UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KUBOTA NORTH AMERICA CORPORATION,
Petitioner,

v.

VERMEER MANUFACTURING COMPANY,
Patent Owner.

IPR2025-00167
U.S. Patent No. 9,321,386

Filed: March 12, 2025

PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,321,386

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EXHIBITS

Exhibit	Description
2001	February 28, 2025 Patent Office Announcement
2002	U.S. Patent No. 7,695,236 ("Green")
2003	U.S. Patent No. 8,821,104 ("Yasuda")
2004	U.S. Patent Pub. 2016/0244937A1
2005	U.S. Patent No. 5,542,814
2006	Summary: Problems with the Disclosure in KR996
2007	Excerpts from Oxford Dictionary
2008	Dingo Operators Manual
2009	Dingo Parts Catalog
2010	Scheduling Order from Parallel Litigation (ECF No. 34)
2011	Kubota's Amended Answer and Counterclaims from Parallel Litigation (ECF No. 39)
2012	Amended Scheduling Order from Parallel Litigation (ECF No. 41)
2013	Judge Pittman's Specific Requirements from Parallel Litigation
2014	Excerpt of Kubota's Invalidity Contentions from Parallel Litigation

CLAIM APPENDIX

Claim No.[1]	Description
1.0	A compact tool carrier configured for standing or walk-behind operator control and having a longitudinal axis and a mass of less than about 1500 kg, the compact tool carrier comprising:
1.1	a loader having an arm, the loader being adapted to carry a tool;
1.2a	a mainframe for supporting the loader, the mainframe having a first side and a second side, and having a front end and a rear end relative to the longitudinal axis,
1.2b	the mainframe comprising an engine bracket that extends from the first side toward the second side for mounting an engine to the mainframe, the engine bracket being spaced from the rear end of the mainframe,
1.2c	the loader arm not being directly attached to the mainframe;
1.3	a linkage pivotally attached to the first side of the mainframe and pivotally attached to the loader arm;
1.4	an actuator pivotally attached to the first side of the mainframe and pivotally attached to the loader arm; and
1.5	a control station having operator controls for propelling the compact tool carrier forward and for raising and lowering the loader, the control station being mounted toward the rear of the compact tool carrier and adapted to allow for standing or walk-behind operation.
2	The compact tool carrier as set forth in claim 1 wherein the mainframe incorporates a single weldment.
3	The compact tool carrier as set forth in claim 1 wherein the loader arm is a first loader arm and the linkage is a first linkage, the loader comprising a second loader arm and the compact tool carrier comprising a second linkage pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.

[1] For purposes of this Preliminary Response, and for ease of reference, Vermeer uses the same claim limitation numbering as the Petition.

Claim No.[1]	Description
4	The compact tool carrier as set forth in claim 3 wherein the actuator is a first actuator, the compact tool carrier comprising a second actuator, the second actuator being pivotally attached to the second side of the mainframe and pivotally attached to the second loader arm.
5	The compact tool carrier as set forth in claim 1 comprising a drive mechanism comprising tracks or wheels, the drive mechanism being attached to the mainframe.
6	The compact tool carrier as set forth in claim 1 comprising an engine to propel a drive mechanism, the engine being attached to the engine bracket.
7	The compact tool carrier as set forth in claim 1 wherein the actuator is a hydraulic cylinder.
8	The compact tool carrier as set forth in claim 1 wherein each loader arm incorporates a single weldment.
9	The compact tool carrier as set forth in claim 1 wherein the control station is mounted toward the rear of the compact tool carrier, the compact tool carrier comprising an operator platform for standing operation of the compact tool carrier, the difference between the height of the control station and the height of the platform being at least 90 cm.
10	The compact tool carrier as set forth in claim 1 wherein the control station is mounted toward the rear of the compact tool carrier, and the height of the control station from a surface supporting the compact tool carrier is at least 90 cm.
11	A method for operating the compact tool carrier as set forth in claim 1, the method comprising standing behind the compact tool carrier and operating the control station to propel the compact tool carrier forward and/or raise or lower the loader.
12	The method as set forth in claim 11 wherein the control station is operated while standing on an operator platform or while standing on a surface supporting the compact tool carrier.
13	The compact tool carrier as set forth in claim 1 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.
15.0	A compact tool carrier comprising:
15.1	a loader adapted to carry a tool;

Claim No.[1]	Description
15.2a	a mainframe for supporting the loader, the mainframe having a first side and a second side, and having a front end and a rear end relative to the longitudinal axis,
15.2b	the mainframe comprising an engine bracket that extends from the first side toward the second side for mounting an engine to the mainframe, the engine bracket being spaced from the rear end of the mainframe,
15.2c	each side having a top and a bottom, the first side of the mainframe having at least two pivot points relative to the loader,
15.2d	the loader not being directly attached to the mainframe;
15.3	a linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader;
15.4	an actuator pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader;
15.5a	a drive mechanism comprising tracks or wheels for propelling the compact tool carrier over a supporting surface, the drive mechanism being attached to the mainframe about a rotational axis, the compact tool carrier having a bottom at which the drive mechanism contacts the supporting surface, the rotational axis and bottom of the compact tool carrier being separated by a vertical distance Dl, the rotational axis and the bottom of the first side of the mainframe being separated by a vertical distance D5,
15.5b	the rotational axis and the pivot point at which the linkage is attached to the mainframe being separated by a vertical distance D2, the rotational axis and the pivot point at which the actuator is attached to the mainframe being separated by a vertical distance D4, D2 and D4 each being less than 1.5 times Dl and each being less than twice D5; and
15.6	a control station having operator controls for propelling the compact tool carrier forward and for raising and/or lowering the loader, the control station being mounted toward the rear of the compact tool carrier and adapted to allow for standing or walk-behind operation.
17	The compact tool carrier as set forth in claim 15 wherein the second side of the mainframe comprises two pivot points, each vertical distance between the rotational axis and a pivot point being less than 1.5 times Dl.

Claim No.[1]	Description
19	The compact tool carrier as set forth in claim 15 wherein the first side of the mainframe comprises a top most pivot point, the top most pivot point and the top of the first side of the mainframe being separated by a vertical distance D6, D6 being less than about 1.5 times DS.
20	The compact tool carrier as set forth in claim 15 further comprising a tool attached to the loader, the tool being selected from the group consisting of a bucket, auger, fork, stump grinder, tiller and roller.
21	The compact tool carrier as set forth in claim 1 wherein the linkage is a first linkage, the first linkage being pivotally attached to the first side of the mainframe at a first pivot point and pivotally attached to the loader arm at a second pivot point, the actuator being attached to the mainframe at a third pivot point and pivotally attached to the loader arm at a fourth pivot point, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe at a fifth pivot point and pivotally attached to the loader arm at a sixth pivot point, wherein as the loader travels from a down position to a vertically raised position, the first, second, third, fourth, fifth, and sixth pivot points are (1) disposed between the operator controls and a bottom of the mainframe or (2) disposed forward of the control station.
22	The compact tool carrier as set forth in claim 21 further comprising an operator platform for standing operation of the operator controls of the control station, the operator platform being located toward a rear of the compact tool carrier such that the first pivot point, third pivot point, and fifth pivot point are disposed forward of the operator platform.
23	The compact tool carrier as set forth in claim 15 wherein D2 and D4 are each less than 1.75 D5.
24	The compact tool carrier as set forth in claim 15 wherein D2 and D4 are each less than 1.5 D5.
25	The compact tool carrier as set forth in claim 15 wherein D2 and D4 are each less than Dl.
26	The compact tool carrier as set forth in claim 15 wherein D2 and D4 are each less than 0.75 Dl.

Claim No.[1]	Description
27	The compact tool carrier as set forth in claim 15 wherein the linkage is a first linkage, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader, the rotational axis and the pivot point at which the second linkage is attached to the mainframe being separated by a vertical distance D3, D3 being less than 1.5 times Dl.
28	The compact tool carrier as set forth in claim 15 wherein the linkage is a first linkage, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader, wherein the mainframe comprises a forward-most pivot point with (1) the pivot point at which the first linkage is attached to the mainframe, (2) the pivot point at which the actuator is attached to the mainframe, or (3) the pivot point at which the second linkage is attached to the mainframe being the forward-most pivot point, a vertical distance between the rotational axis and the forward-most pivot point being less than Dl.
29	The compact tool carrier as set forth in claim 15 wherein the linkage is a first linkage, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader, wherein the mainframe comprises a forward-most pivot point with (1) the pivot point at which the first linkage is attached to the mainframe, (2) the pivot point at which the actuator is attached to the mainframe, or (3) the pivot point at which the second linkage is attached to the mainframe being the forward-most pivot point, a vertical distance between the rotational axis and the forward-most pivot point being less than 0.75 Dl.

Claim No.[1]	Description
30	The compact tool carrier as set forth in claim 15 wherein the linkage is a first linkage, the compact tool carrier further comprising a second linkage pivotally attached to the first side of the mainframe at a pivot point and pivotally attached to the loader, wherein the mainframe comprises a forward-most pivot point with (1) the pivot point at which the first linkage is attached to the mainframe, (2) the pivot point at which the actuator is attached to the mainframe, or (3) the pivot point at which the second linkage is attached to the mainframe being the forward-most pivot point, a vertical distance between the rotational axis and the forward-most pivot point being less than 1.5 D5.
64	The compact tool carrier as set forth in claim 1 further comprising an operator platform for standing operation of the operator controls of the control station, the operator platform extending from the mainframe.
65	The compact tool carrier as set forth in claim 64 wherein least a portion of the operator platform is forward of the rear end of the mainframe.
66	The compact tool carrier as set forth in claim 15 wherein the pivot point at which the actuator is attached to the first side of the mainframe is above the rotational axis.
67	The compact tool carrier as set forth in claim 15 wherein the pivot point at which the linkage is attached to the first side of the mainframe is disposed above the tracks or wheels.

I. INTRODUCTION

Petitioner challenges the validity of claims 1–13, 15, 17, 19–30, and 64–67 of Vermeer's U.S. Patent No. 9,321,386.[2] Before addressing the merits of the Petition, the Board should exercise its discretion to deny institution. The issues presented in the Petition are also the subject of a co-pending litigation between the parties filed more than seven months ago, in August of 2024: *Vermeer Manufacturing Company v. Kubota North America Corporation and Kubota Tractor Corporation*, 4:24-cv-00799-P (N.D. Texas) ("Parallel Litigation"). The District Court assigned that case an aggressive schedule, the parties are already engaged in claim construction for which all briefing will be completed in the next two months, and trial will occur before the deadline for issuing a final decision in this proceeding. Instituting review under these circumstances will cause significant duplication of effort and presents a real risk of conflicting decisions. Moreover, the Petitioner brought patent infringement counterclaims in the Parallel Litigation asserting patents directed to technology derived from the invention described in the '386 Patent. Resolving validity questions for both the '386 Patent

[2] As used herein, "the '386 Patent" means U.S. Patent No. 9,321,386 and "Challenged Claims" means the claims 1–13, 15, 17, 19–30, and 64–67 of the '386 Patent.

and Petitioner's patents in a single proceeding will ensure that Petitioner takes consistent positions regarding the inventive nature of the technology protected by the '386 Patent and its own later-filed patents. For these reasons alone, the Board should exercise its discretion to deny institution.

A review of the merits of the Petition also militates against institution. The Petition advances a series of obviousness arguments that are premised on the combination of Korean Patent No. 10-1041996 ("KR996") relating to a construction vehicle having a special detachable loader unit with various other prior-art references. Petitioner fails to advance any legitimate basis to conclude that a person of ordinary skill in the art would modify this specialized construction vehicle or otherwise combine the teachings of these references in the manner Petitioner alleges. In fact, the express teachings of the references themselves foreclose the hindsight combinations that Petitioner proposes.

Even if the Frankenstein combinations Petitioner proposes could be achieved, those combinations fail to satisfy at least two key limitations of all the Challenged Claims. The '386 Patent teaches the importance of a "mainframe" that acts as the core structure of the machine to which other components of the machine are attached. The Challenged Claims each require at least one "linkage" and "actuator" that are pivotally attached to the side of that mainframe. Petitioner argues that KR996 teaches these limitations, but even a cursory review of that

disclosure reveals that the linkages and actuators of that disclosure are actually attached to a "fixture" that is part of a removable attachment and not the "mainframe" of the machine.

These numerous and fundamental failures in the Petition demonstrate that Petitioner is not likely to prevail on the merits of its arguments. For these additional reasons, the Board should deny institution.

II. LEGAL BACKGROUND

A. Petitioner's Burden

Institution of an *inter partes* review is only appropriate where, in light of the petition and preliminary response, the Board determines "that there is a reasonable likelihood that the petitioner would prevail." 35 U.S.C. § 314(a). The burden to demonstrate this "reasonable likelihood" falls on the petitioner, who must "prov[e] a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e).

