Trials@uspto.gov
571-272-7822

Paper 11
Entered: June 28, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OCADO GROUP PLC,
Petitioner,

v.

AUTOSTORE TECHNOLOGY AS,
Patent Owner.

IPR2021-00311
Patent 10,474,140 B2

Before MIRIAM L. QUINN, FRANCES L. IPPOLITO, and ALYSSA A. FINAMORE, *Administrative Patent Judges.*

FINAMORE, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

Ocado Group PLC ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–4 and 11–15 of U.S. Patent No. 10,474,140 B2 (Ex. 1001, "the '140 patent"). AutoStore Technology AS ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp."). Pursuant to our authorization for additional briefing regarding discretionary denial under 35 U.S.C. § 314(a) in view of an ITC investigation, Petitioner filed a Reply (Paper 8, "Prelim. Reply"), and Patent Owner filed a Sur-Reply (Paper 9, "Prelim. Sur-Reply"). On June 15, 2021, per our instruction, the parties submitted a Joint Statement regarding the status of the ITC investigation. Paper 10 ("Joint Statement").

To institute an *inter partes* review, we must determine that the information presented in the Petition shows "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) (2018). For the reasons set forth below, upon considering the Petition, Preliminary Response, Reply, Sur-Reply, and evidence of record, we determine the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims. Accordingly, we institute *inter partes* review.

A. Related Proceedings

The parties identify the following as related matters: *AutoStore Technology AS v. Ocado Group PLC*, No. 2:20-cv-00494 (E.D. Va. filed Oct. 1, 2020) ("the District Court litigation") and *In the Matter of Certain Automated Storage and Retrieval Systems, Robots, and Components Thereof*, Inv. No. 337-TA-1228 (filed Oct. 1, 2020) ("the ITC

investigation"). Pet. 1–2; Paper 5, 2. The District Court litigation has been stayed pending the ITC investigation. Prelim. Reply 3; Ex. 2001, 1.

Petitioner identifies as a related matter the following Board proceeding between Petitioner and Patent Owner: IPR2021-00274 (challenging U.S. Patent No. 10,294,025 B2). Pet. 2. Petitioner and Patent Owner are also involved in the following Board proceedings: IPR2021-00398 (challenging U.S. Patent No. 10,093,525 B2), IPR2021-00412 (challenging U.S. Patent No. 10,494,239 B2), and PGR2021-00038 (challenging U.S. Patent No. 10,696,478 B2).

B. The '140 Patent

The '140 patent, titled "Robot for Transporting Storage Bins," is directed to a remotely operated vehicle, or robot, for picking up storage bins from a storage system. Ex. 1001, code (54), 1:6–9. The remotely operated vehicle is configured to move in X and Y directions on supporting rails of the storage system to receive a storage bin from a storage column within a bin storing grid. *Id.* at 1:32–36, 4:38–52.

The remotely operated vehicle is shown in Figure 3, reproduced below.

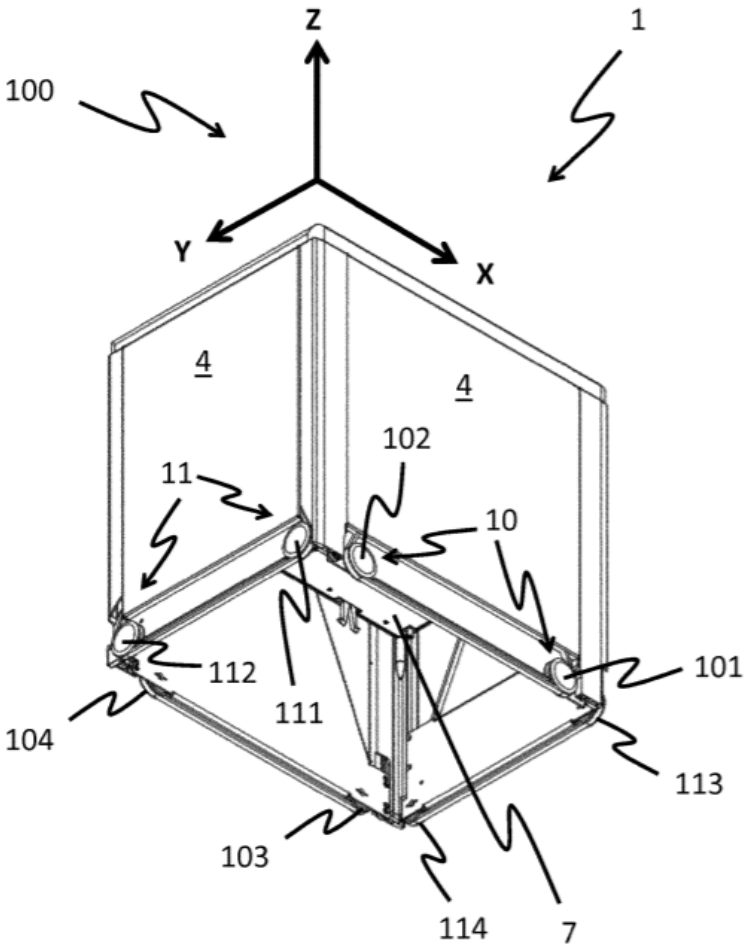


FIG. 3

Figure 3 is a perspective view a remotely operated vehicle seen from below. Ex. 1001, 4:4–5. Robot 1 comprises framework 4 defining a cavity centrally arranged therein for receiving a storage bin. *Id.* at 4:38–41, 49–52. Lifting device 7 picks up a storage bin and retracts to the top of the cavity. *Id.* at 4:52–54. First vehicle rolling means 10 includes wheels 101, 102 and opposing wheels 103, 104 for movement in the X direction on supporting rails of the storage system. *Id.* at 4:41–44. Second vehicle rolling means 11

includes wheels 111, 112 and opposing wheels 113, 114 for movement in the Y direction on supporting rails of the storage system. *Id.* at 4:44–47, Fig. 3.

Robot 1 further includes a first driving means at or at least partly within the first vehicle rolling means, a second driving means at or at least partly within the second vehicle rolling means, and motor control electronics arranged within the volume between two of the wheels of each rolling set. Ex. 1001, 2:9–19. The driving means and motor control electronics are shown in Figures 8A–B and 9B, reproduced below.

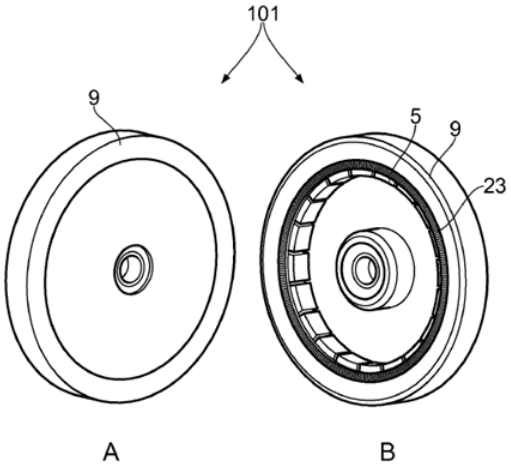


FIG. 8

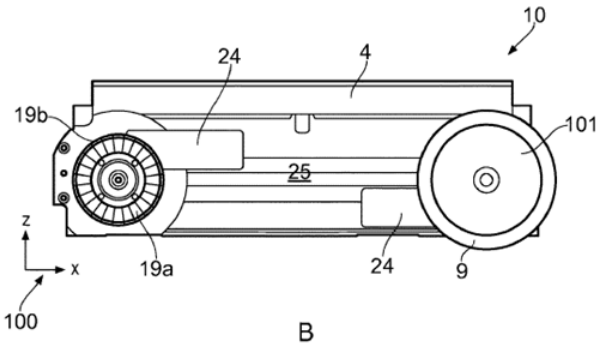


FIG. 9

Figures 8A–B are perspective views of a wheel, and Figure 9B is a cross-sectional view of a rolling set with one wheel removed. *Id.* at 4:19–25. Wheel 101 includes rotor 5 arranged inside the circumference set up by rotary encoder 23 so as to be closer to the rotational axis of wheel 101. *Id.* at 5:16–19. Corresponding stator 19 includes electrical windings 19a wrapped around yokes 19b. *Id.* at 5:20–21. Means for measuring acceleration 24 is connected in signal communication with

stator 19 of each wheel, for example by use of piezoelectric sensors. *Id.* at 5:26–29.

