

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FOSTER-MILLER INC.,
Petitioner,

v.

FLIR DETECTION INC.,
Patent Owner.

Case IPR2019-01549
Patent 6,431,296 B1

Before MEREDITH C. PETRAVICK, BARRY L. GROSSMAN, and
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Determining All Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Foster-Miller Inc. (“Petitioner”) filed a petition for *inter partes* review of claims 1–9 of U.S. Patent No. 6,431,296 B2 (Ex. 1001, the “’296 patent”). Paper 1 (“Pet.”). Flir Detection Inc. (“Patent Owner”) did not file a preliminary response.

On March 11, 2020, we instituted trial. Paper 10 (“Inst. Dec.”). Patent Owner filed a Response. Paper 15 (“PO Resp.”). Petitioner filed a Reply. Paper 18 (“Pet. Reply”). Patent Owner filed a Sur-reply. Paper 23 (“PO Sur-reply”). We held oral argument on November 18, 2020, and a transcript appears in the record. Paper 28 (“Tr.”).

We have jurisdiction to conduct this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1–9 of the ’296 patent are unpatentable.

Related Matters

The Petitioner indicates that the ’296 patent is involved in the following case filed in the United States District Court for the District of Delaware on December 28, 2018: *Endeavor Robotics, Inc., v. QinetiQ North America, Inc. and Foster-Miller Inc.*, Case No. 1:18-cv-02071-MN. Pet. 73. Patent Owner, however, indicates that there are no related matters. Paper 6, 2.

The ’296 Patent

The ’296 patent is titled “Robotic Platform” and issued on August 13, 2002. Ex. 1001, codes (45), (54). The ’296 patent discloses a robot 100. *Id.* at 4:20–21. Figure 3a of the ’296 patent is reproduced below.

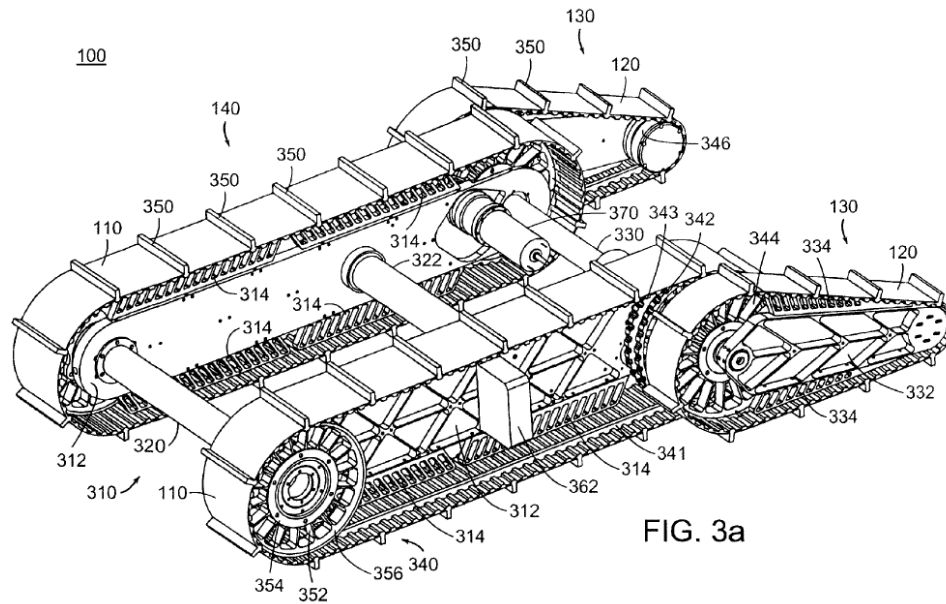


FIG. 3a

Figure 3a depicts robot 100 in a fully extended position. *Id.* at 3:59–60, 5:1–3. Robot 100 has main tracks 110 on main body 140 and forward tracks 120 on forward arms 130. *Id.* at 5:1–4.

The '296 patent discloses that robot 100 can perform multiple maneuvers, including stair climbing and self righting. *Id.* at 8:65–67. Figure 11 of the '296 patent is reproduced below.

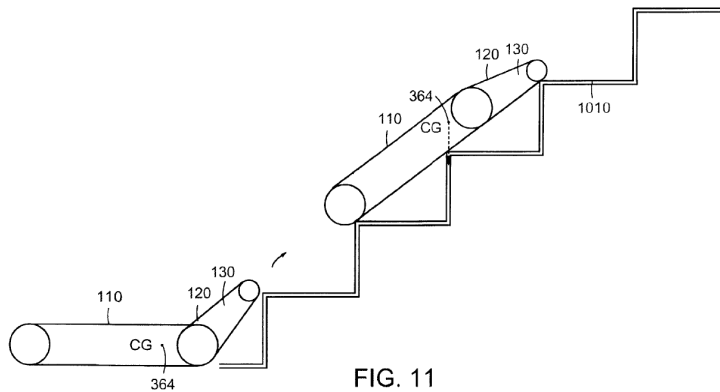


FIG. 11

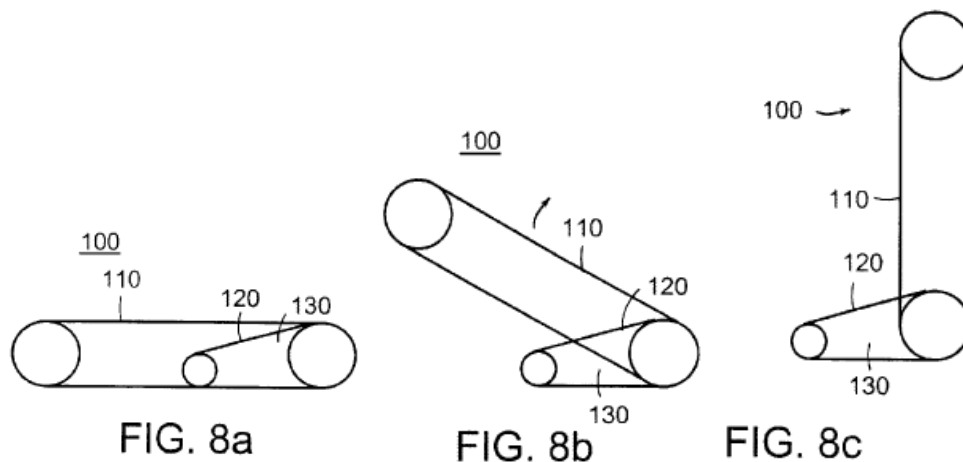
Figure 11 depicts a “schematic side view of a stair climbing maneuver.” *Id.* at 4:6. The '296 patent describes robot 100 climbing stairs as follows:

Referring to FIG. 11, robot 100 can raise arms 130 in order to mount an obstacle, such as a stair 1010, in its path. To

mount the first step of staircase 1110, robot 100 raises its arms 130 and drives forward to raise its main tracks 110 onto the first stair. The robot then assumes a fully extended mode thereby extending its wheelbase to increase it[s] stability and to provide as smooth a ride a[s] possible up the stairs. Soft cleats 350 (not shown in FIG. 11) provide mechanical locking with the stair edge needed to drive the robot up the stairs.

Id. at 9:62–10:3.

Figures 8a–c of the '296 patent are reproduced in sequence below.

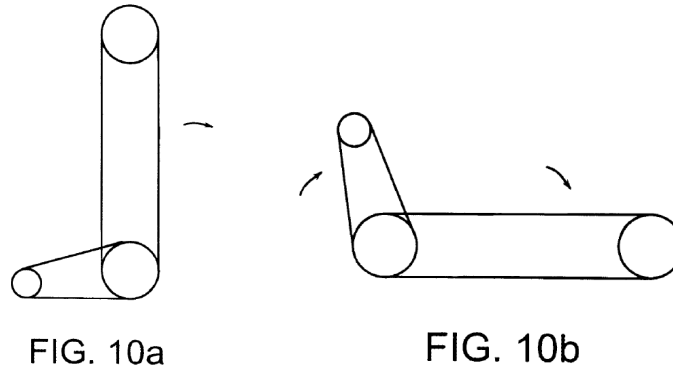


Figures 8a–c depict the maneuver to achieve an upright position. *Id.* at 4:1–2.