A petition must identify where each element of the challenged claims is found in the prior art. 37 C.F.R. § 42.104(b)(4). If the petition fails to explain the relevance of prior art or identify the specific portions of the prior art that it relies on, "[t]he Board may exclude or give no weight to the evidence." 37 C.F.R. § 42.104(b)(5).

B. Petitions Based on Obviousness

A petition based on obviousness under 35 U.S.C. § 103 must address (1) "the scope and content of the prior art;" (2) "differences between the prior art and the claims at issue;" (3) "the level of ordinary skill in the pertinent art;" and (4) "secondary considerations [such] as commercial success, long felt but unsolved needs, failure of others, etc." *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). The petition must describe the differences between the claimed subject matter and prior art with specificity. *Google Inc. and Twitter, Inc. v. EveryMD.com LLC*, IPR2014-00347, Paper 9, at 24–25 (PTAB May 22, 2014) (finding the petition did "not address meaningfully the scope and content of the prior art, and any differences between the claimed subject matter and the prior art," and therefore "plac[ed] the burden on [the Board] to sift through the information presented by Petitioners").

C. Discretionary Denial Under 35 U.S.C. § 314(a)

Institution of *inter partes* review is discretionary. *Apple Inc. v. Fintiv, Inc*. IPR2020-00019, Paper 11, at 2–6 (PTAB Mar. 20, 2020) (precedential). When determining whether to exercise that discretion, the Board considers six 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

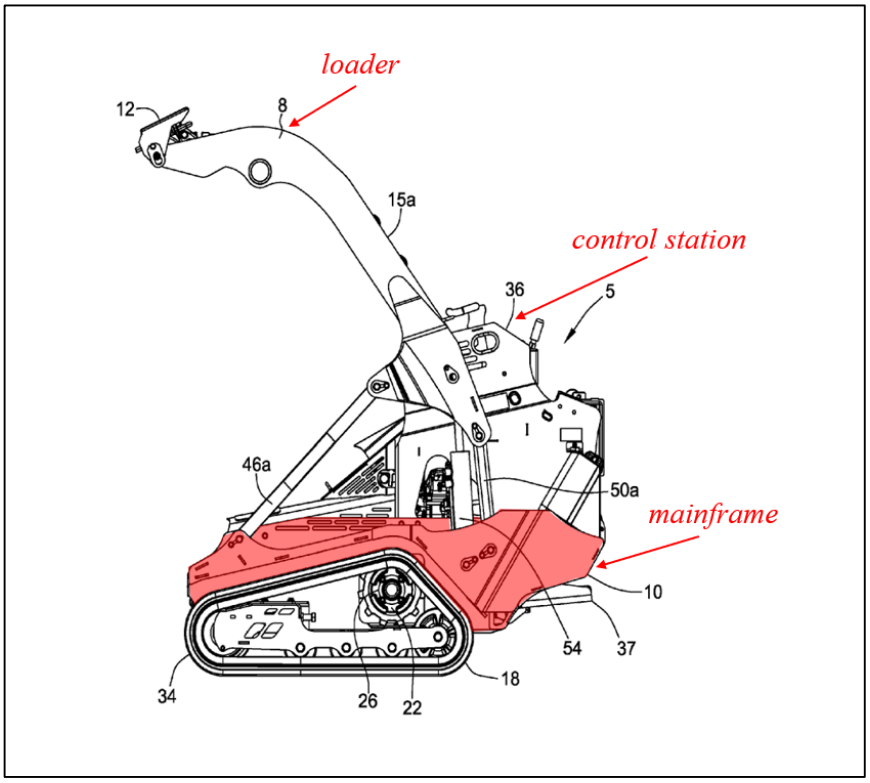
parallel proceeding by the court and the parties;" (4) "overlap between issues raised in the petition and in the parallel proceeding;" (5) "whether the petitioner and the defendant in the parallel proceeding are the same party;" and (6) "other circumstances that impact the Board's exercise of discretion, including the merits." *Id*. at 6. "[I]n evaluating the factors, the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Id*. While the Board previously interpreted these factors in accordance with a June 21, 2022 guidance memo entitled "Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation," the Patent Office rescinded that memo in February 2025. Ex. 2001 ("[T]he portions of those decisions relying on the Memorandum shall not be binding or persuasive on the PTAB.").

III. U.S. PATENT NO. 9,321,386

A. Overview of the '386 Patent

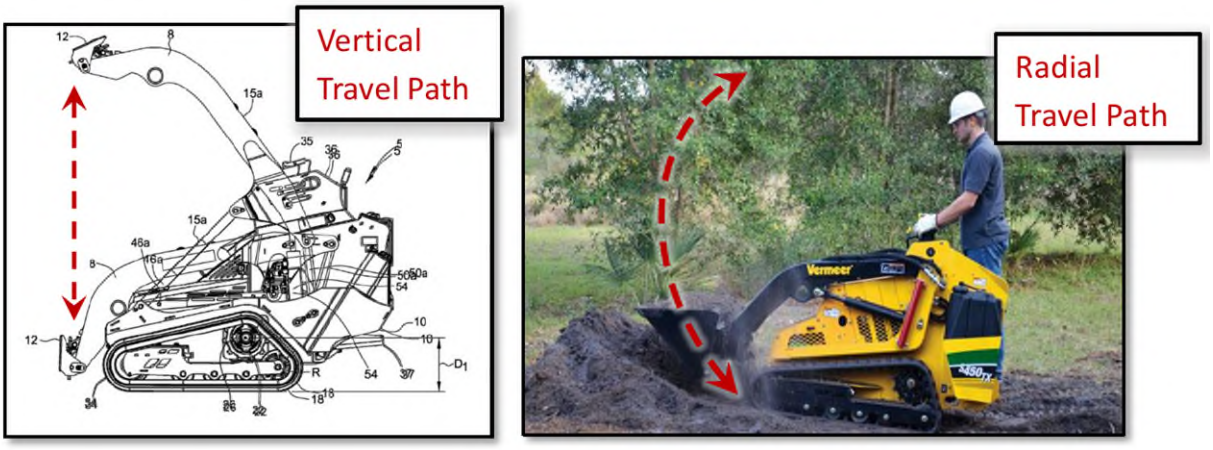
The '386 Patent, titled "Low Profile Compact Tool Carriers," issued on April 26, 2016. Ex. 1001 at Cover Page. It claims priority to Provisional Application No. 62/118,860, which was filed on February 20, 2015. *Id.* The '386 Patent is directed to "[c]ompact tool carriers having a loader mounted to a low-profile mainframe." *Id.* at Abstract, 1:12–13.

Compact tool carriers—also known as mini skid steers, mini track loaders, or compact utility loaders—are distinguishable from full-size skid steers in weight, size, and complexity. *Id.* at 1:34–36. The compact tool carriers are substantially lighter, typically with "a mass of less than about 1500 kg." *Id.* at 1:53–54. As the name suggests, they are smaller than full-size skid steers, resulting in the need for a different method of operation. *Id.* at 1:32–36. The user operates the compact tool carrier using the control station, generally while standing or walking behind the machine. *Id.* at 1:59–61, 3:34–45. The controls are used "for propelling the compact tool carrier forward and for raising and lowering the loader." *Id.* at 1:56–58.



Ex. 1001 at Fig. 3 (shading and annotations added). This method of operation differs from conventional or full-size skid steers, in which the user typically operates the machine from a seated position. *Id.* at 1:32–34.

Because compact tool carriers are smaller and lighter than their conventional counterparts, designing them requires overcoming myriad engineering challenges. One main challenge is maximizing lift capacity without significantly increasing the size and weight of the machines. The '386 Patent's solution involves, *inter alia*, a compact tool carrier having loader arms attached via linkages to a low-profile mainframe to achieve a substantially vertical-lift path as the loader is raised and lowered—rather than a radial path. Ex. 1001 at 6:2–6.



The vertical-lift mechanism results in an increased lift capacity, largely because it keeps the loader as close to the machine as possible throughout the travel path of the loader arm. *Id.* at 6:6–8 ("The vertical travel path of the loader 8 is more effective relative to conventional travel paths for compact tool carriers 5 as the

carrier 5 may operate closer to other structures."). This is particularly advantageous for users of compact tool carriers that are working in tight spaces and need to lift heavy loads. *Id.* at 1:17–19.

The compact tool carrier in the '386 Patent also has a low-profile mainframe. *Id.* at 1:12–13, 5:64–67. This means that "the pivot points [attaching the linkages and actuators to the mainframe] are positioned relatively low on the mainframe[,] allowing its height to be reduced." *Id.* at 5:4–7. This results in several benefits. For example, "the mass of the mainframe 10 and the resulting cost of the carrier 5 may be reduced." *Id.* at 5:62–64. "Further, such a low-profile mainframe 10 improves visibility for the operator and allows the center of gravity in the carrier 5 to be lowered[,] which improves stability." *Id.* at 5:64–67.

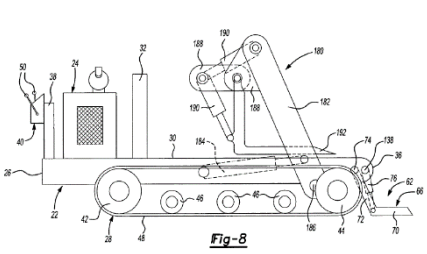
The foregoing components of the compact tool carrier, along with other limitations disclosed in the '386 Patent, result in a small and powerful machine that is well-suited for a variety of projects.

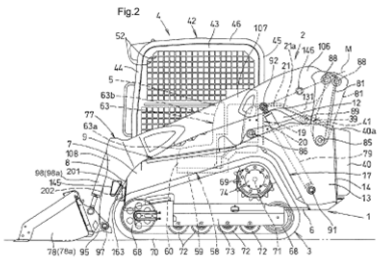
B. Prosecution History

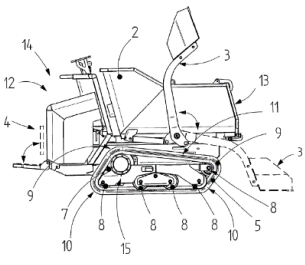
The '386 Patent was the first patent issued to Vermeer in connection with its vertical-lift compact utility loader invention. The '386 Patent issued in 2016 after examination by the Patent Office. Subsequently, the Patent Office issued several related patents to Vermeer for its invention, including U.S. Patent Nos. 9,975,750, 10,202,266, 11,465,891, and 12,098,063. In the nearly nine years since the '386

Patent issued, Vermeer's patents have survived multiple *ex parte* reexaminations. As briefly summarized below, the Patent Office's prior vetting of the validity of the '386 Patent has been very thorough—generating thousands of pages of file histories. *See* Exs. 1002; 1029; 1030; 1031. The consistent result from the Patent Office's prior scrutiny has been to confirm the patentability of the Challenged Claims.

The '386 Patent issued from U.S. Patent Application No. 14/691,649 ("the '649 Application"), which was filed on April 21, 2015. Ex. 1001 at Cover Page. The '649 Application claims priority to Provisional Application No. 62/118,860 ("the '860 Application"), filed on February 20, 2015. *Id.* During the original examination, the examiner rejected certain claims based on prior-art references not at issue in this Petition. Ex. 1002 at 73–79. These prior-art references included full-size loaders with vertical-lift loader arms and various smaller machines, shown below:


Fig-8

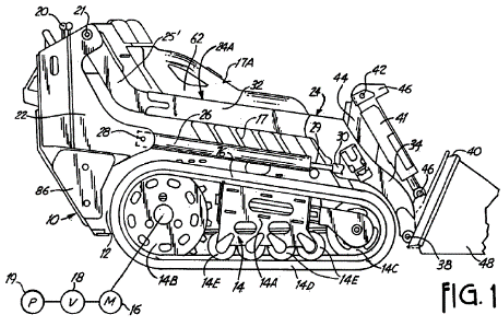

Fig.2


Fig.1

Ex. 1002 at 76–78; Ex. 2002 (U.S. Patent No. 7,695,236, "Green") at Fig. 8; Ex. 2003 (U.S. Patent No. 8,821,104, "Yasuda") at Fig. 2; Ex. 1033 (U.S. Patent Pub.

US2009/0116943, "Valere") at Fig. 1. In response, Vermeer amended its then-pending claims to add key limitations clarifying the specific loader arm configuration of its new compact tool carrier, including the location of the pivotal connections between the mainframe and the linkage and actuator. Ex. 1002 at 57 (adding claim language requiring that the linkage and actuator be "pivotally attached to the first side of the mainframe").[3] These important claim limitations distinguished Vermeer's invention from the configuration used in the walk-behind machine disclosed in Green. *Id*. at 66–68.

