

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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Kubota North America Corporation,  
Petitioner

v.

Vermeer Manufacturing Company,  
Patent Owner

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IPR2025-00171 (U.S. Patent No. 10,202,266)

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**PETITIONER'S REPLY**

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Vermeer (“PO”) touts that they have invented and patented a vertical-lift compact utility loader (CUL) and devotes large portions of their Response (Paper 21/22<sup>1</sup>, “POR”) to discussing long-felt need, commercial success, and industry praise for its commercial vertical-lift CULs relative to conventional radial-lift CULs. However, it is undisputed that PO was not the first to invent a vertical-lift CUL—KR996 is a prior art patent that clearly illustrates and describes just such a CUL. Faced with anticipatory and/or obviousness challenges based on KR996, PO merely recycles its same claim construction arguments directed to “mainframe,” whether the term appears in the challenged claim or not, which were rejected by the Board. PO also argues its claims are patentable because they include one or more commonplace features, such as tracks instead of wheels, low pivot points for the linkages, or a frame that includes welds, that KR996 does not expressly describe. Yet, as demonstrated in the Petition, each of these features was well known in the art and represents an obvious design choice that would bring predictable benefits to KR996’s CUL.

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<sup>1</sup> Further citations are to POR, Paper 22; Paper 21 is misnumbered.

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**I. ARGUMENTS RAISED THROUGHOUT THIS REPLY**

**A. PO's bodily incorporation and teaching away arguments are neither legally correct nor factually supported.**

Rather than consider how POSITA would approach the Petition's prior art combinations, PO and their expert, Dr. Fleming, rigidly assume every component illustrated in the prior art figures must remain exactly as depicted in that patent's not-to-scale figures. Fleming's generated CAD drawings, which are fundamentally flawed. First, the drawings are based on KR996's figures, which are not drawn to scale. EX1043, 83-84 (Fleming describing "one of [his] engineers" "sketch[ing] over" images of the prior art to create an "overlay"). Building on this faulty premise, POR and Fleming compound their errors by overlaying a reproduced portion of Bares' figure onto their KR996 CAD drawing, without contemplating any engineering judgement. Fleming admitted that in doing so he was employing bodily incorporation.<sup>2</sup> PO uses these drawings to argue the obviousness combinations do

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<sup>2</sup> EX1043, 97-98 (responding to a query on "bodily incorporation"—"taking the exact figure as it is from Bares to the exact figure as it is in KR996 and see if they work"—"Yeah, from a high level I would say that's how we ended up scaling those, was [taking] the track from Bares and overlaying there [KR996].")

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not work due to alleged component interference. This is not the proper context for an obviousness analysis.

The facts of this case are very similar to those described and adjudicated in *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016). *Allied* is an appeal of an IPR final written decision in which the CAFC affirmed the PTAB and rejected the patent owner's arguments of bodily incorporation and teaching away. *Allied* recognized it is well established that "[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference[.]" *Allied*, 1381 (quoting *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981)). Yet this is exactly what PO and Fleming did.

Further, *Allied* is informative as to PO arguments that KR996 either teaches away from the combination or that the combination destroys KR996's intended purpose because of the alleged component interference in its drawings. In *Allied*, the patent owner similarly argued that combining references "would fundamentally redesign and reconstruct [the primary reference] to change its principle of operation and [thus] result in an inoperable device." *Id.*, 1380. The CAFC disagreed; rather the test is whether a skilled artisan would have been motivated to combine their teachings to achieve the claimed invention. *Id.* (citing *Pfizer, Inc. v. Apotex, Inc.*,

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480 F.3d 1348, 1361 (Fed. Cir. 2007)). The Court stated that “[a]lthough modification of the movable blades may impede the quick change functionality disclosed by Caterpillar [the primary prior art reference], ‘[a] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.’” *Id.*

Like *Allied*, PO erroneously underpins its arguments with bodily incorporation and teaching away theories. *See, e.g.*, POR, 53, 61, 67. Here, the same conclusion follows—PO’s bodily incorporation-based arguments are legally unsound, and the Board should reject them. Further, even if a secondary reference could not be bodily incorporated into a primary reference, this still does not mean the primary reference teaches away. *Centripetal Networks, LLC v. Palo Alto Networks, Inc.*, No. 2023-1785, 2024 WL 4635578, at \*6 (Fed. Cir. Oct. 31, 2024) (agreeing with the Board that the inability to bodily incorporate references did not constitute teaching away).

**B. There is no genuine dispute that Velinsky is fully qualified.**

PO spends an inordinate amount of time attacking and denigrating the capabilities of Petitioner’s expert, Dr. Velinsky. But there can be no genuine dispute that Velinsky is fully qualified for this role. Velinsky has a PhD in mechanical engineering and was a professor of mechanical engineering at UC Davis, where

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among other things, his area of expertise was vehicle design and mechanics, along with machinery. EX1003, ¶¶8-16; EX1036. In addition to being a professor, he also served as the Director of the Advanced Highway Maintenance & Construction Technology Research Center (“Research Center”) from 1991-2016. EX1036; EX1003, ¶¶10, 15, (priority date of the patent is 2015). While at the Research Center, Velinsky worked on the design and fabrication of highway maintenance and construction skid steer machines developed to address a “wide variety of highway tasks including...collection of roadway debris, landscape maintenance, graffiti removal and plowing of snow, and involve the use of mechanisms to allow the tasks to be performed.” *Id.*

PO admits that skid steers with vertical-lift were well-known in the art prior to their patent but argues that providing vertical-lift to a **compact** utility loader (CUL) or **mini** skid steer was new and non-obvious. POR, 10.<sup>3</sup> Velinsky has personally designed such a mini skid steer and is qualified to opine on them, even under PO’s arbitrary standard. *See* EX2021, 10.