Referring to FIG. 8a, robot 100 begins in a stowed position, and then using articulator drive motor 372 . . . applies a torque to the arms. Since the center of gravity is within arc of the arms . . . , the main body is raised (FIG. 8b) until it reaches a high position (FIG. 8c) which is short of the point at which the robot would topple.

Id. at 9:34–39.

Figures 10a–b of the '296 patent is reproduced below.



Figures 10a–b depict a self-righting maneuver. *Id.* at 4:4–5. The '296 patent describes robot 100 self-righting or inverting as follows:

In this maneuver, in order to invert itself, the robot begins in a stowed mode and raises itself as it does when attaining the upright mobility mode (FIGS. 8a–c). However, rather than stopping in the upright position shown in FIG. 10a rotation is continued past the vertical point and the robot falls over (FIG. 10b), thereby completing the inversion.

Id. at 9:55–61.

Challenged Claims

Petitioner challenges all claims, claims 1–9, of the '296 patent. Pet. 3. Claims 1 and 8 are independent. Ex. 1001, 12:49–62, 14:3–16. Independent claim 1 recites:

1. A method for operating an articulated tracked vehicle having a main tracked chassis and a pivoting forward arm to climb a series of stairs having a rise in elevation at a first stair and at each subsequent stair, comprising:
 - pivoting the arm to raise the arm higher than the rise of the first stair;
 - approaching the first stair until the arm contacts the first stair;
 - driving the main tracks to propel the vehicle until the main tracks contacts the first stair;
 - pivoting the arm to extend the tracked base of the vehicle; and
 - driving the main tracks to ascend the series of stairs.

Id. at 12:49–62. Claims 2–7 depend directly or indirectly from claim 1. *Id.* at 12:63–14:2.

Independent claim 8 recites:

8. A method for inverting an articulated tracked vehicle having a main tracked chassis and a pivoting arm, comprising:

- supporting the vehicle on the main tracks in a first vertical orientation;
- pivoting the arm to support the vehicle on the pivoting arm,
- further pivoting the arm to pass the main chassis past a stable point, and
- supporting the vehicle on the main tracks in a second vertical orientation, the second vertical orientation being inverted with respect to the first orientation.

Id. at 14:3–16. Claim 9 depends from claim 8. *Id.* at 14:17–20.

The Asserted Grounds

Petitioner challenges claims 1–9 of the '296 patent on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–7	103 ¹	Jensen ²
1–9	103	Iwamoto ³
1, 6, 7	103	Clement ⁴ and Jensen

Pet. 5. Petitioner relies on the Declaration of Dr. John Martens (Ex. 1003).

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the '296 patent issued was filed before this date, the pre-AIA version of § 103 applies.

² U.S. Patent No. 3,869,011, issued Mar. 4, 1975 (Ex. 1005) (“Jensen”).

³ U.S. Patent No. 4,483,407, issued Nov. 20, 1984 (Ex. 1006) (“Iwamoto”).

⁴ U.S. Patent No. 4,709,773, issued Dec. 1, 1987 (Ex. 1007) (“Clement”).

Patent Owner relies on the Declaration of Dr. Robert H. Sturges Jr. (Ex. 2001).

II. ANALYSIS

Claim Construction

“[I]n an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). In applying a district court-type claim construction, we are guided by the principle that the words of a claim “are generally given their ordinary and customary meaning,” as understood by a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citation omitted). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a “heavy presumption,” however, that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citation omitted).

We are also guided by the principle that we only construe claim terms if, and to the extent that, it is necessary for the purpose of the proceeding, here, to determine whether to institute an *inter partes* review. *See, e.g.*,

Wellman, Inc. v. Eastman Chem. Co., 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner asserts, “[t]here are no claim terms requiring construction, and all claims should be given their plain and ordinary meaning.” Pet. 15. Similarly, Patent Owner provides no explicit constructions of any claim elements and states that “claims are generally given their ordinary and customary meaning from the perspective of a person of ordinary skill in the art at the time of the invention.” PO Resp. 6–7. We agree that no explicit constructions are necessary and give claim terms their plain and ordinary meaning.

Legal Standards

A patent claim is unpatentable as obvious if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

⁵ The record contains no objective evidence of nonobviousness or any related arguments for us to consider.

Level of Skill in the Art

With regard to the level of ordinary skill in the art, Petitioner contends a person of ordinary skill in the art [“POSITA”] for the ’296 patent would have a bachelor’s degree in electrical engineering, computer engineering, mechanical engineering, computer science, physics, or a related field, and four years of experience (or the academic equivalent) in the field of robotics. Additional graduate education could substitute for professional experience and vice-versa.

Pet. 15 (citing Ex. 1003 ¶ 33). According to Patent Owner, “[a]n appropriate definition of POSITA would be a person with a bachelor’s degree in mechanical engineering or physics and four years of experience (or the academic equivalent) in the field of robotics.” PO Resp. 6 (citing Ex. 2001 ¶ 24).

The difference between the definitions is that Petitioner’s definition includes “someone who does not have a substantial academic training or experience in mechanical engineering or physics” (PO Resp. 6), such as an electrical engineer, computer engineer, or computer scientist. Dr. Sturges testifies:

Electrical engineering, computer engineering, and computer science might be relevant in connection with certain control systems for remotely navigating a robotic vehicle, but they would not cover the kinematic and dynamic principles required to fully appreciate the inventions recited in the claims of the ’296 patent.

Ex. 2001 ¶ 25.

The difference between Petitioner and Patent Owner’s definitions of a POSITA, however, do not affect our determinations in the analysis below, measured under either standard. We also

determine that the level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

Obviousness Based on Jensen

Overview of Jensen

Jensen is titled “Stair Climbing Tracked Vehicle.” Ex. 1005, code (54). Figure 2 of Jensen is reproduced below.

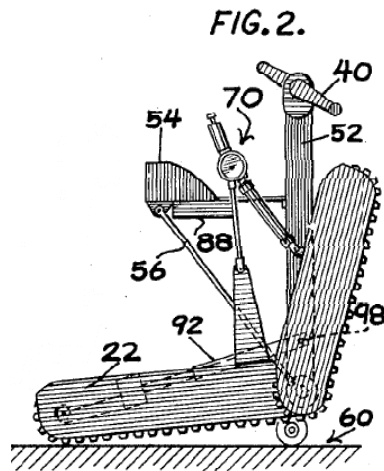


Figure 2 depicts a side elevation of vehicle 20 adjusted for normal horizontal travel. *Id.* at 3:21–23. Vehicle 20 has main tracks 22, 22' and auxiliary tracks 32, 32', pivotally attached to the front of main tracks 22, 22'. *Id.* at 4:14–17, 4:32–36, Fig. 1.

Figure 8 of Jensen is reproduced below.

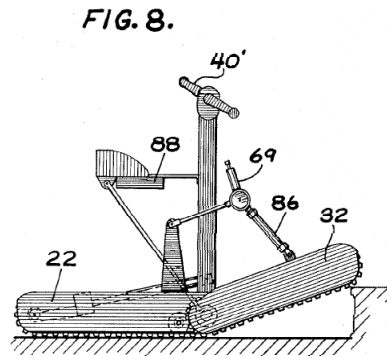


Figure 8 depicts vehicle 20 “in the initial stages of climbing a staircase.” *Id.* at 3:40–41.

The vehicle 20 is driven to the staircase, again facing forwardly, but this time arriving at the bottom. The elbow linkage 70 (pivoted from should stanchion 75) is released dropping the auxiliary tracks 32, 32' down onto the first stair riser. In the illustrated embodiment, the auxiliary tracks are locked in this position. The vehicle is then driven forwards in this attitude until the main tracks 22, 22' assume the included position. The auxiliary tracks 32, 32' are then dropped manually (or have dropped by gravity, if ratchets are used in linkage 70) the rest of the way and locked in the aligned position illustrated in FIG. 14b.

Id. at 7:17–29.

Figure 6 of Jensen is reproduced below.