In response, the examiner shifted to a new argument based on a combination of Yasuda with U.S. Patent No. 6,695,568 (Ex. 1009, "Bares '568"). Ex. 1002 at 52–54. Bares '568 disclosed a radial-lift mini skid steer:


FIG. 1

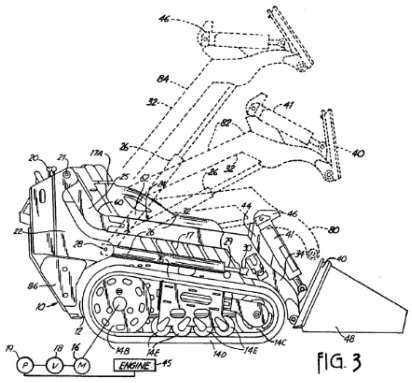


FIG. 3

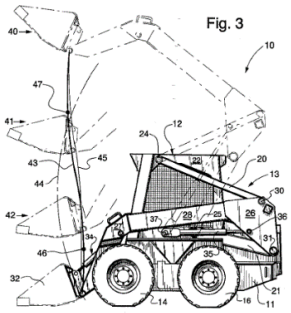
[3] As demonstrated below, Petitioner fails to demonstrate that the KR996 reference—the linchpin for all of its asserted grounds of invalidity—satisfies these key limitations defining Vermeer's claimed invention in the Challenged Claims.

Ex. 1009 at Figs. 1, 3. Vermeer responded by explaining why it would not have been obvious to a POSITA[4] to use the vertical-lift style loader arms of Yasuda's full-size loader on a mini skid steer frame, like Bares '568—including by adding limitations to distinguish the specific Yasuda/Bares '568 combination asserted by the examiner. Ex. 1002 at 42–48, 12–25. The Patent Office allowed the claims and the '386 Patent was issued on April 26, 2016.

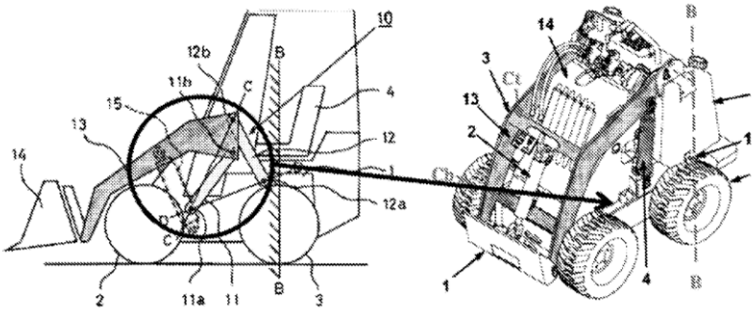
Since the '386 Patent issued, it has survived two rounds of *ex parte* reexaminations initiated by a third party, the Toro Company, which like Petitioner, was facing potential liability in a lawsuit relating to infringement of Vermeer's '386 Patent. *See* Exs. 1029; 1030; 1031. Toro had filed its own patent application relating to its vertical-lift mini skid steer, which included the following assessment of the challenges associated with using high-reach, vertical-lift loader arms on a compact machine:

[4] As used herein, "POSITA" means a person having ordinary skill in the art as of the earliest effective filing date of the '386 Patent, February 20, 2015.

[0007] Finally, the vertical reach of the loader arms on compact utility loaders is somewhat limited. While high lift loader arms are known on full size skid steer loaders as disclosed in U.S. Pat. No. 5,542,814, the use of such high lift loader arms on a compact utility loader has been considered difficult if not impossible due to size and durability constraints. Accordingly, it would be a further advance in the art to provide a way of safely and durably providing high lift loader arms on compact utility loaders to extend the vertical reach of such loaders. For example, this would allow a compact utility loader to dump debris or materials at higher elevations than previously, thus allowing the use of larger trucks to accept such debris or materials for transport.



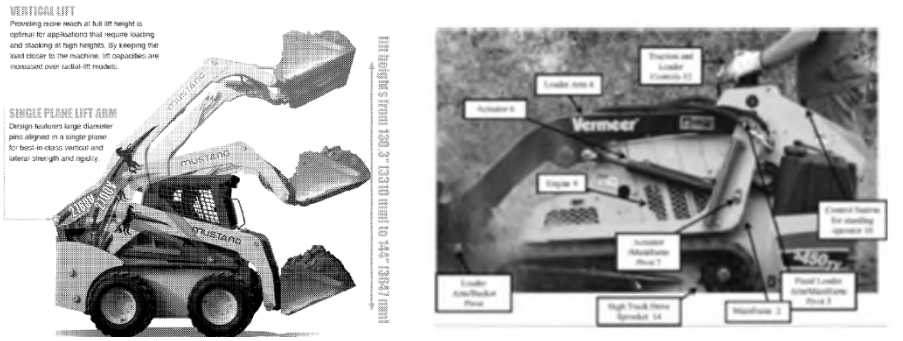
Ex. 2004 (Toro's U.S. Patent Pub. 2016/0244937A1); Ex. 2005 (U.S. Patent No. 5,542,814 cited by Toro) at Fig. 3. Despite this prior representation to the Patent Office,[5] Toro submitted numerous *ex parte* reexamination requests, arguing that it would have been obvious to implement a vertical-lift loader arm configuration on a compact utility loader. *See* Ex. 1029 at 233–275, Ex. 1031 at 447–529. In support of these assertions, Toro presented a number of hypothetical combinations of compact utility loaders with vertical-lift loader arm configurations (taken from full-size machines):



Komatsu **Dingo**

[5] Toro attempted to walk back this representation to avoid an inconsistency with its obviousness assertions.

Ex. 1031 at 483 (proposing replacing the radial-lift loader arms of the Dingo compact utility loader with the vertical-lift loader arms of the Komatsu full-size loader).



Ex. 1029 at 252, 256 (proposing replacing the radial-lift loader arms of the Vermeer S450TX compact utility loader with the vertical-lift loader arms of the Mustang full-size loader).

As part of its response to Toro's reexamination challenges, Vermeer presented the Patent Office with various evidence of objective indicia of non-obviousness. For example, during its litigation against Toro, Vermeer discovered that for years Toro engineers had struggled with the challenge of increasing lift capacity on a mini-skid steer machine. Toro invested years of work and large sums of money designing and prototyping machines in an effort to solve this problem. A detailed examination of Toro's design efforts—all of which further corroborate the inventive nature of Vermeer's invention—was presented to the Patent Office during reexamination. *See* Ex. 1031 at 30–56.

After a lengthy reexamination process, including a detailed review of Toro's efforts to solve the problem resolved by the invention disclosed in the '386 Patent, Vermeer overcame all of the validity challenges, and the Patent Office confirmed the patentability of the '386 Patent's challenged claims, as reflected in the Reexamination Certificates. Ex. 1001 at April 12, 2018 Ex Parte Reexamination Certificate and January 24, 2020 Ex Parte Reexamination Certificate.

IV. SUMMARY OF THE PETITION

A. Grounds

The Petition includes three alleged obviousness grounds in support of its request to cancel the Challenged Claims. Petition at 19–20. All three grounds depend on KR996. *Id.* at 20. Petitioner argues that a POSITA would have been motivated to modify the machine disclosed in KR996 to yield the compact utility loaders defined in the Challenged Claims. First, the Petition argues Claims 1–13, 21–22, and 64 are obvious based on proposed modifications of KR996's machine in light of Japanese Publication of Unexamined Patent Application No. 2004-17705 ("JP705"). *Id.* at 21–59. Second, the Petition argues that Claim 65 is obvious based on proposed modifications of KR996's machine in light of JP705 and U.S. Patent No. 6,397,967 ("McIlwraith"). *Id.* at 59–64. Third, Petitioner argues that Claims 15, 17, 19–20, 23–30, 66, and 67 are obvious based on

proposed modifications of KR996's machine in light of JP705 and U.S. Patent No. 3,586,195 ("Beltrami"). *Id.* at 64–91.

B. Alleged Prior Art

1. KR996

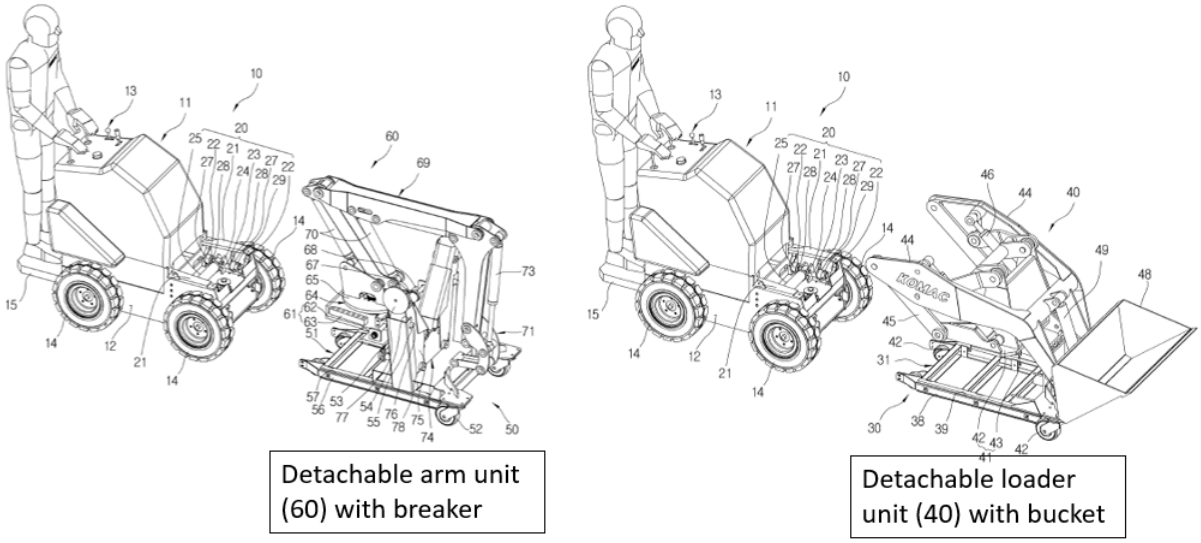
Korean Patent No. 10-1041996, titled "Environmentally Friendly Construction Equipment for Building Deconstruction Work," was published on June 16, 2011. Ex. 1005.[6] KR996 "relates to construction equipment for green building deconstruction work" that "can easily attach and detach various dismantling equipment to the vehicle according to the form of the deconstruction work." Ex. 1005 at [0001].

The problem that KR996 set out to solve was specific to demolition work conducted inside buildings. In the conventional arrangement, an urban demolition team would use two separate machines in pairs: a mini excavator with a concrete breaker or crusher for demolition work and a mini loader with a bucket for hauling

[6] For purposes of this Preliminary Patent Owner Response, Vermeer does not challenge the accuracy of the certified translations of KR996, JP705, or other references submitted by Petitioner. Vermeer, however, reserves all its rights to challenge the accuracy or admissibility of these translations in the event the Board institutes trial in this matter.

away the debris. *Id*. at [0003]–[0006]. The problem with this conventional arrangement, according to KR996, was that "the skid loader is idle while the mini excavator is crushing, and vice versa, the mini excavator is idle while the skid loader is bucketing," resulting in inefficiencies and extra expense associated with owning and maintaining two separate machines—each used only half of the time. *Id*. at [0007]–[0008].

To solve this purported problem, KR996 discloses a construction vehicle with a quickly detachable loader assembly and a quickly detachable breaker assembly:



Ex. 1005 at Fig. 14, Fig. 1, [0012] ("The purpose of the present invention is to provide construction equipment for green building deconstruction work, which enables the easy and quick attachment and detachment of a bucket and a breaker with a single vehicle, to solve the aforementioned problems."), [0013] ("Another

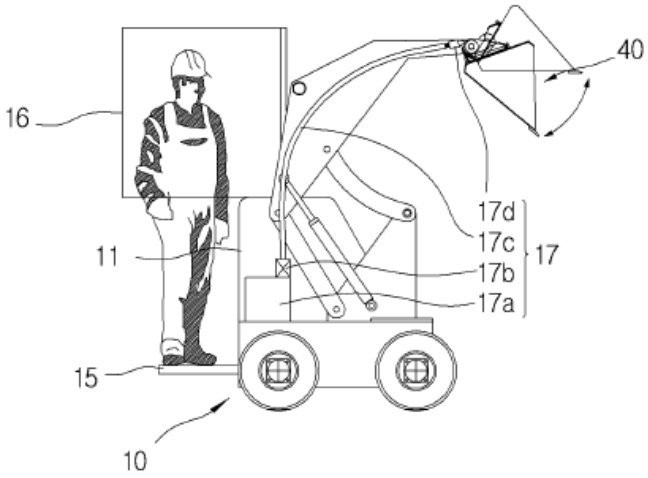
object of the present invention is to provide construction equipment for green building deconstruction work, which allows the boom assembly, bucket attachment, and bucket combined loader unit as a whole, and the boom assembly, breaker attachment, and breaker combined arm unit as a whole to be selectively detachable . . . .").