C. Challenged Claims

Petitioner challenges claims 1–4 and 11–15 of the '140 patent. Pet. 1. Claims 1 and 15 are independent. *Id.* at 6:25–55, 6:22–29. Independent claim 1, reproduced below with Petitioner's labels for the limitations, is illustrative of the claimed subject matter.

> 1. [1(preamble)] A remotely operated vehicle for picking up storage bins from an underlying storage system, comprising:
> [1(a)] a vehicle lifting device for lifting the storage bin from the underlying storage system,
> [1(b)] a first vehicle rolling means comprising a first rolling set and a second rolling set arranged at opposite facing side walls of a vehicle body, allowing movement of the vehicle along a first direction on the underlying storage system during use, and
> [1(c)] a second vehicle rolling means comprising a first rolling set and a second rolling set arranged at opposite facing walls of the vehicle body, allowing movement of the vehicle along a second direction on the underlying storage system during use, the second direction being perpendicular to the first direction,
> [1(d)] wherein each of said rolling sets comprises at least two wheels,
> [1(e)] wherein the vehicle further comprises:
> [1(f)] a first driving means situated at or at least partly within the first vehicle rolling means for providing rolling set specific driving force to the vehicle in the first direction,
> [1(g)] a second driving means situated at or at least partly within the second vehicle rolling means for providing rolling set specific driving force to the vehicle in the second direction and

> [1(h)] motor control electronics arranged within the volume between two of the wheels of each rolling set, which motor control electronics are configured to supply electric power to the first and second vehicle rolling means.

Id. at 6:25–55. Claims 2–4 and 11–14 depend from independent claim 1. *Id.* at 6:56–67, 8:1–21. Independent claim 15 recites a storage system comprising a bin storage structure and a remotely operated vehicle in accordance with independent claim 1 and, thus, incorporates all of the limitations of independent claim 1. *Id.* at 8:22–29.

D. The Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–4 and 11–15 would have been unpatentable on the following four grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1, 11, 15	102(a)(2)/103	Lindbo[1]
1, 11, 15	103	Lindbo, Makinen[2]
1–4, 11–15	103	Lindbo, Makinen, Christensen[3]
1–4, 11–15	103	Lindbo, Makinen, Farag[4]

Pet. 7–8. To support its asserted grounds of unpatentability, Petitioner submits a Declaration of Brian Pfeifer, Ph.D., P.E. (Ex. 1015).

---

[1] Lindbo et al., WO 2015/019055 A1, published Feb. 12, 2015 ("Lindbo") (Ex. 1003).
[2] Makinen et al., EP 2 479 052 A1, published July 25, 2012 ("Makinen") (Ex. 1004).
[3] Lowell Christensen, *Designing In-Hub Brushless Motors*, Machine Design (July 22, 2014), http://machinedesign.com/motorsdrives/designing-hub-brushless-motors [https://web.archive.org/web/20140809193947/http://machinedesign.com/motorsdrives/designing-hub-brushless-motors] ("Christensen") (Ex. 1005).
[4] Mohamed Farag, *In-Wheel Brushless DC Outer Rotor (Hub) Motor Used in Electrically Driven Vehicles* (June 19, 2013), https://contest.techbriefs.com/2013/entries/transportation-and-automotive/3517 ("Farag") (Ex. 1006).

II. 35 U.S.C. § 314(A) DISCRETION

35 U.S.C. § 314(a) states that

> [t]he Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 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.

The language of § 314(a) expressly provides the Director with discretion to deny institution of a *inter partes* review. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 1231, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); Consolidated Trial Practice Guide November 2019 ("TPG") at 55, https://www.uspto.gov/TrialPracticeGuideConsolidated.

In exercising the Director's discretion under § 314(a), the Board may consider "events in other proceedings related to the same patent, either at the Office, in district court, or the ITC." TPG at 58. *NHK Spring* explains that the Board may consider the advanced state of a related district court proceeding, among other considerations, as a "factor that weighs in favor of denying the Petition under § 314(a)." *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential). Additionally, the Board's precedential order in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) ("the *Fintiv* Order") identifies several factors for analyzing issues related to the Director's discretion to deny institution in view of related litigation, with the goal of balancing efficiency, fairness, and patent quality.

When considering related litigation, the Board evaluates the following factors ("*Fintiv* factors"):

> 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 Order at 5–6. In evaluating these factors, "the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id.* at 6.

A. Factual Background

On October 1, 2020, Patent Owner filed an infringement proceeding against Petitioner, asserting thirty-three (33) claims of five (5) patents in the District Court litigation. Ex. 2015; Prelim. Reply 3. There, Patent Owner asserted U.S. Patent Nos. 10,294,025 B2; 10,093,525 B2; 10,474,140 B2, 10,494,239 B2; and 10,696,478 B2. Ex. 2015, 1–2.

At the same time, Patent Owner also filed a complaint with the ITC, requesting institution of an investigation pursuant to Section 337 of the Tariff Act of 1930, involving the same patents and Petitioner. Ex. 1017, 1; *see also* Ex. 2009, 1–3. On November 2, 2020, the ITC instituted the ITC investigation. Ex. 1017, 1. The District Court litigation has been stayed pending resolution of the ITC investigation. Ex. 2001, 1.

Less than five weeks after institution of the ITC investigation, Petitioner filed this IPR petition. Thereafter, Petitioner requested a stay of the ITC investigation pending this IPR. Ex. 2016, 2.

The ITC Procedural Schedule, which issued on December 4, 2020, sets the hearing to start on August 2, 2021, the initial determination date for November 5, 2021, and a target date for completion of the investigation by March 7, 2022. Ex. 2002, 1–4. On March 9, 2021, the ITC denied Petitioner's motion to stay the ITC investigation. Ex. 2016, 1. Subsequently on March 9, 2021, upon receiving the denial of the motion to stay, Petitioner notified Patent Owner that it would provide the following stipulation in the ITC investigation:

> On [Date], the Patent Trial and Appeal Board instituted [IPR] of U.S. Patent No. 10,474,140 (the "'140 Patent"). Respondents hereby stipulate that, from and after the date of this stipulation, they will not pursue a defense in this Investigation that the '140 Patent is invalid based on grounds that were raised or reasonably could have been raised in Respondents' IPR petition for the '140 Patent.

Prelim. Reply 3–4 (alteration in original); *see generally* Ex. 2017.

In the parties' Joint Statement regarding the status of the ITC investigation, the parties informed the Board that the ITC investigation had been temporarily reassigned to Chief Administrative Law Judge ("ALJ") Bullock due to the retirement of the previously assigned ALJ Lord. Joint Statement 1. The parties further indicated that the current schedule in the ITC investigation, including the pre-hearing and hearing schedules, remain unchanged. *Id.*

Patent Owner requests that the Board exercise discretionary power to deny institution under 35 U.S.C. § 314(a) because the *Fintiv* factors favor denial in light of the advanced stage of the ITC investigation. Prelim.

Resp. 2–24; Prelim. Sur-Reply. Petitioner argues that exercising discretion to deny institution of *inter partes* review is not appropriate. Pet. 70–75; Prelim. Reply.

In our analysis below, we address each of the *Fintiv* factors in turn. Because the District Court litigation is stayed pending the ITC investigation, we focus primarily on the ITC investigation below. *See* Ex. 2001, 1.

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

As noted above, the '140 patent is involved the District Court litigation and ITC investigation. The District Court litigation has been stayed pending resolution of the ITC investigation. Ex. 2001, 1. The parties have also indicated that a request to stay the ITC investigation was denied on March 9, 2021. Prelim. Resp. 5 (citing Ex. 2016); Prelim. Reply 3. While the District Court litigation has been stayed, we note that that proceeding has been stayed pending the *ITC investigation* in accordance with 28 U.S.C. § 1659. Ex. 2001, 1. That being the case, we focus our discussion on the parties' arguments regarding the status of the ITC investigation.

Patent Owner argues that the motion to stay has already been denied by the ALJ in the ITC investigation. Prelim. Resp. 5. Further, Patent Owner argues that the ALJ indicated that, in some circumstances, "it might make sense to stay a 337 investigation" if the PTAB were to institute an *inter partes* review, but there is no evidence that a renewed request to stay would be granted in this case. *See* Prelim. Resp. 6 (quoting Ex. 2016, 10 n.9); Prelim. Sur-Reply 5–6. Additionally, Patent Owner contends that there are issues, such as indefiniteness under 35 U.S.C. § 112, pending in the ITC investigation that cannot be resolved by the Board in an *inter partes* review. Prelim. Resp. 7–8. Patent Owner argues that "[b]ecause this issue is not

before the Board, the ITC cannot stay its investigation to await the Board's views." *Id.* at 8.