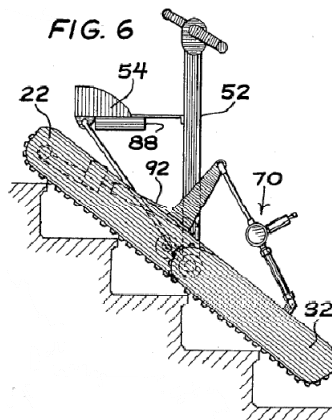


Figure 6 depicts vehicle 20 “traveling down a staircase.” *Id.* at 3:36–37.

“The ascent up the staircase is quite similar.” *Id.* at 7:17.

Analysis of Claim 1

Preamble - A method for operating an articulated tracked vehicle having a main tracked chassis and a pivoting forward arm to climb a series of stairs having a rise in elevation at a first stair and at each subsequent stair

Petitioner contends that Jensen discloses the preamble of claim 1. Pet. 18 (citing Ex. 1005, Abstract, 1:52–2:8, 4:14–45, 5:44–6:51, 7:17, Fig. 6). We agree with Petitioner. Jensen discloses stair-climbing vehicle 20, having main tracks 22, 22’ and auxiliary tracks 32, 32’, pivotally attached to the front of main tracks 22, 22’. *Id.* at 4:14–17, 4:32–36. Ex. 1005, Abstract, 1:1–6, 1:52–58:8, 4:14–45. Jensen’s Figure 8 depicts vehicle 20 “traveling down a staircase” and “[t]he ascent up the staircase is quite similar.” *Id.* at 3:36–37, 7:17. Patent Owner does not dispute that Jensen discloses the preamble.

“pivoting the arm to raise the arm higher than the rise of the first stair”

Petitioner contends that Jensen discloses claim 1’s step of “pivoting the arm to raise the arm higher than the rise of the first stair.” *See* Pet. 19–20 (citing Ex. 1005, 3:41–42, 7:11–16, 7:19–22, Fig. 2, 3, 8; Ex. 1003 ¶ 48). We agree with Petitioner. Figure 8 of Jensen, reproduced above, shows auxiliary arm 32 higher than the rise of the first stair and dropped onto the first stair riser. *See* Ex. 1005, Fig. 8; *see also id.* at 7:19–22. Dr. Martens testifies “[i]n order to be dropped down, the arm must start above the riser.” Ex. 1003 ¶ 48. Jensen discloses a mechanism for pivoting the auxiliary

track to a raised position. *See* Ex. 1005, 7:7–16. Patent Owner does not dispute that Jensen discloses this claim step.

“approaching the first stair until the arm contacts the first stair”

Petitioner contends that Jensen discloses claim 1’s step of “approaching the first stair until the arm contacts the first stair.” *See* Pet. 21 (citing Ex. 1005, Fig. 8). The Petition states: “*Jensen* discloses ‘approaching the first stair until the arm contacts the first stair’ because *Jensen’s* Fig. 8 . . . shows that the vehicle has approached the first stair until the forward arm 32 contacts the first stair.” Pet. 21; *see also* Pet. Reply 2–3. The Petition states that Jensen’s “vehicle 20 drives to the staircase and arrives at the bottom of the staircase where the elbow linkage 70 releases and drops the auxiliary tracks 32 onto the first stair rise.” *Id.* at 17 (citing Ex. 1005, 7:17–22).

We agree with Petitioner. Jensen’s Figure 8 depicts vehicle 20 “in the initial stages of climbing a staircase.” Ex. 1005, 3:40–41. With respect to ascending the staircase, Jensen states:

The vehicle 20 is driven to the staircase, again facing forwardly, but this time arriving at the bottom. The elbow linkage 70 (pivoted from shoulder stanchion 75) is released dropping the auxiliary tracks 32, 32’ down onto the first stair riser.

Id. at 7:17–22. Jensen, thus, discloses vehicle 20 approaching the first stair until the arm contacts the first stair because Jensen discloses dropping auxiliary tracks 32, 32’ down onto the first stair riser. *See* Ex. 1005, 7:19–21, Fig. 8.

Patent Owner disputes Jensen discloses this claimed step because Jensen does not disclose continuously driving the main tracks of the vehicle until the arm contacts the first stair riser. *See* PO Resp. 10; PO Sur-reply 4.

For example, Patent Owner argues, “claim 1 requires the *vehicle*, not just the arm, to approach the first stair until the arm contacts the first stair.” PO Sur-reply 4. Patent Owner’s implies that “approaching” requires continuously driving the main tracks. But, the language of claim 1 does not recite what component of the vehicle performs the approaching. Ex. 1001, 12:49–62. Claim 1 does not preclude the vehicle approaching the first stair by dropping the arm on the first stair. *See id.*; *see also* Pet. Reply 3. Patent Owner’s arguments, thus, are unpersuasive.

Patent Owner contends:

Petitioner never suggested in its Petition, not on pages 21–22 or elsewhere, that the “approaching” step is met by, or would have been obvious in view of, the lowering of *Jensen’s* auxiliary tracks 32, 32’ alone. Now, for the first time, Petitioner argues that the step is met by the lowering of the tracks “alone.” Reply at 3. If that was always Petitioner’s argument, it should have been made in the Petition

and argues that “Petitioner’s new argument should be disregarded.” PO Sur-Reply 1. But, Petitioner’s argument was made in the Petition. *See* Pet. 17, 21; *see also* Inst. Dec. 11–12 (“we agree that Jensen discloses vehicle 20 approaching the first stair until the arm contacts the first stair because Jensen discloses dropping auxiliary tracks 32, 32’ down onto the first stair riser”).

“driving the main tracks to propel the vehicle until the main tracks contacts the first stair”

Petitioner contends that Jensen discloses claim 1’s step of driving the main tracks to propel the vehicle until the main tracks contact the first stair. *See* Pet. 23–24 (citing Ex. 1005, 2:16–21, 7:23–29, Fig. 6, 8; Ex. 1003 ¶¶ 52–53). We agree with Petitioner. Jensen discloses vehicle 20 driving

forward until the main tracks assume the “inclined position” and after reaching the inclined position, the auxiliary arms are dropped and locked in the “aligned position” where the vehicle is in an aligned position. Ex. 1005, 7:23–31. Jensen discloses that the main tracks are driven. *Id.* at 2:16–21 (explaining that the main tracks are independently driven). Dr. Martens testifies this “implies that the ‘inclined position’ is only reached when the main tracks contact the first stair.” Ex. 1003 ¶ 52. Patent Owner does not dispute that Jensen discloses this claim step.

“pivoting the arm to extend the tracked base of the vehicle”

Petitioner contends that Jensen discloses claim 1’s step of pivoting the arm to extend the tracked base of the vehicle. *See* Pet. 25 (citing Ex. 1005, 7:23–29, Figs. 6, 14b; Ex. 1003 ¶ 54). We agree with Petitioner. Jensen discloses dropping the auxiliary arms and locking them into the aligned position with the main tracks. Ex. 1005, 7:23–31; Ex. 1005, 7:23–29; *see id.* at Figs. 6, 14b. Dr. Martens testifies: “Therefore, when the arm is lowered, the tracked base of the vehicle is extended.” Ex. 1003 ¶ 54. Patent Owner does not dispute that Jensen discloses this claim step.

“driving the main tracks to ascend the series of stairs”

Petitioner contends that Jensen discloses claim 1’s step of driving the main tracks to ascend the series of stairs. *See* Pet. 25–26 (citing Ex. 1005, 2:16–21, 6:37–40, 7:17–29, 7:33–34, Fig. 6; Ex. 1003 ¶ 55). We agree with Petitioner. Jensen’s Fig. 6 shows the vehicle traveling along the stairs in a descent, and Jensen states that the “ascent up the stairs is quite similar.” Ex. 1005, 6:37–40, 7:17; *see also id.* at 7:29–30 (“[u]pon arriving at the top of

the stairs . . .”), 7:33–34 (“[t]he vehicle continues to ascend the staircase 66 (as shown in FIG. 10)”). During the ascent, the auxiliary tracks are aligned with the main tracks. *Id.* at 7:17–29, Fig. 6. Jensen discloses that the main tracks are driven. *Id.* at 2:16–21 (explaining that the main tracks are independently driven). Dr. Martens testifies, “[t]he vehicle could not reach the top of the stairs unless driven forward by the main tracks (in conjunction with the auxiliary tracks on the pivoting arm).” Ex. 1003 ¶ 55. Patent Owner does not dispute that Jensen discloses this claim step.