The vehicle (10) is comprised of, *inter alia*, the main body (11), control unit (13), and wheels (14). *Id*. at Fig. 1, [0116]–[0145]. The detachable loader unit (40) and the detachable arm unit (60)—and all the various structural components of these two detachable units—are separate from the vehicle (10), as clearly shown in Figures 1 and 14 above.

The detachability feature and the structural configuration achieving this functionality is repeatedly emphasized throughout the disclosure of KR996 as the key inventive concept. *See*, *e.g.*, *id.* at Abstract ("the present invention can easily and quickly detach the loader unit "), [0012] ("enables the easy and quick attachment and detachment of a bucket and a breaker with a single vehicle, to solve the aforementioned problems"), [0013] ("selectively detachable to the vehicle's detachable part"), [0088] ("easily and quickly detach"), [0069] ("The construction equipment for green building deconstruction work of the present invention, having such as configuration, allows the loader unit (40) or the arm unit (60) to be easily and quickly attached and detached from the vehicle (10).").

The detachability feature inherent to KR996 requires that the various components necessary to each individual attachment (*i.e.*, the loader/bucket unit and the breaker unit) be self-contained, discreet, and detachable from the main vehicle (10) through an intermediate attachment mechanism. As discussed further below, this configuration differs materially from the invention disclosed in the '386 Patent, which teaches an alternative design in which the main vehicle is conjoined with the loader unit so that various components of the loader unit (*i.e.*, linkages and actuators) can be attached to a "low profile" mainframe of the vehicle for increased visibility and stability.

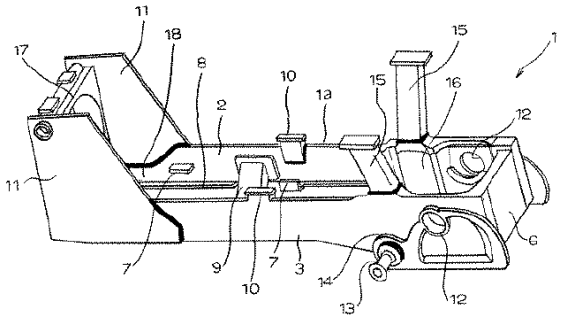
KR996 also teaches including a safety fence (16) to protect the operator from flying debris and a watering device (17) to suppress dust generation. *Id.* at [0089]–[0092]. These two features are depicted in Figures 21 and 22. These cartoon-like drawings depict the safety fence simply as a box (16) surrounding the operator, with no further details:



Although these features (safety fence and watering device) depicted in Figures 21 and 22 are not relevant to the issues before the Board, the lack of specific detail in these figures is representative of the overall lack of disclosure in KR996 as to how to actually implement the ideas set forth therein. Attached as Exhibit 2006 is a summary of some of the inconsistencies and significant problems with the machine depicted in KR996.

2. JP705

Japanese Publication of Unexamined Patent Application No. 2004-17705, titled "Main frame for work vehicle," was published on January 22, 2004. Ex. 1006 at Cover Page. JP705 is directed to large construction vehicles, "such as a bulldozer, hydraulic excavator, and the like." *Id.* at Abstract, [0002]. JP705 discloses a simplified mainframe that attempts to minimize the extent of protruding components on the internal surfaces of the mainframe to avoid interference with various on-board devices:

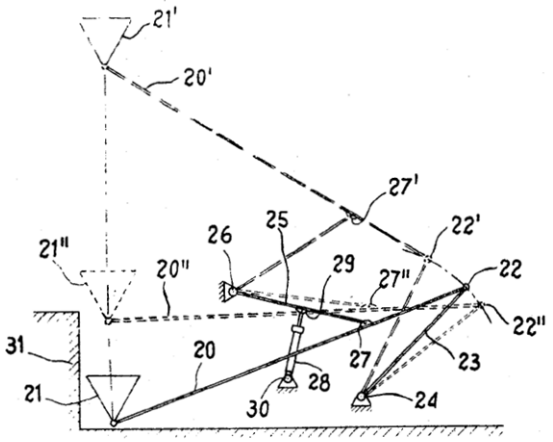


Id. at Fig. 1, Abstract, [0006]–[0013]. Because JP705 is directed to full-size earth moving machines with an entirely different configuration of internal components

(*e.g.*, motors, controls stations, and drive mechanisms), the reference has no relevance or applicability to mini-skid steer machines like those taught in the '386 Patent.

3. Beltrami

U.S. Patent No. 3,586,195 to Beltrami is directed to a device for digging and lifting that has a grabber or excavating bucket. Ex. 1008 at 1:6–16. The loader of Beltrami includes two parallel supporting arms with each arm being connected to a pair of "connecting rods" to form an "articulated quadrilateral so as to impart to the bucket a substantially vertical path." *Id*. at Abstract.



Ex. 1008 at Fig. 2.

V. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner asserts that a POSITA in February of 2015 "would have had a Bachelor of Science degree in Mechanical or Agricultural Engineering and two years of experience in the mechanical design of machines, or have had equivalent

knowledge and experience." Ex. 1003 at ¶19. Petitioner also argued that "[l]ack of professional experience can be remedied by additional education, and vice versa." *Id.*

For purposes of this Preliminary Response, Vermeer does not dispute the definition of level of skill possessed by a POSITA set forth in the Petition and notes that it substantially tracks Vermeer's definition.[7]

VI. CLAIM CONSTRUCTION

A. Claim Construction Standard

In an *inter partes* review, claims are construed under the standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). 37 C.F.R. § 42.100(b). The *Phillips* standard for claim construction uses the "ordinary and customary meaning," also known as "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (*en banc*). In general, there is a "'heavy presumption' that a claim term carries its ordinary and

[7] Vermeer asserts that a POSITA, as of the earliest effective filing date claimed in the '386 Patent, would have had at least a Bachelor of Science degree in Mechanical or Agricultural Engineering and two years of experience in the design of machines, or have had equivalent knowledge and experience.

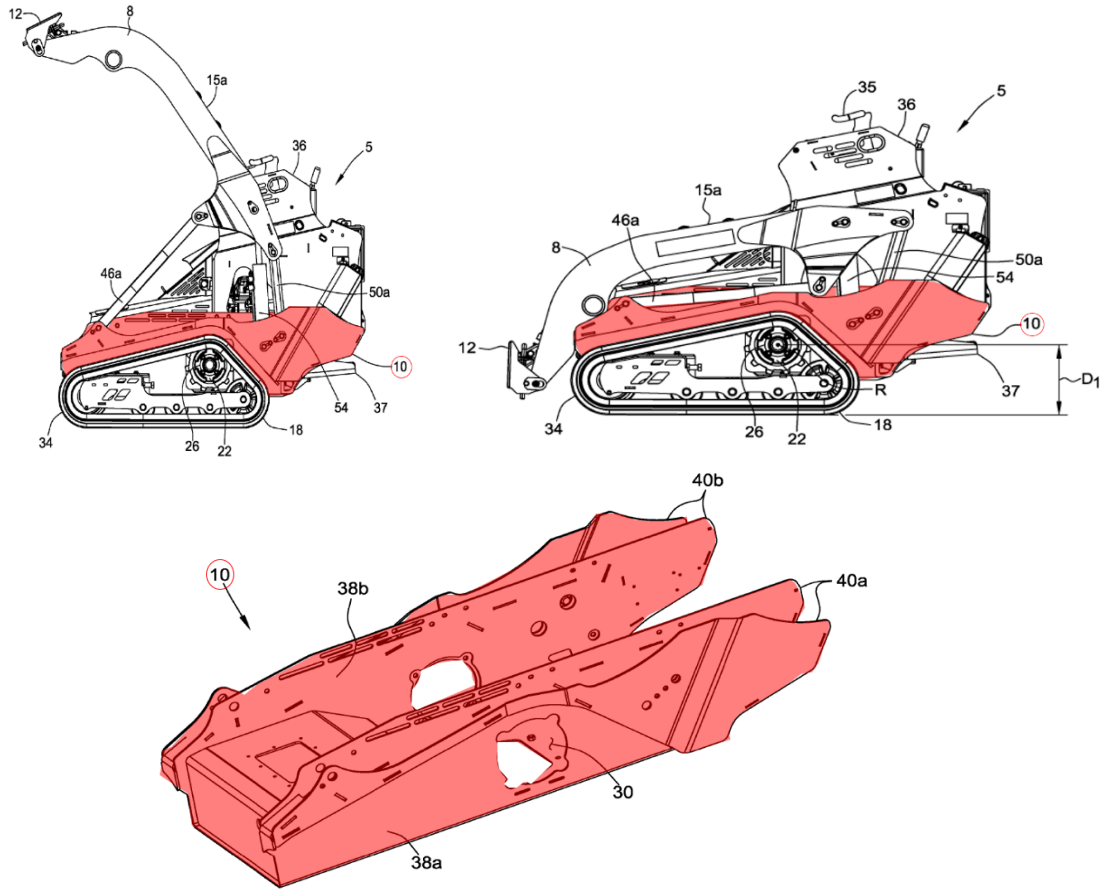
customary meaning." *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). The Board may use dictionary definitions to determine the claim term's ordinary and customary meaning. *Id.*

Intrinsic evidence such as the claims, specification, and prosecution history are used to interpret a claim term. *Id.* Extrinsic evidence, including expert testimony or treatises, may also be considered. *Id.* Further, the Board will consider "[a]ny prior claim construction determination concerning a term of the claim in a civil action . . . that is timely made of record in the *inter partes* review proceeding." 37 C.F.R. § 42.100(b).

B. Construction of "Mainframe"

As discussed in detail below, Petitioner's obviousness challenge is based entirely on an incorrect view of what constitutes the "mainframe" of the compact tool carrier defined in the Challenged Claims. All of the Challenged Claims require that the linkages and actuators that support the loader arms be "pivotally attached" or "pivotally connected" to the "mainframe" of the compact tool carrier. Under a proper construction of the "mainframe" term, Petitioner's challenge necessarily fails. Therefore, claim construction of this term is dispositive.

The plain and ordinary meaning of "mainframe," as that term is used in the '386 Patent, is the *body* of the compact tool carrier that supports the loader, as depicted, for example in these figures:

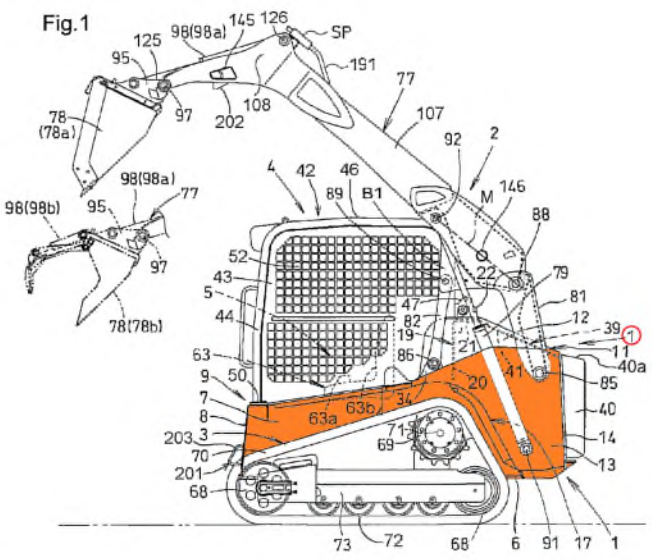


Ex. 1001 at Figs. 2–4 (annotations and shading added).

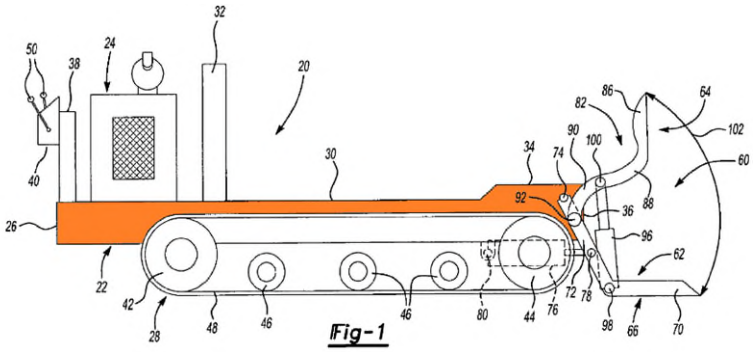
The specification uses the term "mainframe" and "body" interchangeably. Ex. 1001 at 3:66–67. This is consistent with the plain meaning of the words "main" and "frame." "Frame" simply means a rigid supporting structure. Ex. 2007 (defining the noun "frame" as "the rigid supporting structure of a vehicle, aircraft, or other object"). And the addition of "main" to "frame" simply indicates that this frame is the primary—or most important—frame of the vehicle. *Id.* (defining the adjective "main" as "chief in size or importance"). As the *primary* frame of the compact utility loader, the "mainframe" is the core structure of the

machine to which the other components attach. Ex. 1001 at 2:2–3 ("The drive mechanism is attached to the mainframe."), 3:20–24 (same), 3:62–64 (upper frame supporting the control station is attached to mainframe), 4:10–12 (engine and drive mechanism including tracks or wheels are connected to the mainframe), 4:13–18 (loader arms connected to mainframe), 4:35–42 (actuators connected to mainframe), 5:52–55 (mainframe includes an engine bracket for connecting and supporting the engine).