Petitioner responds that the ALJ's willingness to consider a motion to stay weighs against denial. Prelim. Reply 8–9; *see also* Ex. 2016, 10 n.9. In particular, Petitioner contends "the ITC ALJ recognized that 'there is of course the potential for the issues in this [ITC] investigation to be simplified by PTAB rulings' and that a stay might 'make sense . . . if, when, and to the extent that the PTAB determines there is a sufficient likelihood of invalidity that the PTAB institutes review.'" Prelim. Reply 8.

Nonetheless, we decline to speculate as to how the newly assigned ALJ may rule on a renewed motion to stay if one were filed. Likewise, we decline to speculate as to whether the ITC would stay the ITC investigation given the indefiniteness challenge asserted there, but not at issue in this proceeding. *See* Prelim. Resp. 7–8. Accordingly, we determine this factor does not weigh for or against exercising our discretion to deny institution.

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

Patent Owner asserts that the trial in the ITC proceeding will take place on August 2–6, 2021. Prelim. Resp. 11. Patent Owner reasons that "a final written decision in this IPR if instituted would not occur until June 30, 2022—nearly a ***full year*** later." *Id.*

Petitioner contends that, in view of ALJ Lord's retirement from the ITC, it is unlikely that the August trial date will hold. Prelim. Reply 8; Ex. 1025. Petitioner argues that "the currently scheduled dates—an August hearing (more than a month *after* the Board's institution decision by June 30, 2021) and the completion of the investigation (eight months after

the deadline)—are extremely unlikely given the ITC caseload and the ALJ's departure." *Id.*

Patent Owner counters that Petitioner is incorrect to assume ALJ Lord's retirement would result in a change to the schedule for the ITC investigation, and that Chief ALJ Bullock issued an Order on April 20, 2021, denying Petitioner's motion to extend the schedule. Prelim. Sur-Reply 3; Ex. 2018, 2.

In the Joint Statement, the parties informed the Board that "[o]n June 10, 2021, Chief ALJ Bullock issued Order No. 21 (EX1031) amending the Ground Rules and restating the current schedule." Joint Statement 1–2 (footnote omitted). Thus, as indicated by the parties, "[t]he prehearing (August 2, 2021) and hearing (August 2-6, 2021) schedules remain unchanged." *Id.* at 1. Furthermore, under the current schedule, the initial determination would have a target date of November 5, 2021, with a March 7, 2022, target date for the ITC to complete the investigation. *Id.* at 3.

Based on the current schedule, the ITC investigation will be complete by March 7, 2022, over three months before the expected date of a Final Written Decision. *See* Ex. 2002, 3. Accordingly, taking into account both the district court and ITC investigation, we determine this factor weighs in favor of exercising discretion to deny institution.

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

Patent Owner argues that the ITC investigation is already at an advanced stage, and that significant time and resources have been invested by the parties. Prelim. Resp. 13–17. Patent Owner asserts that "it is expected that by June 30, 2021, the ALJ will have issued a claim

construction ruling for the '140 patent and may have issued summary determination decisions regarding the '140 patent." *Id.* at 16–17.

In its Reply to the Preliminary Response, Petitioner calls into question whether the scheduled dates will remain unchanged after ALJ Lord's retirement. *See* Prelim. Reply 8.

Considering the status of these proceedings, we find that by the time we issue this Decision on institution, the parties will have invested some resources in the ITC investigation. In the Joint Statement, the parties indicated that *Markman* briefing was completed on April 1, 2021. Joint Statement 1. The parties also indicated that "[t]he *Markman* hearing that was scheduled for April 1, 2021 was canceled, "and that "[n]o *Markman* decision has been issued." *Id.* The parties further confirmed that fact discovery and expert discovery were completed on May 12, 2021, and June 11, 2021, respectively. *Id.*

Still, *Fintiv* directs us to consider not only the investment of the parties and the court, but also whether "the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted." *Fintiv* Order at 11. In cases where the petitioner acted expeditiously, "this fact has weighed against exercising the authority to deny institution under *NHK*." *Id.*

Here, Patent Owner filed the District Court litigation and ITC investigation on October 1, 2020. Ex. 2015; Ex. 1017, 1. On November 2, 2020, the ITC instituted the ITC investigation. *See* Ex. 1017, 2. Just over a month after the ITC's institution, Petitioner filed this Petition on December 11, 2020. Paper 3, 1 ("The petition for *inter partes* review, filed in the above proceeding has been accorded the filing date of December 11, 2020."). We credit Petitioner's diligence in filing the Petition

in this case just over two months of the filing of the District Court litigation and ITC complaint, and just over one month after the institution of the ITC investigation, thus mitigating the investments made in the ITC investigation. Prelim. Reply 3–4.

Moreover, on March 18, 2021, less than ten days after the ITC ALJ denied the motion to stay, Petitioner notified Patent Owner that it would provide the following stipulation in the ITC investigation:

> On [Date], the Patent Trial and Appeal Board instituted [IPR] of U.S. Patent No. 10,474,140 (the "'140 Patent"). Respondents hereby stipulate that, from and after the date of this stipulation, they will not pursue a defense in this Investigation that the '140 Patent is invalid based on grounds that were raised or reasonably could have been raised in Respondents' IPR petition for the '140 Patent.

Prelim. Reply 3–4 (alteration in original); *see generally* Ex. 2017. Patent Owner does not dispute the timing or timeliness of Petitioner's stipulation. *See* Prelim. Resp. 19–20; Prelim. Sur-Reply 2–5.

On the whole, the evidence here shows that Petitioner acted diligently not only in filing its Petition, but also in providing a stipulation after the ITC ALJ denied the motion to stay. Under the circumstances of this case, we find that Petitioner's expeditious and diligent filing of the Petition and notification of a stipulation mitigates the efforts completed by the parties in the ITC investigation. Accordingly, we determine this factor weighs against exercising discretion to deny institution.

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

According to Patent Owner, "Petitioner does not dispute that there is a substantial overlap between invalidity arguments raised in its petition and at the ITC." Prelim. Resp. 17. Patent Owner contends that "Petitioner's

February 16, 2021 invalidity contentions in the ITC investigation raise the ***exact same grounds*** for invalidity as the petition here." *Id.* at 18 (citing Ex. 2012, Apps. D-1, D-2, D-3, D-4).

Based on our precedential decision in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A), Petitioner indicates that, if *inter partes* review of the '140 is instituted, Petitioner will execute a *Sotera*-type stipulation in the ITC investigation, i.e., "Petitioner will forego pursuit of any grounds that Petitioner raised or reasonably could have raised in the IPR before the ITC." Prelim. Reply. 6. Petitioner contends that this stipulation mitigates any concerns of duplicative efforts between the ITC investigation and this proceeding. *Id.* at 8. Specifically, Petitioner's stipulation provides that

> On [Date], the Patent Trial and Appeal Board instituted *inter partes* review ("IPR") of U.S. Patent No. 10,474,140 (the "'140 Patent"). Respondents hereby stipulate that, from and after the date of this stipulation, they will not pursue a defense in this Investigation that the '140 Patent is invalid based on grounds that were raised or reasonably could have been raised in Respondents' IPR petition for the '140 Patent.

Ex. 2017, 1.

In its Sur-Reply, Patent Owner contends that "even though *Sotera*-style stipulations can streamline issues in overlapping proceedings, the efficiencies recognized by the Board in *Sotera* are significantly limited here in view of the advanced stage of the ITC proceeding now and by the date of institution." Prelim. Sur-Reply 3. Patent Owner argues that there is a high risk of overlapping issues between the ITC investigation and this proceeding because the parties have already invested a substantial amount of time in claim construction and validity issues. *Id.* Patent Owner adds that there is a significant risk of overlapping decisions between the Board and the

ITC with respect to claim construction specifically, as Petitioner proposes constructions for certain terms here that are allegedly inconsistent with the constructions that the parties agreed to in the ITC investigation. *Id.* at 3–5 (citing Pet. 21–23; Ex. 2019).

To start, we are not persuaded that the efficiencies of Petitioner's stipulation are significantly limited by the advanced stage of the ITC investigation as Patent Owner argues. *See* Prelim. Sur-Reply 3. The hearing in the ITC investigation is scheduled for August 2–6, 2021, and according to the ITC Procedural Schedule, the parties have several pre-hearing deadlines, including the filing of pre-hearing statements and briefs by July 14, 2021. Ex. 2002, 2. That being the case, much work remains, and Petitioner's stipulation would serve to streamline and reduce the issues that remain for the ITC investigation post institution of an *inter partes* review.