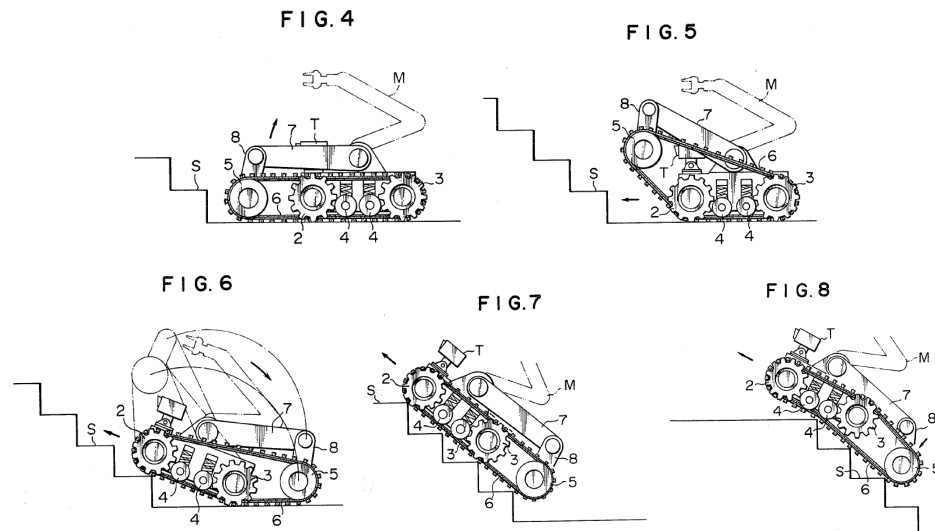
Conclusion as to Obviousness Based on Jensen

For the reasons discussed above, Petitioner has shown that claim 1 is unpatentable over Jensen. Based on the arguments and evidence presented in the Petition, we determine Petitioner has sufficiently shown that dependent claims 2–7 are also unpatentable over Jensen. Pet. 43–53. Patent Owner makes no other arguments specific to dependent claims 2–7. *See* PO Resp. 17–18. Petitioner has demonstrated by a preponderance of the evidence Jensen renders independent claim 1, and claims 2–7, dependent therefrom, unpatentable.

Obviousness Based on Iwamoto

Overview of Iwamoto

Iwamoto is titled “Variable Configuration Track Laying Vehicle” and discloses a remote-controlled vehicle with endless tracks “suited for going up stairs.” Ex. 1006, code (54), 1:8–10. Figures 4–8 of Iwamoto are reproduced in sequence below.



Figures 4–8 depicts a first embodiment of vehicle 1 ascending stair S. *Id.* at 2:15–17, 3:20. First arms 7 swing to lift auxiliary wheels 5. *Id.* at 3:21–25, Fig. 5. When driving wheel 2 is on stair S, first arms 7 swing backward, as shown by the sold lines in Fig. 6, to move auxiliary wheels 5 rearward to cause endless tracks 6 to contact the floor surface to prevent the vehicle from rolling down. *Id.* at 3:25–31. Driving wheels 2 or secondary wheels 3 then move vehicle 10 up stairs S and first arms 7 pivot so that the tread surfaces of endless tracks 6 lay substantially in an inclined common plane. *Id.* at 3:32–37. At the uppermost step of stairs S, first arms 7 swing downwardly so that vehicle 10 drives stably on the flat floor. *Id.* at 3:37–41.

Iwamoto also disclose a second embodiment of the vehicle used to inspect various indoor equipment. *Id.* at 4:20–25; Figs. 11–20. Figure 13 of Iwamoto is reproduced below.

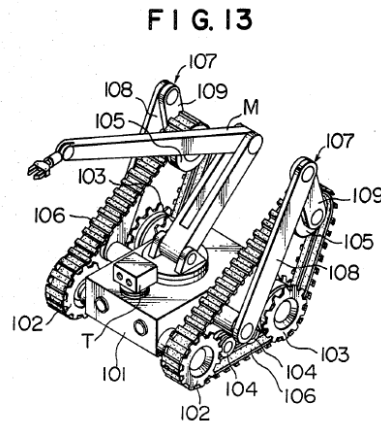
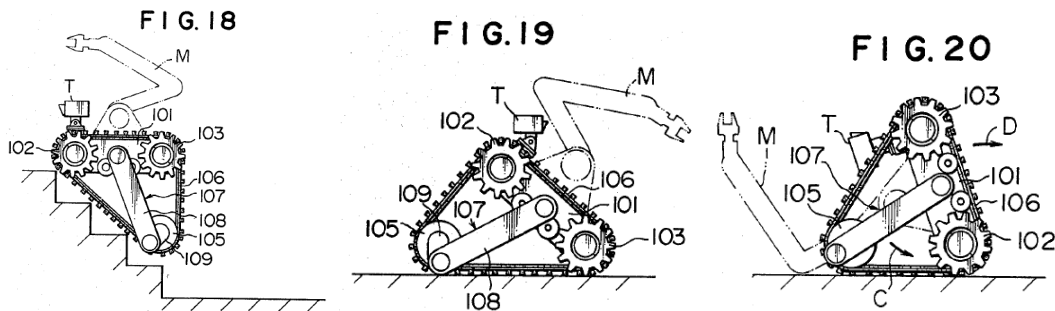


Figure 13 depicts a second embodiment of the vehicle. *Id.* at 4:21–24. In this embodiment, the vehicle has a manipulator M and a TV camera T. *Id.* at 4:24–25. Auxiliary wheel 105 is supported by supporting means 107, which comprises first arm 108 and second arm 109, and is movable along an ellipse. *Id.* at 30–43.

Figures 18–20 of Iwamoto are reproduced side-by-side below.



Figures 18–20 depict the second embodiment of the vehicle in different positions. *Id.* at 2:41–42. “[T]he configuration of each endless track 106 can be varied as desired by moving the auxiliary wheel 105 with respect to the driving wheel 102 and the secondary wheel 103 through pivotal movement of the first and second arms 108 and 109.” *Id.* at 6:26–32.

Figure 18 depicts auxiliary wheel 105 in a position below vehicle body 101

to permit stable ascending or descending of stairs, while vehicle body 101 is kept substantially horizontal. *Id.* at 6:34–40. Figure 19 depicts vehicle body 101 forwardly declined to facilitate work done in front of vehicle body 1010. *Id.* at 6:40–43. Figure 20 depicts an accidental fall of the vehicle. *Id.* at 6:4–44. To return to normal position, auxiliary wheel 105 moves in the direction shown by arrow C so that vehicle body 101 rotates about driving wheel 102 in the direction shown by arrow D. *Id.* at 6:43–49.

Iwamoto discloses that auxiliary wheels 105 moves along an elliptic path that can be used for “superior running performance, mobility and position controllability of the posture of the vehicle.” *Id.* at 4:61–63, 6:50–58. Figure 14 of Iwamoto is reproduced below.

FIG. 14

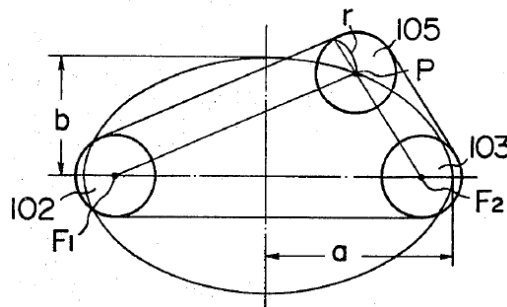


Figure 14 illustrates “the principle of movement of the auxiliary wheels.” *Id.* at 2:29–31, 4:61–63.

