

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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AUTOSTORE SYSTEM INC.,  
Petitioner,

v.

OCADO INNOVATION LIMITED,  
Patent Owner.

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IPR2022-00673  
Patent 10,961,051 B2

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Before HUBERT C. LORIN, JON B. TORNQUIST, and  
RICHARD H. MARSCHALL, *Administrative Patent Judges.*

MARSCHALL, *Administrative Patent Judge.*

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

Petitioner, Autostore System Inc. (“Petitioner”), filed a Petition requesting *inter partes* review of claims 1–18 (the “challenged claims”) of U.S. Patent No. 10,961,051 B2 (Ex. 1001, “the ’051 patent”). Paper 1 (“Pet.”). Ocado Innovation Limited (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

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). *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(a). Upon consideration of the evidence and arguments in the record, we institute *inter partes review* of the ’051 patent on all challenges set forth in the Petition.

## BACKGROUND

### *A. Related Proceedings*

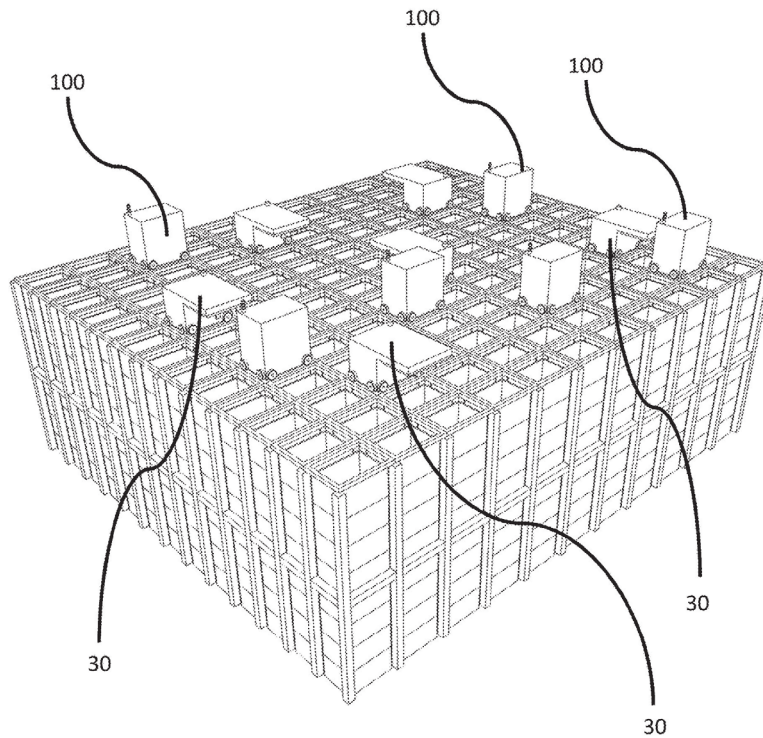
The parties identify the following district court cases as related matters: *Ocado Innovation Ltd. et al. v. AutoStore AS et al.*, No. 1:21-cv-00041 (D.N.H.) (the “New Hampshire litigation”); *AutoStore Technology AS v. Ocado Central Services Ltd.*, No. 2:20-cv-00494 (E.D. Va.). Pet. 14; Paper 4, 1. The parties also identify the following Board proceedings as related matters: PGR2021-00038, IPR2021-00412, IPR2021-00311, IPR2021-00398, and IPR2021-00274. Pet. 14; Paper 4, 1. In addition, Patent Owner identifies the following administrative proceeding before the International Trade Commission as a related matter: *In re Certain Automated Storage and Retrieval Systems, Robots, and Components*

*Thereof*, Inv. No. 337-TA-1228 (ITC Investigation instituted on November 2, 2020). Paper 4, 1.

*B. The '051 Patent*

The '051 patent relates to a “storage system and a load handling device for lifting and moving containers” in a storage system. Ex. 1001, code (57). The storage system includes stacks of containers stacked on top of one another three-dimensionally in columns and rows with “a plurality of rails or tracks arranged in a grid pattern above the stacks of containers.” *Id.* at 1:30–32, code (57). The load handling device moves laterally on the rails above the stacks of containers so that the vehicle handling device can retrieve containers from above, which saves space compared to storage systems using vehicles along aisles between the rows of containers. *Id.* at 1:29–34, code (57). The '051 patent acknowledges that using multiple load handling vehicles on rails above containers was known in the art and seeks to improve upon such systems by employing load handling devices with smaller footprints to minimize “instances in which the optimum movement path for one device is hindered by the presence of other devices.” *Id.* at 4:57–60, 5:32–38, 8:10–23, Figs. 1–4. To achieve this goal, the '051 patent discloses a load handling vehicle that “occupies the space above only one stack of containers in the frame,” in contrast to prior art vehicles that occupied the spaces above two stacks of containers. *Id.* at 5:38–42.

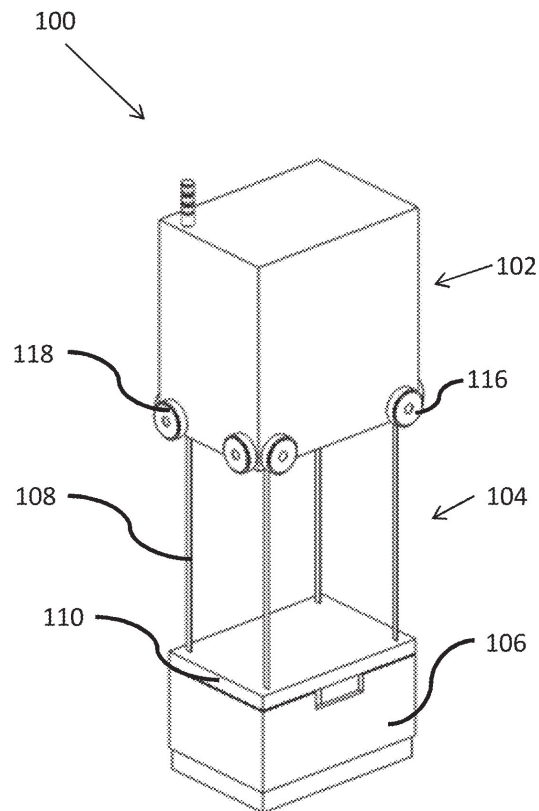
Figure 7 of the '051 patent shows a comparison of the prior art load handling devices and the devices that are the focus of the '051 patent. Figure 7 is reproduced below.



**FIG. 7**

Figure 7 “is a schematic perspective view of a storage system comprising a plurality of known load handler devices” and a plurality of load handling devices consistent with the disclosed invention. Ex. 1001, 8:35–39, 9:41–45. More specifically, Figure 7 shows “prior art cantilever-type load handling devices 30” that “although less tall, occupy two stack spaces compared to the taller but smaller-footprint devices 100 of the invention.” *Id.* at 9:41–48.

Figure 5 of the '051 patent shows further details of load handling device 100, and is reproduced below.



**FIG. 5**

Figure 5 “shows a load handling device 100 according to an embodiment of the invention.” Ex. 1001, 8:63–65. Load handling device 100 includes vehicle 102 equipped with winch or crane mechanism 104 that lifts containers 106 using winch cables 108 and grabber plate 110. *Id.* at 8:64–9:4. Figure 5 also shows wheels 116, 118 used to move vehicle 102 laterally in the X- or Y-direction along rails above containers 106. *Id.* at 9:7–11. Wheels 116, 118 move vertically such that only one set of wheels may contact the rails at one time. *Id.* at 9:12–15.

