (*id.* ¶¶ 81–86); and end panels in Figures 7A–8B (*id.* ¶¶ 87–100).

With this additional background, we understand Patent Owner to view the highlighted statement from paragraph 48 as indicating that Zupancich's teachings *include* (1) a cargo container with sidewall panels as disclosed (for example) in paragraphs 49–60, a floor as disclosed (for example) in paragraphs 61–71, a roof as disclosed (for example) in paragraphs 72–80, a door as disclosed (for example) in paragraphs 81–86, *and* end panels as disclosed (for example) in paragraphs 87–100, *but as not including* (2) a cargo container in which the sidewall panels as disclosed in paragraphs 49–60 are used for the sidewalls, floor, roof, door, *and* end panels. Petitioner, in contrast, views Zupancich as including both possibilities. *See* Pet. 74–75 ("Zupancich teaches all of its container walls (side, top, bottom, and rear) can be constructed with its insulated wall panel structure including exterior

panel." (citing Ex. 1010 ¶ 48, Fig. 2A; Ex. 1011 at 5, 28; Jobin Decl. ¶¶ 410, 418)).

The record more strongly supports Petitioner at this stage of the proceeding. For example, in cited paragraph 418 of his Declaration, Mr. Jobin states that one of ordinary skill in the art would have interpreted paragraph 48 of Zupancich as showing that, "for example, the wall design could be used for all walls including the floor, not just the walls, etc." Jobin Decl. ¶ 418, *cited at* Pet. 74–75. Patent Owner, in contrast, has solely attorney argument as to the proper understanding of paragraph 48. *See Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1359 (Fed. Cir. 2018) (rejecting attorney argument as to the alleged understanding of one of skill in the art on an issue when no evidence was presented). Moreover, paragraph 101 of Zupancich supports Petitioner's understanding of the relevant passage from paragraph 48, with paragraph 101 stating that "cargo containers consistent with the invention may include *any combination of the described insulated panels*." Ex. 1010 ¶ 101 (emphasis added). For these reasons, at this stage of the proceeding and on the current record, we determine that Petitioner has made a sufficient showing that Zupancich discloses the "shell" limitations.

*(2) The Status of Zupancich as Prior Art to the Challenged Claims*

Patent Owner also argues that Petitioner has not shown that Zupancich is prior art to the challenged claims. *See* Prelim. Resp. 57–59. For the reasons below, on the current record, we disagree with Patent Owner.

We first discuss the effective filing date(s) of the Challenged Claims. The filing date of the application issuing as the '855 patent is June 8, 2005. *See* Ex. 1001, code (22). Petitioner states that, "for purposes of this IPR

only, Petitioner assumes the '855 Patent's priority is November 18, 2004 (even though [that date is] incorrect)." Pet. 6 (citing Jobin Decl. ¶¶ 18, 19, 144, 145).

In the Preliminary Response, Patent Owner states that it "has evidence establishing invention of the Challenged Claims in this proceeding prior to the international filing date of Zupancich of February 13, 2004," but states that, because "the Board deferred addressing invention dates for the '855 Patent claims prior to institution in IPR2022-00292, Patent Owner does not rely on that prior invention evidence here." Prelim. Resp. 57 (citing Ex. 1029; Ex. 2004 (Petitioner's Reply ISO Motion for Preliminary Injunction, April 22, 2022)). Patent Owner asserts that "institution in view of Zupancich would be futile" (*id.*), but Patent Owner does not actually present evidence *in this proceeding* to support that position. On the current record, and for purposes of this Decision only, we apply Petitioner's *assumed* effective filing date of November 18, 2004, for the challenged claims.

We turn now to the effective filing date of Zupancich, which is an international application published under the Patent Cooperation Treaty, with a publication date of August 26, 2004, and a filing date of February 13, 2004. *See* Ex. 1010, codes (12), (22), (43). Zupancich claims priority to U.S. provisional application No. 60/447,002, filed on February 13, 2003 (Ex. 1011 (the "Zupancich Provisional")). *See* Ex. 1010, code (30). Petitioner asserts that Zupancich is prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and 102(e). Pet. 9. Petitioner also asserts that Zupancich is prior art based on the 2003 filing date of the Zupancich Provisional. Pet. 9–10.

Patent Owner argues that Zupancich is not entitled to the filing date of the Zupancich Provisional. *See* Prelim. Resp. 58–59. Even if Patent Owner's argument is correct, however, even the publication date of Zupancich (August 26, 2004) predates the *assumed* effective filing date of November 18, 2004, for the challenged claims. Thus, at this stage of the proceeding, the record more strongly supports Petitioner's position that Zupancich is prior art to the Challenged Claims.

*(3) The Additional Limitations of Claims 1 and 19*

Patent Owner does not offer any arguments specifically addressing the remaining limitations of claims 1 and 19 or Petitioner's reasons to modify Zupancich based on Bosher as proposed. *See* Prelim. Resp. 55–59. We have reviewed these aspects of Petitioner's contentions, and determine that the Petition provides a sufficient showing, at this stage of the proceeding, that the combination of Zupancich and Bosher satisfies each limitation and that one of ordinary skill in the art would have had reason to combine the references as proposed, with a reasonable expectation of success. *See* Pet. 71–88, 104.

*(4) Conclusion*

For the reasons above, we determine, based on the current record, that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claims 1 and 19 would have been obvious based on Zupancich and Bosher.

*b. Claim 2–5, 9, 10, 12–18, 20–22, 26, 27, and 29–34*

For claims 2–5, 9, 10, 12–18, 20–22, 26, 27, and 29–34, Petitioner contends that the proposed combination of Zupancich and Bosher discloses each limitation. Pet. 2, 71–72, 88–105. Patent Owner does not present any

arguments specifically addressing claims 2–5, 9, 10, 12–18, 20–22, 26, 27, and 29–34 in the context of this asserted ground not already addressed above. *See* Prelim. Resp. 55–59. We include claims 2–5, 9, 10, 12–18, 20–22, 26, 27, and 29–34 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

*J. Asserted Obviousness of Claims 7, 8, 24, and 25 Based on Zupancich, Bosher, and Ohnishi*

Petitioner asserts that claims 7, 8, 24, and 25 of the '855 patent would have been obvious under 35 U.S.C. § 103(a) based on Zupancich, Bosher, and Ohnishi. Pet. 2, 106–108. Patent Owner does not present any arguments specifically addressing claims 7, 8, 24, and 25 in the context of this asserted ground, but rather, relies on the same arguments presented as to the prior ground. *See* Prelim. Resp. 55–59. We include claims 7, 8, 24, and 25 in the context of this asserted ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

## III. CONCLUSION

For the reasons above, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail with respect to at least one of challenged claims 1–5, 7–36, 40, and 41 of the '855 patent. At this stage of the proceeding, no final determination has yet been made with regard to the patentability of any of the challenged claims or any underlying factual or legal issues, including the construction of claim terms. The final determination will be based on the record as developed during the *inter partes* review.

## IV. ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review is hereby instituted as to claims 1–5, 7–36, 40, and 41 of the '855 patent on all asserted grounds;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, *inter partes* review shall commence on the entry date of this Decision, with notice hereby given of the institution of a trial; and

FURTHER ORDERED that Patent Owner is permitted 500 additional words for any Patent Owner Response filed.

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