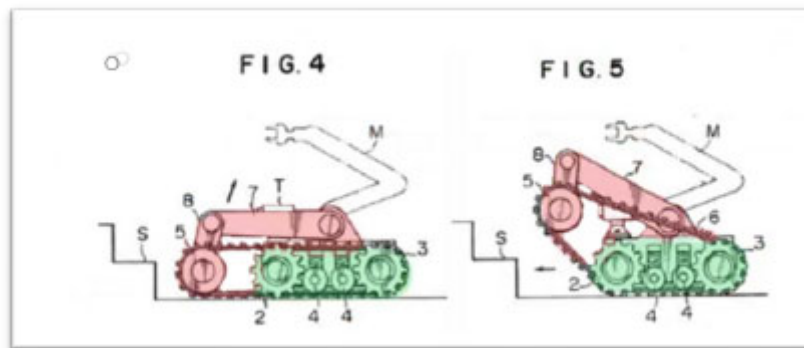
Analysis of Claim 1

The preamble of claim 1 sets for “an articulated tracked vehicle having a main tracked chassis and a pivoting forward arm.” The body of claim 1 recites steps of “pivoting the arm to raise the arm higher than the rise of the first stair” and “approaching the first stair until the arm contacts the

first stair.” The “pivoting forward arm” of the preamble provides antecedent basis for “the arm” recited in the steps.

Patent Owner argues that Iwamoto does not disclose, “approaching the first stair until the arm contacts the first stair” as required by claim 1 because the alleged arm of Iwamoto changes depending on the orientation or configuration of the vehicle. PO Resp. 24 (citing Ex. 2005, 63:5–9); PO Sur-Reply 11–12.

With respect to claim 1’s step of “approaching the first stair until the arm contacts the first stair,” Petitioner equates the claimed “pivoting forward arm” to first arm 7, second arm 8, auxiliary wheel 5, and the portion of track between driving wheel 2 and auxiliary wheel 5 in Iwamoto. *See e.g.*, Pet. Reply 17 (citing Ex. 1021 ¶ 17). For example, Petitioner annotates Iwamoto’s Figures 4 and 5 to show the pivoting forward arm. Pet. 17. Annotated Figures 4 and 5 are reproduced below.

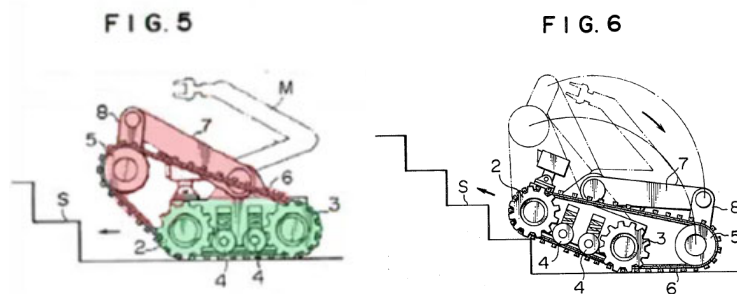


Annotated Figures 4 and 5 depict first arm 7, second arm 8, auxiliary wheel 5, and the portion of track between driving wheel 2 and auxiliary wheel 5 colored in red.

With respect to claim 1’s step of “approaching the first stair until the arm contacts the first stair,” the Petition states:

Iwamoto discloses a vehicle approaching the first stair until the arm contacts the first stair because it discloses that the pivoting arms are swung back “when the driving wheels 2 have gotten on the first step” as shown in Fig. 6.” [Ex. 1006], 3:25–28, Fig. 6. Therefore, to maneuver from the configuration shown in Fig. 5 to the one in Fig. 6, the vehicle approaches the first stair until the arm contacts the first stair. Ex. 1003, ¶ 72.

Pet. 39. The Petition relies upon *Iwamoto*’s Figures 5 and 6 to show the arm contacting the first stair. *Id.* at 39–40. Annotated Figure 5 and *Iwamoto*’s Figure 6 are reproduced below.



Annotated Figure 5 and Figure 6 depict the vehicle ascending the stairs. *Id.* at 3:20–37. The portion of track between driving wheel 2 and auxiliary wheel 5 in Annotated Figure 5 must rotate in order for the vehicle to arrive at the position shown in Figure 6, where driving wheel 2 is on the first step. Petitioner does not sufficiently explain whether the portion of track between driving wheel 2 and auxiliary wheel 5, colored red in Annotated Figure 5, would contact the first stair after the vehicle has moved forward to the position showing in Figure 6, after it has approached the stair.

Further, we note that in Figure 6, first arm 7, second arm 8, and auxiliary wheel 5 (i.e., the alleged pivoting arm) are no longer forward. *Iwamoto* states, “when the driving wheels 2 have gotten on the first step as shown in FIG. 6, the first arms 7 are swung to the position shown by solid lines in FIG. 6 so that the auxiliary wheels 5 are moved rearwardly to cause

the endless track 6 to contact with the floor surface.” *Id.* at 3:25–31.

Petitioner does not explain adequately how the portions of the “arm” it identifies in Iwamoto’s Figure 5 would remain in those positions at the point when that arm contacts the stair.

Conclusion as to Obviousness Based on Iwamoto for Claims 1–7

Petitioner fails to demonstrate by a preponderance of the evidence that Iwamoto renders independent claim 1, and claims 2–7, dependent therefrom, unpatentable.

Analysis of Claim 8

“A method for inverting an articulated tracked vehicle having a main tracked chassis and a pivoting arm”

Petitioner contends:

Iwamoto discloses a method for inverting an articulated vehicle because it discloses a variable configuration tracked vehicle capable of controlling its position as desired to “hav[e] superior running performance to clear obstacles.” [Ex. 1006,] 1:52–58, Figs. 18–20. *Iwamoto* discloses that the auxiliary wheel moves along an “elliptic path” that can be used for “superior running performance, mobility and position controllability of the posture of the vehicle.” *Id.*, 4:61–63, 6:50–58.

Pet. 53.

We agree with Petitioner. With respect to its second embodiment (Figs. 11–13), Iwamoto discloses that “the position of the vehicle can be controlled as desired” by moving the auxiliary wheel 105 with respect to driving wheel 102 and secondary wheel 103.” Ex. 1006, 6:26–34. For example, Iwamoto describes moving auxiliary wheel 105 in a counter-clockwise direction to turn or rotate the vehicle about driving wheel 102 to

return the vehicle to a normal position after it has fallen. *Id.* at 6:43–49, Fig. 20. Iwamoto discloses auxiliary wheel 105 may be moved along an elliptic path by supporting means 107 (first arm 108 and second arm 109). *See id.* at 4:30–42, 4:61–63, 6:50–58, Fig. 14. As shown in our discussion of the steps below, moving auxiliary wheel 105 counter-clockwise through the elliptical path would result in inverting the vehicle.

Petitioner further contends that “[t]his inversion method depends upon vehicle not being equipped with the manipulator M disclosed by *Iwamoto*.” Pet. 59. Patent Owner argues that Iwamoto’s vehicle “does not and cannot invert itself because the manipulator M, TV camera T . . . would be in the way” and that Petitioner fails to explain how or why a POSITA would have removed the vehicle payload (i.e., manipulator M or TV camera T). PO Resp. 26, 29–33; *see also* PO Sur-Reply 13–17.

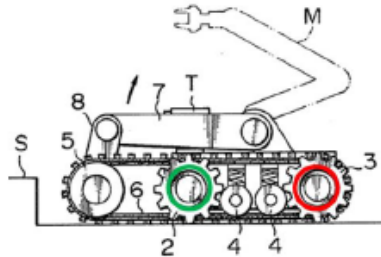
Patent Owner’s argument is not persuasive. We agree with Petitioner, “[a] POSITA would know that different vehicle may have different purposes and thus different payload.” Pet. Reply 22 (citing Ex. 1021 ¶ 21). For example, manipulator M and TV camera T are not needed for stairclimbing. Ex. 1003 ¶ 100. We note that Iwamoto’s claims do not require a camera or manipulator. *See* Ex. 1006, 6:60–8:35 (claims 1–8).

“supporting the vehicle on the main tracks in a first vertical orientation”

Petitioner contends that Iwamoto discloses supporting the vehicle on the main tracks in a first vertical orientation. Pet. 53–54 (citing Ex. 1006,

Fig. 4; Ex. 1003 ¶ 93). We agree with Petitioner. Iwamoto’s Figure 4, with annotations added by Petitioner,⁶ is reproduced below.