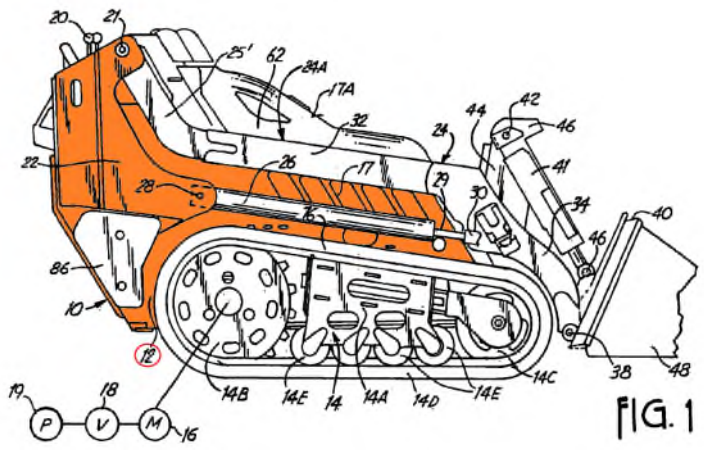
During prosecution and the prior reexaminations of the '386 Patent, this is also the meaning of "mainframe" that was uniformly applied by the Patent Office when evaluating the patentability of the claims. For example, during the original prosecution leading to the '386 Patent, the examiner cited to the "body frame 1" in Yasuda (U.S. Patent No. 8,821,104, Ex. 2003)—a Kubota patent—as teaching a "mainframe":



Ex. 2003 at 7:17–19, Fig. 1 (shading added); Ex. 1002 at 76. Similarly, the examiner cited to the "vehicle frame 22" in Green (U.S. Patent No. 7,695,236, Ex. 2002) as teaching a "mainframe":

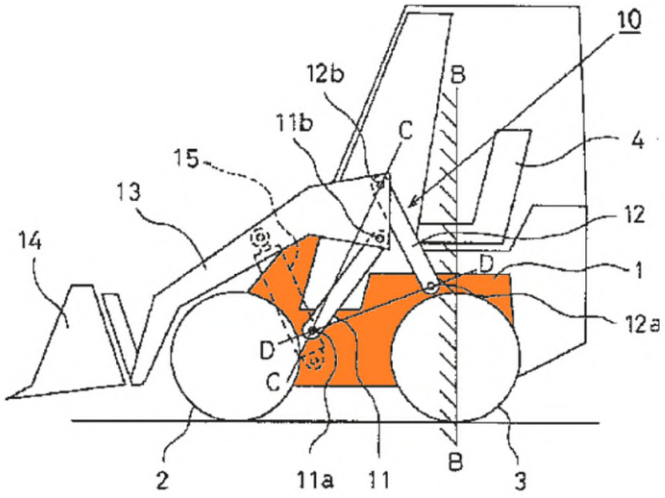


Ex. 2002 at 2:48–50 ("The utility vehicle 20 includes a vehicle frame, seen generally at 22."), Fig. 1 (shading added); Ex. 1002 at 76. Later, the examiner also relied on Bares '568 (Ex. 1009), which included a control station at the rear of its mainframe 12:



Ex. 1009 at 2:32–55 ("body or frame 12" supporting the track assembly and the lift arm assembly), Fig. 1 (shading added); Ex. 1002 at 52–54.

Likewise, the references that were thoroughly considered by the Patent Office during reexamination of the '386 Patent further demonstrate that "mainframe" means the body of the compact utility loader providing the structural support for the other components, such as the loader arms:



Ex. 1011 (Komatsu) at Fig. 1, [0019] ("vehicle body 1"), Fig. 1 (shading added); Ex. 1030 at 322 ("Komatsu teaches a skid-steer loader comprising a mainframe 1. . . .").

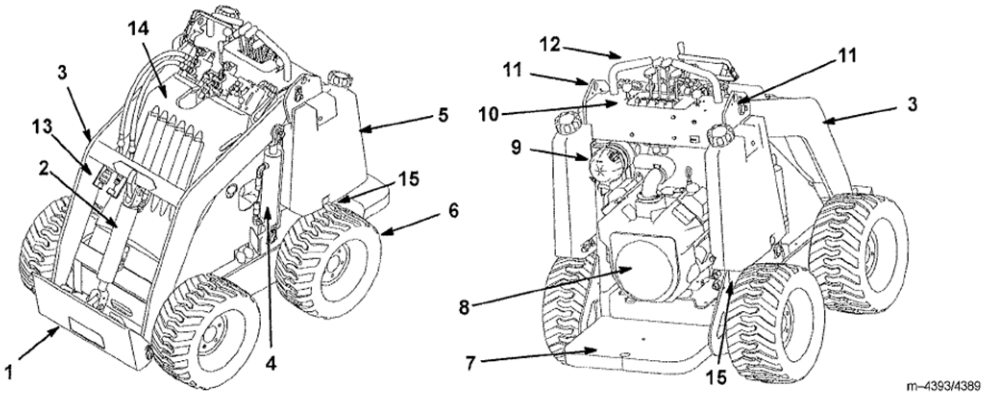
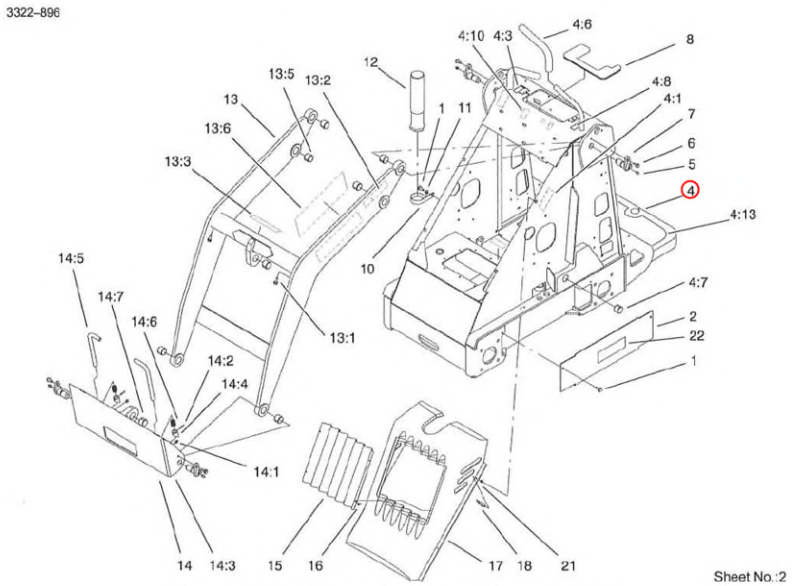


Figure 9



Frame And Loader Arm Assembly

Ex. 2008 (Dingo Operators Manual); Ex. 2009 (Dingo Parts Catalog) (annotation added); Ex. 1030 at 323 ("The mainframe of the Dingo/Dingo Parts Catalog incorporates a single weldment.").

The intrinsic record demonstrates that the plain and ordinary meaning of "mainframe" is the body of the compact tool carrier that supports the loader. *Petitioner does not dispute this construction*. *See, e.g.*, Petition at 30–31, n.6; Ex. 1003 at ¶74. Vermeer respectfully requests the Board to adopt this definition for purposes of evaluating Kubota's Petition.

VII. ARGUMENT

A. The Board Should Deny Institution Under 35 U.S.C. § 314(a).

The Board should exercise its discretion to deny institution in light of the Parallel Litigation concerning the same patents, which has already required

substantial investment and which will entirely resolve Petitioner's invalidity arguments *before* the anticipated date of a final decision here.

In the seven months since Vermeer initiated the Parallel Litigation, the Court has enforced a rapid schedule, requiring Vermeer to serve preliminary infringement contentions in December 2024 and setting a trial date of May 11, 2026. Ex. 2010. In January, Petitioner filed counterclaims for infringement of patents that—while filed years after Vermeer's—relate to the same subject matter. Ex. 2011 at 11–16. The Court slightly modified its schedule so the parties could exchange contentions regarding Petitioner's patents before quickly moving to the claim-construction phase for both parties' claims, without altering any of the deadlines that follow claim construction, including the trial date. Ex. 2012 at 1–2.

Given the Parallel Litigation's rapid progression, each of the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) weigh against institution here—especially in light of the Patent Office's recent decision to rescind its June 21, 2022 guidance memorandum that previously directed the Board to apply the *Fintiv* factors in a manner that typically favored institution. *See* Ex. 2001.

1. Factor 1: A stay of the Parallel Litigation is unlikely because Petitioner has asserted infringement counterclaims that the IPRs cannot resolve.

The first *Fintiv* factor weighs against institution because the Court has not granted a stay and there is no evidence that one would be ordered even if a proceeding is instituted. Petitioner did not move for a stay of the Parallel Litigation until February 11, 2025. It is highly unlikely that motion will be granted because Petitioner's infringement counterclaims cannot be resolved by this IPR, and Texas federal courts routinely decline to stay cases in which a trial will be necessary regardless of the IPR's outcome. *See, e.g.*, *Headwater Rsch. LLC v. Samsung Elecs. Co.*, No. 2:22-CV-00422-JRG-RSP, 2024 WL 2723870, at *3 (E.D. Tex. May 27, 2024) (rejecting stay because "even an ultimate finding [by the PTAB] invalidating all claims of the other patents would leave material disputes for the Court to decide"); *Force Mos Tech., Co. v. ASUSTek Computer, Inc.*, No. 2:22-CV-00460-JRG, 2024 WL 1586266, at *4 (E.D. Tex. Apr. 11, 2024).

This factor therefore weighs in favor of discretionary denial.

2. Factor 2: The Parallel Litigation's trial date is scheduled before the statutory deadline for the Board's Final Written Decision.

The second *Fintiv* factor also weighs against institution because the Parallel Litigation is scheduled for trial on May 11, 2026—one month ***before*** the anticipated date of a final written decision in this proceeding. The Board

"generally take[s] courts' trial schedules at face value absent some strong evidence to the contrary." *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15, at 13 (PTAB May 13, 2020) (informative).[8] This is particularly appropriate here, where the Parallel Litigation's presiding judge does not permit continuances absent "exceptional circumstances." Ex. 2013 at § II(B)(1). This factor therefore also weighs in favor of discretionary denial.

3. Factor 3: The parties have already invested significant effort in the Parallel Litigation.

This factor considers the Court and the parties' investment in the Parallel Litigation as of the date of the institution decision. *Fintiv*, Paper 11, at 9. The parties have already finished exchanging all preliminary contentions and will complete claim construction briefing by May 19, 2025. Ex. 2012 at 2; *see TCL Elecs. Holdings Ltd. v. Univ. of Rochester*, No. IPR2024-01245, Paper 10, at 13 (PTAB Feb. 13, 2025) (denying institution after claim-construction briefing and preliminary infringement and invalidity contentions complete). This factor thus weighs against institution.

[8] In rescinding the 2022 guidance memorandum, the Patent Office vacated its instruction to consider median-time-to-trial statistics when weighing this factor. *See* Ex. 2001.

4. Factor 4: There is substantial overlap between the Parallel Litigation and this IPR, favoring denial.

The "concerns of inefficiency and the possibility of conflicting decisions" further weigh against institution here. *Fintiv*, Paper 11, at 12. "[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial." *Id.* Petitioner has raised substantially the same grounds for invalidity in the Parallel Litigation, as well as ***additional*** grounds not raised here, as evidenced by the identification of prior-art references in Petitioner's invalidity contentions in the Parallel Litigation:

	'386 Patent
Azure III	A01
Dingo TX1000	A02
KR996	A03
Ulinski	A04
Miyaji	A05
DitchWitch SK750	A06
Fukuzumi	A07
Yasuda	A08
Yamashita	A09
Ito	A10
Yamada	A11
Hoechst II	A12
Mori	A13
Kubota SVL75	A14
Bares	A15
Hirao	A16
Sewell	A17
Omnibus References[1]	A18

[1] Omnibus References include Anderson, Azure I, Azure II, Beltrami, Berg, Bock, Derrupe, Dorkins, Hoechst I, JP705, Kim, McIlwraith, Rorabaugh, SAE and Valere.