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<sup>3</sup> The ’266 patent claims are directed to *a loader apparatus*. *See* [1.0], claim terms in bold, italics.

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Indeed, it is PO's expert, Fleming, who has never designed a CUL and only has experience with CULs after the '266 patent priority date (2015). EX1043, 24-25 (Fleming stating he worked on "full-size skid steer with a cab" with his first CUL experience with Vermeer/Toro dispute in 2020).

Further, POR also mischaracterizes the record to disparage Velinsky. Velinsky did not "struggle" to describe CUL component arrangement, but referenced the prior art teachings and explained their configuration is a "design choice." EX2021, 25-28. As to the questions about hydraulic attachments, Velinsky discusses attachments throughout the record, and hydraulic attachments are not claimed. *See, e.g.*, EX2021, 10-12, 29-31, 109-110 discussing attachments. Velinsky did not admit to using "hindsight" as accused (POR, 33-34), rather he confirmed he did not use the claims as a roadmap, relying on the claims to understand the technology at issue. EX2021, 54-57. Moreover, PO's criticism of Velinsky's CAD use is unavailing as its standard practice to rely on technical staff for CAD or modeling tasks. *See, e.g.*, EX1003, ¶188 (discussing overseeing manual and computer-aided design); EX2021, 14 (direct[ing] students and staff). PO's own expert, Fleming, admitted that he did not personally generate his CAD drawings but relies on his team including for the drawings for this proceeding. EX1043, 27-28, 84.

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## II. CLAIM CONSTRUCTION OF “MAINFRAME,” “LOADER SUPPORT,” “RIGID FRAME”

PO refers to '266 patent claim terms *loader support*, *rigid frame*, and *mainframe*<sup>4</sup> “collectively [] as ‘mainframe’” and raises its arguments only directed to “mainframe.” *See* POR, 26. Without agreeing that their scope is commensurate, Petitioner has shown KR996’s frame is a *mainframe*, a *loader support*, and a *rigid frame*. *See infra*; Petition, *e.g.*, 49.<sup>5</sup>

The term *mainframe* has been thoroughly briefed, and its plain and ordinary meaning is understood to be a “primary supporting structure.” ID, 27. In the ID, the Board rejected PO’s proposed construction that “the ‘mainframe’ must be ‘always present and not selectively removeable’” and determined that when KR996’s loader is attached to the compact tool carrier, fixture 41 to be a loader support and part of a rigid frame, along with main body 11. ID, 21, 38. Now PO attempts to recycle their

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<sup>4</sup> *See, e.g.*, [1.2], [7.3], [19.1], respectively.

<sup>5</sup> The Board applied the plain meaning to *loader support* and *rigid frame*, referring to their function of supporting the loader. Paper 15 (Institution Decision (ID)), 39. These terms include frame portions in addition to those to which the loader linkage/actuator are directly attached. *See*, [2], [11].

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proposed construction by arguing that items that are not always present and that are selectively removable are so-called “secondary” structures (an artificial description not found in the '266 patent or the relevant art) should be excluded from a “mainframe.”

**A. A mainframe (as well as a loader support and rigid frame) can be made of separable components.**

The term *mainframe*<sup>6</sup> (or “main frame”) is used often in the prior art in varied ways. POR identifies two prior art patents with a single, un-separable, component labeled a “main frame” or “main frame assembly.” *See* EX2017, EX2018. However, other prior art use the term to describe multiple components assemblies, many of which are readily separable or removable and include various functions.<sup>7</sup> For

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<sup>6</sup> *See, e.g.*, [19.1a].

<sup>7</sup> *See, e.g.*, EX1047, 5:50-55 (“main frame 24” includes uprights 56, attached boom assembly 32, and various other “structural elements”), FIG. 2; EX1048, FIG. 1, 1:23-25, 13:24-45 (“main frame 205” for “compact track loader” including plate members 213/216 “attached and fixed by bolts”); EX1049, 8:67-9:8 (forming “main frame assembly 10” by being “modularly assembled” at “different sites” including by “connect[ing]” a first component and then “at the same or a different location(s)”

example, a 2005 Bobcat skid steer service manual identifies a “MAIN FRAME” that includes many separate components such as an bottom access panel and tailgate, all of which are identified as removable.