The '051 patent describes wheels 116, 118 as “arranged around the periphery of a cavity or recess 120” formed within the lower part 114 of vehicle 102. Ex. 1001, 9:16–18, Fig. 6A. Recess 120 can accommodate the

entire container 106, such that it remains clear of the rails beneath vehicle 102 without interfering with lateral movement. *Id.* at 9:18–22. Once vehicle 102 reaches a desired destination, crane mechanism 104 lowers container 106 and grabber plate 110 releases container 106. *Id.* at 9:22–26. The '051 patent describes housing all “significant bulky components” in upper part 112 of vehicle 102, which allows for a vehicle 102 footprint only slightly larger than container 106 by virtue of wheels 116, 118. *Id.* at 9:27–36.

*C. Challenged Claims*

Petitioner challenges claims 1–18 (all claims) of the '051 patent, of which claims 1 and 13 are independent. Independent claim 13 is reproduced below with emphasis added to limitations addressed in our analysis below:

13. A method of operating a load handling system, the method comprising:

moving a first load handling device along a top side of a grid frame in a first direction using a first plurality of wheels of the first load handling device that are engaged with a first set of rails of the grid frame, the grid frame comprising a three-dimensional storage structure in which a plurality of containers is configured to be stored;

moving the first load handling device along the top side of the grid frame in a second direction perpendicular to the first direction using a second plurality of wheels of the first load handling device that are engaged with a second set of rails of the grid frame, two consecutive rails of the first set of rails and two consecutive rails of the second set of rails defining a grid space for the grid frame;

suspending a gripper plate from a cantilever arm extending laterally from a top side of the first load handling device;

engaging the gripper plate with a top side of a first container of the plurality of containers, the first container being configured to fit between the two consecutive rails of the first set of rails and the two consecutive rails of the second set of rails;

moving a second load handling device along the top side of the grid frame in the first direction using a third plurality of wheels of the second load handling device that are engaged with the first set of rails,

wherein an external structure of the second load handling device is formed in part by two lateral sides, a front side, a back side, and a top side of the second load handling device that at least partly enclose an inner portion of the second load handling device,

wherein the first load handling device has a housing footprint that occupies twice an area of the grid space, and *the second load handling device has a housing footprint that occupies less than twice the area of the grid space;*

moving the second load handling device along the top side of the grid frame in the second direction using a fourth plurality of wheels of the second load handling device that are engaged with the second set of rails; and

lifting, using *a lift motor of the second load handling device*, a second container from a stack of the plurality of containers positioned within the three-dimensional storage structure and fully into a container receiving space in the inner portion of the second load handling device, the second container being a common size as the first container.

Ex. 1001, 13:66–14:49 (emphasis added).

*D. Asserted Grounds of Unpatentability*

Petitioner challenges claims 1–18 on the following grounds (Pet. 16):

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>
1–18	103	WO684, <sup>1</sup> NO366 <sup>2</sup>

<sup>1</sup> WO 2014/090684 A1, published June 19, 2014 (“WO684,” Ex. 1005).

<sup>2</sup> Norway Patent Pub. No. 317366, published Jan. 2, 2001 (“NO366,” Ex. 1007).

Petitioner supports its challenges with a declaration from Dr. Stephen Derby. Ex. 1003. Patent Owner supports its arguments and evidence with a declaration from Dr. Brian Pfeifer. Ex. 2001.

## ANALYSIS

### *A. Discretion Under § 314(a)*

Patent Owner argues that we should exercise our discretion to deny institution under 35 U.S.C. § 314(a) based on the New Hampshire litigation. Prelim. Resp. 22–29. Petitioner disagrees. *See* Pet. 88–90. For the reasons below, we are not persuaded that we should exercise discretion to deny institution under 35 U.S.C. § 314(a) based on the New Hampshire Litigation.

In deciding whether to exercise discretion under § 314(a), the Board may consider “events in other proceedings related to the same patent.” Consolidated Trial Practice Guide 58 (Nov. 2019), <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“TPG”). The precedential order in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020), identifies factors to consider when a patent owner raises an argument for discretionary denial due to the advanced state of a parallel proceeding:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.



*Fintiv*, Paper 11 at 5–6; see also *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (June 21, 2022) (“Guidance Memo”) (setting forth several clarifications to the application of *Fintiv* to discretionary institution).<sup>3</sup>

“These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Fintiv*, Paper 11 at 6. There is some overlap among these factors and some facts may be relevant to more than one factor. *Id.* In evaluating the factors, the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review. *Id.* We discuss each *Fintiv* factor in turn below.

*1. Factor 1: whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted*

The first *Fintiv* factor requires consideration of whether the district court has stayed or may stay the proceeding pending *inter partes* review. “A district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.” See *Fintiv*, Paper 11 at 6.

Petitioner argues that, if we institute *inter partes* review, Petitioner “will likely move to stay” the New Hampshire litigation at least with respect to the ’051 patent, “and the opportunity for such simplification increases the likelihood” that a stay will be granted. Pet. 88. Patent Owner responds by noting that Petitioner has yet to seek a stay and, even if granted, the stay would only apply to one of several patents at issue in the New Hampshire

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<sup>3</sup> Available at:  
[https://www.uspto.gov/sites/default/files/documents/interim\\_proc\\_discretionary\\_denials\\_aia\\_parallel\\_district\\_court\\_litigation\\_memo\\_20220621.pdf](https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621.pdf).

litigation, and therefore “[f]actor one weighs against institution.” *See* Prelim. Resp. 22–23.

We will not attempt to predict, based on the facts in allegedly similar prior situations, how the New Hampshire District Court would rule should a stay be requested in the New Hampshire litigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative) (“A judge determines whether to grant a stay based on the facts of each specific case as presented in the briefs by the parties. We decline to infer, based on actions taken in different cases with different facts, how the District Court would rule should a stay be requested by the parties in the parallel case here.”). We view this factor as neutral because neither of the parties in the New Hampshire litigation has requested a stay thus far. *See id.* at 12 (determining that Factor 1 is neutral when neither party has requested a stay and the issue has not been ruled on by the district court).

*2. Factor 2: proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision*

Under the second *Fintiv* factor, “[i]f the [district] court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution.” *See Fintiv*, Paper 11 at 9.

As noted by Petitioner, the Final Written Decision deadline in this case, in September 2023, will occur several months before the December 5, 2023 trial date in the New Hampshire litigation. Pet. 88 (citing Ex. 1009). Patent Owner acknowledges this timing, but argues that factor two still “weighs at least slightly against institution” because any decision on appeal would likely not issue until more than a year after the scheduled trial date. *See* Prelim. Resp. 23–24. Based on the date of issuance of a Final Written

Decision several months before the scheduled trial date in the New Hampshire litigation, this factor weighs strongly against discretionary denial.

3. *Factor 3: investment in the parallel proceeding by the court and the parties*

The third *Fintiv* factor considers “the amount and type of work already completed in the parallel litigation by the [district] court and the parties at the time of the institution decision. Specifically, if at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial.” *See Fintiv*, Paper 11 at 9–10. Thus, the more advanced the parallel proceeding, the more this factor may weigh in favor of discretionary denial. *Id.* at 10.

Petitioner argues that the parties and district court have invested only limited resources in the New Hampshire litigation, and Petitioner filed the Petition diligently and within the required time limits. Pet. 89. Patent Owner argues that by the time we issue this Decision, the parties will have expended significant resources in the New Hampshire litigation, including exchanging discovery requests, serving invalidity contentions, and briefing claim construction issues, with a *Markman* hearing set for September 29, 2022. Prelim. Resp. 24–25. Patent Owner also argues that Petitioner delayed in filing its Petition until March 2022, nearly a year after the ’051 patent was asserted in the New Hampshire litigation and several months after the ’051 patent became eligible for *inter partes* review. *Id.* at 25.

