

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Kubota North America Corporation,

Petitioner

v.

Vermeer Manufacturing Company,

Patent Owner

IPR2025-00170 (U.S. Patent No. 9,975,750)

PETITIONER'S REPLY

TABLE OF CONTENTS

I.	SUMMARY OF ARGUMENTS PRESENTED THROUGHOUT REPLY	3
A.	PO's bodily incorporation and teaching away arguments are neither legally correct nor factually supported.	3
1.	PO's constructed embodiments are flawed	3
2.	POR improperly relies on bodily incorporation	5
3.	Design changes do not support teaching away	5
B.	There is no genuine dispute that Petitioner's expert Dr. Velinsky is fully qualified.	7
II.	CLAIM CONSTRUCTION OF "MAINFRAME"	8
A.	A "mainframe" can be made of separable components.	9
B.	KR996's CUL mainframe includes fixture 41 of its loader unit.	10
III.	GROUND I—KR996	12
A.	PO arguments on linkages and actuator connections rely on an incorrect construction of "mainframe"	12
B.	Mainframe incorporating a single-weldment is not new or nonobvious.	13
IV.	GROUND II—KR996+BARES	15
V.	GROUND III—KR996+BARES+BELTRAMI	15
A.	Tracks are a well-known, inter-changeable alternatives.	16
1.	Wheels are not essential for KR996's CUL function or detachability	16
2.	Incorporating tracks is well within the skills of a POSITA	20
B.	Petition shows an obvious benefit of providing low pivot point connections.	22
1.	PO's teaching away argument is legally flawed	24
2.	PO's argument relies on improper bodily incorporation	26

VI.	SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS.....	27
A.	Lack of nexus between PO’s evidence and the claimed invention.	
		28
B.	The prior art is strong.....	29
C.	PO’s evidentiary deficiencies: cross-examination, completeness,	
	and authentication lacking.	30
D.	PO’s arguments mischaracterize the tenor and substance of its	
	evidence.	30
VII.	PO’S VELINSKY ATTACK IS CONTRARY TO THE RECORD....	32
VIII.	CONCLUSION	33

Vermeer (“PO”) touts that they have invented and patented a vertical-lift compact utility loader (CUL) alleging their improvement over conventional radial-lift CULs. However, it is undisputed that PO was not first to invent a vertical-lift CUL—KR996 is a prior art patent that clearly illustrates and describes just such a CUL. PO instead re-litigates the construction of the term mainframe, advancing a proposal already rejected by the Board. And PO argues for patentability based on the addition of commonplace features—such as tracks instead of wheels, low pivot points for the linkages, or a mainframe 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.

I. SUMMARY OF ARGUMENTS PRESENTED THROUGHOUT REPLY

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

1. PO’s constructed embodiments are flawed

Rather than consider the teachings of the prior art and the combinations of the Petition, PO and their expert, Dr. Fleming, rigidly assume that every component illustrated in the prior art patent figures must remain exactly as depicted in that

patent's figures. Fleming copied non-to-scale figures from KR996 to form CAD models. EX1043, 83-84 (Fleming describing "one of [his] engineers" "sketch[ing] over" patent images to create an "overlay"). Building on this faulty base, the POR (Paper 21/22) and Fleming compound their errors by overlaying a reproduced portion of Bares' figure onto the generated CAD drawing, without contemplating any engineering judgement. These constructed drawings serve as the basis for PO's arguments that the obviousness combinations do not work due to component interference, which PO surmises means KR996 either teaches away from proposed combinations, or the combination defeats KR996's intended purpose. 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 Federal Circuit affirmed the PTAB's finding of non-patentability and rejected the patent owner's arguments of bodily incorporation and teaching away. It is noted that *Allied* also involved construction equipment, like the present case, so the facts are very similar.

2. POR improperly relies on bodily incorporation

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 (citation omitted). Yet this is exactly what PO and Fleming did in the POR as discussed above, assuming every prior art component must remain precisely positioned and sized as depicted in the not-to-scale patent figures, without allowing for or contemplating any modifications or adjustments including routine engineering. If any item, such as a tank, motor, engine, or track, was in the way, Fleming determined that the combination did not work. Fleming admitted that in doing so he was employing bodily incorporation.¹

3. Design changes do not support teaching away

The POR argues KR996 either teaches away from the combination of references, or that the combination destroys KR996’s intended purpose because of the interfering components. These very same arguments were addressed by the

¹ 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].”)

CAFC in *Allied*. There, the patent owner also argued that combining the 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 faulted the patent owner’s reasoning, affirming the test is instead whether a skilled artisan would have been motivated to combine their teachings to achieve the claimed invention. *Id.* (citing *Pfizer, Inc. v. Apotex, Inc.*, 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.* (citation omitted)).

