

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARCTIC CAT, INC.,

Petitioner,

v.

POLARIS INDUSTRIES, INC.,

Patent Owner.

Case IPR2015-01788

Patent 8,746,719 B2

Before KARL D. EASTHOM, PHILLIP J. KAUFMAN, and
MICHAEL W. KIM, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–16 of U.S. Patent No. 8,746,719 B2 (Ex. 1002, “’719 patent”). Pet. 1–2. Patent Owner filed a corrected Preliminary Response. Paper 8 (“Prelim. Resp.”).¹

We instituted trial for claims 1–16 (the “challenged claims”). Paper 10 (“Institution Decision” or “Inst. Dec.”). After institution of trial, Patent Owner filed a redacted Patent Owner Response. Paper 22 (“PO Resp.”).² Petitioner filed a Reply. Paper 31 (“Pet. Reply”). Patent Owner then filed authorized briefing listing an allegedly improper new rationale in Petitioner’s Reply. Paper 36. Petitioner responded. Paper 41. The parties also filed additional authorized briefing sought by Patent Owner to address its allegation that Petitioner contradicted itself in a related proceeding. Paper 48; Paper 50. The record includes a transcript of the Oral Hearing that occurred on November 21, 2016. Paper 46 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision issues pursuant to 35 U.S.C. § 318(a). Petitioner has shown by a preponderance of the evidence that claims 1–16 of the ’719 patent are unpatentable.

¹ See Paper 7 (Motion to Correct Clerical Error); Paper 9 (granting Motion).

² Patent Owner also filed a confidential version. Paper 21.

A. Related Proceedings

Petitioner indicates that Patent Owner alleges infringement of the '719 patent in *Polaris Industries Inc. v. Arctic Cat Inc.*, No. 14-cv-3386 (D. Minn. 2014). Paper 5, 2. Petitioner filed a petition concurrently with the instant Petition, challenging claims 17–33 of the '719 patent in Case IPR2015-01789. Petitioner also filed petitions in IPR2015-01781 and IPR2015-01783, challenging U.S. Patent No. 8,827,028 B2, which is related by technology, but not continuity.

Patent Owner and Petitioner each contend that other PTAB proceedings have bearing in this case. See Paper 48, 3 (citing *Arctic Cat, Inc. v. Polaris Industries, Inc.*, Case IPR2017-00199 (PTAB Nov. 7, 2016) (Paper 2, petition)); Pet. Reply 22 (citing *Arctic Cat, Inc. v. Polaris Industries, Inc.*, Case IPR2014-01427, slip op. at 35 (PTAB Feb. 4, 2016) (Paper 58, final written decision, holding claims unpatentable) (appealed by Patent Owner to the Court of Appeals for the Federal Circuit)).

B. The '719 Patent

The '719 patent discloses side-by-side (two-person) vehicles 100 with frame 112, power source (engine) 130, CVT (continuously variable transmission) 342, and a suspension system that includes radius arms 526A and 526B, control arms 530 and 532, dampening member 560, and sway bar 570. Ex. 1002, 11:50–53, 16:8–23, 20:62–21:5, 22:15–64, Figs. 10, 11, 28–35. Figure 29 of the '719 patent follows:

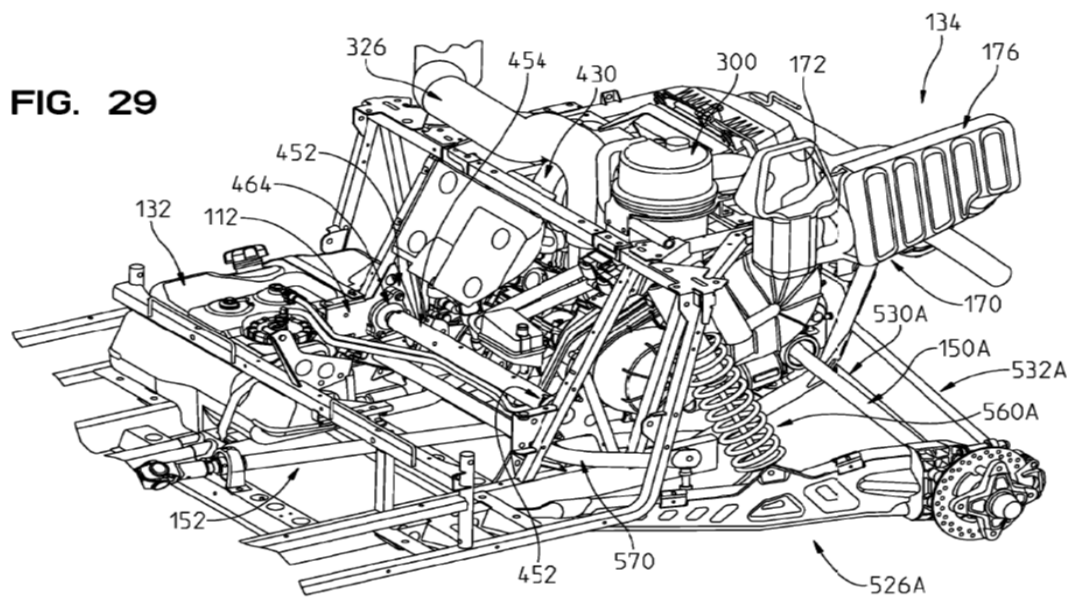


Figure 29 above is a perspective view depicting sway bar 570 and control arms 530A, 532A coupled to radius arm 526A, which is coupled to frame 112 forward of engine 130 (not numbered in Fig. 29). Control arms 530A, 530B, 532A, and 532B couple to frame 112 at two locations—via member 480 and via radius arms 526A, B. *See id.* at 3:16–32, 12:1–6, 20:62–21:25, Figs. 1, 2, 6, 29, 32; Prelim Resp. 6 (annotating Figs 29 and 32).

To illustrate the invention, Patent Owner provides an annotated version of Figure 28, which follows:

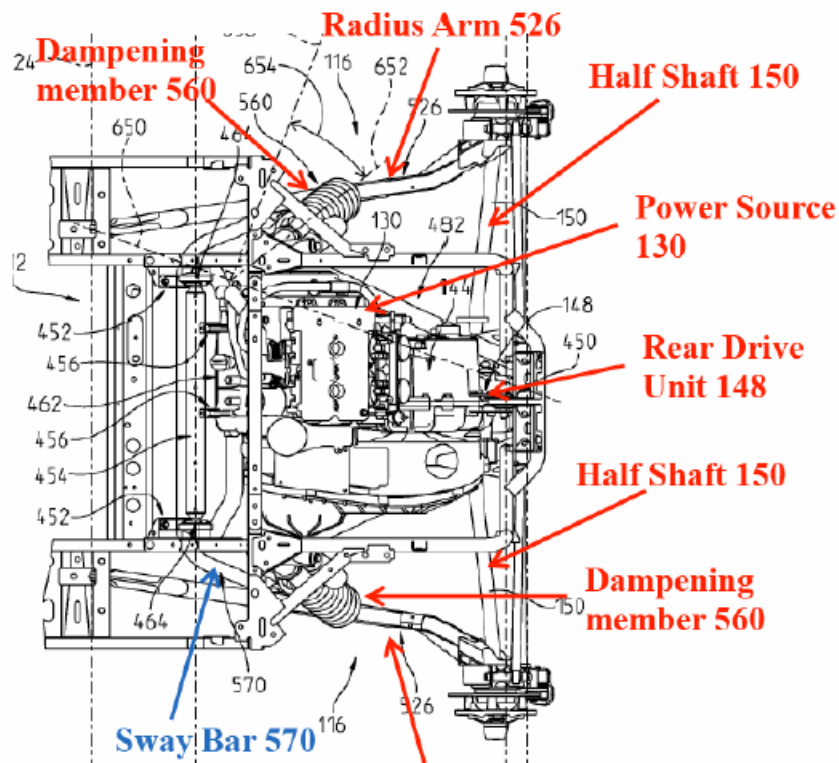


FIG. 28 Radius Arm 526

PO Resp. 4. Figure 28 represents a top view of Figure 29. Patent Owner labels some of “[t]he claimed structure” in Figure 28. *Id.*

C. Illustrative Challenged Claims

Claim 1, the sole independent challenged claim, and dependent claim 2, follow:

1. A vehicle, comprising:
 - a frame;
 - a plurality of ground engaging members supporting the frame;
 - a power source supported by the frame and operatively coupled to at least one of the plurality of ground engaging members to propel the vehicle;
 - an operator area supported by the frame, the operator area including seating and operator controls;
 - a rear drive unit supported by the frame and positioned rearward of the operator area, the rear drive unit being

operatively coupled to the power source and operatively coupled to a first ground engaging member positioned rearward of the operator area through a first half shaft to transfer power received from the power source to the first ground engaging member and to a second ground engaging member positioned rearward of the operator area through a second half shaft to transfer power received from the power source to the second ground engaging member, the first ground engaging member being positioned on a first side of a vertical centerline longitudinal plane of the vehicle and the second ground engaging member being positioned on a second side of the vertical centerline longitudinal plane of the vehicle;

a first rear suspension system moveably coupling the first ground engaging member to the frame, the first rear suspension system including

a first radius arm coupled to the first ground engaging member and coupled to the frame at a first location forward of the first ground engaging member,

a first control arm coupled to the first ground engaging member and to the frame;

a first dampening member coupled to the first radius arm and to the frame;

a second rear suspension system moveably coupling the second ground engaging member to the frame, the second rear suspension system including

a second radius arm coupled to the second ground engaging member and coupled to the frame at a second location forward of the second ground engaging member,

a second control arm coupled to the second ground engaging member and to the frame;

a second dampening member coupled to the second radius arm and to the frame; and

a sway bar coupling the first rear suspension to the second rear suspension, the sway bar being coupled to the frame at a location forward of the power source.

2. The vehicle of claim 1, wherein the location at which the sway bar is coupled to the frame is rearward of the first location and the second location.

Ex. 1001, 25:7–57.

D. Evidence of Record

Petitioner primarily relies on the following Declarations and prior art references:

Reference or Declaration	Exhibit No.
Declaration of Gregory W. Davis, Ph.D., P.E. (“Davis Declaration”)	Ex. 1001
Responsive Declaration of Gregory W. Davis, Ph.D., P.E. (“Davis Reply Declaration”)	Ex. 1028
U.S. Pat. No. 4,817,985 (Apr. 4, 1989) (“Enokimoto”)	Ex. 1003
U.S. Pat. No. 3,292,944 (Dec. 20, 1966) (“Dangauthier”)	Ex. 1004
U.S. Pub. No. 2008/0283326 A1 (Nov. 20, 2008) (“Bennett”)	Ex. 1005

Pet. i–iii.

Patent Owner relies on the Declaration of Dr. John J. Moskwa (Ex. 2044 (“Moskwa Declaration”)) and other Exhibits, some of which are discussed below. See PO Resp. vi–ix (listing Exhibits 2001–44). Each party deposed the other party’s Declarant. See Exs. 1023 and 1026 (“Moskwa Deposition”); Ex. 2031 (“Davis Deposition”).

E. Instituted Grounds of Unpatentability

We instituted trial on the following grounds under 35 U.S.C. § 103(a) as asserted by Petitioner:

Claims Challenged	References(s)
1–6	Enokimoto and Dangauthier
7–16	Enokimoto, Dangauthier, and Bennett

Pet. 2; Inst. Dec. 17–18.