Ex. 2014 at 6 (red emphasis added to prior art cited in both proceedings). The Parallel Litigation can therefore resolve the questions before the Board, but the reverse is not true. Nor has Petitioner stipulated not to pursue any grounds in the Parallel Litigation that it could have reasonably raised in its Petition.

Moreover, Petitioner has filed infringement counterclaims in the Parallel Litigation based on patents that relate to the same subject matter as Vermeer's but were filed many years later. Petitioner's obviousness arguments here are inconsistent with the assertion of its own derivative patents in the Parallel Litigation: if Vermeer's patents are invalid on the grounds raised in the Petition, then so are Petitioner's. Permitting Petitioner to simultaneously assert contradictory positions between proceedings is all but certain to result in conflicting decisions.

This factor weighs heavily against institution.

5. Factor 5: The parties in both proceedings are identical.

The fifth *Fintiv* factor weighs against institution because Vermeer and Petitioner—alongside an affiliate entity that Petitioner identifies as its fellow real party-in-interest here (*see* Petition at 95)—are also the plaintiff and defendants to the Parallel Litigation, respectively.

6. Factor 6: The '386 Patent's survival of extensive prior challenges further weighs against institution.

This factor considers "[o]ther facts and circumstances [that] may also impact the Board's discretion to deny institution," such as "the filing of serial petitions, parallel petitions challenging the same patent, and considerations implicated by 35 U.S.C. § 325(d)." *Fintiv*, Paper 11, at 16. As the Petition acknowledges, the '386 Patent was extensively challenged in previous litigation and reexaminations but survived. *See* Petition at 14, 95. As here, the party that requested those reexaminations was an accused infringer attempting to invalidate the '386 Patent on obviousness grounds. Vermeer and the Patent Office have already expended significant resources confirming the '386 Patent's validity; therefore, the relatively weak arguments set forth by Petitioner here are insufficient to justify yet another proceeding.[9]

Because every *Fintiv* factor weighs against Petitioner, the Board should deny institution.

[9] As discussed below, Petitioner's challenge falls well short of the "reasonable likelihood" standard under 35 U.S.C. § 314(a). Petitioner therefore could not meet the higher "compelling merits" standard set forth in the 2022 Guidance Memorandum, even if it still applied.

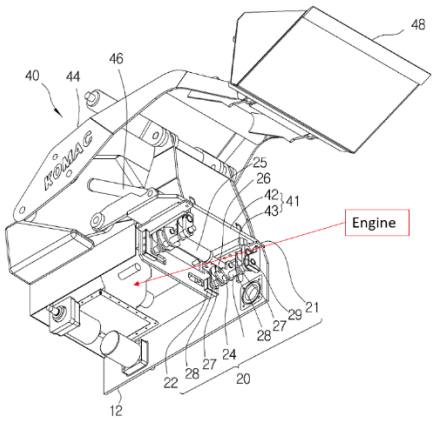
B. Petitioner's Ground I Arguments Lack Merit and Do Not Justify Institution.

Petitioner has failed to demonstrate a reasonable likelihood that it would prevail with respect to at least one of the Challenged Claims identified in Ground I. As explained below, Petitioner's Ground I has a fatal flaw: KR996 fails to disclose the limitations in the Challenged Claims requiring that the linkage and actuator be pivotally attached to the *mainframe*. As explained above, this was a key limitation added by Vermeer at the outset of prosecution of its original patent application to define the claimed invention. The detachable-loader-unit configuration touted in KR996 is fundamentally different than what is required by the Challenged Claims. Petitioner fails to grapple with this important difference, much less demonstrate a legitimate basis for the Board to bridge this chasm. Ground I should be rejected.

1. Petitioner's purported rationale for combining KR996 with JP705 lacks merit.

Petitioner asks the Board to conclude that a POSITA would modify KR996 by incorporating the engine bracket taught in JP705 into the design of the construction vehicle disclosed in KR996. Petition at 25 ("While KR996 does not detail how its engine is secured to its mainframe, JP705 does detail providing a mounting surface for just such an engine in a substantially similar vehicle."). There are two fundamental problems with Petitioner's proposed combination.

First, as shown below, KR996 discloses an engine and, necessarily, a mechanism for securing the engine:

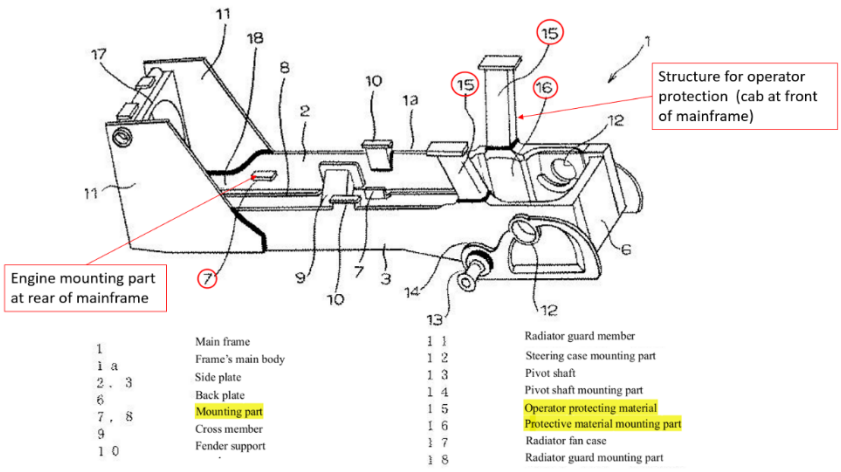


Ex. 1005 at Fig. 12 (annotation added). By failing to recognize this fact, Petitioner's rationale for modifying KR996 to include the engine bracket in JP705 fails.

Second, Petitioner has failed to substantiate its assertion that KR996 and JP705 disclose "substantially similar" vehicles—one of the premises for Petitioner's proposed combination. These references relate to two different categories of construction machines, with disparate sizes and engine types/sizes. KR996 is directed to small machines, namely "mini excavators, small skid loaders, mini loaders." Ex. 1005 at [0002], [0003]. In contrast, JP705 describes a mainframe for use in large work vehicles such as bulldozers and hydraulic excavators. Ex. 1006 at [0001] ("The present invention relates to a main frame for a work vehicle such as a bulldozer,

hydraulic excavator, or other construction or civil engineering machine….").

JP705 would provide a POSITA with no guidance regarding the mounting mechanism or location of the engine of KR996 which is significantly smaller and has a different function and arrangement of components. For example, unlike the machine taught in KR996, the engine of JP705 is located *behind the operator's cab* because JP705 is addressed to full-size machines and not the fundamentally different mini loader contemplated in KR996:



Ex. 1006 at Fig. 1 (annotations added).

Petitioner has failed to demonstrate a legitimate motivation for its proposed combination.

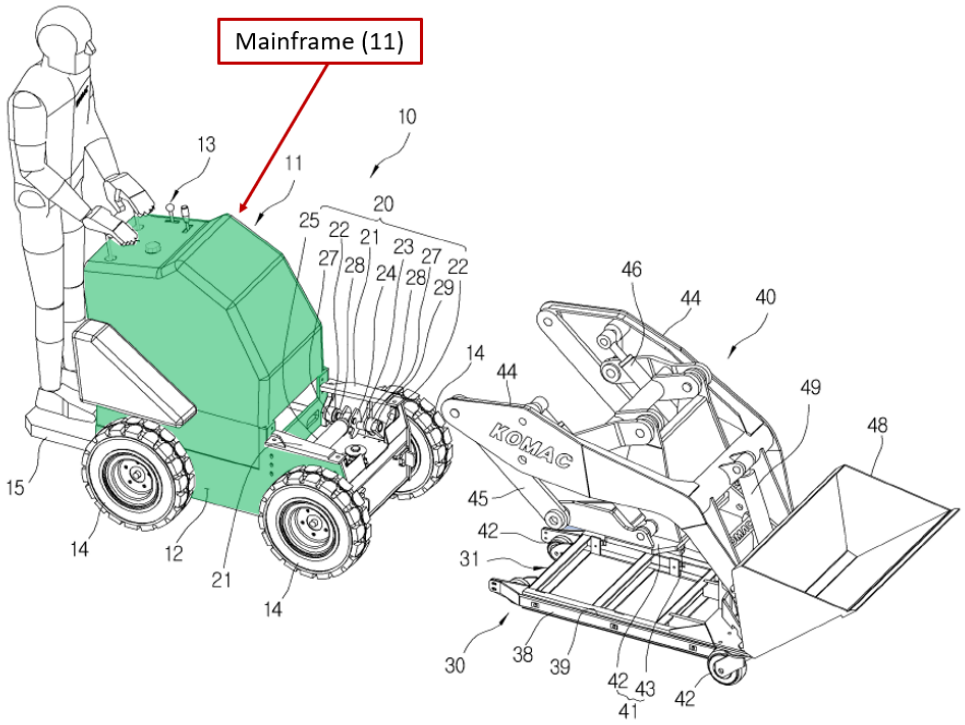
2. Petitioner's proposed combination fails to satisfy all the limitations of the Challenged Claims.

Even if a POSITA were motivated to combine the disclosure of KR996 with the engine bracket taught in JP705, Petitioner's invalidity arguments still fail

because the proposed combination does not teach two key elements of the Challenged Claims. Claim 1 requires a machine having linkages *and* an actuator that pivotally attach to the side of the mainframe. Petitioner superficially asserts that these requirements are satisfied by waving its hands at various figures in KR996, but even a cursory review of the reference reveals that the linkages and actuators of that machine are pivotally attached to a "fixture" that is part of a removable loader attachment—not to the mainframe of the machine, as the Challenged Claims require.

As discussed above—and as Petitioner concedes—a proper construction for the term "mainframe" used in the '386 Patent is "the body of the compact tool carrier that supports the loader." *See* Petition at 30–31, n.6. Because it is the "***body*** of the compact tool carrier," the mainframe is properly understood to be an inherent part of the core machine's structure. It is the core component to which the other components of the machine (*e.g.*, the drive mechanism, control station, operator platform, engine, *etc.*) are connected. *See, e.g.*, Ex. 1001 at 2:1–5, 4:9–13, Fig. 3.

The analogous mainframe taught in KR996 is comprised of a main body (11) and side plates (12).[10] Ex. 1005 at [0116]–[0117]. The mainframe of KR996 is depicted below and highlighted in green:



Ex. 1005 at Fig. 1 (annotations and shading added).

The '386 Patent's claims require that the linkages and actuators that support the loader arm of the invention must be *pivotally attached* to this core component of the machine. Limitations 1.3 and 1.4 of Claim 1 require a first linkage and an actuator that are "pivotally attached to the first side of the mainframe." Dependent

[10] Petitioner concedes that the mainframe of KR996 is main body 11. *See* Petition at 30–31, n.6.

claim 3 requires a second linkage that is "pivotally attached to the second side of the mainframe." Dependent claim 4 similarly requires a second actuator that is "pivotally attached to the second side of the mainframe."

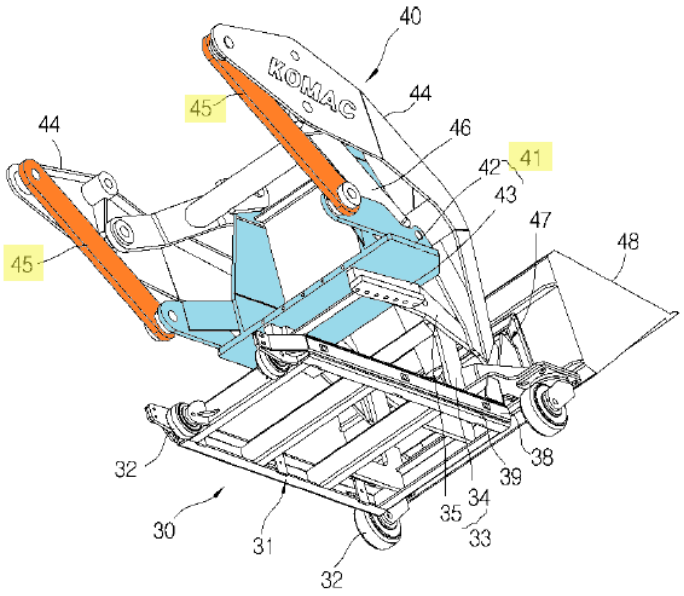
Petitioner has no support for its half-hearted assertion that these requirements are satisfied. For example, to satisfy limitation 1.3, Petitioner asserts that "KR996 illustrates link 45 (linkage) is *pivotally attached to the first side of the mainframe* at a first pivot point and pivotally attached to the boom 44 (loader arm) at a second pivot point." *See* Petition at 36 (emphasis in original).