Like *Allied*, PO erroneously relies on bodily incorporation and teaching away theories to underpin its arguments. POR, 43-44, 51-53. And 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 (Fed. Cir. Oct. 2024) (agreeing with the Board that the inability to bodily incorporate references did not constitute teaching away).

B. There is no genuine dispute that Petitioner's expert Dr. Velinsky is fully qualified.

PO spends an inordinate amount of time attacking and denigrating the technical capabilities of Petitioner's expert, Dr. Velinsky. But there can be no genuine dispute that Velinsky is fully qualified for this role. In short, Velinsky has a PhD in mechanical engineering and was a professor of mechanical engineering at UC Davis, where 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. *Id.* (priority date of the '750 patent is 2015). While at the Research Center, Velinsky worked on the design and fabrication of highway maintenance and construction machines—small skid steers—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.*

Importantly, PO admits that skid steers with vertical-lift were well-known in the art prior to their patent but still argues that providing vertical-lift to a **compact** utility loader (CUL) or **mini** skid steer was new and non-obvious. POR, 10. While Petitioner disputes that POSITA would need to have specialized first-hand expertise

with CUL, Velinsky has personally designed and fabricating such machines and is qualified to opine on them, even under this arbitrary standard set by PO. EX2021, 10.

Indeed, it is PO's expert, Dr. Fleming, who has never designed a CUL. EX1043, 24-25 (indicating no "design development work specifically for mini skid steer. The ones I worked on were a full-size skid steer with a cab"). And Dr. Fleming had no experience with CULs prior to the '750 patent's priority date in 2015. *Id.* (indicating first experience when doing analysis for Vermeer/Toro dispute in 2020).

II. CLAIM CONSTRUCTION OF "MAINFRAME"

Each claim recites *a mainframe for supporting the loader*.² Prior to the institution decision (Paper 15 ("ID")), the parties provided briefing on the meaning of the claim term "mainframe." PO argued that the mainframe must be "always present and not selectively removable." Paper 11, 1. The Board rejected PO's proposal and construed the term as a "primary supporting structure," and in so doing, found KR996's CUL frame, which includes both a body 11 and a fixture 41, teaches a *mainframe*. ID, 36-37. PO continues to argue this already decided argument,

² See, e.g., [1.2a]. The *loader* being arm(s) connected by actuator/linkage to the mainframe *adapted to carry a tool*/bucket.

which is contrary to the plain and ordinary meaning of a *primary supporting structure*.

A. A “mainframe” can be made of separable components.

The term “mainframe” is used often in the prior art in a manner that includes various components and does not limit their separability. For example, a 2005 skid steer service manual identifies a “MAIN FRAME” that includes many components, all of which are removable.

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

		MAIN FRAME
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 5 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, 217.³ All of this is also consistent with plain meaning of phrase “primary supporting structure.” *See also*, EX1052, 4 (defining “primary”); EX2007, 4.

B. KR996's CUL mainframe includes fixture 41 of its loader unit.

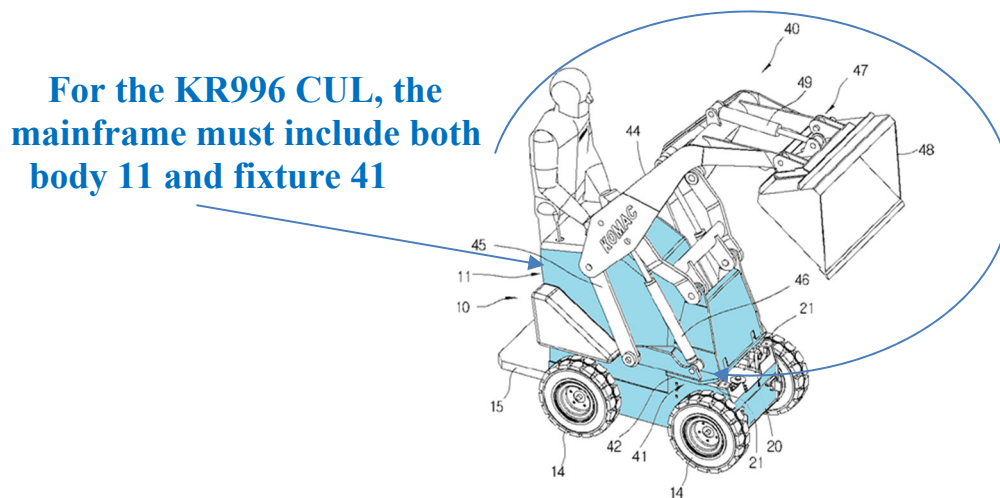
In the present proceeding, the machine at issue is KR996's *compact tool carrier* (or compact utility loader (CUL)), which includes a combination of vehicle 10 and loader unit 40.⁴ *See, e.g.*, EX1005, Fig. 9. Both body 11 and fixture 41 are critical and important to providing a primary support structure for the CUL. EX1042, ¶2-4. *See also*, EX1043, 105-106 (Fleming discussing the fixture is one “critical” component).