We agree with Petitioner that the parties and district court have not expended significant resources in the New Hampshire litigation to date. The court has yet to hold a claim construction hearing or issue a claim construction order, and the parties have not begun expert discovery or work

on dispositive motions, much less begun preparations for a trial that will not occur for well over a year. We also determine that Petitioner exercised reasonable diligence in filing the Petition by doing so within a few months after the '051 patent became eligible for *inter partes* review. Based on the foregoing, factor 3 weighs slightly against discretionary denial.

4. *Factor 4: overlap between issues raised in the petition and in the parallel proceeding*

The fourth *Fintiv* factor requires consideration of “inefficiency and the possibility of conflicting decisions.” *See Fintiv*, Paper 11 at 12. Therefore, “if the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.” *Id.* The *Fintiv* panel stated that “the degree of overlap is highly fact dependent” and encouraged the parties to “indicate whether all or some of the claims challenged in the petition are also at issue in district court.” *Id.* at 13.

Petitioner argues that we should consider the “unique challenges raised in the Petition, which will be resolved before trial” in the New Hampshire litigation, but Petitioner’s argument does not directly address the overlap between the issues raised in this proceeding and the New Hampshire litigation. Pet. 90. Patent Owner argues that there will be substantial overlap in claim construction and invalidity issues and that “Petitioner relies on the same prior art combination” in the New Hampshire litigation as here. Prelim. Resp. 26.

We agree with Patent Owner that the issues in this proceeding and the New Hampshire litigation overlap, but given that the trial will occur after our Final Written Decision, the overlap is not likely to lead to any inconsistent results at the time of our Decision. Based on the foregoing, we

view the degree of overlap in issues as weighing slightly in favor of discretionary denial of institution.

5. *Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same party*

Under the fifth *Fintiv* factor, “[i]f a petitioner is unrelated to a defendant in an earlier [district] court proceeding, the Board has weighed this fact against exercising discretion to deny institution.” *See Fintiv*, Paper 11 at 13–14. Petitioner here is the same party as the defendant in the New Hampshire litigation, and Patent Owner is the same party as the plaintiff in the New Hampshire litigation. *See* Pet. 90; Prelim. Resp. 26. Because the trial will occur after our Final Written Decision and involves the same parties, the Final Written Decision could lead to estoppel pursuant to 35 U.S.C. § 315(e). This factor weighs slightly against discretionary denial. *See Fintiv*, Paper 15 at 15.

6. *Factor 6: other circumstances that impact the Board’s exercise of discretion, including the merits*

In an analysis based on district court litigation, “all . . . relevant circumstances,” including the merits, are considered in assessing whether to exercise discretion to deny institution of *inter partes* review. *Fintiv*, Paper 11 at 14. Petitioner argues that merits of its Petition are strong, favoring institution under this factor, while Patent Owner argues that the merits are weak, favoring denial. Pet. 43; Prelim. Resp. 27. Patent Owner also argues that Petitioner failed to cite an ITC determination that cuts against its arguments in the Petition, and “Petitioner seeks to abuse the IPR process to obtain an incorrect institution decision suggesting that WO684 discloses” something that it does not, which would contradict the ITC determination. Prelim. Resp. 28–29.

We view Patent Owner’s arguments as to the relevance of the ITC’s ruling as an insufficient basis to exercise our discretion to deny institution under section 314(a). Guidance Memo at 6–7. Overall, we view the sixth *Fintiv* factor as neutral.

### 7. Conclusion

Based on the foregoing, several factors are neutral, several weigh against discretionary denial, and one factor weighs in favor of discretionary denial. We place particular emphasis on the trial date that occurs several months after our Final Written Decision and removes the possibility of inconsistent results at the time of that Decision. After weighing all of the factors and taking a holistic view of the relevant circumstances of this proceeding, we determine that we should not exercise our discretion to deny institution under § 314(a).

#### *B. Discretion Under 35 U.S.C. § 325(d)*

Patent Owner argues that we should exercise discretion to deny institution under 35 U.S.C. § 325(d). *See* Prelim. Resp. 11–22. Petitioner disagrees. *See* Pet. 91–94.

#### *1. Legal Framework*

Section 325(d) provides that, in determining whether to institute an *inter partes* review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d): (1) determining whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either

condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *See Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). In applying this framework, we consider several non-exclusive factors, including:

(a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art; (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

*Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph). If, after review of factors (a), (b), and (d), we determine that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims. *Advanced Bionics*, Paper 6 at 10.

## 2. Discussion

### i. *Whether the Same or Substantially the Same art or Arguments Were Presented to the Office*

Petitioner argues that its challenge does not involve substantially the same prior art or arguments before the Examiner during prosecution, and

that neither WO684 nor NO366 were cited as the basis for a rejection or referenced in the notice of allowance because the challenged claims were allowed without any rejection on the merits. Pet. 91. Patent Owner argues that both WO684 and NO366 were before the Office during prosecution of the '051 patent. Prelim. Resp. 12–17. Patent Owner argues that both references were submitted to the Office on an Information Disclosure Statement (“IDS”), and the Examiner signed the IDS, indicating that the references were considered. *Id.* at 12 (citing Ex. 1002, 67, 70, 279–285, 1138).

We agree with Patent Owner that both WO684 and NO366 were at least considered by the Examiner, even if the Examiner never discussed the references or relied on them in any manner. *See* Ex. 1001, code (56) (listing both WO684 and NO366 among the references cited). Under these circumstances, we find the first part of the *Advanced Bionics* satisfied because the prior art before the Examiner and the prior art relied on in the Petition include the same prior art references.

*ii. Whether Petitioner Sufficiently Demonstrates that the Office Erred*

Petitioner argues that “[t]he Examiner erred in a manner material to the patentability” of the challenged claims. Pet. 93. More specifically, Petitioner contends that “the Examiner misapprehended and overlooked the combination of WO684 and NO366.” *Id.* Petitioner first argues that the challenged claims contain broader limitations than claims in previous applications before the Examiner, suggesting that the Examiner may have overlooked the broader scope of the claims of the '051 patent. *Id.* Petitioner also contends that the Examiner overlooked “multiple disclosure in WO684 itself such that a PHOSITA [Person Having Ordinary Skill In The Art]



would have been motivated to combine WO684 and NO366 to arrive” at the limitations in the challenged claims. *Id.* at 93–94.

Patent Owner argues that Petitioner fails to show Examiner error. *See* Prelim. Resp. 17–22. Patent Owner contends that it sent a letter to the Examiner pointing out that the claims of the ’051 patent are different and possibly broader in scope than claims in previous applications, undermining Petitioner’s argument that the Examiner failed to consider the breadth of the challenged claims here. *Id.* at 18–19 (citing Ex. 1002, 302). Patent Owner also argues that consideration of other decisions, including an ITC determination addressing similar issues as presented in the Petition, show that reasonable minds can disagree as to the teachings of WO684, also undermining Petitioner’s argument of material error by the Examiner. *Id.* at 20–21.

Based on our review of the current record, we find that Petitioner has shown that the Examiner erred in failing to find at least claim 13 of the ’051 patent unpatentable as obvious based on WO684 and NO366. First, for the reasons provided in the discussion of the merits below, we determine on the current record that Petitioner establishes a reasonable likelihood that Petitioner would prevail in demonstrating that claim 13 would have been obvious based on WO684 and NO366. Petitioner’s showing as to claim 13 shows sufficiently that the Examiner erred in overlooking the teachings of WO684 and NO366 and their potential combination. Second, findings in related applications addressing narrower claim limitations shed little light on the issues addressed in the context of claim 13. To the extent these other proceedings Patent Owner relies on are relevant at all, they fail to show a lack of error in connection with the prosecution of the ’051 patent.