II. ANALYSIS

A. Claim Construction

The claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015), *aff’d sub nom. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard).

For the purposes of this Final Written Decision, and on this record, most of the claim terms do not need express construction. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only those terms which are in controversy need to be construed and only to the extent necessary to resolve the controversy).

1. “forward of,” “rearward of”

Claim 1, and several of the dependent claims, generally recite that an element is “forward of” or “rearward of” another structure. The claim terms “forward” and “rearward” employ their ordinary meaning as relational terms with respect to the front and rear of the vehicle. *See, e.g.*, Ex. 1002, 9:58–59 (describing Figure 8 as a “back view of the exemplary side-by-side vehicle”), 10:58–59 (describing Figure 32 as “a rear view of the rear suspension of the vehicle of FIG. 1”); 13:34–38 (describing Figure 6 as depicting “a majority of muffler 120 . . . positioned rearward of frame 112” and “muffler . . . forward of a rear extend of the tires 106 of rear axle 110 and forward of a rear extent of vehicle 100”), 16:37–40 (describing Figure 28 as showing CVT housing 342 as “completely rearward of line 524

associated with rear suspension 116 and completely forward control arms 530 and 532 of rear suspensions 116”).

In the Institution Decision, based on the ’719 patent Specification, we construed the terms “forward of” and “rearward of” as respectively including “elements that are either partially or completely forward of and rearward of other structures.” Inst. Dec. 6–7. Neither party disputes this construction. We incorporate herein our analysis regarding construction of the term from the Institution Decision. *See id.*

2. “dampening member coupled to the
[first or second] radius arm and to the frame”

The parties dispute the meaning of this phrase. *See* PO Resp. 12; Pet. 4–5; Pet. Reply 2–5. Petitioner contends that “the broadest reasonable constructions of [coupled and coupling] are ‘connected directly or indirectly’ and ‘connecting directly or indirectly,’ respectively.” Pet. 4. Patent Owner responds by asserting that Petitioner “is correct to a point (*e.g.*, two components need not be screwed together, but can be coupled through, for example, a bracket and/or a bearing).” PO Resp. 12. Patent Owner also asserts that with respect to “coupling,” “[t]he dampening members . . . are different.” *Id.* at 15. According to Patent Owner, “coupling” is narrower with respect to the dampening members, but Patent Owner agrees, as noted, that coupling includes “indirect” coupling, even for the dampening members. *See id.* at 12, 15 (indirect coupling allows coupling “through a bearing or a bushing”). According to Patent Owner, “[p]roperly interpreted, the term ‘dampening member coupled to the [first/second] radius arm and to the frame’ means that the dampening member is coupled to the radius arm and the frame, not to some other structure (*e.g.* the bearing carrier) and the frame.” PO Resp. 12–13.

Citing Dr. Moskwa, Patent Owner presents a hypothetical figure that purports to show the unreasonable result of Petitioner’s “overly broad” and “strained” claim construction of the terms “coupling” and “coupled” with respect to the dampening member. Patent owner’s hypothetical Figure A follows:

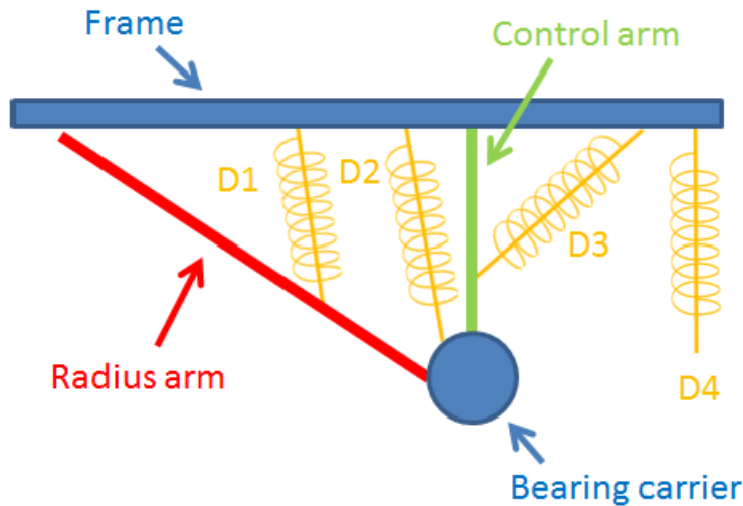


Figure A

PO Resp. 16–17 (citing Ex. 2044 ¶ 58). Figure A above represents different potential connections for hypothetically coupling dampening members D1–D4 between a frame and the radius arm. *See id.* Based on Figure A, Patent Owner asserts the following:

Under the proper construction, Patent Owner respectfully submits that the term “dampening member coupled to the [first/second] radius arm and to the frame” cannot be properly construed as encompassing a suspension where the radius arm, control arm, and dampening member are each coupled at one of their end portions to the frame and at their other end portions to a common bearing carrier. . . . The fact that they each are coupled to a common, but different, element (such as the frame or bearing carrier) does not mean that they are coupled to each other within the meaning of the claim language. This is especially so in connection with claim 8, which explicitly recites the bearing

carrier and that the control and radius arms are coupled to the bearing carrier but that the dampening member is coupled to the radius arm.

PO Resp. 17–18 (citing Ex. 2044 ¶ 57).

Notwithstanding hypothetical Figure A, Patent Owner does not dispute Petitioner’s assertion that, “as shown in the preferred embodiments . . . the control arms and radius arm are, at most, indirectly connected (i.e., ‘coupled’) to the ground engaging member via the vehicle’s bearing carrier.” Pet. 5 (Ex. 1001, Figs. 29–31); *accord* Pet. Reply 2–3 (citing Ex. 1001 Fig. 29, showing control arm 532A and radius arm 526A indirectly coupled to the ground engaging member/wheel via bearing carrier 536A). Dr. Moskwa “agree[s] with Dr. Davis” that “‘coupling’ includes indirect coupling” with respect to the radius arm and control arm, but such indirect “coupling does not make sense if it permits all of the . . . dampening members (D1 through D4) to be ‘coupled to the frame and to the radius arm.’” Ex. 2044 ¶ 58 (citing Ex. 1001 ¶ 67).

In summary, Patent Owner and Dr. Moskwa agree that the Specification discloses indirect coupling through a bearing carrier for the control arms and radius arms, but Patent Owner contends that coupling precludes indirect coupling through a bearing carrier for the claimed dampening member. As Petitioner persuasively argues, however, the Specification does not create a sufficiently clear disclaimer or distinction that limits “coupling” for dampening members to a bearing or other indirect coupling, while, at the same time, not limiting the same term “coupling” for the radius arms and control arms. *See* Pet. Reply 2; Ex. 1001 ¶ 67; Ex. 1028 ¶¶ 4–5 (testifying that “coupling” should not be differently construed for different components). And as noted above, Patent Owner concedes that

coupling, even for the dampening member, includes indirect coupling via “a bearing or a bushing.” *See* PO Resp. 15. The Specification simply does not describe or differentiate coupling via a bearing and a bushing versus a bearing carrier, or coupling for a dampening member versus a control arm, radius arm, or other component, in a sufficient manner that allows, let alone requires, a narrowing of coupling for one suspension element (dampening member) versus another (control and radius arms).

Patent Owner’s argument that Petitioner’s claim construction impermissibly captures dampening members D1–D4 in Figure A fails to note that Patent Owner’s proposed claim construction at least captures D1, as it must according to claim 1 (*i.e.*, “dampening member coupled to the . . . radius arm and to the frame”). *See* PO Resp. 16–17 (citing Ex. 2044 ¶ 58). In addition, Petitioner’s claim construction does not appear to capture D4, because the free end of D4 does not couple to anything, other than via the dampening member itself. *See supra* Figure A. In any event, Petitioner does not argue that coupling includes coupling via the dampening member itself (D4) or via a control arm (D3).

Moreover, the hypothetical coupling of D3 and D4 has no bearing on a prior art issue in this proceeding, whereas the couplings of D1 and D2 constitute the only relevant couplings related to a prior art disagreement. The bearing carrier coupled to D2 directly connects to the radius arm, as Figure A shows. The Specification does not demarcate a sufficient, if any, distinction between dampening members D1 and D2—or as noted, a sufficient distinction of indirect coupling that would include a bearing for D1 while precluding a bearing carrier for D2. *See* Ex. 1001 ¶ 67 (noting radius and control arms disclosed in the ’719 patent as indirectly coupled to

wheels via bearing carriers); Ex. 1009, Figs. 31–34, 21:1–11 (control arms 530, 532 and radius arms 526 coupled wheels via bearing carriers 536); PO Resp. 4–5 (annotating Figures 28, 29, 32).

Patent Owner’s argument that claim 8 supports its position also is not persuasive. See PO Resp. 15. Claim 8 ultimately depends from claim 1 and requires the first control arm and first radius arm respectively to be “moveably coupled” and “coupled” to a “first bearing carrier.” This specifically requires the two arms to be coupled indirectly to the ground engaging member via a bearing carrier, but contrary to Patent Owner’s arguments, claim 8 does not require the dampening member to be coupled to the radius arm without a bearing carrier. PO Resp. 15. If anything, claim 8 supports Petitioner’s claim construction, because, as noted, it specifically shows, by virtue of claim 1, that coupling includes indirect coupling through a bearing carrier. In addition, the ’719 patent discloses dampening members “rotatably coupled to the radius arms,” but claim 8 broadly does not require that type of coupling or preclude another type of coupling. See Ex. 1002, 21:26–27.

Patent Owner’s position appears to be that the dampening member cannot be coupled between the frame at one end and the radius arm at other end, if coupling includes indirect connection via other *claimed* structure. See PO Resp. 15–16. But this would not preclude a bearing carrier as an indirect coupling mechanism at least with respect to claim 1. With respect to claims 1 and 8, where a bearing carrier (D2) or bearing (D1) indirectly connects the dampening member to the radius arm, in both cases the coupling allows the dampening member to dampen the radius arm, as Figure A indicates.

As Patent Owner notes, Dr. Davis explains that a bearing carrier “provides a connection point for suspension components.” PO Resp. 16 (citing Ex. 1001 ¶130). As Patent Owner also notes, “[a] person of skill in the art understands that dampening members can be coupled to many different places on a vehicle.” *Id.* at 15. As claimed and disclosed, however, the dampening member serves to dampen the radius arm. *See supra* Figure A; Ex. 1028 ¶ 5 (describing dampening effect in prior art); PO Resp. 14 (annotating Ex. 1003, Fig. 28).

On this record, the phrase “dampening member coupled to the [first or second] radius arm and to the frame” means that the dampening member connects directly or indirectly to the frame at one end, and directly or indirectly to the radius arm at its other end, such that coupling provides for dampening of the movement of the radius arm. This construction addresses at least part of Dr. Moskwa’s and Patent Owner’s criticism of the breadth of Petitioner’s construction (*i.e.*, characterizing Petitioner’s construction as impermissibly “permit[ting] all of the [Figure A] dampening members (D1 through D4)” (Ex. 2044 ¶ 58)), because this narrower construction more clearly does not encompass D4. It is not necessary in this proceeding to determine if the construction also encompasses hypothetical coupling of D3 (depending on how D3 couples to the control arm, sufficient dampening of the radius arm may or may not occur), because the hypothetical coupling of D3 does not impact a prior art issue. In other words, even if we construe the phrase to preclude indirect dampening and connection via a control arm (*see* D3), it would not impact this Decision.