It is telling that Petitioner expressly recites reference numerals for the link itself—"(45)"—and the boom to which one side of the link is attached—"(44)"—but strategically omits any reference numeral for the structure to which the other side of the link (45) is attached. Instead, Petitioner makes the bare assertion that the link is "attached to the first side of the mainframe." *Id.* This is false.

KR996 teaches that the link (45) is attached to an entirely separate "fixture" (41) that is ***not*** part of the mainframe of the machine. *See* Ex. 1005 at [0054] ("A boom (44) connected by a link (45) *is installed on the fixture* (41)") (emphasis added). KR996 explains that this "fixture" (41) to which the link (45) attaches is a sub-component of the loader unit attachment (40) and *can be detached entirely from the vehicle when another attachment is used*. *Id.* ("*The loader unit* (40) *is equipped with a fixture* (41) that is attached to the attachment part (33) of the bogie

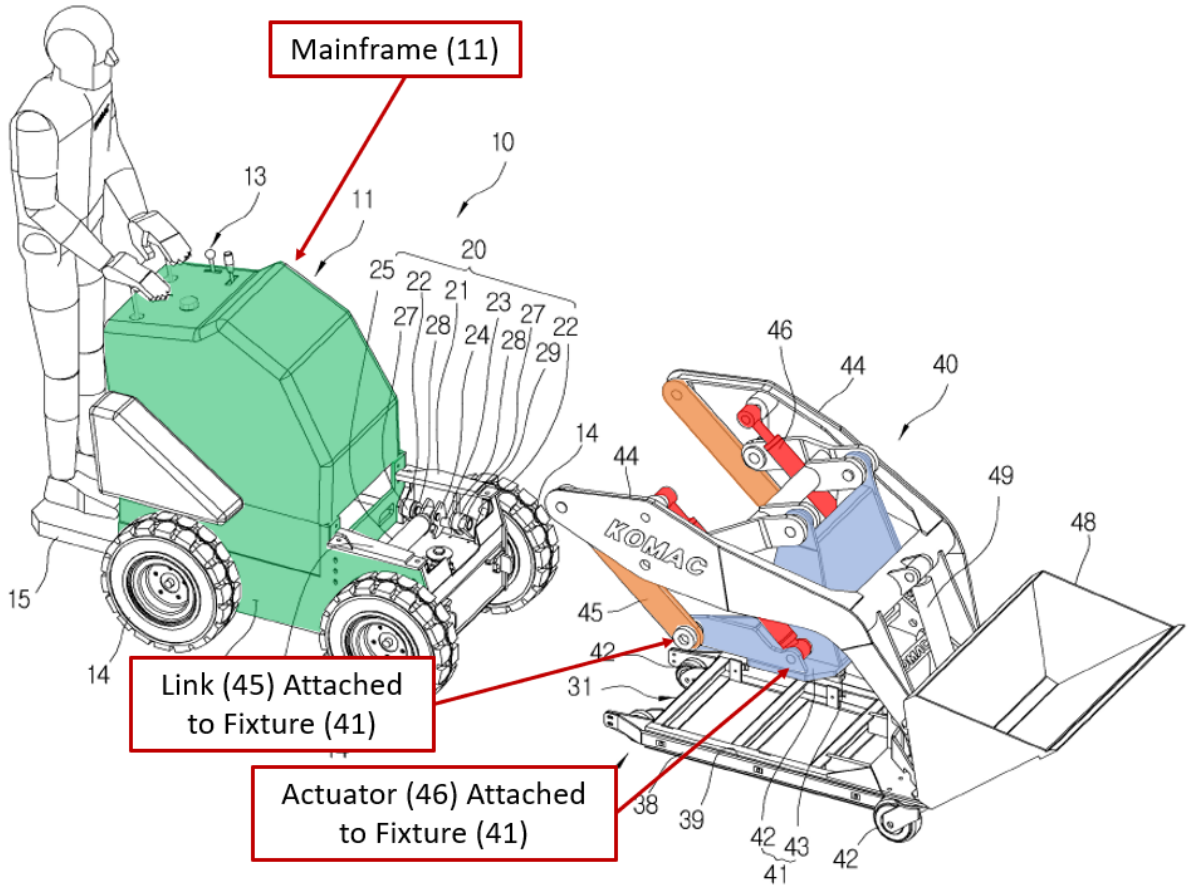
(30) as shown in Fig. 1 to 13, and when the bogie (30) is inserted into the front side of the vehicle (10), *it is attached to the detachable part* (20) *of the vehicle* (10).") (emphasis added); *see also id.* at [0079] (explaining that the loader unit (40) [which includes fixture (41)] can be "completely separated" from the main vehicle (10)).

Figure 2 of KR996 depicts this arrangement by illustrating the loader attachment (40) in its disconnected state. This figure clearly shows link (45) (shaded orange) pivotally attached to "fixture" component (41) (shaded blue), which is a subcomponent of the removable loader attachment (40). This confirms that the link (45) is connected to the detachable fixture (41) and *not* to the mainframe of the machine, as the claims of the '386 Patent require:



Ex. 1005 at Fig. 2 (shading and highlighting added).

The lack of pivotal connection between the links and the mainframe can also be seen in Figure 1, which depicts the vehicle (10) disconnected from the loader attachment (40). The mainframe (11) of the machine is shown in green on the left. The loader attachment (40), which can be separated from the vehicle (10) to use different attachments, includes the links (45) (in orange) pivotally attached to the "fixture" (41) (in blue). As can be seen below, the same problem also plagues Petitioner's arguments regarding the actuator limitations:



Ex. 1005 at Fig. 1 (annotations and shading added).

KR996 explains repeatedly, and in detail, how the "fixture" (41) is selectively attached or detached from the "main body" of the construction vehicle. *See, e.g.*, [0018] ("when the fixture of the loader unit or the fixture of the arm unit enters the detachable part inward, the fixture is raised upward to *press the fixture against the main body* and fix it in place") (emphasis added), [0036] ("when the driving part of the detachable part is operated in a state where the bogie and the loader unit are docked at the front of the vehicle, the pressure roller rotates and *presses the fixture of the loader unit upward, thereby coupling the loader unit to the main body of the vehicle*") (emphasis added), [0043] ("when the fixture (41) of the loader unit (40) or the fixture (61) of the arm unit (60) enters the detachable part (20) inward, *the fixture* (41) (61) *is lifted upward to fix it to the main body* (11) *by pressing it against the main body* (11)") (emphasis added).[11]

Consistent with these express teachings in KR996, Petitioner concedes in its argument that the loader attachment (40)—which necessarily includes the fixture

[11] Based on these disclosures, if anything, the link and actuator of KR996 are pivotally connected to fixture (41), which is subsequently pinched to the front of the mainframe via pressure plates and rollers. Therefore, the link and actuator are not pivotally attached to the side of the mainframe, as the Challenged Claims expressly require.

(41) to which the links (45) are pivotally attached—is a *separate* component that is not part of the mainframe of the machine but instead *attaches to it*:

> *KR996's weight-bearing frame is for supporting the loader as* ***the loader unit 40*** *including its boom 44* ***is attached to the mainframe*** *by way of linkages and actuator connecting to the loader arm…."*

Petition at 32 (emphasis added). Because the loader unit (40) is not part of the mainframe, it follows that the fixture (41)—which is a subcomponent of the loader unit (40)—is also not part of the mainframe. KR996 teaches that the links (45) and actuators (46) are pivotally connected to fixture (41); therefore, they are not pivotally attached to the *entirely separate* mainframe component, as the claims of the '386 Patent require.

Because KR996 does not satisfy the limitations from the '386 Patent that require linkages and actuators pivotally attached to the mainframe, Petitioner's challenge of the '386 Patent fails.

C. Petitioner's Ground II Arguments Lack Merit and Do Not Justify Institution.

Ground II involves one dependent claim (claim 65), relating to the positioning of the operator platform. Petitioner relies on an additional prior-art reference (McIlwraith) in connection with that limitation. But for all the remaining limitations in claims 1 and 64—from which claim 65 depends—Petitioner relies on

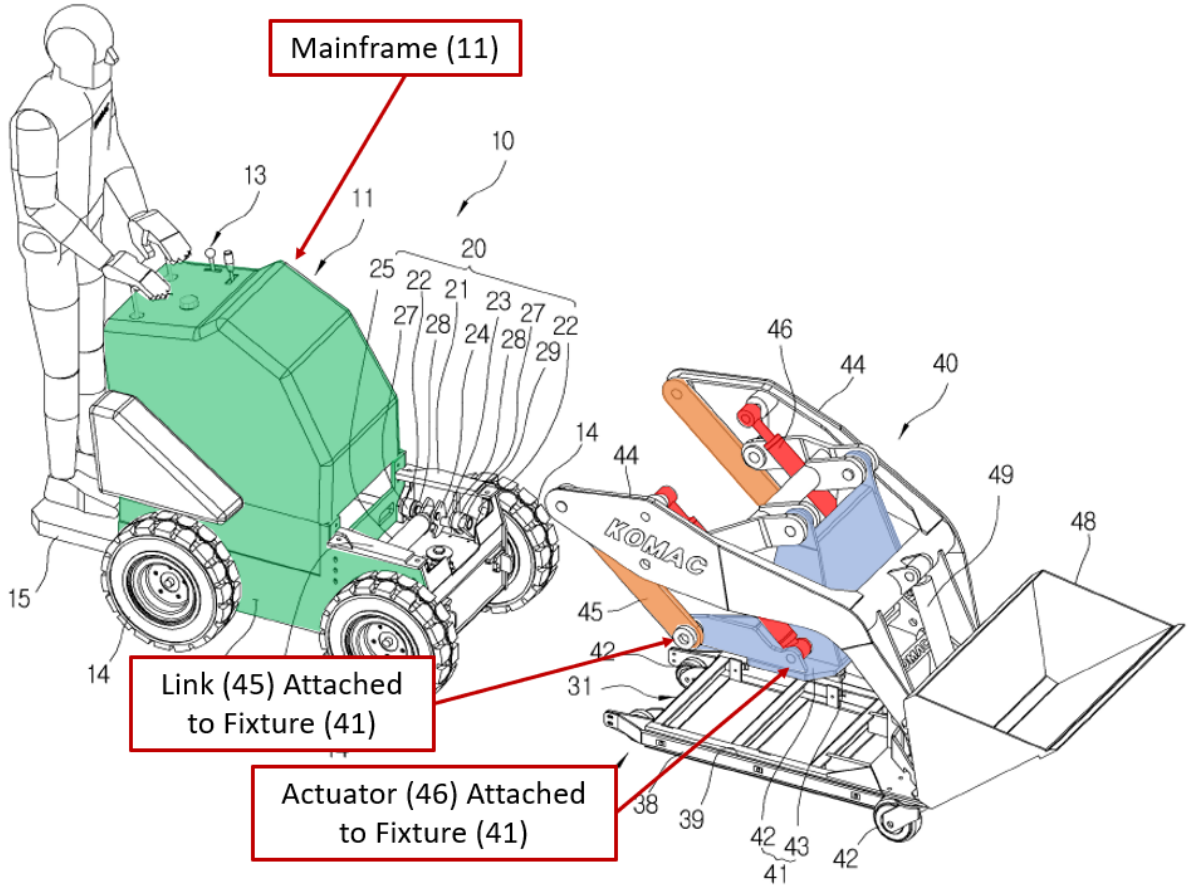
the same arguments made in Ground I. Therefore, Ground II fails for the same reasons explained above for Ground I.

D. Petitioner's Ground III Arguments Lack Merit and Do Not Justify Institution.

In Ground III, Petitioner asserts obviousness based on a purported combination of the teachings of KR996, JP705, and Beltrami. Specifically, Petitioner argues that a POSITA would dramatically redesign the construction vehicle disclosed in KR996 to move the pivot points connecting the linkages and actuators to locations lower on the vehicle (closer to the ground). *See, e.g.*, Petition at 74–91, Ex. 1003 at ¶¶177–202. As explained below, Petitioner fails to show that a POSITA would be motivated to make these drastic changes to the construction vehicle, or that such changes would yield the subject matter required by the Challenged Claims.