We are also unpersuaded that the differences between Petitioner's proposed claim constructions for this proceeding and the agreed-upon constructions in the ITC investigation override the efficiencies of Petitioner's stipulation. *See* Prelim. Sur-Reply 3–5. Although there are differences, Petitioner's proposed claim constructions for this proceeding and the agreed-upon constructions in the ITC investigation do not differ materially. *See id.* at 4.

Considering the particular circumstances here and that Petitioner has agreed to be bound by a stipulation that is substantively the same as the stipulation addressed in *Sotera*, we follow the *Sotera* precedent in finding that this factor weighs strongly against discretionary denial. *See Sotera*, IPR2020-01019, Paper 12; Ex. 2017. Accordingly, we consider the stipulation to address any concerns about overlap between the issues presented in the two fora.

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

Petitioner and Patent Owner acknowledge the parties are the same in the *inter partes* review and in the ITC proceeding. Prelim. Resp. 20; Pet. 74. Thus, this factor weighs in favor of the exercise of discretion to deny institution. *Fintiv* Order at 13–14*; see also Sand Revolution II, LLC v. Cont'l Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 at 12–13 (informative) ("Although it is far from an unusual circumstance that a petitioner in *inter partes* review and a defendant in a parallel district court proceeding are the same, . . . this factor weights in favor of discretionary denial.").

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

Based on our review of the arguments and evidence on the merits, we determine that the merits in this case do not weigh so strongly in either direction that it would affect our analysis under *Fintiv*. As discussed below, we simply determine that Petitioner has demonstrated a reasonable likelihood that it would prevail at trial.

Accordingly, this factor is neutral in exercising discretion.

H. Balancing the Factors

Because the analysis is fact-driven, no single factor is determinative of whether we exercise our discretion and deny institution under 35 U.S.C. § 314(a). We recognize that the parties and the ITC have invested time and resources in the ITC investigation. The ITC investigation is scheduled for a target date for completion of the investigation by March 7, 2022, at least three months before a final written decision would occur in this proceeding. Nevertheless, in view of Petitioner's diligence in filing the Petition and Petitioner's stipulation not to pursue grounds at the ITC that Petitioner raised

or reasonably could have raised in this *inter partes* review, and after weighing the *Fintiv* factors together, we decline to exercise discretion to deny the Petition under 35 U.S.C. § 314.

III. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner contends a person of ordinary skill in the art would have had "at least a bachelor's degree in mechanical engineering, and at least two to three years of experience working in the field of the design of robotic vehicles for material handling systems." Pet. 15 (citing Ex. 1015 ¶ 71). At this stage of the proceeding, Patent Owner does not dispute Petitioner's proposed level of skill in the art or propose a different level of ordinary skill in the art. *See* Prelim. Resp. 22 ("Patent Owner elects not to address the merits at this preliminary juncture of the proceeding, preferring to address (indeed, having already largely addressed) the same invalidity issues presented here in a single forum: the ITC.").

On the current record, we find Petitioner's proposal is consistent with the level of skill reflected in the '140 patent and the asserted references. For example, the '140 patent and Lindbo are each directed to robotic devices for handling storage containers of a storage system. Ex. 1001, 1:6–9, Figs. 1, 5–6; Ex. 1003, 1:5–7, Figs. 1–5. Accordingly, for purposes of this decision on institution, we adopt Petitioner's proffered level of ordinary skill in the art.

B. Claim Construction

We interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as

understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.* Furthermore, at this stage in the proceeding, we expressly construe the claims to the extent necessary to determine whether to institute *inter partes* review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e 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))).

Petitioner proposes constructions for the following claim terms of independent claim 1: "vehicle," "rolling means," "driving means," "rolling set specific driving force," "motor control electronics," and "arranged within the volume between two of the wheels." Pet. 16–24. Petitioner also proposes a construction for the following claim term of claim 14: "wherein the stator field windings are following the outer periphery of the wheels." *Id.* at 24. Patent Owner does not propose any claim construction. *See* Prelim. Resp. 22 ("Patent Owner elects not to address the merits at this preliminary juncture of the proceeding, preferring to address (indeed, having already largely addressed) the same invalidity issues presented here in a single forum: the ITC."). On the current record, we determine that no claim term requires an express construction for the purpose of determining whether to institute *inter partes* review.

C. Anticipation or Obviousness Based on Lindbo

Petitioner challenges claims 1, 11, and 15 under 35 U.S.C. § 102 or § 103, contending the Lindbo anticipates or otherwise makes obvious the claimed subject matter. Pet. 25–41. At this stage of the proceeding, Patent Owner does not dispute Petitioner's contentions. *See* Prelim. Resp. 22 ("Patent Owner elects not to address the merits at this preliminary juncture

of the proceeding, preferring to address (indeed, having already largely addressed) the same invalidity issues presented here in a single forum: the ITC."). We begin our analysis of this asserted ground of unpatentability with an overview of Lindbo, and then discuss Petitioner's contentions for each of the claims.

1. *Lindbo (Ex. 1003)*

Lindbo relates to robotic devices for handling storage containers in a storage system comprising a grid of stacked units. Ex. 1003, 1:5–7. Lindbo's robotic device is depicted in Figure 5, reproduced below.

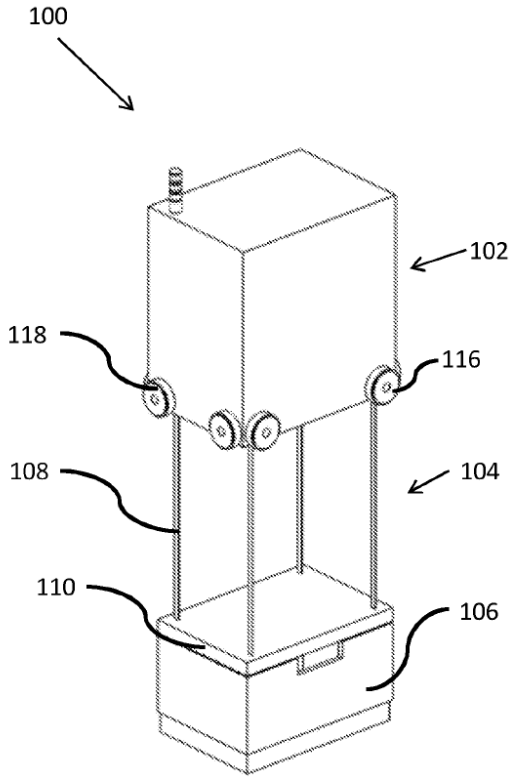


Figure 5

Figure 5 is a schematic perspective view of a load handling device. *Id.* at 10:13. Load handling device 100 comprises vehicle 102 equipped a winch or crane mechanism 104 to lift storage container or bin 106 from a

stack of containers in the storage system into recess 120. *Id.* at 11:7–10, 23–24. Vehicle 102 also includes two sets of wheels 116, 118, which run on rails on the top of the frame of the storage system to enable movement of vehicle 102 in the X and Y directions, respectively, along the rails. *Id.* at 11:16–18, Fig. 2.

In one embodiment, each wheel has a motor integrated within a hub of the wheel. Ex. 1003, 14:27–28. This embodiment is shown in Figure 17, reproduced below.