PO argues that only body 11 is the primary support structure. This is incorrect. Body 11 would be the primary support structure for KR996 vehicle 10 operating

³ *See also*, EX1047, 5:50-55, FIG. 2; EX1048, FIG. 1, 1:23-25, 13:24-45; EX1049, 8:67-9:8; EX1050, 6:4-46; EX1006, FIG. 1 discussing various main frame components from loader arms to transmission cases that are assembled separately, including different locations.

⁴ Claim context matters, the mainframe is *for supporting a loader*. *See Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314.

alone, not as a loader. *Contrast*, Petition, 26-28, EX1003, ¶¶65-68. PO's distinctions of where the assembly occurs and possible other uses of vehicle 10 are misplaced. POR, 38-39. KR996's loader is fully assembled only when vehicle 10 is attached with loader unit 40, where this attachment occurs is irrelevant. Also, the loader unit 40 including fixture 41 is not removable during the loader operations.



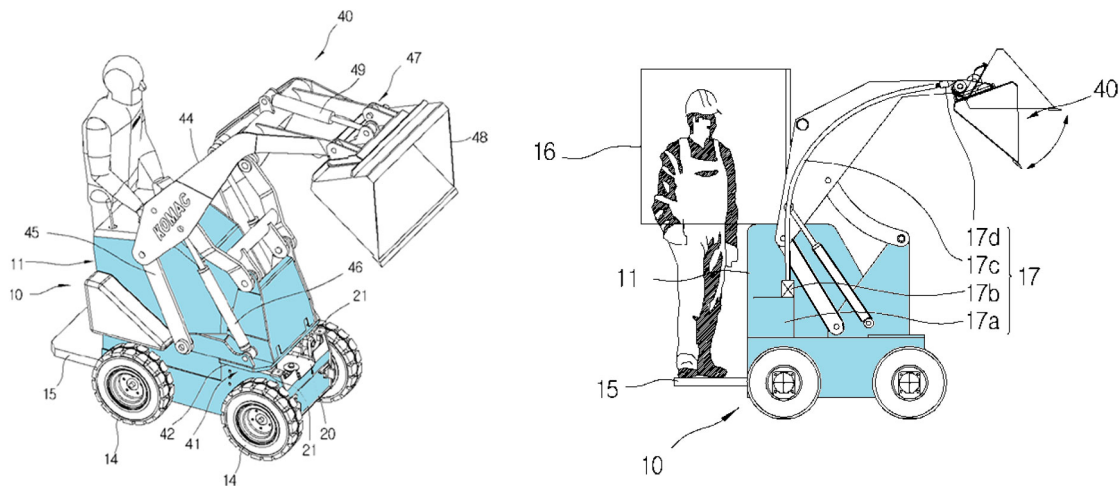
EX1042, ¶¶2-4, EX1005, Fig. 9, KR996's CUL.

The Board's ID construction of primary supporting structure is correct and includes the combination of body 11 and fixture 41, which supports the loader of KR996 by attachment of its linkages/actuator.

III. GROUND I—KR996

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

The Board agreed that the Petition established that when KR996's machine is configured as a loader, it has linkage(s)/actuator pivot point connections to a mainframe just as claimed in the '750 patent. *See* ID, 29-37. PO's argument that KR996 vehicle 10 could be used to operate in other modes, including that where it is not as a loader and/or lacks a loader arm, does not refute the explicit disclosure of KR996's CUL—*e.g.*, EX1005, Figs. 9, 21.



EX1042, ¶¶2-4.

B. Mainframe incorporating a single-weldment is not new or nonobvious.

Certain claims recite that the mainframe *incorporates a single weldment*. See, e.g., claim 2. The Petition shows it would have been obvious to form “one or more portions of the mainframe” as a single weldment. Petition, 38-39 describing weldment benefits. Fleming agrees that it is “most likely” that KR996’s body and fixture are each “mostly, if not all, welded” together. EX1043, 113-114. Thus, it is uncontested that KR996 renders obvious a mainframe including a single weldment.