**This example manual illustrates “main frame” includes separately removable components**

|                                                                                                                                      |          |
|--------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>MAIN FRAME</b>                                                                                                                    |          |
| BOB-TACH .....                                                                                                                       | 50-10-1  |
| Installation .....                                                                                                                   | 50-10-2  |
| Lever And Wedge Removal .....                                                                                                        | 50-10-3  |
| Removal .....                                                                                                                        | 50-10-1  |
| Seal Removal And Installation .....                                                                                                  | 50-10-3  |
| BOTTOM ACCESS PANEL .....                                                                                                            | 50-90-1  |
| Removal And Installation .....                                                                                                       | 50-90-1  |
| INSTRUMENT PANEL .....                                                                                                               | 50-50-1  |
| Removal And Installation .....                                                                                                       | 50-50-1  |
| FUEL TANK .....                                                                                                                      | 50-40-1  |
| Removal And Installation .....                                                                                                       | 50-40-1  |
| GRAB BAR .....                                                                                                                       | 50-60-1  |
| Removal And Installation .....                                                                                                       | 50-60-1  |
| HOOD .....                                                                                                                           | 50-70-1  |
| Disassembly And Assembly .....                                                                                                       | 50-70-1  |
| Hood Latch Removal .....                                                                                                             | 50-70-2  |
| Removal And Installation .....                                                                                                       | 50-70-1  |
| LIFT ARM .....                                                                                                                       | 50-20-1  |
| Removal And Installation .....                                                                                                       | 50-20-1  |
| REVERSE STOP PANEL .....                                                                                                             | 50-80-1  |
| Description .....                                                                                                                    | 50-80-1  |
| Inspecting Function .....                                                                                                            | 50-80-1  |
| Removal And Installation .....                                                                                                       | 50-80-1  |
| Reverse Stop Mechanism Removal And Installation .....                                                                                | 50-80-2  |
| RIDE-ON PLATFORM .....                                                                                                               | 50-100-1 |
| Caster Removal And Installation .....                                                                                                | 50-100-2 |
| Removal And Installation .....                                                                                                       | 50-100-1 |
| Tire Removal And Installation .....                                                                                                  | 50-100-1 |
| TAILGATE .....                                                                                                                       | 50-30-1  |
| Rear Door Panel Removal And Installation .....                                                                                       | 50-30-1  |
| Removal And Installation .....                                                                                                       | 50-30-1  |
| Tailgate Bumper Adjustment .....                                                                                                     | 50-30-3  |
| Tailgate Striker Adjustment .....                                                                                                    | 50-30-2  |
| Tailgate Striker Removal And Installation .....                                                                                      | 50-30-2  |
| TIGHTEN ALL HARDWARE PER SIZE TO GRADE S TORQUE (See TORQUE SPECIFICATIONS FOR BOLTS on Page SPEC-30-1.) UNLESS OTHERWISE SPECIFIED. |          |
| 217 of 388                                                                                                                           | 50-01    |
| MT52 Bobcat Mini Track Loader Service Manual                                                                                         |          |

Dealer Copy – Not for Resale

EX1051, 217.

connecting another assembly); EX1050, 6:4-46 (“loader main frame” including, *inter alia*, “transmission case 70.”); FIG. 3; EX1006, FIG. 1 (main frame 1 including attachment members 11).

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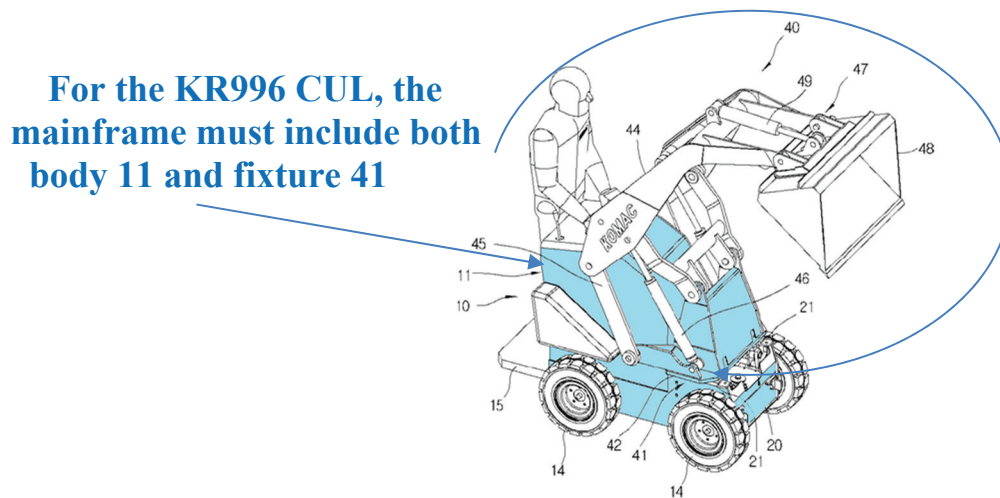
All of this is consistent with the phrase “primary supporting structure”, which does not require the absence of selectively removeable components, but rather that the structure be “of first rank, importance, or value.” EX1052, 4 (definition of “primary”).

**B. KR996's loader “mainframe” includes fixture 41 of its loader unit.**

In the present proceeding, the machine at issue is KR996's *loader apparatus* (discussed as a CUL), which includes vehicle 10 and loader unit 40. Both vehicle 10 and loader unit 40 include frame portions, the vehicle has body 11 and the loader unit has fixture 41, that are the primary supporting structure of the entire machine and are for supporting the loader. Thus, the primary supporting structure or *mainframe* of KR996's CUL is the combination of body 11 and fixture 41. *See, e.g.*, EX1005, Fig. 9. Velinsky confirms that both body 11 and fixture 41 are critical and important to providing a primary support structure for the loader apparatus. EX1042, ¶2. Fleming also agrees. EX1043, 105-106 (discussing when attached, “loads” go through fixture, which is “one of” the “critical” components).