FIG. 4



Annotated Figure 4 shows Iwamoto's vehicle in a first orientation. Patent Owner does not dispute that Iwamoto discloses this claim step.

“pivoting the arm to support the vehicle on the pivoting arm”

Petitioner contends that Iwamoto discloses pivoting the arm to support the vehicle on the pivoting arm. Pet. 54–55 (citing Ex. 1006, Fig. 19; Ex. 1003 ¶ 93). Petitioner states:

For example, *Iwamoto's* Fig. 19 . . . demonstrates the vehicle pivoting the arm to support the vehicle on the pivoting arm. *Id.* To reach this configuration, the vehicle begins in the first vertical orientation, and the pivoting arm 7 (107) is then moved downwards (in a counterclockwise direction as viewed in Fig. 19) In this configuration, the vehicle is held up by the pivoting arm, the end of which contacts the underlying surface.

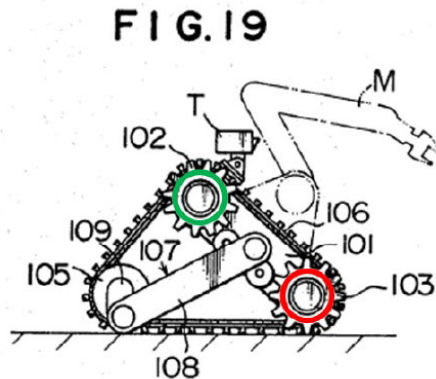
Pet. 54–55.

We agree with Petitioner. Moving auxiliary wheel 105 counter-clockwise along the ellipse would include a position where supporting

⁶ The Petition relies upon Iwamoto’s second embodiment (Ex. 1006, Figs. 11–20) as disclosing the method of claim 8. But, the Petition includes annotated figures from the first embodiment to illustrate various configurations that either embodiment can form. *See* Pet. Reply 22.

means 107 supports the vehicle. Ex. 1006, Fig. 14; Ex. 1003 ¶ 94.

Iwamoto's Figure 19, with annotations added by Petitioner, is reproduced below.



Annotated Figure 19 shows Iwamoto's vehicle supported on supporting means 107.

Patent Owner disagrees and argues:

Iwamoto does not disclose or suggest anywhere in the specification or the figures pivoting first or second arms 7 (108), 8 (109) to contact the underlying surface *to support the vehicle on those arms*. [Ex. 2001, ¶ 63]. Rather, first and second arms are located on either the interior or exterior side of the vehicle's tracks. Ex. 1006 at 14 (6:20–22); *id.* at 3 (Fig. 3), 8 (Fig. 13).

PO Resp. 27–29; PO Sur-Reply 12–13.

Patent Owner's argument is unpersuasive. The plain language of claim 8 does not require the pivoting arm to support the vehicle *by contacting the underlying surface*. See Ex. 1001, 14:3–16. Iwamoto's supporting means 107 (i.e., first arm 108 and second arm 109) support the vehicle because forces are applied to the vehicle through auxiliary wheel 105 and supporting means 107. See Ex. 1021 ¶ 19 (testimony of Dr. Martens); Ex. 1022, 144:12–16 (testimony of Dr. Sturges that if supporting mean 107 was removed, the vehicle would fall).

“further pivoting the arm to pass the main chassis past a stable point”

Petitioner contends that Iwamoto discloses further pivoting the arm to pass the main chassis past a stable point. Pet. 55–58 (citing Ex. 1006, Figs. 4–8, 18, 19; Ex. 1003 ¶¶ 96, 99). Petitioner states:

Iwamoto discloses this element by explicitly showing that the pivoting arm 7 (107) may be moved continuously through 360 degrees of motion, as shown in *Iwamoto*’s Fig. 14. [Ex. 1003, ¶ 93]. This 360–degree range of motion allows the pivoting arm to adopt any orientation with respect to the main section between wheels 2 (102) and 3 (103). *Id.*

* * *

Accordingly, it would have been obvious to a [POSITA] that a downward motion of the arm used to reach the orientation shown in Fig. 19 could be sustained. Ex. 1003, ¶ 99. In this case, the vehicle would continue to be supported on the pivoting arm, and wheel 2 (102) would continue to tilt upwards as the arm moves further. *Id.* The base of support between the pivoting arm and wheel 3 (103) continues to narrow as the arm pivots further. *Id.* When the arm pivots far enough, wheel 2 (102) moves through a vertical orientation, i.e. directly over wheel 3 (103), and the vehicle’s center of mass moves outside of the base of support. *Id.* At this point, the main section of the vehicle passes the point of stability. *Id.*

Pet. 55–58.

We agree with Petitioner. Further pivoting supporting means 107 along the ellipse from the configuration shown in Iwamoto’s Figure 19 will pass body 101 past a stable point. Ex. 1003 ¶¶ 95–98. Patent Owner does not dispute that Iwamoto discloses this claim step.

“supporting the vehicle on the main tracks in a second vertical orientation, the second vertical orientation being inverted with respect to the first orientation”

Petitioner contends that Iwamoto discloses supporting the vehicle on the main tracks in a second vertical orientation, the second vertical orientation inverted with respect to the first orientation. Pet. 58–59 (citing Ex. 1006, Fig. 14; Ex. 1003 ¶¶ 99–100). The Petition states:

Once the vehicle passes the stable point, as discussed in the previous section, the pivoting arm would be pointing to the left of wheel 3 (103) and would be raised. . . . The arm could thus continue to be moved downwards (counter-clockwise) until the vehicle adopted a planar configuration with the pivoting arm to the left of wheel 3 (103) and with wheel 2 (102) to the right of wheel 3 (103) as shown in Fig (5) above. Ex. 1003, ¶ 99.

Pet. 58–59.

We agree with Petitioner. Once the vehicle passes the stable point, supporting means 107 is raised and points to the left of secondary wheel 103. Ex. 1003 ¶ 99. Supporting means 107 could continue to be moved counter-clockwise until the vehicle adopted a planar configuration with supporting means 107 to the left of wheel 103 and with driving wheel 102 to the right of secondary wheel 103. *Id.*

Patent Owner argues that the arms in Iwamoto’s two embodiment are in different locations and “arms 7, 8 [of the first embodiment] would be in the way” of inverting the vehicle. PO Resp. 29, 31–32. Patent Owner further argues that Petitioner fails to explain why a POSITA could combine two different embodiments to modify the location the arms. *Id.*

Patent Owner’s argument is unpersuasive. The Petition does not combine Iwamoto’s two embodiments. *See* Pet. 53–59; Ex. 1021 ¶ 22. Petitioner explains, “[t]he Petition uses figures from the first embodiment to

show the various configurations that either embodiment can form.” *See* Pet Reply 22–23; *see also* Ex. 1006, 6:26–30 (“As in the case of the first embodiment described before, the configuration . . . can be varied . . .”). Dr. Martens testifies that “created images 1 and 5 using the other pictures, the other embodiments” to make it easier for the reader to follow. Ex. 2005: 67:3–4; Ex. 1021 ¶ 22.

Patent Owner also argues that Iwamoto’s Figure 14 fails to provide a 360-degree motion and that it cannot be imposed on any other embodiments. PO Resp. 33–34.

Patent Owner’s argument is again unpersuasive. To the contrary, Iwamoto discloses that the auxiliary wheel moves along the elliptic path shown in Figure 14 meaning the arm has a 360-degree motion. Ex. 1006, 4:61–63. Figure 14 shows the position of Point P on the ellipse and the center of the 360-degree rotation. Ex. 1021 ¶ 24.

Conclusion as to Obviousness Based on Iwamoto for Claims 8 and 9

Based on the arguments and evidence presented in the Petition, we determine Petitioner has sufficiently shown that dependent claim 9 is also unpatentable over Iwamoto. Pet. 59–60. Patent Owner makes no other arguments specific to dependent claim 9. *See* PO Resp. 34.

Petitioner has demonstrated by a preponderance of the evidence that Iwamoto renders independent claim 8, and claim 9, dependent therefrom, unpatentable.

Obviousness Based on Clements and Jensen

Overview of Clements

Clement is titled “variable geometry tracked vehicle” and discloses a tracked vehicle designed to “move up or down staircases having several flights of stairs.” Ex. 1007, code (54), 1:9–13. Clement’s Figure 2 is reproduced below.