The term “incorporates” is an open-ended term analogous to *includes*. EX1053 (“incorporate” as “contain (something) as part of a whole; **include**”). Thus, the claims do not preclude the mainframe from having some portions formed as a single weldment, and other portions fastened in other manners. This was presented in the Petition⁵ and is consistent with “incorporates” in other similar patent claims. See EX1054, 22:45-49 (claiming “casing incorporates the hydraulic pump and motor”); EX1055, 26:33-40 (claiming “transaxle incorporates a first hydraulic motor”).

⁵ Paper 2, 38.

This is also consistent with how PO has presented similar limitations in this patent family. For example, claim 3 of USP 12,098,063 recites:

- “wherein the mainframe is a single weldment”⁶

contrasted with the present claims:

- “wherein the mainframe incorporates a single weldment.”

The different terms have different meanings. *See PPC Broadband, Inc. v Corning Optical Communications*, 815 F.3d 747, 52-53 (Fed. Cir. 2016).

The POR appears to construe the claim to require the **mainframe** consists (in its entirety) of a single, unitary welded piece. POR, 40. Even if this claim required the entire mainframe to be welded together, the Petition already addressed this alternative claim construction showing it is an obvious design choice. Petition, 39; EX1043, 116-117 (Fleming agreeing there could be “some kind of permanent attachment”). Certainly, trade-offs exist between fasteners and welding, including ease of separability. EX1003, ¶102 (discussing trade-offs between weld/fasteners); EX1042, ¶5 (discussing advantages of a dedicated loader); EX1043, 103-104 (confirming advantageous to just having a loader function). Further, KR996 does not

⁶ Petitioner did not challenge this claim in the co-pending PGR.

clearly discourage the use of 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) (“a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.”); *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014).

IV. GROUND II—KR996+BARES

This Ground addresses *an engine*, and to the extent KR996 does not explicitly describe one, it is explicit in Bares’ CUL. Petition, 66-67. Ground II also addressed *a drive mechanism having a drive sprocket* (claim 16); POR arguments as to the combination of Bares’ tracked assembly are discussed in Ground III below.

V. GROUND III—KR996+BARES+BELTRAMI

Various claims in this Ground recite *a drive mechanism having a drive sprocket defining a rotational axis R* and also recite *vertical distance[s] between the rotational axis R* and the *pivot point* attachments of linkage(s)/actuator and mainframe. 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, 10.

A. Tracks are a well-known, inter-changeable alternatives.

CULs having track or wheel configurations were well-known alternatives. Petition, 60-61; EX1003, ¶¶157-160; *see also*, 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.* KR996 includes “building deconstruction work,” which inherently involves uneven terrain and debris—conditions where tracks excel. EX1005, (54); EX1003, ¶158. *See also*, EX1057 (EX1062), EX1056, 3:64-4:2 (illustrating indoor use for tracked mini skid steers). PO’s argument that KR996 has (unspecified) limitations of the terrain suitable for attachment/detachment functionality would at most limit the specific location where attachments are changed—not the overall operation of the machine. In practice, attachments are typically changed away from the work area. EX1043, 48-49; EX1058 (each illustrating changing attachments away from worksite). Therefore, operational advantages of tracks remain regardless of any attachment/detachment terrain limitations.

1. Wheels are not essential for KR996’s CUL function or detachability

PO contends that wheels are critical to KR996’s detachability function and must be maintained. POR, 41. First, KR996’s detachability does not necessitate wheels. *See* EX1005, 2, claiming vehicle (10) without limitation to its drive

mechanism. Moreover, the POR narrative of tires flexing to perform KR996's attachment/detachment overstates the tires' role. *See* POR, 42-43. What KR996 actually says is:

...bogie (30) enters between the two wheels (14), making **contact** with the inner side of the wheel (14) by the guide plate (38). As the wheel (14) continues to rotate in the forward direction, the guide plate (38) of the bogie (30) is pulled inward of the vehicle (10)...