PO incorrectly argues that only body 11 is the primary support structure. POR, 40. But body 11 would be the primary support structure for KR996's vehicle 10 operating alone, not as a loader. In contrast, the KR996 *loader apparatus* includes both vehicle 10 and loader unit 40, and the primary support structure for it would

include body 11 and fixture 41, necessary to support the loader arm. *See, e.g.*,  
Petition, 26-27; EX1003, ¶¶65; EX1042, ¶¶2-4; EX2021, 69-70 (agreeing Board's  
construction does not change original opinion).



EX1042, illustrating KR996's loader apparatus (Fig. 9).

KR996's loader apparatus is completed when vehicle 10 is joined or assembled with loader unit 40. That assembly can happen by an operator near a job site does not negate the fact that when assembled, vehicle body 11 and loader unit fixture 41 together form the primary supporting structure of the loader apparatus. Further, loader unit 40 including fixture 41 is *not* removable during the loader operations of the machine.

Thus, the Board's ID construction of *mainframe* as "primary supporting structure" is correct and includes the combination of body 11 and fixture 41 that

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supports the loader arm of KR996 by attachment of its linkages/actuator. PO has raised no argument with respect to related terms rigid frame, loader support, or upper frame, which the Petition shows are all disclosed by KR996.<sup>8</sup>

### III. GROUND I and II—KR996

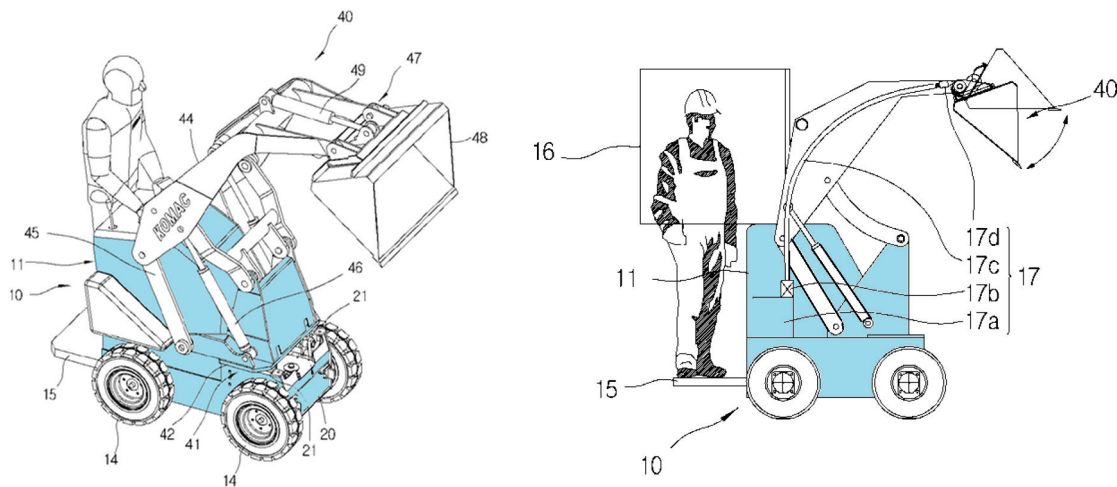
#### A. PO arguments on linkages/actuator connections rely on an incorrect construction of “mainframe.”

PO argues that the Challenged Claims require a linkage/actuator “that pivotally attach to the side *of the mainframe*.” POR, 37. The Petition established, and the Board agreed, that when KR996’s machine is configured as a CUL, it has linkage(s)/actuator *pivotaly attached to the first side of the mainframe/loader support/rigid frame* just as claimed in the ’266 patent. *See* ID, 39-40. That KR996’s vehicle could be used in other modes, including where it is not a CUL and/or lacks a loader arm, does not refute this. KR996’s loader mainframe—which includes components of body 11 and fixture 41 of loader unit 40—is a primary supporting

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<sup>8</sup> PO also did not dispute Petition’s construction of “barrier guard.” *See* Petition, 18-19.

structure of the loader (e.g., EX1005, Figs. 9, 21)<sup>9</sup> and the linkage/actuator are pivotably attached thereto. EX1042, ¶¶2-4.



*Id.*

**B. KR996's mainframe incorporates a single-weldment.**

Certain claims recite that the mainframe/loader support/rigid frame *incorporates a single weldment*. See, e.g., claim 3. The Petition shows it was well-

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<sup>9</sup> Velinsky was asked to identify a mainframe for supporting a loader in the context of KR996's Fig. 1 where vehicle is separate from loader unit on a bogie, but this is irrelevant as it is not the machine at issue.

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known to form one or more portions of the loader support/rigid frame/mainframe as a single weldment. *See, e.g.*, Petition, 39-40. *See also*, EX1043. 113-114 (discussing likely welded components of KR996). Thus, it is uncontested that KR996 teaches or renders obvious the relevant structure including a single weldment.<sup>10</sup>

This is also consistent with the use of “incorporates” in other patent claims in the art. *See* EX1054, 22:45-49; EX1055, 26:33-40. Further still this is consistent with how PO has used the term in the family. *See* related USP 12,098,063, claim 3 recites “wherein the mainframe is a single weldment” contrasted with the present claim language.