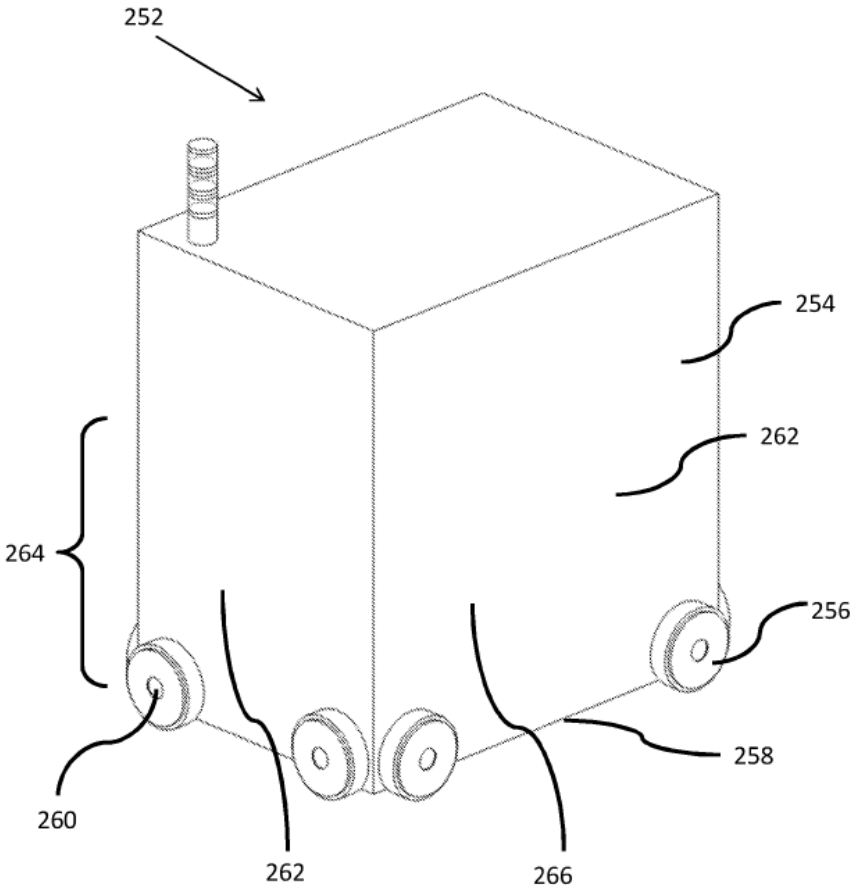


Figure 17

Figure 17 is a perspective view of a load handling device according to an embodiment of the invention. *Id.* at 11:1. In this embodiment, load

handling device 252 includes a plurality of wheels 256 mounted near lower edge 258 of housing 254. *Id.* at 14:25–25. Wheels 256 are motorized hub wheels, with each wheel 256 having a motor integrated within hub 260 to drive the respective wheel directly, thereby eliminating any need for drive belts connected between the wheels and drive motors. *Id.* at 14:26–29. The motors are powered by batteries located within side walls 262 of lower part 264 of housing 254, adjacent to container-receiving space 266 of load handling device 252. *Id.* at 14:31–32. "Locating the batteries low down in this way has the advantageous effect of lowering the centre of gravity of the device 252, thereby increasing its stability and allowing higher acceleration and deceleration." *Id.* at 14:32–34.

2. *Independent Claim 1*

a. Limitations 1(preamble) and 1(a)–1(f)

For the preamble, i.e., limitation 1(preamble), which recites a remotely operated vehicle for picking up storage bins, Petitioner argues Lindbo relates to robotic devices. Pet. 27 (citing Ex. 1003, 1:6). Petitioner also argues Lindbo's load handling device is preferably a robot vehicle and includes controllers and communications devices that allow the robot to be remotely operated under the control of a central computer. *Id.* (citing Ex. 1003, 5:5, 8:21, 11:33.). Regarding the vehicle lifting device recited in limitation 1(a), Petitioner relies on Lindbo's crane mechanism 104 shown in Figure 5. Pet. 29–30 (citing Ex. 1003, 7:24–25, 8:5–7, 11:6–11; Ex. 1015 ¶ 102).

Regarding limitation 1(b), which recites a first vehicle rolling means comprising first and second rolling sets, limitation 1(c), reciting a second vehicle rolling means comprising first and second rolling sets, and limitation 1(d), reciting each rolling set comprises at least two wheels,

Petitioner argues that Lindbo's vehicle 32 has first set of wheels 34, which consists of a pair of wheels on the front of vehicle 32 and a pair of wheels on the back of vehicle 32, and second set of wheels 36 consisting of a pair of wheels on each side of vehicle 32, and that Lindbo's Figures 5 and 10 show vehicle 102 fitted with two sets of wheels 116, 118 to enable movement of vehicle 102 in the X and Y directions, respectively. Pet. 30–32 (citing Ex. 1003, 3:27–31, 11:16–18, 12:12–16; Ex. 1015 ¶¶ 105–106, 108, 111). In support of its argument, Petitioner provides an annotated version of Lindbo's Figure 10, reproduced below. *Id.* at 31.

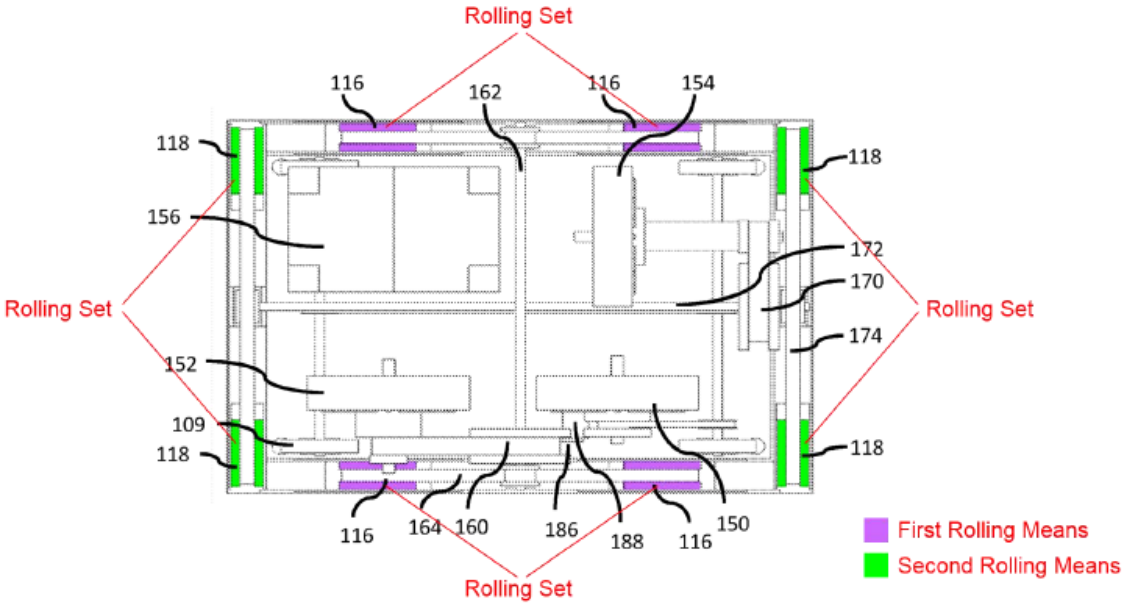


Figure 10

Petitioner annotates Lindbo's Figure 10 to identify wheels 116 in purple as the first rolling means and wheels 118 in green as the second rolling means. Petitioner further annotates Lindbo's Figure 10 to identify each of wheels 116 on the top, wheels 116 on the bottom, wheels 118 on the left, and wheels 118 on the right as a rolling set.

For the first and second driving means recited in limitations 1(e) and 1(f), respectively, Petitioner contends that Lindbo's wheels are motorized hub wheels, with each wheel 256 having a motor integrated within hub 260 of the wheel, and that, to provide rolling set specific drive force, Lindbo's vehicle uses four drive belts, with each belt specific to a particular set of two wheels on one side of the vehicle, or eight separate in-wheel hub motors. Pet. 33–35 (citing Ex. 1003, 7:3–5, 7–8, 11:17–18, 14:26–29; Ex. 1015 ¶¶ 114–117, 119). In support of its contention, Petitioner provides annotated versions of Lindbo's Figures 11 and 12, reproduced below. *Id.* at 34.