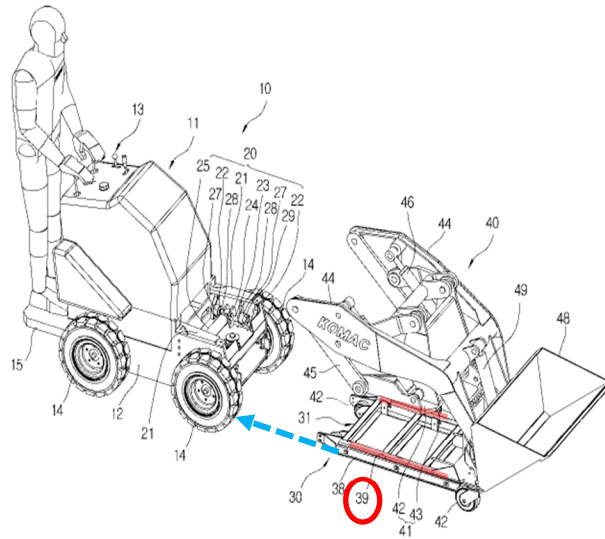
EX1005, [0036]. From this mention of “contact,” PO spins a tale alleging the extent of flexion/bowing out of a tire is critical to KR996's attachment/detachment. *See* POR, 42-43.⁷ KR996 **never** discusses that its tires “bow out under the load of the machine” or any reliance on tire compression. Moreover, even if there is some gap-tuning needed to address differences between the track and wheel, KR996 also describes how to do this providing “a liner (39)” that is precisely for the purpose of “adjust[ing] the gap” between the drive mechanism—wheel 14—and the bogie—guide plate 38. EX1005, [0005], [0053]. Therefore, should the gap be different

⁷ 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.

between wheels and tracks or their flexion, KR996's liner can compensate for it.

See, id.

Further, PO overstates the differences between tracks and wheels. Modification of the drive assembly from tire to track just means any desired contact locus is between the track and the bogie's guide plate (as opposed to a wheel and the bogie guide plate). The track is positioned at the same location, comprises a similar material, is rotating in the same direction as the wheel would be, and has an appreciable thickness. *See* EX1051, 206 (describing rubber); EX1010, FIG. 7, arrow 160A, track 148 thickness, 5:29-38. PO's assertion that a track would not extend a significant enough height above the ground to allow for contact with the bogie is incorrect. *See* POR, 43. The guide plate 39 contacts with the drive mechanism (wheel 14/Bares' track) at the front of the vehicle where the tire/track is extending vertically from the ground to over the front wheel (idler wheel 152/wheel 14). *See* EX1005, Figs. 7-8; EX1010, FIG 8. Similarly, PO's alleged loss of an "alignment feature" lacks foundation in KR996, and does not address any track alignment. *See* POR, 43.



adjustable thickness liner (39)

EX1005, Fig. 1, [0035] (“thickness of the liner (39) can be adjusted”).

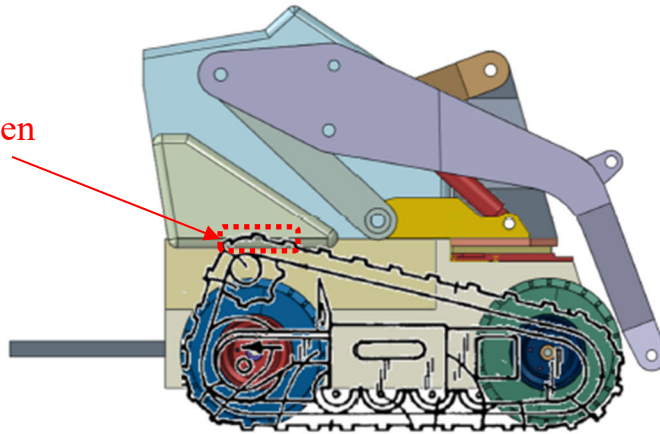
Moreover, PO’s story of the role of KR996’s wheels is premised on POSITA being mere automatons void of any engineering knowledge. The POR simply ignores the features of Bares’ rotating track and the plurality of rotating wheels with its assembly, which are all available to provide a directional force, if desired. *See* EX1010, 5:33-43, 6:59-7:11 (describing rotating wheels). As discussed above, KR996 explicitly discloses one example, a liner, readily available for modification to provide desired contact. Further, *Allied* shows that such design changes do not negate a motivation to combine.

2. Incorporating tracks is well within the skills of a POSITA

PO argues POSITA could not change the drive assembly to a track because if Bares' track is cut-and-pasted onto a flawed CAD drawing of KR996's CUL, it would interfere with components of KR996's CUL. This argument is based on a rigid, literal overlay of patent figures, ignores that bodily incorporation is not required, that patent drawings are not scale, and POSITA routinely makes necessary modifications. *See supra* I.A.

Both experts agree that in practice it is known to make modifications in designing vehicles. *See* EX1043, 23-24 (describing design review meeting to resolve issues); EX1003, ¶¶217-219 (discussing modifications). Yet, when developing his figures for this proceeding, Dr. Fleming "did not try to" fix or make any design or engineering modification to address the alleged interference. EX1043, 97, 123.