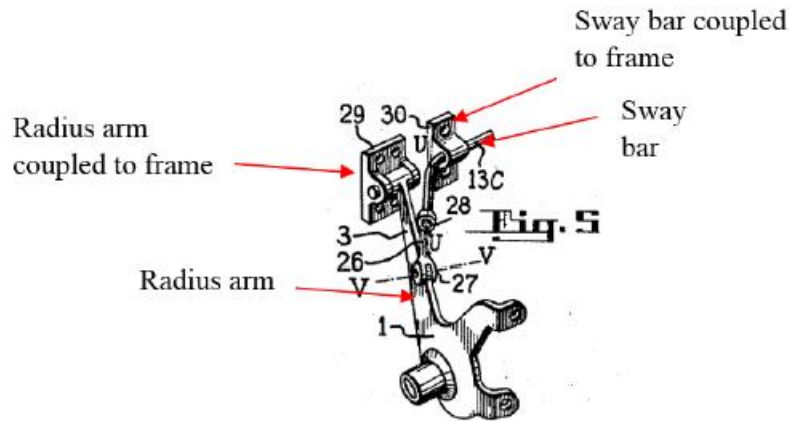
B. *Obviousness*

1. Claim 1

Relying on the testimony of Dr. Davis, Petitioner contends that the combination of Enokimoto and Dangauthier would have rendered claim 1 obvious. Pet. 14–36; Ex. 1001. Petitioner relies on Enokimoto as disclosing or suggesting most of the elements of the vehicle as set forth in claim 1, including a frame, a plurality of ground engaging members and their positions, a power source, an operator area, a rear drive unit, first and second rear suspension systems, first and second radius arms, and first and second control arms. See Pet. at 19–36. Petitioner relies on the combination of Enokimoto and Dangauthier primarily to address the sway bar limitation recited in claim 1, and alternatively to address other features that Enokimoto may not disclose, such as coupling the dampening member. *See id.*

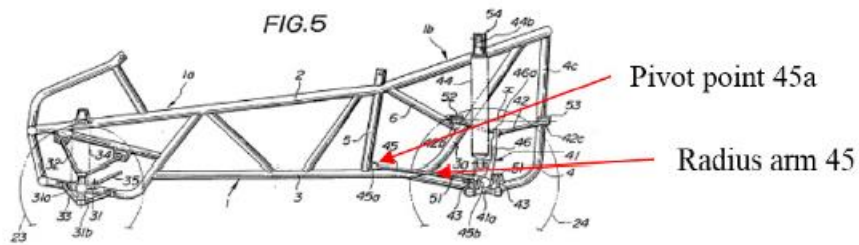
Particularly, Petitioner relies on Enokimoto as disclosing dampening members coupled to the radius arms as claimed, and alternatively, to the extent Enokimoto may not disclose dampening members coupled to the radius arms, Petitioner relies on Dangauthier to suggest modifying Enokimoto to include a “direct” coupling feature in order to provide a more compact suspension as Dangauthier suggests. See Pet. 27–28 (citing Ex. 1001 ¶ 100; Ex. 1004, 2:5–8, Fig. 1). Petitioner also relies on Dangauthier’s radius arm and sway bar suspension system to suggest modifying Enokimoto’s radius arm suspension system, in order to address the claim 1 limitation of “a sway bar coupling the first rear suspension to the second rear suspension, the sway bar being coupled to the frame at a location forward of the power source.” Pet. 32–36.

To illustrate its reliance on Dangauthier, Petitioner provides an annotated version of Dangauthier's Figure 5, as follows:



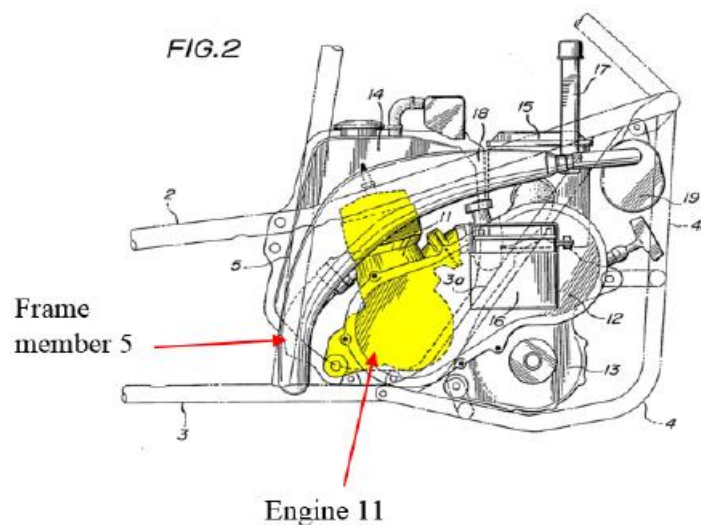
Pet. 33 (Petitioner annotating Fig. 5 of Dangauthier, citing Ex. 1004, Figs. 3–5; Ex. 1001 ¶ 104). Figure 5 is a partial perspective view of Dangauthier's suspension and depicts sway bar 13C connected to radius arm 3, each of which attaches to the frame at different pivot points. See Ex. 1004, 1:59–61, Fig. 5; Pet. 17 (describing Dangauthier's “set back” mounting system embodiment—with the sway bar mounted “back from (but near) the pivot point of the radius arms,” as taught by Figures 5 and further suggested by Figure 2). Petitioner notes that another embodiment discloses the sway bar and radius arms connected in line at the same pivot point. Pet. 17 (discussing Ex. 1004, Fig. 3)

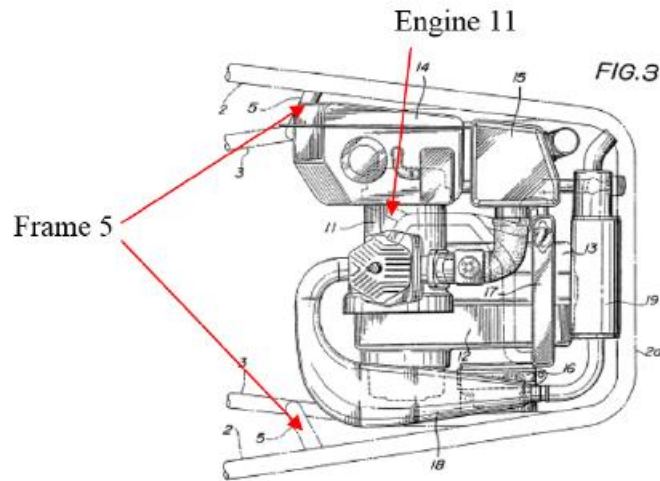
Petitioner contends that “Enokimoto teaches that its engine is rearward of the point at which Enokimoto teaches one of ordinary skill to couple a radius arm to the frame (the pivot point of the radius arm).” *Id.* at 33 (citing Ex. 1003, 3:1–3, Fig. 5; Ex. 1001 ¶¶ 105–06). To illustrate its point about the respective locations of the radius arm, frame, and rear engine, Petitioner annotates Figure 5 of Enokimoto, as follows:



Id. (Petitioner annotating Figure 5 of Enokimoto). Annotated Figure 5 depicts a fragmentary view of the frame and suspension of Enokimoto's vehicle. Petitioner contends that Figure 5, when considered in conjunction with Enokimoto's Figure 3 and other disclosures, indicates that Enokimoto at least suggests that Enokimoto's radius arm 45 would be coupled to frame 1 forward of engine 11 (*i.e.*, in the vicinity of frame portion 5). *See id.* at 33–34 (citing Ex. 1003, 3:1–3, Fig. 2; Ex. 1001 ¶¶ 105–106); *see* Ex. 1003, 2:5–6, Fig. 6 (showing another view of radius arm 45).

To further illustrate its point about the engine location relative to a modified sway bar position, Petitioner produces the following annotated versions of Enokimoto's Figures 2 and 3:





Pet. 34 (annotating Enokimoto's Figures 2 and 3).

Annotated Figures 2 and 3 reproduced above depict different views of Enokimoto's frame 2, frame portion 5, and engine 11. Petitioner contends that Enokimoto's radius arm 45 attaches at pivot point 45a adjacent to frame portion 5 (vertical stiffener pipe 5). Pet. 33–34. Petitioner also explains that Dangauthier discloses similar radius arm 3 coupled via pivot 8 to frame C, with sway bar 13 coupled adjacent to, or at, a similarly located pivot point in various embodiments. See Pet. 32–35.

Relying on the combined teachings, Petitioner summarizes and reasons as follows: “Enokimoto teaches that its engine is rearward of the point at which Enokimoto teaches one of ordinary skill to couple a radius arm to the frame (the pivot point of the radius arm).” Pet. 33 (citing Ex. 1001 ¶¶ 105–06; Ex. 1003, Fig. 5). “[C]oupling Dangauthier's sway bar to Enokimoto's frame at or slightly behind the location at which Enokimoto teaches one of skill to mount the radius arms results in a vehicle in which the

sway bar is coupled to the frame forward of the engine.” *Id.* at 34 (citing Ex. 1001 ¶ 105).

Petitioner advances several reasons for modifying Enokimoto’s frame and radius arm to include a sway bar coupled forward of the engine, including as follows: providing known sway bar stabilizing benefits (*e.g.*, anti-banking), “minimizing the bending” of the sway bar, allowing room for an engine to “sit lower in the vehicle . . . contributing to a lower center of gravity,” and maintaining a large vertical wheel stroke while maintaining stability. *See* Pet. 17–18 (citing Ex. 1001 ¶¶ 70, 90), 35 (citing Ex. 1001 ¶¶ 37–46, 86–90, 106); PO Resp. 20–21 (listing reasons). Petitioner also explains that such a mounting location “accommodates various other vehicle components” and “positions the sway bar outside the space occupied by the engine.” *Id.*

As Petitioner explains regarding known sway bar benefits, Dangauthier teaches that its sway bar provides a known benefit of “anti-banking” (Ex. 1004, 2:46–47) or otherwise providing “[s]tiffness counteracting the effect of banking” (Ex. 1004, 3:13–14). *See* Pet. 15 (citing Ex. 1004, 2:46–47, 3:13–24). In simple terms, as Dr. Davis explains, sway bars provide “flatter cornering” (Ex. 1001 ¶ 43) and “act to prevent a vehicle from rolling over and seriously injuring or killing a passenger” (*id.* ¶ 47). Petitioner adds that it was well known that off-road vehicles were “aggressively” driven in “difficult terrain,” and “the state of the art before 2010 was such that persons of ordinary skill—recognizing the known benefits of sway bars—were implementing them on vehicles, including off-road vehicles, with existing suspension systems to obtain the known benefits

of sway bars.” Pet. 15–16 (citing Ex. 1001 ¶¶ 42–45; Ex. 1007, 38; Ex. 1008; Ex. 1009.).

Petitioner adds that sway bars would have furthered an Enokimoto goal of reducing wheel “tread” (*i.e.*, providing narrower wheels) by contributing to the vehicle stability, “particularly during cornering and sharp maneuvers.” *Id.* at 16 (citing Ex. 1001 ¶87; Ex. 1003, 1:56–58). Petitioner lists similarities of the two prior art vehicles, including rear driven wheels, rear radius arm suspension systems, compact vehicles, and dampening members similarly coupled to radius arms and frames, as further suggesting a ready modification. *See id.* at 18.