### 3. Conclusion

Based on our review of the current record, we determine that Petitioner has demonstrated that the Examiner erred in a manner material to the patentability of challenged claims and that the second part of the *Advanced Bionics* framework is not satisfied. Accordingly, we decline to exercise our discretion to deny institution pursuant to 35 U.S.C. §325(d).

#### 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 “has a Master’s degree in Mechanical Engineering or Robotics and at least three to four years of experience working as an engineer in the field of AS/RS [Automated Storage and Retrieval Systems].” Pet. 26 (citing Ex. 1003 ¶ 62). Petitioner argues in the alternative that one of ordinary skill in the art “has at least a Bachelor’s degree in Mechanical Engineering, and at least four to five years of experience working as an engineer in the field of AS/RS.” *Id.* (citing Ex. 1003 ¶ 63).

Patent Owner argues that “the level of ordinary skill in the art is ‘at least a bachelor’s degree in mechanical engineering, and at least two to three years’ experience working in the field of the design of robotic vehicles for material handling system[s].” Prelim. Resp. 29 (citing Ex. 2001 ¶ 50).

Patent Owner contends that the parties agreed that this level of skill applies to WO684 in a related ITC proceeding, and should be adopted here. *Id.* at 29–30 (citing Ex. 2007, 19–20).

We note that the parties’ respective proposals overlap considerably, with Petitioner’s alternative proposal nearly identical to Patent Owner’s proposal. We need not resolve which proposal most closely aligns with the level of ordinary skill in the art here, however, because even if we adopt Patent Owner’s proposal we would come to the same ultimate conclusion that Petitioner satisfies its burden of showing a reasonable likelihood of establishing the unpatentability of any of the challenged claims.

#### *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 does not propose any constructions for any claim terms, and “Patent Owner also believes no claim term requires construction and submits that the Petition is defective under any reasonable claim construction.”

Prelim. Resp. 30. Based on our review of the current record, we need not formally construe any claim terms to determine whether to institute an *inter partes* review. 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 necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

*E. Obviousness Based on WO684 and NO366*

Petitioner argues that the combination of WO684 and NO366 renders claims 1–18 obvious. Pet. 16, 27–88. Patent Owner disagrees. Prelim. Resp. 31–59. We begin our analysis with an overview of WO684 and NO366, followed by our discussion of the parties’ arguments.

*1. Overview of WO684*

WO684 discloses “a remotely operated vehicle or robot for picking up storage bins from a storage system.” Ex. 1005, code (57). WO684 describes the same cantilever-type prior art vehicle that the ’051 patent describes, and seeks to provide an improved vehicle. *Id.* at 1:5–35, Figs. 1–2. More specifically, WO684 seeks to “provide a vehicle/robot with higher stability properties, higher maximum handling weights, a more effective use of available space during operation and a less time[-]consuming lifting and transporting process of storage bins.” *Id.* at 1:35–38. To achieve these goals, WO684 discloses a vehicle with one set of wheels “arranged fully within the vehicle body.” *Id.* at 2:19–21. WO684’s vehicle has a body that

covers less than or equal to the width of a storage column (grid space) in one direction (the X-direction) and covers some of the area of adjacent storage columns in the opposite direction (the Y-direction). *Id.* at 2:38–3:3.

WO684's Figure 3 is reproduced below.

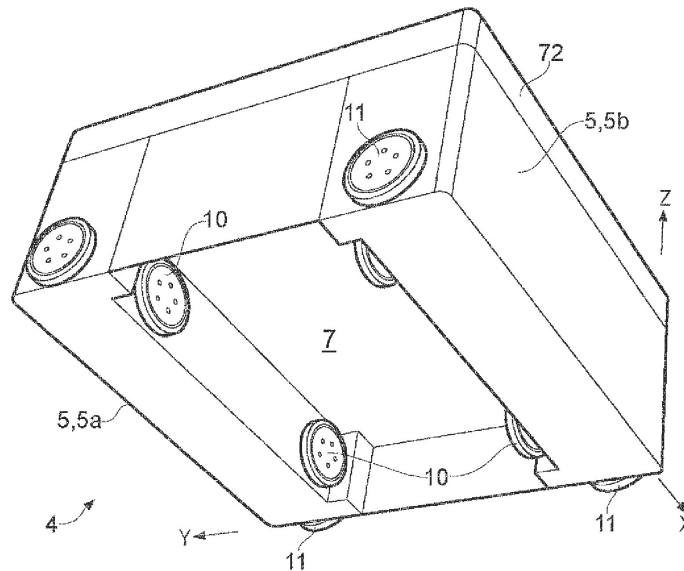


FIG. 3

Figure 3 “is a perspective base view of a remotely operated vehicle according to the present invention.” Ex. 1005, 4:39–40. Figure 3 shows rectangular vehicle body or framework 4 with central cavity 7 within body 4. *Id.* at 5:17–19. Figure 3 also shows top lid 72 covering the top part of body 4, a first set of four wheels 10 mounted inside cavity 7 and a second set of four wheels 11 mounted to the exterior walls of body 4. *Id.* at 5:19–22. Vehicle body 4 also includes side parts 5, 5a, 5b arranged on both sides of the cavity 7 along the Y-axis shown in Figure 3. *Id.* at 5:23–27. Cavity 7 contains a lifting device and enough space to completely contain the largest storage bin 2 intended to be picked up by robot 1. *Id.* at 5:27–29.

WO684's Figure 9 is reproduced below.

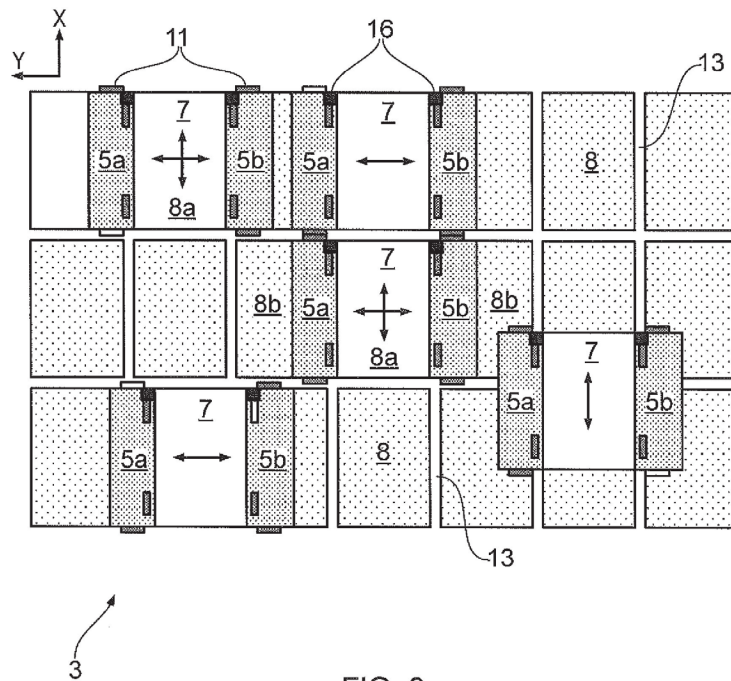


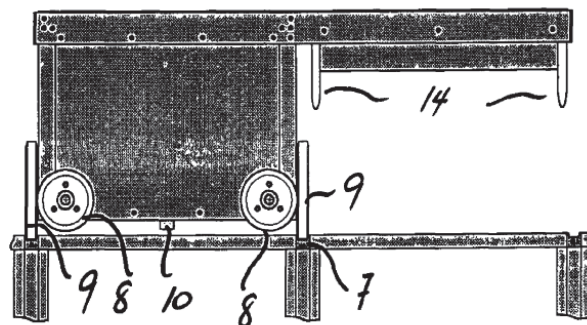
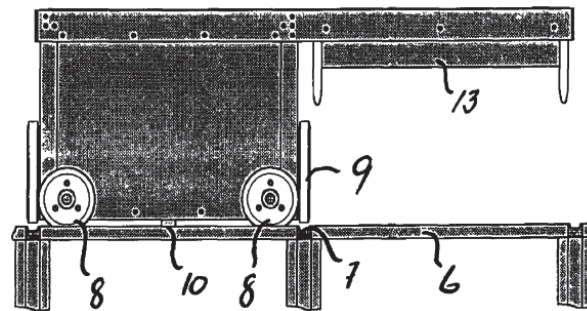
FIG. 9