Exemplary alleged
“significant interference”
that Dr. Fleming did not even
try to address is minimal



POR, 47
Fleming's KR996 CAD model
with Bares' track "superimposed"

Fleming is quick to agree POSITA would address interference when discussing making changes to the embodiments of the Vermeer patent. EX1043, 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 potentially involve structure, that could involve **moving internal components such as engine and drive line components.**”) Further, POSITA’s skills are evident from ’750 patent itself, which does not illustrate its suggested wheel drive mechanism and does not describe its engine or disclose or illustrate the position of its drive motors or fuel tanks. *See* EX1001, 3:27-30, 4:8-13, 5:52-59 (all discussing components that are “not shown”). In this context, Fleming agrees that the selection of proper engine, hydraulics and drive system components

would be a suitable engineering project of POSITA. EX1043, 35-36, 39. Further, there are many options for machine engines, tanks and drive mechanisms that can affect and address the alleged space constraints including moving or varying component shape/size. *See* EX1043, 38-44, 86-87 (differing drive motor size/shape, tank size/shape).

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

There is no genuine dispute that both Beltrami and KR996, like the '750 patent, disclose vertical-lift loaders utilizing a four-bar mechanism—*e.g.*, [19.2]-[19.5]. There is also no genuine dispute that Beltrami teaches having pivot points for the four-bar mechanism low on the mainframe.⁸ And there is also no dispute that positioning the pivot point connections low on the mainframe:

- reduces frame requirements and

⁸ Various claims in this Ground recite positions of the pivot points, such as *the rotational axis R and [[pivot points being separated by a vertical distance (e.g., [19.6b])]*. 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.

- lowers the center of gravity (“COG”) of the machine,

both of which were well-known design benefits for a loader of any size. These and additional benefits of a reduced frame and low COG were well-recognized by POSITA prior to the '750 patent and are detailed in the Petition and by Velinsky (including with supporting evidence). *See* Petition, 70-71, 79-84; EX1003, ¶¶178-183, 199-228. 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” of design. EX1043, 61-63, 77-80 (explaining “the higher [COG], the more front-to-back movement” impacting stability and “lower the pivot point down where you are supporting it on the lower mainframe structure, then...the mass of the mainframe [is] reduced.”) Thus, the Petition satisfies a *prima facie* finding of obviousness for these limitations.

PO's arguments about Beltrami are inconsequential and factually incorrect. As best understood, PO's dispute seems to arise from their supposition that Beltrami—within the four-corners of its disclosure—explicitly recognizes benefits to low pivot points and frame requirements, but only in the context of improvements from radial-lift to vertical-lift and/or only describes an improvement of COG in a fore-aft plane that comes from not relying on a radial-lift configuration. POR, 46-50. However, case 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 a

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 “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; Petition, 69, 80-82. Beltrami does not constrain this “supporting frame” as only of radial-lift. It is not debatable that providing the pivot points low such that frame requirements are reduced, lowers COG.

Similarly, PO's suggestion that Beltrami's discussion is limited to improvements of fore-and-aft shifts of COG is misplaced—COG is a multi-directional, fundamental design parameter. EX1043, 64 (evaluating “to keep [COG] at a lower level in order to increase stability”), 74-78 (discussing front-to-back/vertical COG as “fundamental principles”). A primary means of reducing the center of mass of a CUL is by attaching the loader as low as possible on the machine to gain benefits of stability. *See, e.g.*, EX1003, ¶¶180, 212, 234.

1. PO's teaching away argument is legally flawed

Like with Bares, PO contends KR996's patent figures show a component that is in the way of the proposed combination's lower pivot point and this interference effectively teaches away from the combination. POR, 56. Fleming points to a “wheel

motor” and mounting mechanism that he alleges cannot be moved, resized, or otherwise redesigned. *Id.* As discussed *supra*, this is not the proper context for obviousness. *See* Section I.A. PO’s argument improperly relies on not-to-scale patent drawings, bodily incorporates elements, functions as automaton without any engineering considerations, and fails to recognize even if the combination required design changes, that does not support teaching away.

Second, as recognized in the Petition, Velinsky affirmed that POSITA would have known to address any space constraints and operator safety. EX1003, ¶¶217-219 (discussing shape modification for “no interference” and operator area safety fences/barriers). PO’s expert also previously testified, when representing Vermeer as a petitioner, that moving pivot points in a mini skid steer loader is routine in the design process. EX1046, 58-59 (Fleming’s modifications including pivot points, linkage/actuator lengths, arm shape, etc.)

Third, PO overstates the component interference as the allegedly interfering drive motor is **not even present** in the proposed combination with Bares’ track assembly. *See* EX1010, FIG. 3 (16B), FIG. 8 (motor 146 at raised, rear sprocket). Implementing the angled track of Bares as proposed, there is sufficient room—even under PO’s bodily incorporation premise—for low pivot points to not interfere with KR996’s mounting mechanism should POSITA wish to retain it as illustrated. *See*

Petition 83, EX1003, ¶220, Figure A (claimed distances are relative to raised sprocket).