Patent Owner responds that Petitioner fails to show that Enokimoto discloses a “dampening member coupled to the [first or second] radius arm and to the frame,” as claim 1 requires. PO Resp. 45. Patent Owner contends that

Enokimoto specifically states that its dampening member is coupled at its upper end 44b to the frame and at its lower end 44a to an upward extension 46 of the knuckle 41. (AC1003, FIGS. 5, 8 & 9, 2:52–62.) Enokimoto’s separate radius arm 45 has its rear end 45b coupled to the front portion of the knuckle 41.

PO Resp. 45 (citing Ex. 1003, 2:1–3, Figs. 5, 8).

In other words, Patent Owner contends that the Enokimoto’s knuckle (and similar structure in Dangauthier) precludes the claimed coupling. Patent Owner’s claim construction argument—*i.e.*, with Enokimoto’s knuckle being precluded as a bearing carrier—is not persuasive. *See id.*; *see also id.* at 15–16 (arguing the claimed coupling precludes a bearing carrier); Ex. 1026, 180:21 (describing Enokimoto’s “knuckle . . . or bearing carrier”).

Even if Enokimoto’s knuckle constitutes a bearing carrier, it provides the claimed coupling under our claim construction, because it indirectly

couples Enokimoto's dampening member to the radius arm and provides for dampening of the latter. See Pet. Reply 16 (citing Ex. 1028 ¶ 5; Ex. 102[6], 180:7–181:1). As Petitioner explains, Patent Owner “ignores that Enokimoto's dampening member is coupled to the radius arm via knuckle 41 in a manner that provides a dampening effect on the movement of the radius arm.” See Pet. Reply 16 (Ex. 1028 ¶ 5). Dr. Moskwa agreed during his deposition that Enokimoto discloses that the “dampening member is indirectly coupled to the radius arm” via the “knuckle . . . or bearing carrier,” “and the bearing carrier is directly coupled to the radius arm.” Ex. 1026, 180:21–181:1. Accordingly, Petitioner's contention regarding this claim phrase is persuasive.

Patent Owner also argues that “nothing in Dangauthier suggests mounting a sway bar **forward of the engine** in a rear-wheel-drive vehicle.” PO Resp. 21 (citing Ex. 2044 ¶¶ 102–06). Patent Owner contends that “none of Petitioner's ‘reasons’ provides any motivation to choose *Dangauthier's* particular sway bar configuration over numerous other (and far more common) sway bar configurations.” *Id.* (citing Ex. 2044 ¶ 73). Patent Owner does not dispute Petitioner's contention “that the components have been ‘known’ for 40+ years.” *Id.* at 24 (citing Ex. 1001 ¶ 61). Rather, Patent Owner contends that “Petitioner presents no evidence that anyone ever made the invention,” so the fact that the elements “‘lay about in the prior art available for years to all skilled workers . . . is itself evidence of nonobviousness.’” *Id.* (quoting *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1577 (Fed. Cir. 1987)). *Id.* Patent Owner observes that “particularly in fields of crowded arts,” “when an invention on its face appears ‘simple,’ that may actually be strong evidence of **nonobviousness**.”

Id. at 25 (citing *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996)).

Addressing Petitioner’s motivation, Patent Owner generally contends that each of Petitioner’s alleged benefits could have been obtained by using other sway bar mounting locations. *See* PO Resp. 21 (citing Ex. 2044 ¶¶ 72–116). For example, Patent Owner contends that “rear engine vehicles with rear sway bars routinely had engines sitting low in the frame without using a forward-mounted sway bar.” *Id.* at 28 (citing Ex. 2044 ¶¶ 36–37, 78, 134). According to Patent Owner, “[r]earward of Enokimoto’s engine is also the location that a person of ordinary skill would recognize as having space for a sway bar, in contrast to the area forward of Enokimoto’s engine, which is crowded with engine components.” *Id.* at 30 (citing Ex. 2044 ¶¶ 80, 107, 119).

Patent Owner also contends that Petitioner “is simply wrong” that positioning a sway bar rearward of an engine ““would subject the sway bar to greater bending moments.”” PO Resp. 31 (citing Ex. 1001 ¶¶ 41, 106). Patent Owner contends that positioning the sway bar mounting bushings outward minimizes stress in the central part of a sway bar, but “this would not suggest any particular fore or aft positioning of the sway bar.” PO Resp. 31 (citing Ex. 2044 ¶ 90). Patent Owner also contends that positioning a sway bar near the pivot point of a radius arm would increase, instead of decrease, bending stress in the sway bar legs. *Id.* at 32–33 (citing Ex. 2044 ¶¶ 81–101, 139).

Patent Owner also asserts that skilled artisans would have been discouraged from combining Dangauthier and Enokimoto, because of a high bending stress in the sway bar legs of Dangauthier’s system, the high weight

required for a given stiffness, and additional bending stress in the suspension system of Enokimoto. See PO Resp. 42–43. Patent Owner also contends that Dangauthier teaches mounting a sway bar rearward of a forward engine, and that skilled artisans would have recognized that Dangauthier’s compact suspension does not allow space for “an engine between the rear drive unit and the sway bar.” *Id.* at 44–45 (citing Ex. 2044 ¶ 107). Dr. Moskwa contends that “one of ordinary skill would instead be led . . . to mount a sway bar farther rearward in Enokimoto, near its rear axle and near the rear of Enokimoto’s engine. This is a common sway bar configuration.” 2044 ¶ 107.

Patent Owner’s arguments are not persuasive. The parties agree that the skill level involves “a bachelor’s degree in mechanical engineering or a related field,” and about a year of experience working in automotive engineering or a related field, or may include a similar level of knowledge without formal education by working in the field of automotive engineering for 2–3 years and developing a familiarity with principles of vehicle design and dynamics similar to what one would acquire via a bachelor’s degree in mechanical engineering. Ex. 2044 ¶ 23; Ex. 1028 ¶ 27. As quoted above, Patent Owner cites cases implying that the claimed invention is “simple” and in the crowded arts, but Petitioner provides several motivating reasons for combining the references and explains how the prior art suggests the invention, as discussed above and below. See PO Resp. 24–25 (citing *e.g.*, *In re Meng*, 492 F.2d 843, 848 (C.C.P.A. 1974)). In *Meng*, the court noted that “simplicity, particularly in an old and crowded art, may argue for rather than against patentability,” but found that the relied-upon “drawing occurs in a reference in no way directed toward the problem involved, and the drawing

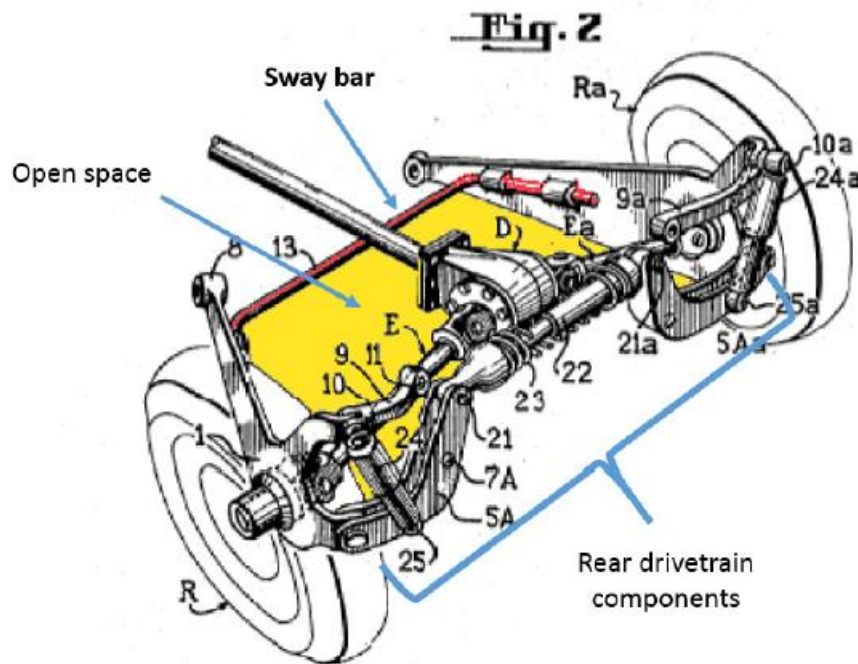
must be viewed in a teaching vacuum so far as the invention before us is concerned.” *Id.* at 849. In other words, “the scope and content of the prior art did not disclose or suggest the inventions claimed.” *Id.*

Also, the mere age of the prior art reference to Dangauthier does not undermine its probative force as a teaching directed to the mounting of sway bars at or near the pivot point of a radius arm to obtain predictable benefits. *See In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977) (citation omitted) (“The mere age of the references is not persuasive of the unobviousness of the combination of their teachings, absent evidence that, notwithstanding knowledge of the references, the art tried and failed to solve the problem.”); *In re Ethicon, Inc.*, App. No. 2015-1696, 2017 WL 24641, at *6 (Fed. Cir. Jan. 3, 2017) (quoting *Wright* with approval and noting “Ethicon presented no evidence of a long-felt need or the failure of others”). Similar to the situation in *Ethicon*, Patent Owner presents no evidence of a long-felt need or the failure of others in implementing a sway bar such as Dangauthier’s. In *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), the Court instructed that “a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions,” *id.* at 417, and apply “an expansive and flexible approach” to obviousness, *id.* at 415. *See also* Pet. 18 (quoting *KSR*, 550 U.S. at 417 (“When a patent ‘simply arranges old elements with each performing the same function it has been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” (citation omitted))).

As indicated above, Petitioner relies on the combination of Dangauthier and Enokimoto; particularly, Enokimoto’s disclosure of an

engine located rearward of the frame and its radius arms coupled forward of the engine, and Petitioner provides several reasons for making the combination.

Initially, Petitioner points out the two references teach similar vehicle suspension systems with rear driving wheels. Pet. 18. In other words, Dangauthier's space for holding differential D appears to be similar in location to Enokimoto's engine and transmission location. *Compare* Ex. 1004, Fig. 2, *with* Ex. 1003, Fig. 2. To highlight its point about the similarities of the two teachings, and Dangauthier's suggestion to mount a sway bar forward of an engine location (*i.e.*, near the pivot points of a radius arm), Petitioner provides the following annotated version of Dangauthier's Figure 2:



Pet. Reply 6 (annotating Figure 2 of Dangauthier). Petitioner's annotated Figure 2 of Dangauthier represents a similar engine area (*i.e.*, "forward of

the rear drive components”) to that of Enokimoto. *See supra* (annotation of Enokimoto’s Figs 2 and 5); Pet. 34.

Given the similar location of Enokimoto’s engine and radius arm relative to a vehicle frame, Petitioner proposes modifying Enokimoto to include a sway bar, i.e., modifying Enokimoto’s radius arm 45 in a fashion similar to Dangauthier’s radius arm 3 and sway bar 13. *See* Pet. 32–36. As noted above, Patent Owner acknowledges that skilled artisans would have been motivated to add a sway bar to Enokimoto, but contends that they would not use Dangauthier’s system. *See* PO Resp. 44–45; Ex. 2044 ¶ 107. Patent Owner’s central thrust urges nonobviousness because skilled artisans allegedly would have ignored Dangauthier’s teachings and instead, *modified* Dangauthier to implement *another sway bar mounting location*. As Dr. Davis testifies, however, “nothing in Dangauthier or Enokimoto suggests to one of ordinary skill that Dangauthier’s sway bar should be *re-engineered if applied to different vehicles*.” *See* Ex. 1028 ¶ 8 (emphasis added).