Figure 9 “is a schematic top view of a remotely operated vehicle moving on a two[-]dimensional matrix of supporting rails.” Ex. 1005, 5:12–13. Figure 9 shows robots 1 riding on supporting rails 13 above storage columns 8. *Id.* at 6:1–6, 6:35–37. With robot 1 exactly above storage column 8 as shown in the upper left corner of Figure 9, robot 1 can move in either the X- or Y-direction as shown by the arrows on robot 1. *Id.* at 6:37–41. Figure 9 also shows that, once centered over storage column 8, robot 1 side parts 5a, 5b of the vehicle body extend into adjacent storage columns 8 in the Y-direction, but no part of vehicle body extends into adjacent storage columns 8 in the X-direction. *Id.* at 4:28–31, 6:19–24, 6:29–30. WO684 emphasizes that such an “arrangement is more space efficient relative to the prior art” because the wheels do “not give any additional extensions in at least one of the two robot[-]moving directions (X and Y).” *Id.* at 4:28–31.

2. Overview of NO366

NO366 discloses “a remote-controlled motorized trolley” and a “hoist system for operation on rails crossed by stacks of storage units.” Ex. 1007, code (57). NO366 discloses the same prior art “cantilever” type of vehicles addressed by both WO684 and the ’051 patent. *See* Ex. 1001, 3:6–4:31, Figs. 3A–3C, 4; Ex. 1005, 1:7–21, Figs. 1–2. The trolleys include two sets of wheels to enable movement in the X- and Y- directions on top of the rails. Ex. 1007, 5:8–19.<sup>4</sup> The trolleys include “electric motors for their propulsion and lifting functions.” *Id.* at 5:32–33.

Figure 2 of NO366 is reproduced below.



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<sup>4</sup> We cite to the native pagination of NO366 rather than the pagination added to Ex. 1007.

Figure 2 “shows a remote-controlled trolley 1 with a fixed set of wheels 8, and a submersible set of wheels 9, for rolling movement in the guide grooves 7 of the rails 6.” Ex. 1007, 4:33–34. Figure 2 also depicts optical probe/sensor 10 that registers the rail crossing points, and yoke holders 11 of the motor housing having yoke 13 and steering or guide pins 14. *Id.* at 4:35–36, 6:7–9. When the yoke holders 11 are positioned over a desired storage unit, metal bands 12 spooled into yoke holders 11 unspool to a specified depth into the column. *Id.* at 6:7–11. When steering pins 14 of yoke 13 engage with corresponding holes in the desired storage unit, gripping clips 16 engage unit to allow the unit to be lifted out of a stack of units in the column. *Id.* at 6:12–15.

### 3. Discussion

Independent claims 1 and 13 contain many of the same limitations, and the parties rely on the same arguments for claim 13 as they do for claim 1. *See* Pet. 80–83 (relying on arguments as to claim 1 in support of arguments as to claim 13); Prelim. Resp. 32–42, 47–59 (arguing similar limitations in claims 1 and 13 together). We take the same approach here, and treat similar limitations in the claims together, with a focus on limitations relevant to Patent Owner’s arguments.

The claims refer to various limitations corresponding to “a first load handling device” and “a second load handling device.” *See* Ex. 1001, 12:33, 12:57, 14:1, 14:25. Petitioner generally relies on NO366 as disclosing the limitations corresponding to the first load handling device, and WO384 as corresponding to the limitations corresponding to the second load handling device. *See* Pet. 27–54, 80–83. For example, Petitioner contends that the trolley vehicle of NO366 discloses the claimed first load handling device



that includes a housing, wheels that engage the rails of a grid frame, and a crane device comprising a cantilever arm and gripper plate. *See id.* at 27–39, 80–81. Petitioner further contends that the vehicle of WO684 discloses the claimed second load handling device that includes a second housing and wheels that engage the rails of the grid. *See id.* at 40–42, 44–46, 82–83. For each limitation, Petitioner points to the relevant portions of NO366, WO684, or both, that allegedly disclose the limitation at issue, and accompanying support from Dr. Derby’s declaration. *See generally id.* at 27–54; Ex. 1003 ¶¶ 65–120, 183–208. Petitioner also sets forth various reasons why one of ordinary skill in the art would be motivated to combine NO366 and WO684, with support from Dr. Derby. *See Pet.* 54–61; Ex. 1003 ¶¶ 121–129.

Patent Owner argues that Petitioner’s proposed combination fails to disclose several limitations in claims 1 and 13, including a second load handling device that includes a “lift motor” and “a housing footprint that occupies less than twice the area” of a grid space. *See Prelim. Resp.* 41–42, 47–59. Patent Owner also argues that Petitioner fails to establish an adequate reason to combine the references. *Id.* at 32–41. Patent Owner further argues that the proposed combination fails to disclose a second device “taller than” the first device, a limitation found in claim 1 but not claim 13. *See id.* at 42–47. Patent Owner supports its arguments with the testimony of Dr. Pfeifer. *See id.*; Ex. 2001 ¶¶ 53–91. We address each of Patent Owner’s arguments in turn below.

*a. Lift Motor (Claims 1 and 13)*

Claim 1 requires a second load handling device comprising “a lifting device comprising a lift motor” and claim 13 requires “lifting, using a lift motor of the second load handling device.” Ex. 1001, 12:57, 13:5, 14:43–

44. Petitioner argues that WO684 discloses a “vehicle lifting device” that lifts storage bins and meets this aspect of the claims. Pet. 46–48 (citing Ex. 1003 ¶¶ 107, 109; Ex. 1005, 2:8–10, 5:27–29, 5:33–35, 6:27–29, Figs. 5, 8). Patent Owner does not contest the WO684 discloses a “lifting device,” but argues that Petitioner’s analysis fails to take into account the “lift motor” aspect of the limitation because the relied-upon aspects of WO684 merely describe a lifting device, not a lift motor. *See* Prelim. Resp. 41–42 (citing Ex. 2001 ¶ 68).