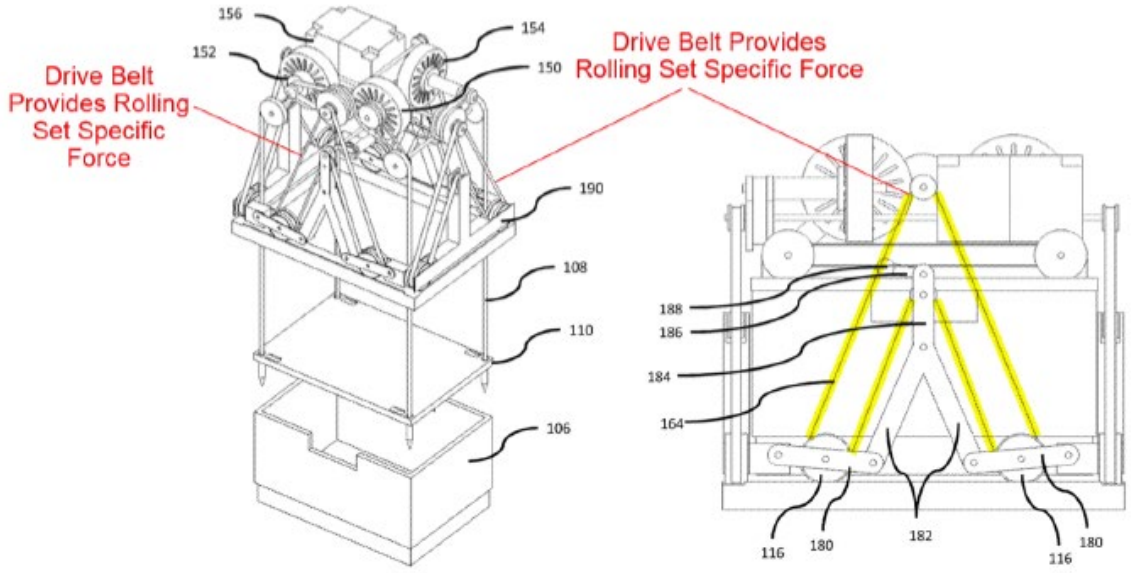


Figure 11 Figure 12

Petitioner annotates Lindbo's Figure 11 to identify two drive belts providing rolling set specific force. Petitioner annotates Lindbo's Figure 12 to identify a drive belt, in yellow, that is connected to a set of wheels 116 on one side of the vehicle and that provides rolling set specific force.

Based on the preliminary record, Petitioner's arguments and Dr. Pfeifer's testimony regarding limitations 1(preamble) and 1(a)–1(f) are

consistent and supported by Lindbo's disclosure. *See* Pet. 30–32 (citing Ex. 1003, 3:27–31, 11:16–18, 12:12–16; Ex. 1015 ¶¶ 105–106, 108, 111). For example, as shown in Lindbo's Figures 10 and 11, the load handling device includes motor 150 to raise and lower winch cables 108 and move storage bin 106 to and from a cavity within the load handling device, X-drive motor 152 to drive wheels 116, which include first and second sets of two wheels arranged at opposite facing side walls of the load handling device, and Y-drive motor 154 to drive wheels 118, which include first and second sets of two wheels arranged at opposite facing side walls of the load handling device. Ex. 1003, 12:12–16, Figs. 10–11. Figures 10–12 show X drive belt 164 for transferring drive from drive shaft 162 of X-drive motor 152 to wheels 116, and also shows Y drive belt 174 for transferring drive from drive shaft 172 of Y-drive motor 154 to wheels 118. *Id.* at 12:20–26, Figs. 10–12. Thus, for purposes of institution, Petitioner has made a sufficient showing that Lindbo discloses these limitations.

b. Limitation 1(g)

For limitation 1(g), which recites motor control electronics arranged within the volume between two of the wheels of each rolling set, Petitioner contends that Lindbo discloses or renders obvious the recited subject matter of this limitation. Pet. 36–37. In regard to Lindbo's disclosure of this limitation, Petitioner argues that Lindbo's batteries supply power to the wheel motors and that they are located within side walls 262 of lower part 264 of housing 254, which includes the volume between the wheels of the rolling sets. *Id*. at 36 (citing Ex. 1003, 14:31–32; Ex. 1015 ¶ 122).

Petitioner relies on Lindbo's description of the batteries' location according to the embodiment shown in Figure 17, which depicts motorized hub wheels. Ex. 1003, 14:24–34. In Figure 17, wheels 256 appear outside

of side walls 262. Given Lindbo discloses that this embodiment includes batteries located within side walls, the batteries do not appear to be located within the volume between two of the wheels, which are located outside of the housing.

Moreover, Petitioner relies on the embodiment of Lindbo's invention shown in Figure 17, which has wheels outside of the housing, for a disclosure of the motor control electronics recited in limitation 1(g) (Pet. 36), but Petitioner relies on a different embodiment, which is shown in Figures 11 and 12, and has wheels inside the housing, for a disclosure of the first and second drive means recited in limitations 1(e) and 1(f), respectively (*id.* at 33). Petitioner has not explained how Lindbo discloses the combinability of the features of different embodiments such that a person of ordinary skill in the art would envisage the claimed invention. *See Net MoneyIn, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) ("Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements arranged as in the claim." (internal quotations omitted)); *Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1069 (Fed. Cir. 2017) ("[A]nticipation is not proven by multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention." (internal quotations omitted)); *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1350 (Fed. Cir. 2019) ("[W]hen a reference discloses elements in different locations in the disclosure, the relevant question is whether the reference is sufficiently clear in disclosing the combinability of those elements such that a skilled artisan would at once envisage the claimed combination." (internal quotations omitted)).

Alternatively, Petitioner argues that locating Lindbo's batteries in the volume between two of the wheels of each rolling set would have been obvious. Pet. 36–37. Petitioner points to Lindbo's disclosure that placing the batteries low down, i.e., within side walls 262 of lower part 264 of housing 254, "has the advantageous effect of lowering the centre of gravity of the device 252, thereby increasing its stability and allowing higher acceleration and deceleration" and argues that a person of ordinary skill in the art "would be motivated by this disclosure to place the motor control electronics entirely in the volume between two wheels, knowing that it would reduce the size of the robot and lower its center of gravity." *Id.* at 36 (citing Ex. 1003, 14:31–34; Ex. 1015 ¶ 122). Lindbo does suggest placing the batteries within a lower part of the housing, but Petitioner has not explained persuasively how this suggestion in general would have motivated a person of ordinary skill in the art to place the batteries in a *specific area* within the lower part of the housing, much less *within the volume* between two of the wheels of a rolling set.

Petitioner also argues that placing the batteries within the volume between two of the wheels would have been an obvious design choice because "[t]here are only a limited number of choices—within the volume between the wheels, outside that volume on the side of the robot, or in the plane above the cavity." Pet. 36 (citing Ex. 1015 ¶ 123). According to Petitioner, "[e]ach [choice] is obvious to try." *Id.* Nonetheless, neither Petitioner, nor Dr. Pfeifer, point to any evidence to support the assertion that the specific location recited in limitation 1(g), i.e., the volume between two wheels of a rolling set, was a known choice for locating batteries. Rather, Lindbo simply discloses that the batteries are located within the lower part

of the housing. Ex. 1003, 14:31–32 (disclosing "batteries located within side walls 262 of a lower part 264 of the housing 254").

Petitioner further argues that "the claimed location is the most likely to be chosen because it would necessarily reduce the size of the robot and reduce the amount of cabling required to connect motor control electronics to the hub motors." Pet. 37. Petitioner's support for this argument is an alleged admission by the applicant for the '140 patent during prosecution that a person of ordinary skill in the art would appreciate that choosing the volume between the wheels would result in a shorter length of cabling and a more compact design of the vehicle. *Id.* (citing Ex. 1014, 6, 8; Ex. 1015 ¶¶ 122–123). On this record, we do not see how this is an admission by Patent Owner that this knowledge was part of the prior art. Nor has Petitioner shown clearly that this was indeed an understanding that a person of ordinary skill in the art would have had in analyzing Lindbo's disclosure, without the benefit of the '140 patent. Rather, at this juncture, it appears that taking statements concerning what the *patent-at-issue* would teach to a person of ordinary skill in the art is an exercise in hindsight. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983) ("To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.").

In view of the foregoing, during trial, the parties should address Lindbo's disclosure of the motor control electronics recited in limitation 1(g), as well as Lindbo's disclosure of all elements of the claim arranged as recited. The parties should also address the rationale proffered

in the Petition for locating Lindbo's batteries in the volume between two of the wheels, in accordance with limitation 1(g).

3. *Claim 11 and Independent Claim 15*

Claim 11 depends from independent claim 1 (Ex. 1001, 8:1–11), and independent claim 15 incorporates all of the limitations of independent claim 1 *(id.* at 8:22–29). Our analysis for independent claim 1 above in section III.C.2 applies to claims 11 and independent claim 15.

D. Obviousness Based on Lindbo and Makinen

Petitioner challenges claims 1, 11, and 15 under 35 U.S.C. § 103, contending the claimed subject matter is obvious over Lindbo and Makinen. Pet. 41–47. At this stage of the proceeding, Patent Owner does not dispute Petitioner's contentions. *See* Prelim. Resp. 22 ("Patent Owner elects not to address the merits at this preliminary juncture of the proceeding, preferring to address (indeed, having already largely addressed) the same invalidity issues presented here in a single forum: the ITC."). As we discuss Lindbo above in section III.C.1, we begin our analysis of this asserted ground of unpatentability with an overview of Makinen, and then turn to Petitioner's contentions for each of the claims.