The POR incorrectly construes this language to require the mainframe **consist** of a single, unitary weldment piece. POR, 40. Even if required, the Petition already addressed obviousness under this alternative construction. Petition, 40-41, EX1003, ¶100 discussing unitary embodiments. *See also*, EX1043, 116-117 (Fleming discussing modifying design that “could do some kind of permanent attachment”). Certainly, trade-offs exist between fasteners and welding, including ease of separability and reliability. *See* EX1043, 103-104 (“Is there ever a job situation

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<sup>10</sup> The Petition recognizes “incorporates” is an open-ended term (Petition, 40) analogous to *includes*. EX1053, 4 (definition).

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where it would be advantageous just to have a loader? A (Fleming): There would be.”); EX1042, ¶5 (Velinsky identifying benefits of a dedicated loader, versus one that can convert to a different type of machine). Further, KR996 does not clearly discourage using a dedicated loader but instead notes that being able to switch between a loader and excavator provides “operational efficiency.” EX1005, [0007]. *See Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (discussing simultaneous advantages and disadvantages); *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014) (not “requir[ing] that the motivation be the best option, only that it be a suitable option from which the prior art did not teach away”).

#### IV. GROUND III—KR996+Bares+Beltrami

Various claims in this Ground recite *a drive mechanism having a drive sprocket defining a rotational axis R*, which the Petition shows in the tracked assembly of Bares. Various claims also recite *vertical distance[s] between pivot point* attachments of linkages/actuator relative to the *rotational axis R*. While the Petition discusses these relative positions in detail, the POR discusses these claim elements generally as requiring “the pivot points ... are positioned relatively low on the mainframe[.]” POR, 11.

**A. Tracks are a well-known alternative.**

CULs having track or wheel configurations were well-known alternatives. *See* Petition, 66-67; EX1003, ¶¶161-165 (including citing various support); EX1043, 12. The Petition also details specific benefits of applying a track to KR996, such as improved traction, better ability to cross holes, and reduced ground pressure. *Id.* PO does not contest this.

KR996 is directed to “building deconstruction work,” which inherently involves uneven terrain and debris—conditions where tracks excel. EX1005, (54); EX1003, ¶¶163. *See also*, EX1057 (supported by EX1062); EX1058, 3:64-4:2, FIG. 1 (showing indoor tracked mini skid steers). Even if PO is correct that KR996’s attachment/detachment technique requires smooth terrain, this limitation only applies to the specific location where attachments/tools are changed—not to the overall operation of the KR996 loader. In practice, attachments are typically exchanged away from the work area requiring the loader to traverse various surfaces to both perform its work and to reach those exchange locations. EX1043, 48-49; EX1058 (supported by EX1062) (each illustrating changing attachments away from worksite). Operational advantages of tracks remain regardless of any attachment/detachment terrain limitations.

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**1. Wheels are not essential for KR996's loader function or detachability.**

PO contends wheels are critical to KR996's attachment/detachment function and must be maintained. POR, 43-45. This is wrong. First, KR996's broadest embodiments do not require wheels. *See* EX1005, 2. Second, PO overstates the criticality of KR996's tires. What KR996 actually describes in one attachment/detachment technique is simply "contact" made between the rotating drive mechanism—wheel 14—and guide plate 38 of bogie. EX1005, [0036].

From this mere mention of "contact," PO alleges it is the extent to which the tires bow out under the vehicle weight that is "gripping" the bogie's guide plate. POR, 43-44. And then surmises tracks, being "relatively stiff," would not bow out to this same extent. *Id.* To be clear, KR996 never discusses its tires flexing or compressing or reliance on as much.<sup>11</sup> Further, even if there is a difference in the extent of flexion between tires and tracks, KR996 describes exactly how to address this. KR996 has a liner 39 explicitly for "adjust[ing] the gap" between the drive

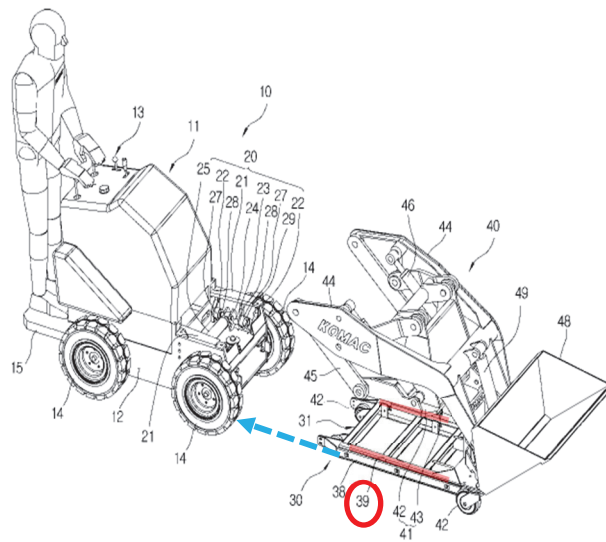
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<sup>11</sup> EX2021, 84:9-15 shows what Velinsky agreed to is an interface between tires and bogie "helps pull in" the bogie. Velinsky did not agree with PO's contention that the sidewalls of tracks and tires are different. *See* EX2021, 136:23-25.