The Petition clearly relies on WO684’s “lifting device” and associated structures as disclosing the “lifting device comprising a lift motor” limitation. *See* Pet. 46–47. While we agree with Patent Owner that the Petition’s analysis of the “lift motor” aspect of the limitation in claim 1 does not explicitly refer to a “lift motor” in the body of the analysis after quoting the claim language, that does not necessarily mean that Petitioner fails to assert that WO684’s lifting device includes a motor or fails to recognize the limitation in the claims. *See id.* Based on our reading of the Petition as a whole, Petitioner argues that WO684 discloses a lifting device that inherently includes such a lift motor. This reading finds support in the Petition’s analysis of dependent claim 5, which depends from claim 1 and includes an additional “lift motor” limitation. In that analysis, Petitioner expressly acknowledges that claim 1 includes a “lift motor” requirement and separately addresses the “lift motor” required by claim 5, which raises and lowers vehicle wheels. *See id.* at 66 n.11.<sup>5</sup> As part of its analysis of claim 5,

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<sup>5</sup> Claim 5 refers to “*the* lift motor,” suggesting that it refers to the same lift motor of claim 1, which provides an antecedent basis for the term in claim 5. *See* Ex. 1001, 13:38 (emphasis added). Petitioner anticipates Patent Owner arguing that claim 5 refers to a second lift motor distinct from the “lift

Petitioner argues that one of ordinary skill in the art “would at once have understood and envisaged using a lift motor as the means of raising and lowering” the wheels and “[a] lift motor necessarily and inevitably will be present when WO684 is practiced in order to raise and lower the wheels.” *Id.* at 68–69 (citing Ex. 1003 ¶ 148). With respect to another “lift motor” limitation in dependent claim 6, Petitioner argues that one of ordinary skill in the art would at once understand and envisage a mechanical connection between the lift motor and wheels to raise and lower the wheels, because “otherwise, there would be no way for the lift motor to lower the wheels.” *Id.* at 69–70 (citing Ex. 1003 ¶ 154).

Based on the foregoing, and reading the Petition as a whole, we interpret the Petition as arguing that WO684 discloses the lifting device limitation, including an associated lift motor, because the lifting device necessarily includes a motor in order to lift the storage containers. *See* Pet. 46–48, 68, 68–70; Ex. 1003 ¶¶ 107, 109, 148, 154. While the Petition could have been clearer by repeating the inherency argument each time it addresses a “lift motor” limitation, we view the arguments in the Petition as a whole as sufficient to provide notice to Patent Owner of Petitioner’s position, and to allow Patent Owner to respond meaningfully in the Patent Owner Response, if it chooses to file a Response and address the “lift motor” limitations in claims 1 and 13.

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motor” in claim 1, and treats the two as distinct in its analysis. Pet. 66 n.11, 67–69. We do not take a position on this potential claim construction dispute at this time, but the fact that claim 5 appears to refer to the same “lift motor” as claim 1 supports our view that the Petition’s treatment of the lift motor in claim 5 as inherent should apply to claim 1 as well.

Turning to the merits of Petitioner's assertions, we determine that Petitioner establishes adequately, based on the current record, that WO684 discloses a lifting device that includes a lift motor because such a motor would necessarily be present in order to lift a container from a stack as required by the claims. The parties may explore these issues further during trial.

*b. Footprint Less Than Twice the Area of a Grid Space  
(Claims 1 and 13)*

Claim 1 requires a second housing having "a housing footprint that occupies less than twice the area of the grid space," while claim 13 requires "the second load handling device has a housing footprint that occupies less than twice the area of the grid space." Ex. 1001, 13:13–15, 14:36–38. Petitioner argues that WO684 discloses a vehicle that occupies less than twice the area of a grid space. Pet. 50–51 (citing Ex. 1003 ¶¶ 114–115). Petitioner relies on WO684's statements that (1) the vehicle covers less than or equal to the space of a storage column in the X-direction, (2) smaller sized vehicles are rendered possible, and (3) that the vehicle "is more space efficient" than the vehicle NO366 discloses, which occupies two spaces. *Id.* at 50 (citing Ex. 1003 ¶¶ 114–115; Ex. 1005, 2:37–38, 4:28–32). Petitioner also argues that Figure 9 shows vehicles having footprints that occupy less than twice the area of a grid space. *Id.* at 50–51 (citing Ex. 1005, 4:28–32, Fig. 9). In the alternative, Petitioner argues that WO684 discloses smaller vehicles that would include vehicles that occupy only a single grid space, and that modifying the vehicles WO684 discloses to occupy only a single space would have been obvious. *Id.* at 51–54.

Patent Owner argues that WO684 fails to disclose or render obvious a second housing footprint that occupies less than twice the area of a grid

space. Prelim. Resp. 48–59. Patent Owner relies on portions of WO684 that describe “side parts” that preferably extend into adjacent columns in the Y-direction, and preferably an equal amount on each side. *Id.* at 48–49 (citing Ex. 1005, 2:38–3:5). Patent Owner argues that “the text of WO684’s specification does not disclose whether that footprint, as a result of the side part extensions, is less than two grid spaces.” *Id.* at 49. Patent Owner further argues that the only example WO684 provides covers exactly two grid spaces because the example describes a vehicle that occupies one central column in the middle and half of two adjacent columns in the Y-direction. *Id.* at 49–50 (citing Ex. 1005, 6:14–25). As to Petitioner’s reliance on Figure 9 of WO684, Patent Owner argues that Petitioner’s interpretation conflicts with the specification of WO684 and Petitioner cannot rely on the figure to show precise proportions of elements in the figures. *Id.* at 50. As to Petitioner’s argument that WO684 discloses or renders obvious a vehicle that occupies a single grid space, Patent Owner argues that WO684 does not expressly or inherently disclose such a vehicle, and that such a modification would not have been obvious given the goals of WO684. *Id.* at 50–59.

Based on our review of the current record, Petitioner establishes sufficiently that WO684 discloses a housing footprint that occupies an area less than twice the area of a grid space. First, WO684 expressly limits its size in the X-direction to one grid space. Pet. 50; Ex. 1005, 2:37–39. Second, WO684 states that its vehicle extends into adjacent grid spaces in the Y-direction and depicts that extension as less than half of the area of a grid space in Figure 9. Pet. 50–51; Ex. 1005, 2:39–3:3, Fig. 9.

Petitioner's annotated version of Figure 9 is reproduced below (Pet. 51).