1. *Makinen (Ex. 1004)*

Makinen relates to a working machine such as a tractor. Ex. 1004, 1:1–11. Makinen's working machine is depicted in Figure 2, reproduced below.

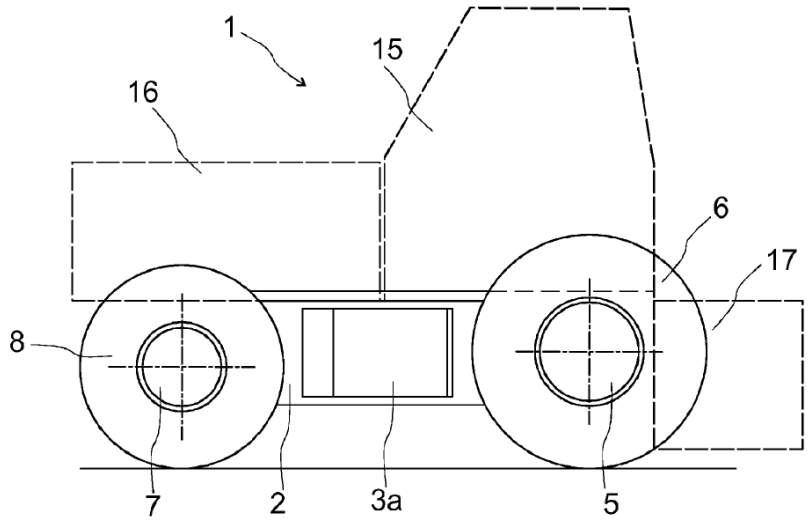


Fig.2

Figure 2 shows a working machine, as well as its parts in a side view. *Id.* at 6:24–25. The machine includes "one wheel 6 and an electric hub motor 5 belonging to the same and driving the wheel 6." *Id.* at 6:42–44. The machine also includes "one wheel 8 and an electric hub motor 7 belonging to the same and driving the wheel 8." *Id.* at 6:54–56. At least one device that produces electric energy is placed in unit 3a between wheels 6 and 8. *Id.* at 8:53–56. Unit 3a may include a battery or a capacitor storing electric energy, and one or more electric control units or control devices can be placed in unit 3a. *Id.* at 9:15–17, 51–57. Another device producing electric energy can be placed in unit 3b, which is located opposite unit 3a and between wheels 6 and 8. *Id.* at 9:3–7.

2. *Independent Claim 1*

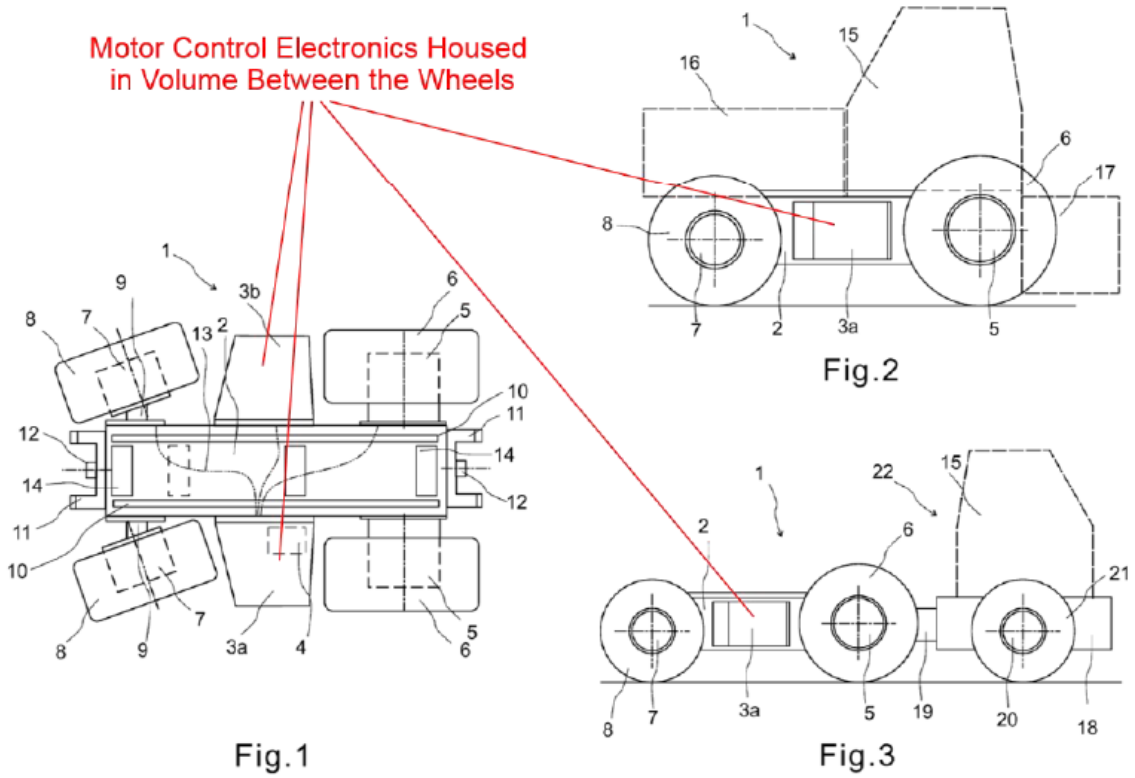
a. Limitations 1(preamble) and 1(a)–(f)

For limitations 1(preamble) and 1(a)–1(f), Petitioner relies on its arguments for these limitations with respect to the asserted ground based on Lindbo. Pet. 44. For the reasons above in section III.C.2.a, on this record

and for purposes of institution, Petitioner has made a sufficient showing that Lindbo discloses these limitations.

b. Limitation 1(g)

For limitation 1(g), which recites the motor control electronics arranged within the volume between two of the wheels of each rolling set, Petitioner relies on Makinen's unit 3a and similar unit 3b. Pet. 44–47. According to Petitioner, units 3a and 3b both include components that supply electricity to the motors and transmit control signals to control them. *Id.* at 44–45 (citing Ex. 1004, 3:32–35, 3:49–4:10, 8:53–9:4, 9:14–18, 53–57; Ex. 1015 ¶ 149). Petitioner also asserts units 3a and 3b are placed on the side of frame 2 between wheels 6 and 8 such that units 3a and 3b are within the volume between two of the wheels of each rolling set. *Id.* at 45–46 (citing Ex. 1004, 8:54–56, claim 3, Figs. 1–3; Ex. 1015 ¶¶ 150–151, 153). In support of its argument, Petitioner provides annotated versions of Makinen's Figures 1–3, reproduced below. *Id.* at 46.



Petitioner annotates Makinen's Figures 1–3 to show units 3a and 3b in the volume between the wheels.

Petitioner argues that a person of ordinary skill in the art would have combined the teachings of Lindbo and Makinen with a reasonable expectation of success. Pet. 43 (citing Ex. 1015 ¶ 143). Petitioner maintains that both Lindbo and Makinen relate to robotic vehicles and have the goal of reducing the size of the vehicle. *Id.* (citing Ex. 1003, 5:26–29; Ex. 1004, 1:47–49, 2:16; Ex. 1015 ¶ 143). According to Petitioner, Lindbo reduces the vehicle size by using in-hub motors to eliminate the need for a power transmission chain, and Makinen similarly uses in-hub motors to reduce vehicle size by eliminating the mechanical power transmission system. *Id.* (citing Ex. 1003, 14:26–29; Ex. 1004, 1:47–49, 2:16). Petitioner also argues that "[f]urther size reduction is achieved in [Makinen] by putting bulky electrical storage and control units required by the in-hub motors within the

volume between the wheels," and that "[s]uccess in applying this disclosure from [Makinen] to the wheel hub motors of [Lindbo] was likely, because the space is otherwise unused." *Id.* (citing Ex. 1004, 9:52–57, Figs. 1–2; Ex. 1015 ¶ 144). Petitioner further argues that Makinen teaches placing units 3a and 3b between wheels 6 and 8 to attain a low structure and to reduce any attendant cabling. *Id.* at 45 (citing Ex. 1004, 3:10–16, 8:54–56, Figs. 1–3; Ex. 1015 ¶ 150).