Dr. Moskwa also contends that “Dangauthier’s compact suspension does not allow space for an engine between the rear drive unit and the sway bar,” and “[t]hat is why Dangauthier places his suspension system rearward of his engine.” *See* Ex. 2044 ¶ 107. Patent Owner makes a related argument that Dangauthier’s teaching of a “compact” rear suspension system “does not allow space for an engine.” PO Resp. 44–45. This testimony and these arguments focus too narrowly on Dangauthier’s engine location and rear differential space. Contrary to the testimony, no persuasive evidence exists on this record showing that Dangauthier’s system uses a forward engine due to a lack of rear space; rather, the system simply employs a forward engine with a rear drive train with differential D that takes up similar space that a

small engine would. *See* Ex. 1004, Fig. 2 (differential D). In addition, the proposed combination relies primarily on Enokimoto's engine location and size and Dangauthier's suggestion of a sway bar located near the pivot point of a radius arm for any type of engine location. *See* Ex. 1004, Figs. 1–3; 1:11–17. Petitioner does not rely on using any alleged specific size related to Dangauthier's suspension system or on bodily incorporating all aspects of that suspension system.

Furthermore, even if Dangauthier's "compact suspension" system is a stated goal, that goal is relative to wheel size and other considerations, because Dangauthier's various figures and disclosure do not fix the radius arm length or wheel size, suggesting its system applies to various wheel and suspension component sizes to apply "in a general way to vehicle suspensions." *See* Ex. 1004, Figs. 1–3; 1:11–17. In addition, Dangauthier's stated goals are not limited to a compact suspension system, but also include "a particularly simple suspension having a small number of pivotal connections," compensation for "the rising movement of the body . . . as a result of longitudinal decelerations brought about by braking," with "anti-banking" functionality (a sway bar). *See* Ex. 1004, 1:19–21, 30–32, 2:46–47. Finally, similar to the disclosures of Enokimoto and Dangauthier, the claims do not require any set engine size.

Dangauthier's main reason for implementing a sway bar coupled to a forward part of a frame near radius arms—to provide "anti-banking"—also applies "*in a general way to vehicle suspensions . . . and more particularly the suspensions of the rear wheels which may be the driving wheels.*" Ex. 1004, 1:11–14, 2:46–47 (emphases added). Therefore, Dangauthier implies or suggests advantages for using its sway bar system in all types of vehicles,

including rear engine vehicles, in order to promote anti-banking. See Ex. 1001 ¶¶ 69–70 (noting Dangauthier’s goals of compact suspension in generic vehicles, while allowing “for significant wheel travel,” design flexibility, and stability advantages).

As noted above, Petitioner provides several other reasons for making the modification, including obtaining “the known benefits of a sway bar, while minimizing the bending to which the sway bar is subjected.” See Pet. 35 (citing Ex. 1001 ¶¶ 106–07); Pet. Reply 15 (citing Ex. 1028 ¶¶ 9–11). As also noted, these known benefits include anti-banking, which Dangauthier discloses explicitly. See Ex. 1001 ¶¶ 38, 44, 45, 47 (describing the known benefits, including load transfer during turns to keep the vehicle even by using a sway bar); Ex. 1004, 2:46–47.

The record also shows that skilled artisans would have recognized that Dangauthier’s sway bar system would have minimized bending stress in the central part of a sway bar and would have provided anti-banking and other benefits. See Pet. Reply 15 (citing Ex. 1028 ¶¶ 8–11; Ex. 2013, 83:12–19, 97:14–18; Ex. 1026, 154:6–17); Pet. 15–18 (citing Ex. 1001 ¶¶ 70, 90), 35 (citing Ex. 1001 ¶¶ 37–46, 86–90, 106). For example, as Petitioner notes, Patent Owner “concedes that ‘[m]ounting the sway bar bushings (which hold the sway bar to the frame) towards the outer lateral ends of the sway bar, adjacent to the sway bar legs, can minimize bending in the straight central part of the sway bar.’” Pet. Reply 14 (quoting PO Resp. 31).

Patent Owner’s contention that bending stress also could be minimized in a central part of the sway bar by locating a sway bar rearward of an engine, instead of using Dangauthier’s well-known system, does not rebut adequately Petitioner’s showing that it would have been obvious to

implement Dangauthier's system in a rear engine vehicle, in order to provide anti-banking while minimizing stress in a central part of a sway bar, providing vertical wheel stroke, minimizing wheel tread, and lowering the center of gravity. See Ex. 1001 ¶ 41; Ex. 1028 ¶¶ 8–11; Pet. 15–18 (citing Ex. 1001 ¶¶ 70, 90), 35 (citing Ex. 1001 ¶¶ 37–46, 86–90, 106).

Petitioner also persuasively responds to Patent Owner's argument that a forward-mounted sway bar may impose additional stresses on the sway-bar legs—i.e., Patent Owner's argument essentially shows “the mere existence of . . . tradeoffs,” which does not negate obviousness. See Pet. Reply 15 (citing *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000) (“The fact that the motivating benefit comes at the expense of another benefit . . . should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.”)). Petitioner similarly responds persuasively that any increase in stress could have been overcome in a predictable fashion by using “different/additional materials, shapes/thicknesses, if necessary.” *Id.* at 16 (citing Ex. 1028 ¶ 12).

Petitioner persuasively points out that similar to other prior art vehicles, Enokimoto's frame width varies from front to back. Pet. Reply 14 (citing Ex. 1028 ¶ 11; Ex. 1003, Fig. 6). “Because of this, mounting the sway bar near Enokimoto's wider frame section (*e.g.*, near the pivot point of the radius arm), allows for the sway bar bushing to be placed nearer to the outer ends of the sway bar, thereby reducing bending stress on the sway bar.” *Id.* (citing Ex. 1028 ¶¶ 9–11). Therefore, Petitioner persuasively shows that mounting a sway bar forward of Enokimoto's engine and “near the pivot point of the radius arm” would have been expected to limit bending

in the middle of the say bar, and provide other known benefits described above. *See id.*; Ex. 1028 ¶¶ 9–12.

Patent Owner also characterizes as “classic hindsight” (PO Resp. 27) Petitioner’s rationale of locating a sway bar forward of the engine in order to “allow[] the engine to both occupy the frame portion toward the rear of the vehicle and sit lower in the vehicle, which has the known advantage of contributing to a lower center of gravity” (Pet. 35 (citing Ex. 1001 ¶ 106)). According to Patent Owner, Petitioner provides no evidence that “there was a known center-of-gravity related problem” among rear-engine vehicles such that “Petitioner has failed to show that a person of ordinary skill would associate sway bar mounting location with that problem.” *Id.* Patent Owner also contends a sway bar under an engine “does not prevent the engine from sitting low in the frame,” and also contends other references show sway bars located above or behind the engine. *See* PO Resp. 28–30 (citing Ex. 2044 ¶¶ 69, 71, 78).

These arguments ignore the combination and specifically ignore Dangauthier’s teaching of locating a sway bar forward of Dangauthier’s differential D—suggesting a location forward of where Enokimoto’s rear engine would be located, as the Petitioner explains. *See* Ex. 1004, Fig. 2; Ex. 1003, Fig. 2; Pet. 20, 34–35. Faced with Enokimoto’s rear engine teachings and Dangauthier’s applicable sway bar teachings, skilled artisans readily would have recognized the benefit of Dangauthier’s sway bar as providing for a reduction of a center of gravity as applied to Enokimoto’s engine and would have recognized other benefits. *See* Pet. Reply 11–12 (citing Ex. 1001 ¶¶ 105, 112–113; Ex. 1023) 45:8–11), 12 (“The law is not so restrictive. It is sufficient to demonstrate that the claimed elements were

known in the art and a POSITA would have been prompted to combine them in a predictable manner to address the well-known issue of vehicle stability.”); Ex. 1023, 42:14–15 (“center of gravity calculations were known in 2006”); Ex. 1028 ¶¶ 6, 8, 9 (noting benefits); Ex. 1001 ¶ 106 (lower center of gravity and other benefits would have been known).

Patent Owner unpersuasively asserts that locating a sway bar above, below, behind, or forward of Enokimoto’s engine each would have allowed the engine to have a lower center of gravity, thereby rendering the forward location that Dangauthier suggests nonobvious. *See* PO Resp. 29; Ex. 2044 ¶¶ 78–79. Patent Owner’s arguments fail to undermine sufficiently Petitioner’s showing of obviousness of locating a sway bar in any one of a finite set of places to obtain a predictable result of a lower center of gravity and other predictable results. *See* Pet. 15–19; Pet. Reply 11–13; Ex. 1028 ¶ 28.

As Petitioner also points out,

[t]he fact that a proposed benefit might also be obtained in other ways is immaterial; a party challenging a patent is not required to prove that the known benefits could be achieved **only** through the proposed combination. A lower center of gravity was a known benefit before 2010, and it is undisputed that positioning a sway bar forward of Enokimoto’s engine would provide such a benefit.

Pet. Reply 13. As Petitioner contends, the inventors of the ’719 patent were “not the first to recognize that vehicular stability could be improved by lowering the vehicle’s center of gravity.” Pet. Reply 12 (citing Ex. 1023 45:8–11 (generally agreeing that vehicles with a lower center of gravity have better stability); *see also* Ex. 1023, 42:14–15 (testifying that “center of gravity calculations were known in 2006”); Ex. 1028 ¶¶ 6, 8, 9 (noting

benefits); Ex. 1001 ¶ 106 (lower center of gravity and other benefits would have been known).

In Papers 34 and 35, we authorized additional briefing to address Patent Owner's assertion, *inter alia*, that Petitioner improperly added new and improper rationale to combine the references. *See* Papers 34 and 35 (clarifying Paper 34); Ex. 3001. According to Patent Owner, the Petition does not assert that locating a sway bar forward of an engine provides for ease of access to the engine for maintenance and similar purposes, but the Reply Brief and Reply Declaration belatedly make that assertion. *See* Paper 36, 3 (citing Pet. Reply 11, Ex. 1028 ¶¶ 8, 19). Petitioner replies that the new rationale constitutes a proper response to Patent Owner's arguments that skilled artisans would have been led away from locating a sway bar forward of Enokimoto's engine. *See* Paper 41, 2.

Petitioner's argument is persuasive. In its Response, Patent Owner alleges that "[r]earward of Enokimoto's engine is also the location that a person of ordinary skill would recognize as having space for a sway bar, in contrast to the area forward of Enokimoto's engine, which is crowded with engine components." PO Resp. 30 (citing Ex. 2044 ¶¶ 80, 107, 119). In addition, the Petition contends, in a related manner, that providing a sway bar at a forward location "positions the sway bar outside of the space occupied by the engine" (albeit for an unrelated advantage of allowing the engine to sit rearward and lower the center of gravity). *See* Pet. 35. The Petition similarly describes a forward sway bar mounting location "to accommodate both the sway bar and the vehicle's other components, such as the engine and other components in the rear compartment of the vehicle."

Pet. 37; Ex. 1001 ¶ 107 (testifying the forward location allows for “the placement of other vehicle components”).