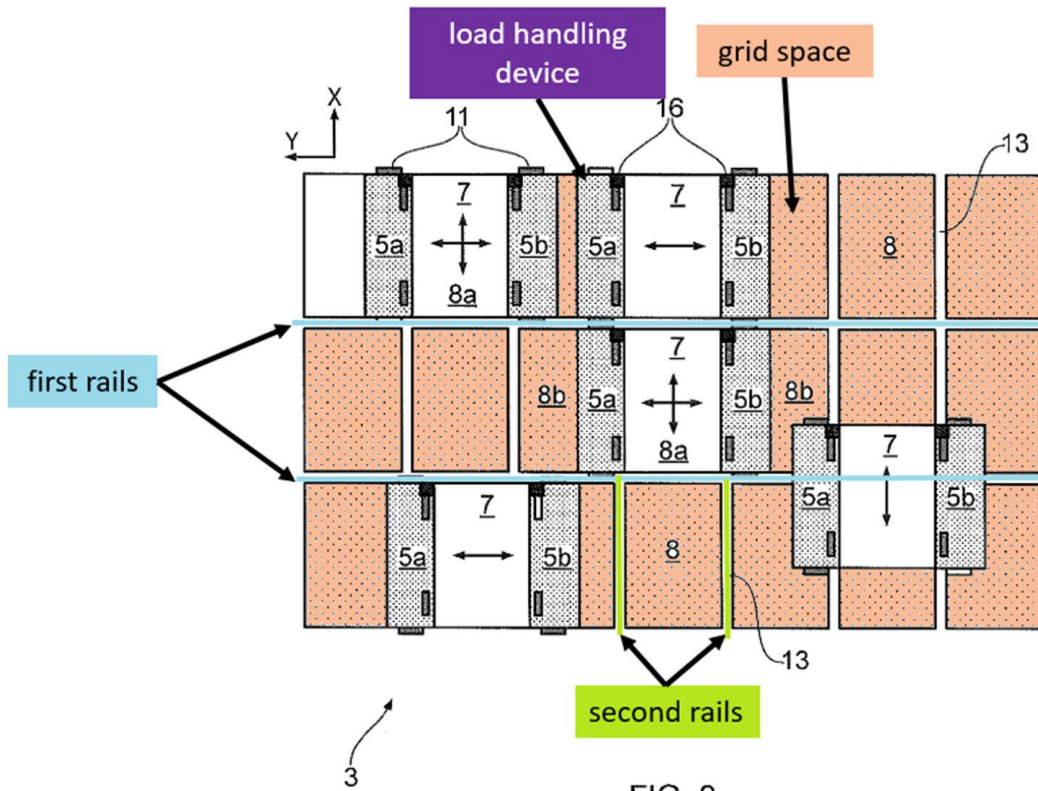


FIG. 9

Petitioner's annotated version of Figure 9 shows multiple vehicles 7 having side parts 5a, 5b that extend into adjacent grid spaces in the Y-direction. Ex. 1005, Fig. 9. Based on the current record, we agree with Petitioner that Figure 9 shows vehicles 7 that occupy an area less than twice the area of a grid space. For example, Figure 9 shows two vehicles 7 in the top row adjacent one another with a space between them—if vehicles 7 occupied two grid spaces there would be no space between vehicles 7. Similarly, vehicles 7 partially adjacent one another in the middle row show a space between them, which allows vehicle 7 furthest to the right to pass vehicle 7 in the middle of the figure. If the vehicles occupied two grid spaces the figure would not depict a gap between the vehicles and the likelihood that the

vehicles would interfere with one another as one passed the other would increase.

Patent Owner's arguments, on the current record, do not undermine Petitioner's showing. First, the WO684 specification does not definitively refer to the extensions in the Y-direction as occupying half of a grid space. Instead, in one example, the specification describes how wide certain meshes 17, 18 on the border regions of the grid must be "*if* the robot 1 extends . . . over  $\frac{1}{2}$  of the cross[-]sectional area of the adjacent storage column 8b in the Y-direction." Ex. 1005, 6:19–24 (emphasis added), Figs. 8–9. Other portions of the specification make clear that the vehicle extensions need only extend into "some" of the cross-sectional areas of adjacent grid spaces in the Y-direction. *See id.* at 2:39–3:3. WO684's statement that the extensions only occupy "some" of the adjacent grid spaces generally supports Petitioner's argument that the extensions cover less than half of the adjacent grid spaces and undermines any suggestion that WO684 only discloses vehicles that extend into half of the adjacent grid spaces. Second, interpreting Figure 9 as showing vehicles that cover less than half of adjacent grid spaces does not violate any rule against interpreting figures as disclosing specific sizes or precise proportions. We need not read in any specific sizes or proportions from Figure 9 to understand that the noticeable gaps between the vehicles would not be present if the vehicles occupied half of adjacent grid spaces. In addition, the figures merely show the relationship between vehicle and grid size that remains consistent with the text in the specification stating that the vehicles occupy only "some" of adjacent grid spaces. *See* Prelim. Resp. 50.

As to Patent Owner’s argument that WO684 does not expressly or inherently disclose a vehicle that occupies a single grid space, and that it would not have been obvious to modify WO684 in such a manner given its emphasis on the stability and other advantages of its existing design, we generally agree with Patent Owner, based on the current record. We are not persuaded by Petitioner’s argument that WO684 expressly or inherently discloses a single space vehicle, and we question whether one of ordinary skill in the art would have been motivated to make its proposed modifications, which require removal of the side parts of the vehicle, when the existing design provides “significantly higher stability and time efficiency” and “effectively hinders any undesired bin reeling / wobbling.” Ex. 1005, 4:13–24. But we need not resolve these disputes at this time given that we already determined that Petitioner has made an adequate showing as to this limitation without needing to resort to its alternative arguments. The parties may further address all of the issues related to this limitation during the trial.

Based on the current record, we determine that Petitioner establishes adequately that WO684 discloses a second housing having a “housing footprint that occupies less than twice the area of the grid space” as required by claims 1 and 13.

*c. Basis for the Proposed Combination (Claims 1 and 13)*

Petitioner argues that its proposed combination of NO366’s vehicle and WO684’s vehicle on the same storage grid merely arranges old elements in a way that preserves their original intended function—storing and retrieving containers on a grid. Pet. 54–56 (citing Ex. 1003 ¶ 123). According to Petitioner, both NO366 and WO684 already teach using



multiple vehicles on the same grid system and that one of ordinary skill in the art would understand that such systems need to remain flexible and able to accommodate additional vehicles to increase the output of the system. *Id.* at 56 (citing Ex. 1003 ¶ 124). Petitioner also argues that one of ordinary skill in the art would recognize that the ability to add additional vehicles would depend on their size, and would look to the more efficient use of space noted in the WO684 vehicles and add one or more of those vehicles to a system using the vehicles disclosed in NO366. *Id.* at 56–57 (citing Ex. 1003 ¶ 125; Ex. 1005, 1:34–38, 4:28–32). Petitioner also contends that one of ordinary skill in the art would have been motivated to make the combination (1) due to the unique benefits that the vehicles in NO366 and WO684 provide; (2) because market forces would have motivated such a backwards-compatible system capable of working with two types of vehicles; and (3) because the combination would be likely to succeed. *Id.* at 57–60 (citing Ex. 1003 ¶¶ 126–128).

Patent Owner argues that none of the prior art suggests using “very different robots together in the same grid storage system” and that using “multiple robots of the same type” does not provide the requisite motivation. Prelim. Resp. 33 (citing Ex. 2001 ¶ 53) (emphasis omitted). Patent Owner also argues that WO684 teaches away from using the cantilever-type robots of NO366 because it disparages them and advocates replacing them with the robots of WO684. *Id.* at 33–34 (citing Ex. 2001 ¶¶ 54–55). Patent Owner further contends that combining the two robots retains the disadvantages of the NO366 robot and negates some of the advantages of the WO684 robots. *Id.* at 34–35 (citing Ex. 2001 ¶¶ 56–57). Patent Owner also contends that

Petitioner's stated reasons to combine the vehicles on the same grid system lack merit. *Id.* at 35–41 (citing Ex. 2001 ¶¶ 59–65).

Based on our review of the current record, Petitioner establishes sufficiently that one of ordinary skill in the art would have been motivated to combine NO366 and WO684 as Petitioner proposes. *See* Pet. 54–61. Petitioner provides several specific rationales for the combination, and supports each with the testimony of Dr. Derby. *See id.* (citing Ex. 1003). Patent Owner's arguments, supported by the testimony of Dr. Pfeifer, present plausible arguments in opposition, but they do not so fatally undermine Petitioner's showing at this stage that we would deny institution on this basis. *See* Prelim. Resp. 32–41 (citing Ex. 2001). Patent Owner's arguments present highly factual issues that are best resolved after further development of the record during trial, including an opportunity for Petitioner to respond to any Patent Owner arguments included in a Patent Owner Response.

*d. Conclusion as to Claims 13–18*

We have addressed all of Patent Owner's arguments that relate to independent claim 13 above. We have also reviewed Petitioner's arguments and evidence as to the remaining limitations of claim 13. Based on our review, Petitioner establishes sufficiently, based on the current record, that the combination of NO366 and WO684 disclose all of the limitations of claim 13, and that one of ordinary skill in the art would have been motivated to combine the references as Petitioner proposes. Accordingly, Petitioner establishes a reasonable likelihood of success in establishing that independent claim 13 would have been obvious based on NO366 and WO684.