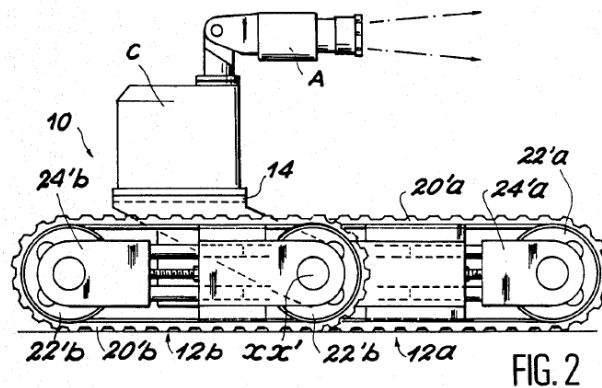


Figure 2 depicts a side view of tracked vehicle 10. *Id.* at 4:31. Vehicle 10 has a front tracked body 12a, a rear tracked body 12b, and a non-tracked body 14. *Id.* at 4:43–49.

Clement's Figure 4 is reproduced below.

FIG. 4

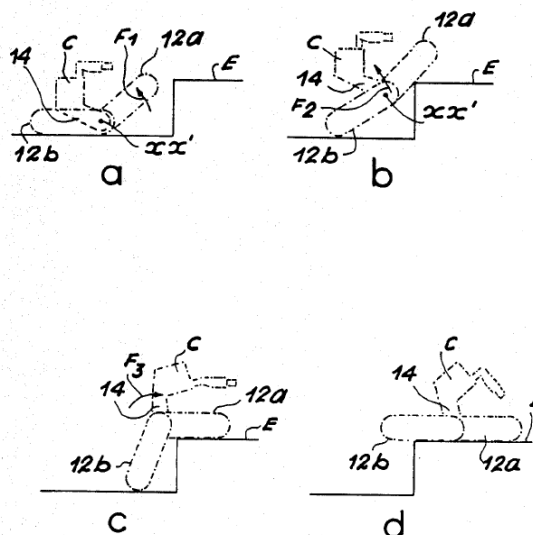


Figure 4 depicts different rise sequences on a step. *Id.* at 4:35–36, 6:39–44. Approaching step E, the front tracked body 12a is raised as shown by arrow F1 and the non-tracked body 14 pivots backwards with respect to axis XX'. *Id.* at 6:45–48, Fig. 4a. Front tracked body 12a and rear tracked body 12b then reverse pivot, as shown by arrow F2, to align the two tracks. *Id.* at 6:49–55, Fig. 4b. Non-tracked body 14 then tilts forward, as shown by arrow F3 and brings the front tracked body 12a above step E. *Id.* at 6:56–59, Fig. 4c. Engines 26a and 26b drive the tracked bodies and front tracked body 12a and rear tracked body 12b are re-aligned, advancing tracked vehicle 10 on step E. *Id.* at 6:60–64, Fig. 4d.

Analysis of Claim 1

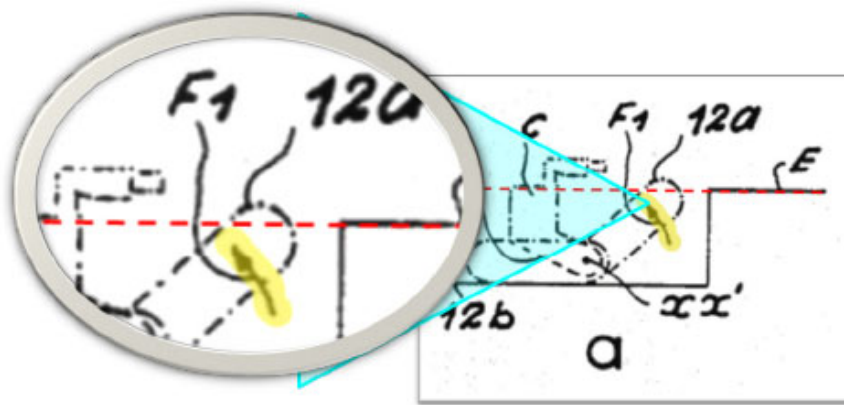
Preamble - A method for operating an articulated tracked vehicle having a main tracked chassis and a pivoting forward arm to climb a series of stairs having a rise in elevation at a first stair and at each subsequent stair

Petitioner contends that Clement discloses the preamble of claim 1. Pet. 63 (citing Ex. 1007, 3:6–22, 3:23–32). We agree with Petitioner. Clement discloses vehicle 10, having two tracked bodies 12a, 12b and capable of “clearing a flight of stairs.” Ex. 1007, 3:6–32, 4:43–45, Fig. 4. Patent Owner does not dispute that Clement discloses the preamble.

“pivoting the arm to raise the arm higher than the rise of the first stair”

Petitioner contends that Clement discloses claim 1’s step of “pivoting the arm to raise the arm higher than the rise of the first stair.” See Pet. 63–64 (citing Ex. 1007, 6:45–48, Fig. 4a); Pet. Reply 8–9 (citing Ex. 1022, 161:5–9). We agree with Petitioner.

Clement states: “It is [] possible to see in FIG. 4 that on approaching step E, the front tracked body 12a can be raised (arrow F₁).” Ex. 1007, 6:45–48. *Clement’s* Figure 4a, with a portion enlarged and Petitioner’s annotations, is reproduced below. Pet. Reply 9.



The enlarged portion of annotated Figure 4a of Clement shows the upper face of front tracked body 12a raised higher than the rise of the first stair. Ex. 1022, 161:5–9 (testimony of Patent Owner’s expert Dr. Sturges).

Patent Owner disputes that Clement discloses this limitation. PO Resp. 35–37; PO Sur-reply 17–18. Patent Owner argues that Clement does not disclose this limitation because Clement does not disclose raising the bottom vertical portion of tracked body 12a above the stair riser. *Id.* Patent Owner states:

[W]hen the leading tracked body 12a of *Clement* is rotated upward to climb step E, it is not raised higher than the rise of step E. . . . Rather, as shown in Figure 4a . . . , a vertical portion of tracked body 12a contacts a vertical surface of the rise of step E.

PO Resp. 36 (citations omitted).

Nothing in claim 1, however, requires raising the bottom vertical portion of tracked body 12a above the stair riser. Claim 1 simply recites

“pivoting the arm to raise the arm higher than the rise of the first stair.” Ex. 1001, 12:53–54. Thus, Patent Owner’s argument is unpersuasive.

“approaching the first stair until the arm contacts the first stair”

Petitioner contends that Clement discloses claim 1’s step of “approaching the first stair until the arm contacts the first stair.” See Pet. 65 (citing Ex. 1007, 6:49–55, Figs. 4a, 4b). We agree with Petitioner. As Petitioner states: “To get to the position shown in Fig. 4b, which shows the arm in contact with the first stair, from the one in Fig. 4a, the vehicle must approach the first stair.” *Id.*; see Ex. 1007, Figs. 4a, 4b; see also *id.* at 6:49–50 (describing that “the front part of the tracked body 12a bears on step E”). Patent Owner does not dispute that Clement discloses this claim step.

“driving the main tracks to propel the vehicle until the main tracks contacts the first stair”

Petitioner contends that Clement discloses claim 1’s step of “driving the main tracks to propel the vehicle until the main tracks contacts the first stair.” See Pet. 65–66 (citing Ex. 1007, 6:60–63, Fig. 4d). We agree with Petitioner. Clement’s Figures 4d shows the rear tracked body 12b contacting step E, and in describing Figure 4d, Clement states, “the actuation of the tracked with the aid of engine 26a, 26b, as well as the restoration of the alignment of the two tracked bodies 12a, 12b enables the vehicle to continue its advance on step E.” Ex. 1007, 6:60–63, Fig. 4d. Patent Owner does not dispute that Jensen discloses this limitation.