On balance, Petitioner’s Reply, in light of the Petition’s original contention regarding accommodating the engine and other components, properly responds to Patent Owner’s allegation that a forward-located sway bar mount would crowd a space already “crowded with engine components.” See PO Resp. 30. In other words, explaining that access to the engine would be easier with a forward located sway bar, after contending that the forward location exists outside of an engine space and accommodates the engine and other components, reasonably addresses Patent Owner’s response that the forward mount location would be crowded with other components—i.e., regardless of whether or not the mounting location would be crowded, such a mounting would make engine and some component access easier. Nevertheless, even though this additional rationale supports obviousness and responds properly to Patent Owner, it is not necessary to our holding, given other reasons advanced by Petitioner.

Patent Owner also argues that

Dangauthier’s suggestion to have the sway bar coupled to the frame rearward of where the radius arms are coupled to the frame would lead to the result that the rear sway bar would be coupled to the frame at a location that is between the wheels and not forward of the engine in Enokimoto.

Prelim. Resp. 31.

This passage shows that Patent Owner agrees that Dangauthier suggests coupling a sway bar at a forward frame location—albeit between the forward part of the two rear wheels. As discussed above, Dangauthier’s disclosure does not limit its teachings to any specific wheel, radius arm, or sway bar sizes—i.e., suggesting sway bar coupling to a frame inside or

outside the radius of the wheels. *See* Ex. 1004, Figs. 1–5; *see* Inst. Dec. 15–16 (making a similar preliminary finding). Similarly, as also discussed above, Enokimoto’s disclosure does not limit the size of its engine relative to its rear wheel size. *See* Ex. 1003, Figs. 2, 4–6; *see* Inst. Dec. 15–16 (making a similar preliminary finding). Accordingly, Dangauthier’s “suggestion” (Prelim. Resp. 31) for a forward coupled sway bar bolsters Petitioner’s showing that it would have been obvious to couple a sway bar forward of Enokimoto’s rearward engine in order to attach it readily to a frame location at or near where the radius arm attaches to the frame, as Dangauthier suggests. *See* Ex. 1004, Figs. 2, 3, 5. The scope of claim 1 captures subject matter suggested by the combination especially because claim 1 does not specify a size for the claimed “power source” (engine) or “ground engaging member” (wheel).

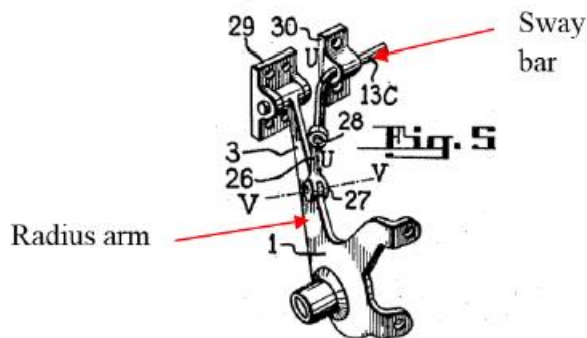
In summary, Petitioner shows that the claim 1 combination that includes a sway bar mounting location amounts to no “more than the predictable use of prior art elements according to their established functions,” or involves the arrangement of prior art elements with each performing the same function it has been known to perform to yield a predictable result. *See KSR*, 550 U.S. at 417; Pet. 18 (citing *KSR*). Based on the foregoing discussion, and considering the evidence of nonobviousness addressed below, Petitioner persuasively shows the unpatentability of claim 1 by a preponderance of the evidence.

2. Claims 2–6

Claims 2, 4, and 6 depend directly or indirectly from claim 1, and require “the location at which the sway bar is coupled to the frame is

rearward of the first location and the second location.” Annotating Dangauthier’s Figure 5, Petitioner contends that

[i]n other words, Claim 2 recites radius arms coupled to the frame forward of where the sway bar is coupled to the frame. As previously described in Section VI.A above, Dangauthier shows the conventional configuration in which a sway bar is mounted to the frame at a different location than the radius arm (permitting the sway bar 13C to be either slightly set back from the pivot point of the radius arm or to be aligned with the pivot point):



Pet. 36 (citing Ex. 1004, 3:25–30). Dangauthier’s Figure 5 above, annotated by Petitioner, portrays sway bar 13C coupled to radius arm 3, and depicts two frame coupling points at bearings 29 and 30. *See id.*; Ex. 1004, 3:25–30. Petitioner also points in general to two frame locations in Enokimoto for mounting the radius and sway bar according to Dangauthier’s suggestion, with no or minimal modification of Enokimoto’s frame. *See* Ex. 1001 ¶¶ 112–113.

Patent Owner responds that neither Enokimoto nor Dangauthier discloses or suggests the claimed structure. PO Resp. 47–50. Patent Owner contends that Petitioner’s showing with respect to claim 2 “**directly conflicts**

with the purported motivations that Petitioner relies on for claim 1.” *Id.* at 48. Patent Owner describes the alleged conflict as follows:

For [c]laim 1, Petitioner contends there is motivation to couple a sway bar close to the pivot point of Enokimoto’s radius arm (1) to position the bar outside the space occupied by the engine, and (2) to minimize the bending to which the sway bar is subjected. (Pet. at 35.) Petitioner cites Dangauthier, which Figures 4 and 5 shows a sway bar 13B/13C mounted to the frame laterally in line with the pivot point of radius arm 3, as evidence of these motivations. Now with Claim 2, Petitioner contends that it would be obvious to do just the **opposite**: move the mounting point of Dangauthier’s sway bar 13C rearward, **towards** Enokimoto’s engine and **away from** the pivot point of the radius arm.

Id.

Patent Owner’s arguments mischaracterize Petitioner’s showing. Petitioner contends that there were known advantages for mounting the sway bar “at or near” the radius arms—i.e., wherein “near” includes locations further rearward of the radius arm. See Ex. 1001 ¶¶ 111–112; Pet. 17 (“the sway bar is set back from (but near) the pivot point of the radius arm”), 37 (Enokimoto and Dangauthier suggest “that another predictable location for a sway bar mounted to the frame . . . would have been at a position just slightly rearward of the radius arm points 45a, to accommodate both the sway bar and the vehicle’s other components.”). Petitioner provides several reasons for the modification including that “a POSITA would have been prompted to locate a sway bar in this location, because it would have predictably prevented the sway bar from interfering with the radius arm’s movement during operation.” Pet. Reply 17 (citing Pet. 37–38 (reasoning

the location “would accommodate” the engine and other components); Ex. 1001 ¶ 111).

Comparison of Dangauthier’s Figures 4 and 5 reveals that Dangauthier respectively discloses attaching sway bar 13B and radius arm 3 at the same frame pivot point, and sway bar 13C and radius arm 3 at different pivot frame points, suggesting a relative “set back” between a sway bar and radius arm coupling point, contrary to Patent Owner’s arguments. *See* Pet. 17. In other words, pivot point V-V and bearings 29, 30 suggest that sway bar 13C may be mounted rearward of where radius arm 3 mounts to the frame, depending on the shape of the frame. *See* Ex. 1004, Fig. 5.

Patent Owner also contends that

Petitioner . . . draws a small square in between the engine and the radius arm pivot point [of Enokimoto] and states that this would be another “predictable location.” (Pet. at 37–38.) But Petitioner offers no motivation for this location, other than a general goal to avoid “interfering with other components.”

PO Resp. 49–50 (citing Pet. 37–38, Ex. 1001 ¶ 113).³

Notwithstanding Patent Owner’s arguments, and similar arguments related to the thickness of typical sway bars and “far more open areas” for mounting (*see id.* at 50 (citing Ex. 1001 ¶ 113; Ex. 2013, 115:12–21; Ex. 2044 ¶ 115.)), Petitioner proffers motivation, as outlined above with respect to claim 1, for mounting the sway bar forward of the engine and near the radius arm—motivation that applies to claim 2. In addition, as explained above, Dangauthier’s different embodiments suggest that frame shapes vary, and discloses a bearing mounting structure for mounting a sway bar

³ Patent Owner actually cites page 64 of Exhibit 1001, which includes paragraph 113.

rearward of the radius arm in Figure 5, in order to accommodate a frame that varies in width or shape along its length, thereby providing a reason to mount the radius arm and sway bar at different frame locations, and further so as not to interfere with other components attached to the frame, as Petitioner contends. *See* Ex. 1001 ¶¶ 111 (explaining that coupling rearward “enables greater design flexibility with regard to the length of the radius arms and the placement of the sway bar, which must extend laterally across the vehicle”), 112 (noting a “very minimal . . . modification” of Enokimoto’s frame near location of cross bar 7), 113 (noting general location forward of wheels on Enokimoto’s frame to avoid interference with other components); Pet. 37–38.

Figures 1 and 2 of Dangauthier further suggest applying the modification set forth in Figure 5 to a sway bar mounted slightly rearward of a radius arm at different frame locations, because Figures 1 and 2 each disclose a sway bar attached to a radius arm rearward of the radius arm pivot point at the frame. *See* Pet. 17 (discussing Figures 2 and 5). As explained generally with respect to claim 1, artisans of ordinary skill would have been motivated to mount the sway bar as set forth in claim 2 in order to minimize central bending stress in the sway bar, provide anti-banking, lower the center of gravity, provide vertical travel, and minimize wheel width, and readily would have been able to mount a sway bar in a crowded component area. Patent Owner’s arguments verify that artisans of ordinary skill, as Enokimoto suggests, were capable of mounting all manner of components in a “very small” “boxed area . . . filled with functional components.” PO

Resp. 50 (discussing Enokimoto); Ex. 2044 ¶ 115 (discussing Petitioner's showing).

With respect to possible other allegedly “far more open” areas for mounting a sway bar (see PO Resp. 50; Ex. 2044 ¶ 115), as discussed above, Dangauthier suggests mounting the radius arm and sway bar near each other. See Ex. 1004, Figs. 1, 2, 5. To the extent another more open area may accommodate that mounting structure, the argument fails to rebut sufficiently Petitioner's showing of obviousness. Rather, the arguments, at most, suggest the obviousness of several areas. Such mounting amounts to a predictable result of attaching two components to a frame near each other for their intended purpose of providing suspension and anti-braking, and accommodating variances in frame structure for different mounting points, as Dangauthier teaches, while providing the other predictable benefits noted.

Petitioner's showing includes advancing “a position just slightly rearward of the radius arm points 45a” (which is forward of the rear wheel and includes an unnumbered diagonal pipe extending from pipe 7 to pipe 5). See Pet. 37–38 (annotating Figures 1 and 6 of Enokimoto). In addition, Enokimoto does not specify an engine 11 size. The claims do not either. Skilled artisans would have recognized that Enokimoto's frame readily could have carried different engine sizes with known trade-offs being speed, weight, size, and other similar constraints, including component crowding. Therefore, given the breadth of claims 1 and 2, artisans of ordinary skill would have recognized the benefit of using smaller engines in Enokimoto's

frame while also recognizing the benefit of implementing Dangauthier's sway bar teaching.

As Petitioner also argues, "it is a long-standing principle" that the claimed combination does not require bodily incorporation. See Pet. Reply 18 (citing cases). The combination of Enokimoto and Dangauthier suggests mounting both the radius arm and sway bar forward of an engine, and Dangauthier suggests mounting the sway bar near or behind the radius arm, as discussed in connection with claim 1. As Petitioner maintains, claim 2 amounts to "simply arrang[ing] old elements with each performing the same function it has been known to perform and yields no more than one would expect from such an arrangement." Pet. 38 (quoting *KSR*, 550 U.S. at 417).