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mechanism—wheel 14—and the bogie—guide plate 38. EX1005, [0005], [0053]. Therefore, should the gap be different between the alleged flexion of wheels compared to tracks as alleged by PO, KR996's liner is suitable for compensating for it. *See, id.*

PO also overstates the differences between tracks and wheels. Modification from tire to track just means any desired contact is between the track and the bogie's guide plate, as opposed to the wheel and guide plate. The track is positioned at the same location, comprises a similar material, rotates in the same direction, and has a thickness sufficient for contact with the guide plate. *See* EX1051, 206 (describing rubber); EX1010, FIG. 7, arrow 160A, track 148, 5:29-38. Further, the “contact” between the drive mechanism and bogie is at the front of the vehicle; here the track extends a sufficient height (*e.g.*, compare track over front idler wheel 152 versus wheel 14). *See* EX1005, Fig. 1, EX1010, FIG. 8. Also contrary to PO, KR996 does not describe any “alignment feature” that PO alleges is critical. POR, 45-46. And PO provides no reason a track, extending along the CUL, provides a different available alignment boundary than wheels.



*adjustable thickness liner (39)*

EX1005, Fig. 1 (annotated), [0053] (discussing adjustable liner).

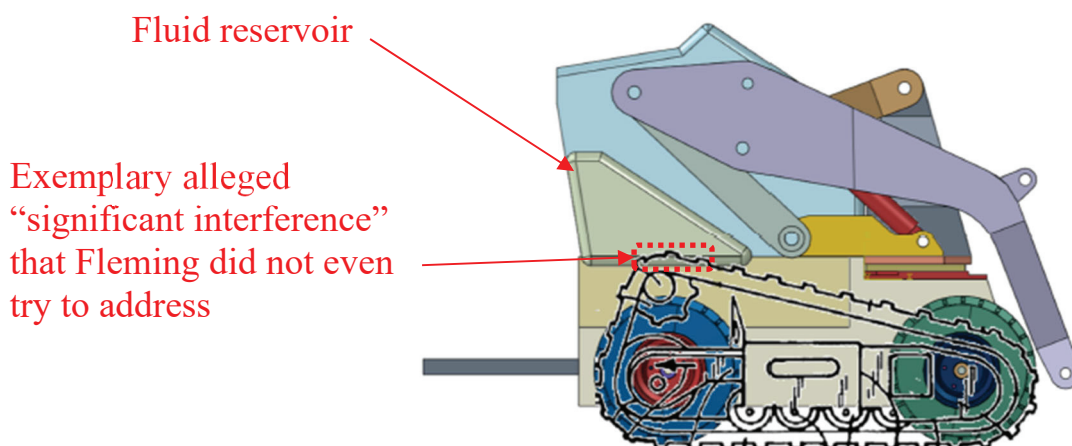
Moreover, POSITA are not mere automatons void of any engineering knowledge. The POR ignores Bares' rotating track and its rotating wheels are all available to provide a directional force to pull in/out, if desired. *See* EX1010, 5:33-43, 6:59-7:11. KR996 explicitly discloses one example, a liner, readily available for modification to provide any desired contact with any feature. Further, *Allied* shows that such design changes do not negate a motivation to combine.

## **2. Incorporating tracks is well within the skills of POSITA.**

PO also argues that POSITA could not change the drive mechanism to a track assembly because the track and/or drive motor—if Bares' track is cut-and-pasted onto the flawed CAD drawing of KR996's CUL—would interfere with components

of KR996's CUL. This argument is based on a rigid, literal overlay of patent figures ignoring that bodily incorporation is not required, that patent drawings are not scale, and that POSITA routinely make necessary modifications.

Both experts agree that in practice it is known to make modifications in designing vehicles. *See* EX1003, ¶¶203-205; EX1043, 23-24 (Fleming discussing design review meetings, evaluation, and resolving issues), 59-60 (moving engine and drive line components to eliminate interference). Yet, when developing his figures for this proceeding, Fleming “did not try to” make any design or engineering modification to address the interference. EX1043, 97, 123. In fact, when asked if it would be possible to move or reshape the alleged fluid reservoir that appears to be contacting the track (see image below), Fleming refused to consider such modification. *Id.*



**POR, 49**  
**Fleming's KR996 CAD model**  
**with Bares' track “superimposed”**

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Perhaps most telling of POSITA's abilities, the '266 patent does not describe its engine or describe the positions of the drive motors or fuel tanks, the very components alleged to be interfering. *See* EX1001, 3:24-31, 4:17-20, 5:66-6:4. In this context, Fleming was quick to agree that such component arrangement is "routine design engineering". EX1043, 38-41 (discussing routine engineering by POSITA to make wheeled version and drive motor changes), 59-60 ("obviously you can't have a machine you're trying to use that had interference. So there would be some design work that would be done to eliminate that interference...that could involve **moving internal components such as engine and drive line components.**"); 35-36 (discussing engine selection as "engineering project for designing product"). Further, there are a myriad of available design choices, for example, the components come in various sizes/shapes. *See* EX1043, 38-44, 86-87 (discussing different size/shape tank and motors).