2. PO's argument relies on improper bodily incorporation

Velinsky provided kinematic diagrams illustrating a four-bar mechanism where the pivot points are horizontally aligned as shown in the prior art. Petition, 82-84; EX1003, ¶¶220-228, Appendix A, ¶218 (EX1021 having pivot points at “same level.”) Velinsky's analysis includes Appendix A, which shows kinematic movement (not linkage shape) of that four-bar mechanism—with level points—functioning exactly as he expected and just like the movement of offset pivot points of the KR996 patent figures. *Id.* In other words, Appendix A and his analysis supports that POSITA can provide a four-bar mechanism with aligned pivot point connections that works. *Id.*

Fleming provided diagrams and an animation of a four-bar mechanism that he alleges does not work. POR, 59-60.⁹ Fleming's diagrams at most show it is possible

⁹ Fleming's “modeling” does not show the bucket vertical movement but movement **toward the operator** (*contrast* POR, 10 with “vertical travel path”) and shows an actuator **without any appreciable change to its length**, which is incorrect. EX1043 58-60 (confirming actuator movement in four-bar).

to create a mechanism that does not work, without any effort to try to make it work. *See* EX1043, 96-98 (affirming bodily incorporation), 120-122 (discussing not considering loader arm design changes), 123 (“I did not try to fix”). As discussed at length, this is not the standard of obviousness.

Ultimately, the Petition has shown that four-bar mechanisms were a well-known design option for skid steers (including in KR996’s CUL), for many years prior to the ’750 patent. And four-bar mechanisms with low pivot points 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-affecting variables and benefits of providing low pivot points were recognized in the prior art and by fundamental engineering principals.¹⁰ 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.

VI. SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS

PO’s arguments for non-obviousness based on secondary considerations fail for at least four reasons: A) the considerations lack any nexus to the claims; B) the

¹⁰ Petition also shows it is known to increase relative dimensions D1 and D5. Petition, 76, EX1003, ¶¶189-193.

overall strength of the prior art; C) the improper reliance on hearsay evidence; and D) the mischaracterization of the evidence.

A. Lack of nexus between PO's evidence and the claimed invention.

PO's secondary considerations lack nexus to the claims as their arguments and evidence are premised on the assertion that PO was the first to invent a vertical-lift CUL. Specifically:

- Dr. Fleming agrees that the evidence of secondary considerations is directed to vertical-lift. EX1043, 123 (“The evidence of secondary considerations, is that directly primarily to vertical lift? A. I would say primarily, yes.”).
- Magazine recognition of introduction of “vertical lift to the compact tool carrier market.” POR, 65-66.
- Hearsay testimony regarding the “popularity of vertical-lift machines.” *Id.*
- Inventor's testimony that his vertical-lift machine has “greater lift capacity than its radial-lift counterpart.” *Id.*, 68.
- Hearsay stories of Toro engineers' difficulties developing vertical-lift machines cobbled from portions of depositions taken from a different litigation. *Id.*, 67, 69-73.

- Some of Kubota's customers prefer vertical-lift machines. *Id.*, 73-81.

However, it is undisputed that KR996 discloses a vertical-lift CUL, demonstrating that PO was not the first to invent this. None of the features addressed in obviousness above are shown to drive any of secondary indicia. 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. 2016).

B. The prior art is strong.

As discussed above, all elements of many challenged claims are explicitly disclosed in KR996, with only a few conventional features shown to be obvious. In such a case, secondary considerations cannot override such a strong showing of obviousness, which here closely approaches anticipation.¹¹ *See Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

¹¹ Velinsky reviewed secondary considerations and found them related to applying vertical-lift to a CUL. EX1003, ¶27. Understanding KR996, he properly concluded they do not alter his opinion finding the claims obvious. *Id.*; EX2021, 59.

C. PO's evidentiary deficiencies: cross-examination, completeness, and authentication lacking.

The Board should accord little to no weight to PO's evidence of secondary considerations due to significant evidentiary deficiencies and a separate motion to exclude will be provided in this proceeding. 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 that it does not submit directly in this proceeding. *See* EX1059.

D. PO's arguments mischaracterize the tenor and substance of its evidence.

PO's arguments, as best ascertained from the portions of testimony provided, are directed to the challenges of development and commercialization of a vertical-lift CUL that has a certain "lift capacity" relative to then available radial-lift counterparts in the market. *See* POR 71-74. However, the mere existence of development challenges or struggle to meet a market demand for improved performance does not constitute an indicia of non-obviousness, especially where the claims themselves do not recite any "lift capacity" limitation.