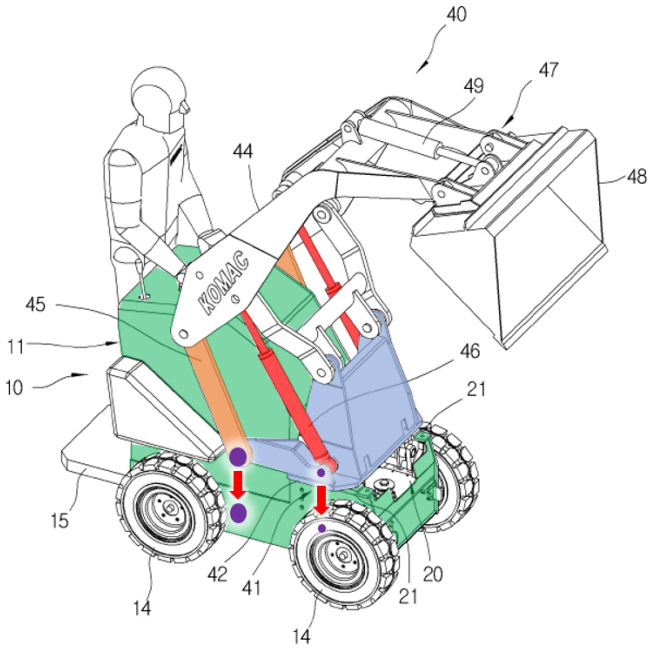
1. Petitioner's purported rationale for combining the teachings of KR996, JP705, and Beltrami to dramatically redesign the construction vehicle of KR996 lacks merit.

As discussed above relating to Ground I, the linkages ("link 45") and actuators ("boom cylinder 46") of KR996 connected to the loader arm ("boom 44") are *not* pivotally connected to the first side of the mainframe. Instead, they are connected to fixture (41), which is part of the removable loader unit attachment (40):



Ex. 1005 at Fig. 1 (shading and annotations added).

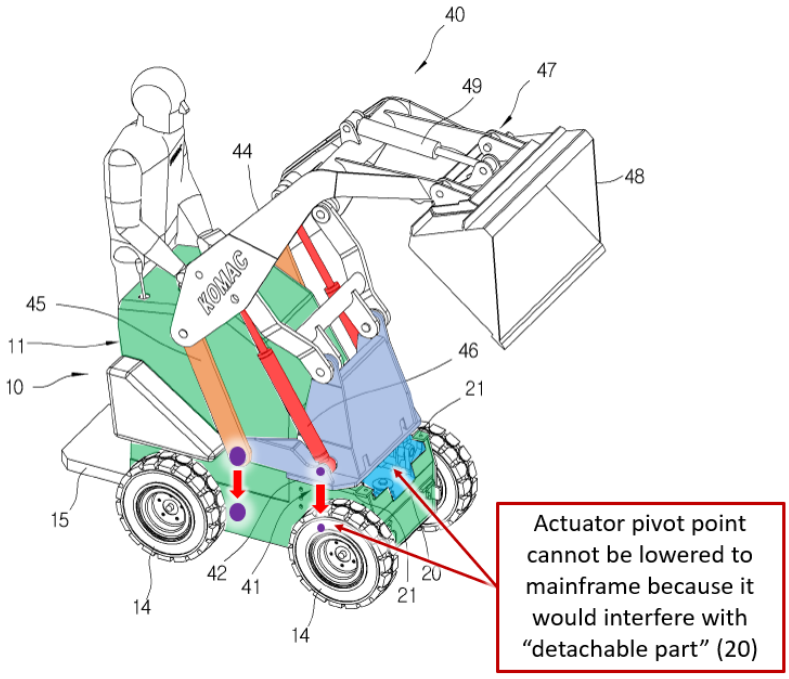
Petitioner relies on Beltrami to assert that a POSITA would have lowered the locations of the pivot points connecting the linkages and actuators in KR996. *See, e.g.*, Petition at 74–91, Ex. 1003 at ¶¶177–202. Modifying KR996 as asserted by Petitioner would render the construction vehicle not suitable for its intended purpose. As shown below, lowering the pivot points would move the pivot points off the supporting bracket ("fixture (41)") and onto the main body of the machine. This would preclude the loader unit (40) from being detachable from the main body of the machine, which is the entire point of the design disclosed in KR996:



Ex. 1005 at Fig. 9 (shading and annotations added). Therefore, Petitioner's proposed modification would render the vehicle unsatisfactory for its intended purpose by destroying the detachability feature that lies at the heart of KR996's disclosure. A POSITA would *not* have been motivated to consider—much less implement—the fanciful modifications proposed by Petitioner that involve lowering the points of pivotal attachment of the linkages and actuators in a manner that would undermine the critical, easily-detachable functionality touted in KR996. *See In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (no motivation to combine where the proposed modification to the prior art "would be rendered inoperable for its intended purpose"); *Chemours Co. FC, LLC v. Daikin Indus., Ltd.*, 4 F.4th 1370, 1376 (Fed. Cir. 2021) (proposed modification of the prior art not obvious where the Board "ignored the express disclosure [in the prior art] that teaches away

from the claimed invention and relied on teachings from other references that were not concerned with the particular problems [the prior art] sought to solve").

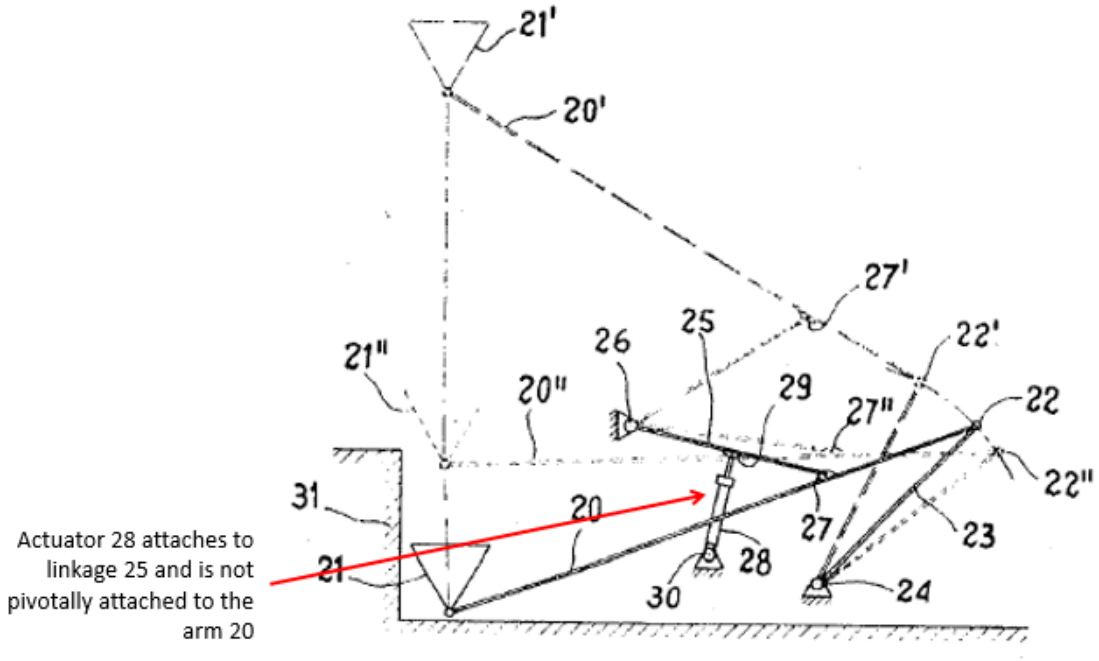
In addition, the actuator pivot point *cannot* be lowered because it would interfere with the "detachable part 20" which is used to removably connect the loader assembly and with the connection of the front wheel to the machine:



Ex. 1005 at Fig. 9 (shading and annotations added). This further precludes a conclusion that a POSITA would have been motivated to make the drastic changes to KR996's construction vehicle proposed by Petitioner. *See Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019) (affirming finding of no motivation to combine where modification would "introduce additional . . .

complexity and lead to decreased efficiency" and thus "yield an unappetizing combination") (internal citations omitted).

Finally, Beltrami and KR996 teach significantly different loader-arm configurations. KR996 attaches the actuator (cylinder) to the loader arm (boom). Beltrami, by contrast, teaches that the actuator should be pivotally attached to the *linkage*, not the loader arm:



Ex. 1008 at Fig. 2 (annotations added). Beltrami states that connecting the actuator (referred to therein as "connecting jack 28") to the linkage (referred to therein as "connecting rod") is advantageous because it allows for a sturdier actuator to be used. Ex. 1008 at 3:41–45 ("It is clear that by connecting the connecting jack 28 to the middle of connecting rod, a relatively short-stroke movement is obtained. Such

a short-stroke movement permits use of a sturdier lifting arm or jack than is employed with prior art devices."). This provides yet another reason for why a POSITA would not have been motivated by Beltrami's teachings to modify the design of KR996.

These significant problems with the proposed modifications to KR996, and Petitioner's failure to recognize or address them in the Petition, betray the unserious nature of Petitioner's Ground III validity challenge. Petitioner has provided no legitimate basis for the Board to conclude that a POSITA would have been motivated to make Petitioner's proposed changes—which would have eviscerated the key detachability feature of KR996's construction vehicle and rendered the machine inoperable. Ground III should be rejected.

2. Petitioner's proposed combination fails to satisfy all the limitations of the Challenged Claims.

In Ground III, petitioner primarily relies on many of the same arguments relating to KR996 discussed above for Ground I. In fact, for most of the claim limitations of independent claim 15, Petitioner incorporates by reference its arguments from Ground I. *See* Petition at 68–69. Importantly, this includes the key limitations discussed above relating to the linkage and actuator being pivotally attached to the first side of the mainframe.

Therefore, even if a POSITA would have combined the teachings of KR996 with JP705 and Beltrami, the modified vehicle would not satisfy each and every limitation of claim 15 and its dependent claims for the same reason discussed above for Ground I. This provides an additional and independent basis for rejecting Ground III.

VIII. CONCLUSION

As explained above, a critical flaw pervades all of Petitioner's grounds for challenging the '386 Patent: KR996 does not disclose a loader-arm configuration in which the linkages and actuators connecting the loader arm are pivotally attached to the *mainframe*—a key limitation present in all the Challenged Claims. Petitioner has also failed to identify a legitimate basis for its fanciful proposed modifications to the KR996's construction vehicle. Regardless, Petitioner's proposed modifications do not overcome the fatal shortcoming resulting from the fundamentally different detachable-loader-unit configuration touted in KR996. Therefore, Vermeer respectfully requests that the Board deny the Petition for *inter partes* review of the '386 Patent.

Date: March 12, 2025

Respectfully submitted,

/*Richard Brophy*/

Richard L. Brophy
Reg. No. 69,736
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
Saint Louis, Missouri 63105
Telephone: 314.621.5070
Facsimile: 314.621.5065
rbrophy@atllp.com

Lead Counsel for Patent Owner

CERTIFICATE OF SERVICE

Under 37 C.F.R. § 42.6(e), the undersigned certified that on March 12, 2025, a copy of Patent Owner's Preliminary Response was served via electronic mail on the following attorneys of record:

David M. O'Dell
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201
Phone: (972) 739-8635
Fax: (214) 200-0853
david.odell.ipr@haynesboone.com
USPTO Reg. No. 42,044

Greg Michelson
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201
Phone: (949) 202-3022
Fax: (214) 200-0853
greg.michelson.ipr@haynesboone.com
USPTO Reg. No. 44,940

Kelly Gehrke Lyle
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201
Phone: (512) 867-8528
Fax: (214) 200-0853
kelly.lyle.ipr@haynesboone.com
USPTO Reg. No. 62,332

John Russell Emerson
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201
Phone: (214) 651-5328
Fax: (214) 200-0853
Russ.Emerson.IPR@haynesboone.com
USPTO Reg. No. 44,098

Hong Shi
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201
Phone: (512) 867-8440
Fax: (214) 200-0853
hong.shi.ipr@haynesboone.com
USPTO Reg. No. 69,009

Dated: March 12, 2025

By: */Richard Brophy/*
Lead Counsel for Patent Owner
Richard L. Brophy
Reg. No. 69,736

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME REQUIREMENTS UNDER 37 C.F.R. § 42.24

Under 37 C.F.R. § 42.24(d), the undersigned certifies that the Patent Owner's Preliminary Response complies with the type-volume requirements of 37 C.F.R. § 42.24(a)(1)(i) because it contains 8928 words, excluding the parts of the Response exempted by 37 C.F.R. § 42.24(a).

This Response also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and the type style requirements of 37 C.F.R. § 42.6(a)(2)(iii) and (iv).

Dated: March 12, 2025

By: */Richard Brophy/*

Richard L. Brophy
Reg. No. 69,736
Armstrong Teasdale LLP
7700 Forsyth Boulevard
Suite 1800
Saint Louis, Missouri 63105
Telephone: 314.621.5070
Facsimile: 314.621.5065
rbrophy@atllp.com