“pivoting the arm to extend the tracked base of the vehicle”

Petitioner contends that Clement discloses claim 1’s step of “pivoting the arm to extend the tracked base” of the vehicle. Pet. 68 (citing Ex. 1007, Fig. 4b; Ex. 1003 ¶ 110). We agree with Petitioner. Clement’s Figure 4b, reproduced above, depicts front tracked body 12a and rear tracked body 12b aligned with one another. Ex. 1007, 6:49–52, Fig. 4b. Dr. Martens testifies that the configuration shown in Figure 4b “demonstrates that by pivoting the arm, the tracked base extend[s] in a planar configuration.” Ex. 1003 ¶ 110. Patent Owner does not dispute that Clement discloses this claim step.

“driving the main tracks to ascend the series of stairs”

Petitioner contends that the combination of Clement and Jensen teaches claim 1’s step of “driving the main tracks to ascend the series of stairs.” Pet. 69 (citing Ex. 1005, 6:37–40, 7:17–40; Ex. 1007, 3:28–32; Ex. 1003 ¶ 110); *see also* Pet. 66–67 (citing Ex. 1003 ¶¶ 106, 107, 109).

We agree with Petitioner. Clement’s Figure 4 depicts vehicle 10 ascending one step at a time and Clement does not explicitly describe ascending a series of stairs. *See* Pet. 66, Ex. 1003 ¶ 106, Ex. 1007, 4:35–36, 6:43–44. But, Clement suggests using vehicle 10 to ascend a flight or series of stairs. Ex. 1007, 3:30–31 (“when clearing a flight of stairs or when clearing the final step”), 4:21–23 (“mainly the clearing of staircases with several flights of stairs”).

As shown in Clement’s Figure 4b, Clement’s vehicle’s front tracked body 12a can be aligned with rear tracked body 12b to form a planar configuration when climbing stairs. Ex. 1007, 6:49–52, Fig. 4b. Jensen’s vehicle has a similar structure to Clement’s vehicle. Ex. 1003 ¶ 6. Similar

to Clement, Jensen discloses dropping its auxiliary arms and locking them into the aligned or planar configuration to extend the main tracks when climbing stairs. Ex. 1005, 7:23–31, Figs 6, Fig. 14; Ex. 1007, Fig. 4b; Ex. 1003 ¶ 54. Unlike Clement’s vehicle, Jensen’s vehicle is scaled so that its length spans several steps to ascends a series of stairs at one time by driving its main tracks. *See* Ex. 1005, 6:37–40, 7:17, 7:29–30, 7:33–34, Fig. 6, Fig. 10; Ex. 1003 ¶¶ 55, 112.

We are persuaded by Petitioner that a POSITA would have been motivated to modify Clement to ascend multiple steps at once “because both vehicles have the same planar configuration [that can be] used to climb a series of stairs” and ascending multiple steps at a time is more efficient than ascending one step at a time. Pet. 70; Ex. 1003 ¶¶ 106, 111.

Patent Owner disagrees that a POSITA would have been motivated to combine Clement and Jensen. PO Resp. 39–42; PO Sur-Reply 19–22. First, Patent Owner argues that Clement and Jensen “describe different vehicles that work fundamentally differently.” PO Resp. 40–41. Pointing to Clement’s Figure 4c, Patent Owner argues

[f]or each step, the non-tracked body 14 must tilt forward until the lower face of the front tracked body 12a contacts the top of the step being climbed. Ex. 1007 at 4 (Fig. 4c), 7 (6:56–59). Without this forward movement of non-tracked body 14, the vehicle in *Clement* could not climb step E. *See id.* at 7 (6:56–59); Ex. 2001, ¶ 93.

PO Resp. 40–41.

But, Clement discloses that its front tracked body 12a can be aligned with rear tracked body 12b to form a planar configuration when climbing stairs. Ex. 1007, 6:49–52, Fig. 4b. We agree with Petitioner that “scaling Clement’s vehicle to allow it to climb multiple steps at a time would allow it

to maintain the planar configuration of Fig. 4b.” Pet. Reply 12 (citing Ex. 1021 ¶ 28); *see also* Ex. 2005, 54:24–55:6 (testimony of Dr. Martens that Jensen’s Fig. 6 suggests to a POSITA to scale the vehicle to span several steps).

Second, Patent Owner argues that Clement “teaches away from scaling up the vehicle by explicitly identifying one disadvantage of prior art vehicle was their length, which contributed to their lack of maneuverability.” PO Resp. 42 (citing Ex. 1007, 1:58–64). Clement states:

[O]n increasing the vehicle length, so that it can remain stable on the nosings of stairs, said increase in the overall dimensions of the vehicle is prejudicial when it arrives on landings, which makes it necessary to perform a half or quarter turn on the spot in a space which can be extremely limited.

Ex. 1007, 1:58–64.

We do not find this statement to be a sufficient teaching away. *See In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (“teaching away” requires a POSITA to be discouraged from pursuing the solution in question). Clement statement concerns the tradeoff of increasing stability by increasing vehicle length and concerns vehicles without pivoting arms, like “conventional military assault tanks.” Ex. 1007, 1:31–35. A POSITA less concerned with size and maneuverability and more concerned with speed and simplicity would still be motivated to scale up Clement’s vehicle, based on the desired function. Ex. 1021 ¶ 29.

Conclusion as to Obviousness Based on Clements and Jensen

Based on the arguments and evidence presented in the Petition, we determine Petitioner has sufficiently shown that dependent claims 6 and 7 are also unpatentable over Clements and Jensen. Pet. 71–72. Patent Owner

makes no other arguments specific to dependent claims 6 and 7. *See* PO Resp. 39.

Petitioner has demonstrated by a preponderance of the evidence that the combination of Clements and Jensen renders independent claim 1, and claims 6 and 7, dependent therefrom, unpatentable.

Constitutional Challenge

Patent Owner argues the Board should dismiss this *inter partes* review proceeding because Administrative Patent Judges (“APJs”) are unconstitutionally appointed. PO Resp. 43–44 (citing *Lucia v. SEC*, 138 S. Ct. 2044, 2049 (2018); *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019)); PO Sur-reply 22–24. Patent Owner argues that although the Federal Circuit attempted to cure this constitutional defect in *Arthrex* by severing Title 5’s removal protections, the solution is insufficient because IPR proceedings are formal adjudications under the Administrative Procedures Act. PO Resp. 43–44. Under 5 U.S.C. § 556(b), Patent Owner argues, formal adjudications must be conducted by administrative law judges appointed under 5 U.S.C. § 3105 and such judges may be removed only for good cause. PO Resp. 44–45 (citing 5 U.S.C. § 7521). Because APJs are now removable, Patent Owner argues they lack the authority to preside over formal adjudications such as the present proceeding, and thus, Patent Owner requests the Board to dismiss this proceeding pending review of the *Arthrex* decision. *Id.* at 45.

We decline to consider Patent Owner’s constitutional challenge. The Federal Circuit has addressed this issue in *Arthrex*, 941 F.3d at 1325, 1337–38 (“This as-applied severance . . . cures the constitutional violation.”); *see also Arthrex, Inc. v. Smith & Nephew, Inc.*, 953 F.3d 760, 764 (Fed. Cir.

2020) (Moore, J., concurring in denial of rehearing) (“Because the APJs were constitutionally appointed as of the implementation of the severance, *inter partes* review decisions going forward were no longer rendered by unconstitutional panels.”).

III. CONCLUSION⁷

For the foregoing reasons, we conclude that Petitioner has established by a preponderance of the evidence that claims 1–9 are unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–9 of the ’296 patent are unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 3, 5, 7	103	Jensen	1–7	
1–9	103	Iwamoto	8, 9	1–7
1, 6, 7	103	Clement and Jensen	1, 6, 7	
Overall Outcome			1–9	

⁷⁷ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

Case IPR2019-01549

Patent 6,431,296 B1

PETITIONER:

Lionel M. Lavenue

Cory C. Bell

Razi Safi

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP

lionel.lavenue@finnegan.com

cory.bell@finnegan.com

razi.safi@finnegan.com

Kirk Teska

LANDIORIO TESKA & COLEMAN, LLP

kirk@itclaw.com

PATENT OWNER:

Mark J. Thronson

Dipu A. Doshi

Megan R. Wood

BLANK ROME LLP

mthronson@blankrome.com

ddoshi@blankrome.com

mwood@blankrome.com