We have also reviewed Petitioner’s arguments and evidence as to dependent claims 14–18, that ultimately depend from claim 13. *See* Pet. 84–87. Patent Owner does not address these dependent claims. *See* Prelim. Resp. 31–59. Based on our review, Petitioner establishes sufficiently, based on the current record, that the combination of NO366 and WO684 disclose all of the limitations of claims 14–18, and that one of ordinary skill in the art would have been motivated to combine the references as Petitioner proposes. Accordingly, Petitioner establishes a reasonable likelihood of success in establishing that dependent claims 14–18 would have been obvious based on NO366 and WO684.

*e. Top of the Second Load Handling Device “Taller Than” the Top of the First Load Handling Device (Claim 1 Only)*

Because we institute *inter partes* review as to the claims 13–18, we also institute *inter partes* review as to claims 1–12. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). We address Patent Owner’s argument with respect to the “taller than” limitation in claim 1 to provide further guidance to the parties during trial.

Claim 1 requires a “top side of the second housing . . . taller than the top side of the first housing.” Ex. 1001, 12:62–63. Petitioner argues that WO684 discloses a “first section” for storing vehicle driving means and other components, and a “second section” that includes a container-receiving cavity that houses a storage bin lifted by the vehicle, with the second section larger than the storage bin. Pet. 42–43 (citing Ex. 1003 ¶ 97; Ex. 1005, 2:6–8, 2:16, 2:23–25, Fig. 4). According to Petitioner, one of ordinary skill in the art “would have understood and at once envisaged that by including any components (such as the lifting device) in the first section, located above the

container-receiving cavity, the robot housing would necessarily be taller than the load handling devices of NO366, which are only as tall as the height of the ‘surrounding motor housing.’” *Id.* at 43 (citing Ex. 1003 ¶ 98; Ex. 1005, Fig. 2; Ex. 1007, 6:7–8, Fig. 5). Petitioner also argues that putting components above the cavity makes sense given WO684’s emphasis on producing smaller-sized robots. *Id.* (citing Ex. 1003 ¶ 99). In the alternative, Petitioner argues that it would have been obvious “that the top side of the second housing could be taller than the top side of the first housing.” *Id.* (citing Ex. 1003 ¶ 100). Petitioner contends that given WO684’s goal to create a more space efficient vehicle, it would have been obvious “to move the driving and other mechanical components from beside the container-receiving space, as in the NO366 robot, to above the container-receiving space, creating a taller robot housing than that of the NO366.” *Id.* at 43–44 (citing Ex. 1003 ¶ 100; Ex. 1005, 4:29–31).

Patent Owner argues that “neither NO366 nor WO684 discloses the specific height of the robot, and a POSITA would have no reason to expect that the robot disclosed in WO684 is taller than the cantilever robot of NO366.” Prelim. Resp. 42 (citing Ex. 2001 ¶ 69). Patent Owner further argues that “the only component that WO684 actually discloses as being above the container receiving cavity is the lifting device, and NO366 teaches exactly the same thing—a robot in which the lifting mechanism is placed above the container-receiving space,” such that their heights would be expected to be the same. *Id.* at 42–43 (citing Ex. 2001 ¶ 70). As to Petitioner’s obviousness argument, Patent Owner argues that “Petitioner’s claim that it is ‘logical’ to create a robot with a footprint occupying only a single grid space based on the disclosure in WO684 makes no sense.” *Id.* at

45 (citing Ex. 2001 ¶ 74). According to Patent Owner, WO684 ties its preference for smaller sized robots to the vehicle WO684 discloses, which includes placing mechanical components in the side parts rather than above the container-receiving cavity as Petitioner proposes. *Id.* at 45–46 (citing Ex. 2001 ¶¶ 74–75). Patent Owner further argues that locating mechanical components above the cavity would undermine the stability advantages in WO684’s vehicle. *Id.* at 46–47 (citing Ex. 2001 ¶ 75).

We agree with Patent Owner that Petitioner has not established adequately, based on the current record, that WO684 expressly or inherently discloses a housing with a top “taller than” the top of the housing in NO366. Neither reference discloses any specific height of its housing or a height relative to any other vehicles. In addition, although Petitioner argues that placement of any components such as the lifting device above the cavity makes “the most logical sense,” WO684 does not describe any components in the area above the cavity, and in the case of the lifting device, it describes the device as within the cavity itself. *See* Ex. 1005, 5:27–28 (“The size of the cavity 7 is adapted to contain necessary component for a lifting device 9.”), 5:33–35 (“Fig. 5 also shows a small part of a storage bin 2 arranged fully inside the cavity 7 and a small part of the lifting device 9.”). To the extent that some portion of WO684’s lifting device must be above the cavity in order to lift a storage bin, NO366 appears to disclose a similar arrangement. *See* Prelim. Resp. 42–43 (citing Ex. 1007, 6:7–15; Ex. 2001 ¶ 70).<sup>6</sup> Based on these disclosures, Petitioner cannot reasonably rely on

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<sup>6</sup> As we understand it, NO366 includes metal bands 12 spooled into yoke holders 11 above the container-receiving area, and electric motors for propulsion and lifting beside the container-receiving area within motor housing 1. *See* Ex. 1007, code (57) (“Protruding from the [Computer

WO684's disclosure of a lifting device above its cavity as a basis to argue that the top of its housing must be taller than the housing in NO366. Even if locating some mechanical components above the cavity "makes logical sense," as Petitioner contends, the lack of disclosure in WO684 does not adequately support Petitioner's argument that WO684 expressly or inherently discloses a housing "taller than" the housing in NO366.

As to obviousness, we question whether Petitioner's proposed modification, which requires moving mechanical driving and other components to a location above WO684's cavity, cuts against the advantages WO684 ties to its existing design. *See* Pet. 43–44; Ex. 1005, 4:9–28 (noting advantages of disclosed design). For this limitation, Petitioner does not expressly suggest *completely* removing the side parts of the WO684 vehicle to create a vehicle that occupies only a single grid space to satisfy this limitation, but any modification that saves space by raising the height of the vehicle necessarily impacts the stability of the vehicle. *See* Pet. 43–44 (proposing moving "driving and other mechanical components from beside the container-receiving space, as in the NO366 robot, to above the container-receiving space, creating a taller robot housing than that of the NO366"); Prelim. Resp. 46–47 (arguing that modification would reduce stability and be too complex to implement); Ex. 2001 ¶ 75. Whether one of ordinary skill in the art would have been motivated to make such a modification requires

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Operated Trolley] (1) motor housing, two parallel hoke holders (11) with two spooling metal bands (12) that drop into a yoke (13) . . . ."), 5:32–33, 6:7–9, Figs. 2–5). Accordingly, Petitioner must establish that WO684 discloses more than spooled bands or cables associated with the lifting mechanism above its cavity to show that WO684's housing is "taller than" the housing in NO366. If our understanding is inaccurate, the parties should address this issue during trial.

resolution of close factual issues and competing declarant testimony, and we view the issue as best addressed after further development during trial.

*f. Conclusion as to Claims 1–12*

We have reviewed the parties’ arguments and evidence as to claim 1 and, with the exception of the “taller than” limitation, on which we reserve final judgment until after trial, we determine that Petitioner establishes sufficiently that the combination of WO684 and NO366 discloses all of the limitations of claim 1. We have also reviewed Petitioner’s arguments and evidence as to dependent claims 2–12, which ultimately depend from claim 1, and which Patent Owner does not address. *See* Pet. 61–80. We institute *inter partes* review as to claims 1–12 because we institute *inter partes* review as to the claims 13–18. *See SAS*, 138 S. Ct. at 1359–60.

CONCLUSION

For the reasons above, we grant institution of *inter partes* review.

ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–18 of the ’051 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

IPR2022-00673  
Patent 10,961,051 B2

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