**B. The Petition shows an obvious benefit of providing low pivot point connections.**

There is no genuine dispute that both Beltrami and KR996, like the '266 patent, disclose vertical-lift loaders utilizing a four-bar mechanism—*e.g.*, elements [14.2]-[14.5]. There is also no genuine dispute that Beltrami teaches having *pivot*

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*points* for the four-bar mechanism low on the *mainframe/loader support*.<sup>12</sup> There is also no dispute that positioning the pivot point connections low on the mainframe:

- reduces frame requirements and
- lowers the center of gravity (“COG”) of the machine,

both of which were well-known design benefits for a utility loader of any size. These and additional benefits of a reduced frame and low COG were well-recognized by POSITA prior to the '266 patent and are detailed in the Petition and by Velinsky (including with supporting evidence). *See* Petition, 69-70, 81-85 citing EX1003, ¶¶189-212 (citing various supporting separate prior art and explaining fundamental physics). PO's own expert, Fleming, agrees that the benefits of placing these pivot points low—including reduction of frame and lower COG—are “fundamental principles.” EX1043, 61-63, 77-80 (explaining “higher [COG], the more front-to-back movement” impacting stability and “lower the pivot point down where you are

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<sup>12</sup> Various claims in this Ground recite positions of the pivot points, such as *a vertical distance between the rotational axis R* and the *[] pivot point* (e.g., element [14.6c]). While the Petition discusses these positions in detail for each claim, the POR characterizes these claim elements generally as “the pivot points ... are positioned relatively low on the mainframe[.]” POR, 11. *See* EX1001, 5:13-62.

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supporting it on the lower mainframe structure, then...the mass of the mainframe [is] reduced.”) Thus, the Petition fully satisfies a *prima facie* finding of obviousness for these claim limitations.

PO's arguments about Beltrami are inconsequential and factually incorrect. As best understood, PO's dispute seems to arise from the premise that Beltrami only recognizes low pivot points in the context of improvements over radial-lift configurations and recognizes improvement of fore-aft shifts COG, again relative to radial-lift. POR, 52-55. However, the law is clear that a prior art reference is not limited to any specific problem it addresses; its teachings are available for all they fairly disclose to POSITA. *In re Kahn*, 441 F.3d 977, 987, (Fed. Cir. 2006); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323 (Fed. Cir. 2005).

Beltrami states advantages including “the **pivot points 24, 26 and 30** [those connecting linkages/actuator of the vertical-lift and frame] **can be kept in such a low position on the vehicle that no supporting frame is needed.**” EX1008, 3:35-37; *see* Petition, 82-83. Beltrami does not say this “supporting frame” is applicable to only a certain loader configuration. It is not debatable that providing the pivot points low such that the need for upper frame requirements is reduced, which also lowers COG.

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Further, PO's suggestion that Beltrami is limited to improvements of fore-and-aft COG shifts is misplaced as COG is a multi-directional, fundamental design parameter. EX1043, 64 ("one of the things that we would want to evaluate, was [COG]...you'd want to keep [COG] at a lower level in order to increase stability"), 74-78 (discussing front-to-back and vertical COG as "fundamental principles"). A primary means of reducing the COG of a CUL is by attaching the loader as low as possible on the machine. EX1003, ¶¶132, 168 ("basic engineering principles, i.e., attaching the loader low on the carrier lowers the center of mass...reduces the mainframe structural needs above the attachment point. The lower the center of mass, the more stable the skid steer...).

**1. PO's teaching away argument is legally flawed.**

Like when faced with Bares, PO contends KR996's patent figures show a component that is in the way of the proposed lower pivot point that effectively "teaches way" from the proposed modification. *See* POR, 55-57. Fleming presumes there is a "wheel motor" and a mounting mechanism that cannot be moved, resized, or otherwise redesigned. POR, 56-57. As discussed *supra*, Section I.A, and as supported by *Allied*, the entire premise of this argument is legally flawed. As discussed, PO's argument improperly relies on patent drawings that are not to scale, requires bodily incorporation, approaches the modification as an automaton without

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any engineering considerations, and fails to recognize even if the combination required design changes, that does not support teaching away. It is interesting to note that Fleming previously testified, when representing Vermeer as a petitioner in a different PTAB proceeding, that moving pivot points in a mini skid steer loader is routine in the design process. EX1046 (Fleming declaration showing various pivot point placement, linkage/actuator lengths, arm shape, and so forth modifications.) Further, Velinsky affirmed that POSITA would have known to address any space constraints and operator safety. Petition, 87 (POSITA knowledge to arrange components without interference), EX1003, ¶¶203-205 discussing techniques such as linkage shape modification, jog or bends, accommodation of safety fences or barriers, including while maintaining kinematic lengths).

Moreover, PO overstates the component interference. For one, the allegedly interfering “wheel motor” is **not even present** in the proposed combination with Bares’ track assembly. *See* EX1010, FIG. 3, 8 (drive motor (16B), motor 146 being at the raised, rear sprocket). And PO’s bodily incorporation argument appears to demand the pivot points are lowered to the very bottom of the mainframe. That is not proposed or required. *See* Petition, 81. Implementing Bares’ track with raised sprocket as proposed, there is sufficient room—even under PO’s bodily incorporation premise—for low pivot points while not interfering with KR996’s mounting mechanism should POSITA wish to retain it as illustrated. *See* EX1003,

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¶183, Figure A (notably the claimed distances are relative to R, a raised, rear sprocket).