At this juncture of the proceeding, we are persuaded that Petitioner's arguments and proffered testimony are consistent with Makinen's disclosure. In particular, Makinen teaches that units 3a and 3b are placed between wheels 6–8 and enclose components that produce electric energy. Ex. 1004, 8:53–56, 9:3–7, Figs. 1–3. Makinen also teaches that placing unit 3a between wheels 6 and 8 achieves a low structure. *Id.* at 8:53–56. On this record and for purposes of institution, Petitioner has made a sufficient showing that Makinen teaches the motor control electronics recited in limitation 1(g). Petitioner also has made a sufficient showing at this stage of the proceeding that a person of ordinary skill in the art would have combined the teachings of Lindbo and Makinen in the manner set forth in the Petition.

c. Conclusion for Independent Claim 1

At this stage of the proceeding and for purposes of institution, Petitioner has sufficiently shown that the subject matter of independent claim 1 would have been obvious in view of Lindbo and Makinen. Petitioner has demonstrated a reasonable likelihood that it would prevail in demonstrating independent claim 1 is unpatentable under 35 U.S.C. § 103 based on the combination of Lindbo and Makinen.

3. *Claim 11 and Independent Claim 15*

Petitioner identifies each limitation of claim 11 and independent claim 15 in Lindbo. Pet. 38–41; *see also id.* at 47 (referencing the arguments for these claims with respect to the asserted ground based on Lindbo). At this juncture of the proceeding, we are persuaded that Petitioner's arguments and proffered testimony are consistent with Lindbo's disclosure. For purposes of institution, Petitioner has made a sufficient showing that a person of ordinary skill in the art would have combined the teachings of Lindbo and Makinen in the manner set forth in the Petition, and that each limitation of claim 11 and independent claim 15 is found in the proposed combination. Petitioner has shown a reasonable likelihood that it would prevail in demonstrating claim 11 and independent claim 15 are unpatentable under 35 U.S.C. § 103 based on Lindbo and Makinen.

E. Obviousness Based on Lindbo, Makinen, and Christensen

Petitioner challenges claims 1–4 and 11–15 under 35 U.S.C. § 103, contending the claimed subject matter is obvious over Lindbo, Makinen, and Christensen. Pet. 47–61. At this stage of the proceeding, Patent Owner does not dispute Petitioner's contentions. *See* Prelim. Resp. 22 ("Patent Owner elects not to address the merits at this preliminary juncture of the proceeding, preferring to address (indeed, having already largely addressed) the same invalidity issues presented here in a single forum: the ITC."). As we discuss Lindbo and Makinen above in sections III.C.1 and III.D.1, respectively, we begin our analysis of this asserted ground of unpatentability with an overview of Christensen, and then discuss Petitioner's contentions for each of the claims.

1. *Christensen (Ex. 1005)*

Christensen relates to electric motors formatted to fit inside the wheel of a vehicle. Ex. 1005, 1. The in-hub motors "are direct-drive motors with no gearbox." *Id.* In one embodiment, the motor magnets are bonded to the rotor, and the rotor sits outside the stator and rotates around it. *Id.* at 3. In this embodiment, the rotor is "formed as the tire rim and the tire will directly mount to the motor rotor." *Id.*

2. *Claims 1–4 and 11–15*

Petitioner argues each limitation of these claims is found in Lindbo, Makinen, and Christensen. Pet. 50–61. Petitioner also argues that a person of ordinary skill in the art would have combined the teachings of Lindbo, Makinen, and Christensen in the manner set forth in the Petition. *Id.* at 47–50.

If Petitioner makes a sufficient showing for institution as to any challenged claim, we are compelled to institute an *inter partes* review on all challenged claims with respect to all grounds asserted in the Petition. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); TPG 64 ("The Board will not institute on fewer than all claims or all challenges in a petition."); *see also* 35 U.S.C. § 314(a) (requiring a showing of "a reasonable likelihood that the petitioner would prevail with respect to *at least 1 of the claims challenged*") (emphasis added). As discussed above in sections III.D.2–3, we determine that Petitioner has shown a reasonable likelihood of proving that claims 1, 11, and 15 are unpatentable under 35 U.S.C. § 103 over Lindbo and Makinen. As a result, institution of an *inter partes* review is warranted as to all challenged claims on all grounds asserted in the Petition, and the parties will have additional opportunities to address this asserted ground after institution.

F. Obviousness Based on Lindbo, Makinen, and Farag

Petitioner challenges claims 1–4 and 11–15 under 35 U.S.C. § 103, contending the claimed subject matter is obvious over Lindbo, Makinen, and Farag. Pet. 62–69. At this stage of the proceeding, Patent Owner does not dispute Petitioner's contentions. *See* Prelim. Resp. 22 ("Patent Owner elects not to address the merits at this preliminary juncture of the proceeding, preferring to address (indeed, having already largely addressed) the same invalidity issues presented here in a single forum: the ITC."). Given that we previously discuss Lindbo and Makinen above in sections III.C.1 and III.D.1, respectively, we begin our analysis of this asserted ground of unpatentability with an overview of Farag, and then discuss Petitioner's contentions for each of the claims.

1. *Farag (Ex. 1006)*

Farag relates to a "full mechanical, magnetic and electrical design of an in-wheel brushless DC outer rotor (hub) motor." Ex. 1006, 1. "As all motors, the rotary motion is developed via the magnetic interaction of the magnetic fields in the rotor (rotating part) and the stator (stationary part)." *Id.* at 2. Farag discloses that its "motor design could be used on any electric locomotive vehicle." *Id.*

2. *Claims 1–4 and 11–15*

Petitioner argues that each limitation of these claims is found in Lindbo, Makinen, and Farag. Pet. 64–70. Petitioner also argues that a person of ordinary skill in the art would have combined the teachings of Lindbo, Makinen, and Farag in the manner set forth in the Petition. *Id.* at 62–64.

If Petitioner makes a sufficient showing for institution as to any challenged claim, we are compelled to institute an *inter partes* review on all

challenged claims with respect to all grounds asserted in the Petition. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); TPG 64; *see also* 35 U.S.C. § 314(a). As discussed above in sections III.D.2–3, we determine that Petitioner has shown a reasonable likelihood of proving that claims 1, 11, and 15 are unpatentable under 35 U.S.C. § 103 over Lindbo and Makinen. As a result, institution of an *inter partes* review is warranted as to all challenged claims on all grounds asserted in the Petition, and the parties will have additional opportunities to address this asserted ground after institution.

IV. APPOINTMENTS CLAUSE

Patent Owner contends that "Patent Owner objects to the institution of a proceeding which under current laws and regulations, absent settlement, will conclude at the Office with a final written decision entered by a panel of administrative patent judges who have not been nominated by the President and confirmed by the Senate in violation of the Appointments Clause of the Constitution." Prelim. Resp. 25. We do not reach Patent Owner's Appointments Clause challenge because the Supreme Court resolved the issue in *United States v. Arthrex, Inc.*, Nos. 19-1434, -1452, 1458, 2021 WL 2519433, at *12, *21 (June 21, 2021).

V. CONCLUSION

Based on the evidence before us, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in its assertions that the challenged claims of the '140 patent are unpatentable over the asserted prior art. Accordingly, we institute *inter partes* review on all of the grounds raised in the Petition. *See SAS Inst.*, 138 S. Ct. at 1359–60 (holding that a decision to institute under 35 U.S.C. § 314 may not institute on fewer than all claims challenged in the petition); *PGS Geophysical AS v. Iancu*, 891

F.3d 1354, 1360 (Fed. Cir. 2018) (stating the decision whether to institute *inter partes* review requires "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition").

Our determination in this Decision is not a final determination on either the patentability of any challenged claims or the construction of any claim term and, thus, leaves undecided any remaining fact issues necessary to determine whether sufficient evidence supports Petitioner's contentions by a preponderance of the evidence in the final written decision. *See Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (noting that "there is a significant difference between a petitioner's burden to establish a 'reasonable likelihood of success' at institution, and actually proving invalidity by a preponderance of the evidence at trial") (quoting 35 U.S.C. § 314(a) and comparing *id.* § 316(e)).

VI. ORDER

Upon consideration of the record before us, it is:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4 and 11–15 of U.S. Patent No. 10,474,140 B2 is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of U.S. Patent No. 10,474,140 B2 shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

FOR PETITIONER:

Stephen J. Elliott
Raffaele A. DeMarco
SULLIVAN & CROMWELL LLP
elliotts@sullcrom.com
demarcor@sullcrom.com

FOR PATENT OWNER:

W. Todd Baker
Joseph A. Loy
Arun P. Swain
KIRKLAND & ELLIS LLP
todd.baker@kirkland.com
jloy@kirkland.com
arun.swain@kirkland.com