PO contends that Petitioner's performance of surveys of the market and its customers demonstrate intentional copying. POR, 75. This argument is unavailing. Petitioner's commercially available CUL is different than that of Vermeer's CUL

and the '750 patent. Fleming has testified that it is common industry practice to survey the market and benchmark against competitors and this supports obviousness. *See* EX1046, ¶¶110, 120.

PO relies on a Toro patent application as evidence that Toro struggled to create a vertical-lift CUL. POR, 70-71 citing EX2004. This is a mischaracterization. The cited passage states only that it is “difficult” to use “such high lift loader arms” particular to USP 5,542,814 on a CUL. EX2004, [0007]. The Toro application inventors have testified just that—a fact that PO fully knows and has previously relied upon—but did not disclose here. *See* PGR2020-00081, Paper 1, 41-43 (PO relying on inventors’ Toro inventors’ testimony to show this same statement is discussing specific “front mounted scissor mechanism” not vertical-lift). Further, Toro inventor testimony portions submitted in that proceeding show the Toro inventors did not think it was “difficult or impossible” to provide a “vertical lift or four-bar linkage” on a CUL at least because “there are so many other loaders out there that have vertical lift on them” and the “art [high lift loader arms] is out there for skid steers. That’s easily adaptable.” *See* EX1060, 7-8; EX1061, 8 (portions of deposition produced by PO in the PGR2020-00081).

VII. PO'S VELINSKY ATTACK IS CONTRARY TO THE RECORD.

Velinsky is a highly qualified expert as discussed above. *See* I.B. PO mischaracterizes Velinsky's testimony, who did not "struggle" to describe how components of the CUL fit together. *See* POR, 31. Velinsky listed various CUL components (*e.g.*, hydraulic pumps, motors, engine, radiators), referenced prior art illustrating the arrangement, and explained component locations are a "design choice." EX2021, 25-28. PO's line of questioning—demanding detailed physical arrangements of components not even claimed in the patent—only underscores PO's continued reliance on bodily incorporation.

Similarly, over an objection to scope, PO's counsel asked Velinsky to name the "hydraulically powered attachment[s]" including the "amounts of hydraulic power and hydraulic flow to operate." EX2021, 29-31. Whether Velinsky chose to answer a line of questioning that did not appear focused on obtaining relevant substantive testimony—hydraulic attachments not being claimed or described in the '750 patent—says nothing as to his qualifications. PO does not contend it invented a new attachment and the prior art of record and Velinsky's testimony is replete with discussion of various attachments.

PO also criticizes Velinsky for not personally generating CAD drawings, implying this undermines his credibility. This argument is meritless. It is standard

practice for experts to rely on technical staff or assistants for tasks such as CAD. *See* EX1003, ¶202; EX2021, 14. Indeed, PO's own expert, Fleming, admitted that he does not personally generate his drawings, including those in this matter. EX1043, 27-28, 83-84. What is relevant is whether Velinsky's analysis and conclusions in his declarations are his own; here they are. EX1003, XI. Finally, PO's accusation that Velinsky "admitted" to using "hindsight" is a distortion of the record. *See* POR, 34, *contrast* EX2021, 54-57 (Dr. Velinsky explaining the truism that he "had to look to the claims to know what the technology was.")

VIII. CONCLUSION

The Board should find all challenged claims unpatentable.

Respectfully submitted,

/David M. O'Dell/
David M. O'Dell
Lead Counsel for Petitioner
Registration No. 42,044

Dated: ____December 3, 2025____

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 5,566 words, according to the word count tool in Microsoft Word™.

/David M. O'Dell/
David M. O'Dell
Lead Counsel for Petitioner
Registration No. 42,044

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.

Date of service December 3, 2025

Manner of service Electronic Mail: rbrophy@atllp.com
mvandertuig@atllp.com;
mvandermolen@atllp.com

Documents served **Petitioner's Reply**
Exhibits EX1042-EX1062

Persons served Richard L. Brophy
Armstrong Teasdale LLP
7700 Forsyth Boulevard, Suite 1800
Saint Louis, Missouri 63105

Marc Vander Tuig
Armstrong Teasdale LLP
7700 Forsyth Boulevard, Suite 1800
Saint Louis, Missouri 63105

Michael J. Vander Molen
Armstrong Teasdale LLP
7700 Forsyth Boulevard, Suite 1800
Saint Louis, Missouri 63105

/David M. O'Dell/
David M. O'Dell
Lead Counsel for Petitioner
Registration No. 42,044