**2. PO's reasonable expectation argument relies on improper bodily incorporation.**

Velinsky provided kinematic diagrams, which do not define shapes, illustrating a four-bar mechanism where the pivot points are aligned at the same level—just as shown in the prior art. Petition, 86-87; EX1003, ¶195-212; EX1021 (pivot points at the “same level”). Velinsky discusses how he instructed the creation of Appendix A, which shows the kinematic movement of that four-bar mechanism—with aligned points—functioning exactly as he expected and like the movement of KR996's illustrated offset pivot points. *Id.* In other words, Appendix A supports that POSITA can provide a four-bar mechanism with aligned pivot point connections that works. *Id.*

Fleming provided diagrams of a four-bar mechanism that he alleges does not work. POR, 60-61.<sup>13</sup> Fleming's diagrams at most show it is possible to create a

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<sup>13</sup> Fleming's animation and drawings provide a bucket attachment point that is **not vertical but extends toward the operator** (*contrast* POR, 10 with “vertical travel path”) and shows an actuator **without any appreciable change to its length**.

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mechanism that does not work, without any effort to try to make it work. *See* EX1046, 96-98 (affirming bodily incorporation), 120-122 (discussing not considering loader arm design changes), 123 (“I did not try to fix”).<sup>14</sup> As discussed above, this is not the standard of obviousness, nor the requirements of a reasonable expectation of success.

Ultimately, the Petition has shown that four-bar mechanisms were a well-known design option for skid steers (including KR996’s CUL) for many years prior to the ’266 patent. And four-bar mechanisms with low pivot points, including as recited in some claims, and reasons to provide low pivot points, were also well known prior to the patent. Thus, all of the relative dimensions recited in these claims are well-understood, result-affective variables and benefits of providing low pivot

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EX1046, 58-60 (describing POSITA “would know how to position the actuator to make the [ ] setup move,” “that works with your design,” and agreeing in the lifting operation, “the length of the actuator will change”).

<sup>14</sup> Velinsky’s model shows aligned pivot points provide the desired loader motion, prior art references suggest the same orientation. EX1021.

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points was recognized in the prior art and by fundamental engineering principals.<sup>15</sup>

PO does not dispute this, choosing instead to argue for an overly rigid interpretation of the prior art and improperly demand for bodily incorporation, while ignoring the perspective of POSITA.

## **V. SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS**

PO's evidence of secondary considerations is fundamentally flawed because it lacks the required nexus to the claimed invention. All of PO's arguments and evidence are premised on the assertion that PO was the first to invent a vertical-lift CUL. The cited evidence—such as magazine recognition, hearsay testimony about market success, inventor testimony about lift capacity, and stories of Toro engineers—relates to vertical-lift functionality, a feature known in the prior art (KR996). Fleming agrees that the evidence of secondary considerations is directed to vertical lift. EX1043, 123. As CAFC has made clear, objective evidence of nonobviousness lacks a nexus if it relates solely to a feature that was already known in the prior art. *See Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1364 (Fed. Cir. 2023); *Ethicon Endo-Surgery, Inc. v. Covidien LP*, 812 F.3d 1023, 1034 (Fed. Cir.

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<sup>15</sup> Petition also shows it is known to increase D1 and D5. Petition, 76, EX1003, ¶¶175-176. The claims recite the relative dimensions with respect to D1 and D5.

2016). Thus, PO's reliance on vertical-lift CUL evidence—known in the art (KR996)—renders its secondary considerations legally irrelevant.

Here, many claims are challenged under **anticipation**, or approaching anticipation. Secondary considerations cannot override anticipation, or such strong shows of obviousness.<sup>16</sup> See *Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). Further, PO's evidence should be accorded little to no weight because of evidentiary deficiencies, which will be addressed in a forthcoming motion to exclude. In summary, POR relies on declarations, portions of deposition testimony, and portions of third-party (Toro) documents from a prior litigation as truth of the matter being asserted, but has not produced the documents or declarants here. This raises a risk of mischaracterization.

PO's omission of deposition testimony of Toro declarants, which Petitioner located only by review of other PTAB matters, illustrates just this risk. PO relies on a Toro patent application as evidence of Toro's vertical-lift CUL struggles. POR, 68

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<sup>16</sup> Velinsky reviewed secondary considerations, which he found related to applying vertical-lift to a CUL. EX1003, ¶26. As KR996 teaches that, he concluded that those considerations did not alter his opinion finding the claims obvious. EX1003, ¶26; EX2021, 59.

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citing EX2004. But the cited passage states only that it's "difficult" to use specific scissor mechanism of a prior patent on a CUL. EX2004, [0007]. PO knows this having relied on this previously before the PTAB. *See* PGR2020-00081, Paper 1, 41-43. Further, as PO also introduced in that proceeding, those Toro inventors testified they did not find it difficult to provide a vertical-lift CUL but found it, for example, "easily adaptable." *See* EX1060, 7-8, EX1061, 8.

## **VI. CONCLUSION**

The Board should find all challenged claims unpatentable.

Respectfully submitted,

/David M. O'Dell/

Dated: Dec. 3, 2025

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**CERTIFICATE OF WORD COUNT**

Pursuant to 37 C.F.R. § 42.24, the undersigned attorney for the Petitioner declares that the argument section of this Reply has a total of 5,502 words, according to the word count tool in Microsoft Word™.

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**CERTIFICATE OF SERVICE**

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e), service was made on Patent Owner as detailed below.

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