Given Petitioner's argument that obviousness does not require a bodily incorporation, especially where the showing at most shows minor modifications related to coupling components on a frame, or modifying the frame, no need exists to resolve the factual dispute regarding Petitioner's alternative possible sway bar mounting location in Enokimoto—i.e., horizontal pipe 7. See Pet. 38–39. That is, Patent Owner contends that pipe 7 would not be forward of the engine. See PO Resp. 49; Ex. 2044 ¶ 114. Even if Patent Owner is correct, Enokimoto states that "[t]he present embodiment is . . . considered in all aspects as illustrative, and not restrictive," and the relative frame locations indicate that moving bar 7 slightly forward would amount to a predictable, minor modification for the purpose of attaching Dangauthier's sway bar close to the radius arm pivot points as Dangauthier suggests. See Ex. 1003, 4:11–15, Figs. 2, 5; Ex. 1003, Figs. 5, 6 (showing horizontal frame pipe 7 adjacent vertical pipe 5 forward

of wheel 24 in the longitudinal direction L), Fig. 3 (showing engine 11 rearward of vertical pipe 5).

Based on the foregoing discussion, Petitioner sufficiently shows that it would have been obvious to mount a sway bar slightly rearward of where Enokimoto's radius arm 45 attaches to the frame at or near vertical pipe 5, in order to accommodate the shape of a frame (i.e., having different possible mounting locations) and to maintain a desired radius arm length as the dual pivot points of Dangauthier suggests, and in order also to maintain stiffness, combat banking, provide a low center of gravity, provide vertical travel, minimize wheel width, and prevent the sway bar from interfering with the radius arm and other parts. *See* Pet. 17, 27–31, 35–38; Ex. 1003, Figs. 5–6, Ex. 1004, 3:13–30, Fig. 5; Pet. Reply 17–18 (citing Ex. 1001 ¶ 111); Ex. 1001 ¶¶ 111–113.

Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides rationale to support its showing that the combination of Dangauthier and Enokimoto would have rendered claims 3–6 obvious. Pet. 39–41. Petitioner's showing as to claims 2–6 is persuasive and we adopt it as our own. *See* Pet. 36–41. Patent Owner does not address claims 3–6 separately from claim 2. *See* PO Resp. 50–51.

Based on the foregoing discussion, and considering the evidence of nonobviousness addressed below, Petitioner persuasively shows the unpatentability of claims 2–6.

3. Claims 7 and 13–15

Claim 7 depends from claim 1 and further recites a front drive unit and CVT (continuously variable transmission) coupled to the power source. Relying on the testimony of Dr. Davis, Petitioner points to evidence and

provides rationale to support its showing that the combination of Dangauthier, Enokimoto, and Bennett would have rendered claim 7 obvious. Pet. 42–48. Petitioner contends that it would have been obvious to modify the Enokimoto/Dangauthier combination of claim 1 to include a four-wheel-drive vehicle with a CVT, as Bennett teaches. *See* Pet. at 42–48 (citing Ex. 1005, Fig. 10A, ¶¶ 63, 66). Petitioner advances several well-known and predictable benefits for using four-wheel drive, including better traction and acceleration, and for using CVT, including a smoother ride. Pet. 45; Ex. 1001 ¶¶ 51–52, 127; Pet. Reply 19. For example, Petitioner explains that the modification would have involved “routine,” “minor modifications,” and “would have been merely the use of a known technique (e.g., implementing four-wheel drive) to improve similar devices (e.g., four-wheeled, all-terrain vehicles).” Pet. 45–46 (citing Ex. 1001 ¶¶ 75, 126; Ex. 1005 ¶ 57; Ex. 1020; *KSR*, 550 U.S. at 417).

Patent Owner responds that “[e]ven assuming that it would be obvious to convert Enokimoto into a four-wheel-drive vehicle with a CVT, doing so would crowd the rear frame portion forward of the engine.” PO Resp. 52 (citing Ex. 2044 ¶ 119). Patent Owner concludes that “a person of ordinary skill would have even more reason to follow convention and couple the rear sway bar to the frame at a location that is not forward of the engine. . . . This is what Bennett teaches.” *Id.* (citing Ex. 2044 ¶¶ 117–119; Ex. 1005, Figs. 7, 30–31, ¶ 90 and pointing to rear sway bar 226).

Patent Owner’s arguments turn on motivation with respect to claim 1, and focus on an unpersuasive bodily incorporation allegation—i.e., adding a CVT and front-wheel-drive would further crowd Enokimoto’s “small region,” thereby thwarting the reason for using Dangauthier’s sway bar as

suggested with respect to claim 1. *See* PO Resp. 51–52; Pet. Reply 20 (arguing that the “references do not need to be bodily incorporated in order to show obviousness”).

Contrary to Patent Owner’s arguments, the record shows that artisans of ordinary skill readily would have been able to fit components into tight spaces and/or modified Enokimoto’s frame slightly in order to accommodate components, motivated by the reasons for using a sway bar as set forth with respect to claim 1, and the reasons for using a CVT and four-wheel-drive with respect to claim 8. *See* Pet. 45–46 (citing Ex. 1001 ¶¶ 75, 126; Ex. 1005 ¶ 57; Ex. 1020); Ex. 1001 ¶¶ 51–52, 126–127. Dr. Moskwa’s testimony that Enokimoto’s proposed sway bar area as advanced by Petitioner “is already filled with functional components” itself shows that skilled artisans knew how to place components into tight spaces and were motivated to do it. *See* Ex. 2044 ¶ 115. Dr. Davis supports this finding by testifying that “Bennett’s suggested front drive shaft could readily have been modified to the length necessary to run between Enokimoto’s transmission and front axle assembly.” Ex. 1001 ¶ 126. Dr. Davis also testifies that Enokimoto’s transmission either is a CVT or provides room for one. *See id.* ¶¶ 127, 128. It follows that skilled artisans readily could have mounted a sway bar of the desired size within the scope of the claims (i.e., including $\frac{3}{4}$ inch width (*see* Ex. 2044 ¶ 115)), so that it extends along a radius arm and frame structure as Dangauthier suggests (*see* Ex. 1004, Figs. 2–4), regardless of whether the sway bar coupling area would be “even smaller” (*see* Ex. 2044 ¶ 118) due to Petitioner’s proposed modification.

Claims 13–15 depend directly or indirectly from claim 7. Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides

adequate rationale to support its showing that the combination of Dangauthier, Enokimoto, and Bennett would have rendered claims 13–15 obvious. Pet. 55–58. Petitioner’s showing regarding claims 7 and 13–15 is persuasive, and we adopt it as our own. Pet. 42–48, 55–58. Patent Owner does not address claims 13–15 separately from claim 7. *See* PO Resp. 57. Claims 7 and 13–15 involve the arrangement of prior art elements with each performing the same function it has been known to perform to yield a predicable result. *See KSR*, 550 U.S. at 417.

Based on the foregoing discussion, and considering the evidence of nonobviousness addressed below, Petitioner persuasively shows the unpatentability of claims 7 and 13–15 by a preponderance of the evidence.

4. Claims 8–10

As discussed above in the claim construction section, claim 8 depends from claim 7, which depends from claim 1. Claim 8 requires the first radius arm and first control arm to be coupled to a first bearing carrier (which is coupled implicitly to a first ground engaging member via claim 1), and a first half-shaft located forward of the first control arm. Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides rationale to support its showing that the combination of Dangauthier, Enokimoto, and Bennett would have rendered claim 8 obvious. *See* Pet. 48–49.

With respect to claim 8, Patent Owner’s arguments rely on its claim construction argument that it presents with respect to claim 1:

Even under the broadest reasonable construction, claim 8’s recitation that the control and radius arms are coupled to the frame and bearing carrier but that the dampening member is coupled to the frame and radius arm [as claim 1 requires] clearly indicates that it does not encompass structure such as Enokimoto,

where the dampening member, like the control and radius arms, is coupled to the frame and bearing carrier.

PO Resp. 54.

Patent Owner's claim construction arguments with respect to claim 1 are unpersuasive for the same reasons discussed above. In summary, Petitioner and Patent Owner agree that "[e]ach of Enokimoto's alleged radius and control arms and dampening member are coupled to that bearing carrier/knuckle 41." PO Resp. 53 (citing Pet. 48–49; Ex. 1001 ¶ 130; Ex. 1003, Fig. 5). This disclosure satisfies our claim construction, as discussed above with respect to claim 1, because Enokimoto's dampening member and radius arm each couple to the bearing carrier 41, as the parties agree, so that the dampening member indirectly couples to the radius arm and provides dampening to it. *See supra* Section II.A.1, II.B.1; Ex. 1028 ¶ 5; Ex. 1026, 180:21–181:1.

Claim 9 depends from claim 8. Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides rationale to support its showing that the combination of Dangauthier, Enokimoto, and Bennett would have rendered claim 8 obvious. Pet. 49–50. Petitioner's showings with respect to claims 8 and 9 are persuasive. *Id.* at 48–50.⁴ We adopt them as our own. Patent Owner does not address claim 9 separately from claim 8. *See* PO Resp. 54.

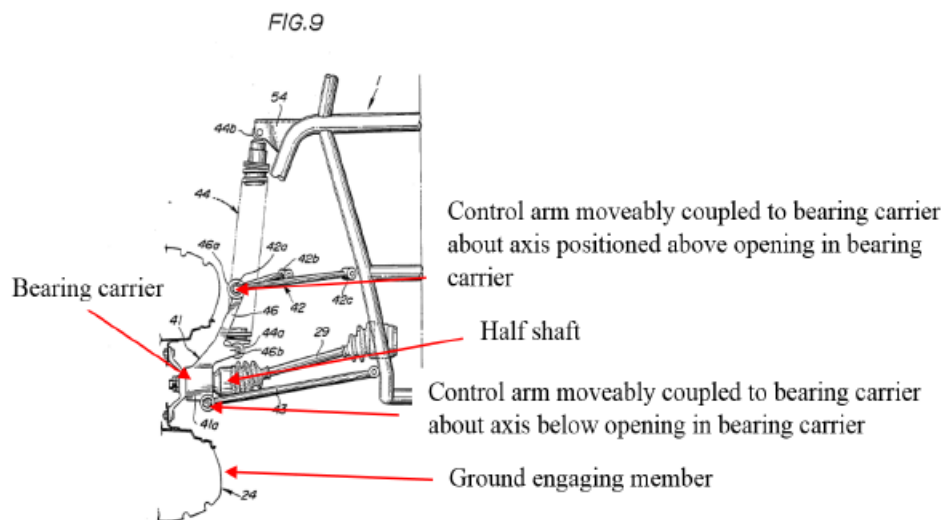
Claim 10 depends from claim 9 and adds

wherein the first control arm is rotatably coupled to the first bearing carrier about a first axis positioned above the opening in the first bearing carrier and the third control arm is rotatably

⁴ As discussed below, addressing claim 10, Patent Owner presents an argument that applies to claim 8.

coupled to the first bearing carrier about a second axis positioned below the opening in the first bearing carrier.

Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides rationale to support its showing that the combination of Dangauthier, Enokimoto, and Bennett would have rendered claim 10 obvious. *See* Pet. 51–52. Petitioner contends that “Enokimoto’s vehicle provides the claimed suspension configuration,” and provides the following annotation to illustrate its point:



Pet. 50–51 (annotating Figure 9 of Enokimoto). Annotated Figure 9 reproduced above represents a fragmentary rear elevational view of a rear portion of Enokimoto’s frame. Ex. 1003, 2:11–12. Annotated Figure 9 represents how Petitioner reads the recited control arms of claim 9 onto Enokimoto’s disclosure. *See id.*

Patent Owner responds that the parties agree that Enokimoto’s half shaft is located between the two I-shaped beams 43 as depicted in Figure 6 of Enokimoto. PO Resp. 54–55 (citing Ex. 2044 ¶ 124 (annotating Figure 6 of Enokimoto)). Relying on a limitation recited in claim 8, Patent Owner

contends that the half shaft is not “forward of” control arm 42, because it is only forward of the rear leg of the control arm 42—instead of forward of both legs of A-arm 42. *Id.* To support this argument, Patent Owner contends that a single arm of the A-arm 42 cannot be a control arm. *Id.* at 55 (“Although an A-arm may be a control arm, a single leg of that A-arm is not.”)

Although the parties do not discuss claim construction explicitly, the argument turns on claim construction. Petitioner does not dispute Patent Owner’s proffered claim construction, which requires a control arm to “control[] the lateral, as opposed to the longitudinal, motion of the wheel by being mounted generally perpendicular to the frame” and to “extend[] generally perpendicularly outward from the vehicle’s frame.” See PO Resp. 18 (citing Dr. Davis’s deposition testimony, Ex. 2013, 33:9–14); Pet. Reply 20–22.

Citing Dr. Davis’s deposition testimony, Petitioner replies that the “intrinsic” record does not support precluding a control arm from reading on a single leg of Enokimoto’s A-arm. Pet. Reply 21 (citing Ex. 2013, 60:25–61:21, 65:2–13). Petitioner’s response is persuasive. The ’719 patent does not preclude each leg of an A-arm to be considered a control arm, where each leg controls lateral movement to an appreciable extent, and the two legs join together at one apex and have separate control locations on the frame. Compare PO Resp. 5 (annotating Ex. 1002, Figs. 29 & 32 to show control arms 530, 532), with Ex. 1003, Fig. 6 (Enokimoto’s A-arm 42).

Addressing the issue of whether a single leg of Enokimoto’s A-arm 42 constitutes the recited control arm during his deposition, Dr. Davis testified that the rear leg of A-arm 42 (between points 42a and 42c, see Ex. 1003, Fig.

6) “is generally perpendicular to the frame. It’s generally.” Ex. 2013, 63:3–4. As such, Dr. Davis testifies that he “would consider [Enokimoto’s rear leg of A-arm 42] a lateral control arm, not a longitudinal control arm, like a radius arm.” *Id.* at 63:8–10. Dr. Davis further described Enokimoto’s A-arm as “composed of two control arms, the one that spans 42A to 42B, and the other than spans 42A to 42C.” *Id.* at 64:7–9. He also explained that the two legs “would be control arms which are tied together at the distal end, which is done for convenience of connections. . . . They could be connected separately, but it’s – it’s much more convenient to tie them together that way before you make that connection.” *Id.* at 65:5–13.

Patent Owner does not dispute that Enokimoto’s rear leg of A-arm 42 is “generally perpendicular” to the frame as Dr. Davis testified during his deposition. For example, citing testimony by Dr. Moskwa, Patent Owner concedes that “an A-arm may be a control arm” and “[a]n A-arm is a type of control arm.” PO Resp. 55–56 (citing Ex. 2044 ¶¶ 62–64, 124–125). Patent Owner also argues that “no person of skill in the art would consider simply cutting off or otherwise removing that forward leg.” *Id.* at 55.

The latter argument is not persuasive, because claims 8–10 ultimately depend from claim 1, which recites “a vehicle comprising,” so that claims 8–10 do not preclude using two control arm legs connected together at one end to form an A-arm control arm, which is how Dr. Davis characterizes Enokimoto’s A-arm. *See* Ex. 2013, 64:7–65:13A; Ex. 1001 ¶¶ 137–138. A close reading of Dr. Moskwa’s testimony shows that he does not dispute that Enokimoto’s rear leg is “*generally* perpendicular” to the frame. Rather, he testifies that that the rear leg is not “perpendicular” to the frame: The rear leg “does not perform the function of a control arm (i.e., control lateral

movement, *and [be] mounted perpendicular to the vehicle frame*.” Ex. 2044 ¶ 124 (emphasis added). Dr. Moskwa similarly testifies that a single leg of an A-arm cannot be a control arm “if neither is perpendicular,” or “unless that single leg extends *essentially perpendicular* to the vehicle frame.” *Id.* (emphasis added). Notwithstanding that latter statement that uses “essentially perpendicular” language to characterize *what a control arm requires*, Dr. Moskwa *does not testify* that *Enokimoto’s rear leg* is not “essentially perpendicular,” let alone not “generally perpendicular” to the frame. *See id.* ¶¶ 122–125 (annotating Ex. 1003, Fig. 6).

Accordingly, at issue is whether or not Enokimoto’s rear leg is “generally perpendicular” to the vehicle frame, because if it is, it necessarily would control lateral movement and satisfy Patent Owner’s claim construction of a “control arm.” *See* PO Resp. 18 (claim construction). Dr. Moskwa’s testimony verifies the necessary relationship between an “essentially perpendicular” control arm and its function. *See* Ex. 2044 ¶ 124 (indicating an “essentially perpendicular” structure “performs the function of a control arm”). As Patent Owner proposes a “generally perpendicular” control arm, the lateral control function associated therewith necessarily follows that structure. PO Resp. 18. Hence, on one hand, Dr. Davis testifies clearly that Enokimoto’s rear leg is “generally perpendicular” to the frame and functions as a lateral control arm (as opposed to a longitudinal radius arm). *See* Ex. 1023, 63–65 (specific line citations discussed above). On the other hand, Dr. Moskwa testifies that the rear leg is not “perpendicular” and is not a control arm. Ex. 2044 ¶¶ 122–125. Accordingly, no factual dispute exists on this record over whether Enokimoto’s rear A-arm leg is “generally perpendicular” to the frame—and we find that it is so and functions as a

lateral control arm according to Patent Owner's claim construction based on the record evidence. *See* Ex. 1023, 63–65 (specific line citations discussed above); Ex. 1003, Fig. 6, 3:43–46; Ex. 1001 ¶¶ 137–138; Ex. 2044 ¶¶ 122–125.⁵ Based on the testimony presented, the weight of evidence supports Petitioner's position that Enokimoto's rear leg of A-arm 42 satisfies Patent Owner's proffered claim construction of a control arm as recited in claims 8–10.⁶

Claim 11 depends from claim 10. Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides rationale to support its showing that the combination of Dangauthier, Enokimoto and Bennett would have rendered claims 10 and 11 obvious. Pet. 50–54. Petitioner's showing with respect to claims 8–11 is persuasive. *Id.* at 48–54. We adopt it as our own. Patent Owner does not address claim 11 separately from claim 10. PO Resp. 56.

Based on the foregoing discussion, and considering the evidence of nonobviousness addressed below, Petitioner persuasively shows the unpatentability of claims 8–11 by a preponderance of the evidence.

⁵ As noted above, Patent Owner submits that a control arm includes an A-arm. PO Resp. 55–56 (“an A-arm may be a control arm” and “[a]n A-arm is a type of control arm”). Patent Owner does not argue that Enokimoto's A-arm (or its rear leg) is not “generally perpendicular” to the frame.

⁶ Petitioner contends that Patent Owner “*admitted*” that Enokimoto satisfies claim 10 in a related District Court proceeding. Pet. Reply 20–21 (citing Ex. 1029, quoting Patent Owner's statement in a claim chart listing claim 10 and stating that “Polaris does not dispute that Enokimoto '713 appears to disclose this element”). Given the evidence of record and claim construction agreed upon by the parties in this proceeding, no need exists to reach the impact of Patent Owner's District Court statement as cited by Petitioner.

5. Claims 12 and 16

Claim 12 depends from claim 10, which depends directly from claim 9 and ultimately from claims 7 and 1. Claim 12 recites “wherein the third control arm has a longer length than the first control arm.” Claim 9 introduces “a third control arm . . . moveably coupled to the first bearing carrier” on the first ground engaging member as recited in claim 1 (i.e., a rear wheel). Claim 16 depends directly from claim 15 and ultimately from claims 7 and 1. Claim 16 recites “wherein the third control arm has a longer length than the first control arm.” But unlike claim 12, in claim 16 “the third control arm” lacks antecedent basis because claim 16 does not depend ultimately from claim 9. In other words, the control arm recited in claim 16 may be located anywhere.

Relying on the testimony of Dr. Davis, Petitioner points to evidence and provides rationale to support its showing that the combination of Dangauthier, Enokimoto, and Bennett would have rendered claims 12 and 16 obvious. *See* Pet. 54–55, 58 (citing Ex. 1001 ¶¶ 137–138 (showing measurement of the arms)). Petitioner contends that the recited third control arm reads on one of Enokimoto’s control arms 43, and that the recited first control arm reads on the rear leg (i.e., spanning from 42a to 42c) of A-arm 42. *See* Pet. 54 (citing Ex. 1003, Fig. 9; Ex. 1001 ¶¶ 137–138).

Patent Owner relies on arguments that track those addressed above with respect to claims 8 and 10—i.e., arguing that the rear leg of Enokimoto’s A-arm 42 (i.e., spanning from 42a to 42c) cannot constitute, by itself, the claimed first control arm—so that the total length of the first control arm must include the length of both A-arm legs, thereby rendering nonobvious the relative length recited in claims 12 and 16. *See* PO Resp. 56

(“The Petition claims that this element is shown by comparing a measurement of the lower I-shaped arm [43] with only the rear leg of the upper A-shaped arm.”). Patent Owner makes a similar argument related to the length between the “distal ends” of the A-arm (*i.e.*, from a distal end of one leg 42b to the distal end of the other leg 42c). *Id.* at 56–57.

For the reasons explained above with respect to claims 8 and 10, Patent Owner’s arguments are not persuasive. In summary, as discussed in connection with claims 8 and 10, the recited first control arm of claims 8, 12, and 16 reads on the rear leg of Enokimoto’s A-arm 42. *See* Ex. 1003, Fig. 9; Pet. 54; Ex. 1001 ¶¶ 137–138. No other dispute exists with respect to claims 12 and 16. Petitioner’s showing with respect to claims 12 and 16 is persuasive, and we adopt it as our own. *See* Pet. 54–55, 58 (citing Ex. 1001 ¶¶ 137–138 (showing measurement of the arms)).⁷

Based on the foregoing discussion, and considering the evidence of nonobviousness addressed below, Petitioner persuasively shows the unpatentability of claims 12 and 16 by a preponderance of the evidence.

6. Additional Briefing and Observations

Patent Owner alleges in additional briefing that Petitioner advances an inconsistent allegation in a related proceeding concerning the obviousness of a sway bar mounting location. *See* Paper 48, 3 (citing IPR2017-00199);

⁷ Aside from contesting whether a single A-arm leg constitutes a control arm, Patent Owner does not contest Dr. Davis’s measurement and finding that “the third control arm is substantially longer than the first control arm.” *See* Ex. 1001 ¶ 138; PO Resp. 56–57. Dr. Davis adds that making one longer than the other “is a common design choice which provides favorable handling characteristics due to the different radii of curvatures imposed by control arms of differing lengths.” *Id.* Dr. Davis’s position is persuasive.

supra Section I.A. (Related Proceedings, providing full citation). Petitioner disagrees. Paper 50. Petitioner’s position is persuasive, and we adopt it. In summary, as Petitioner argues, the related proceeding, IPR2017-00199, involves different evidence and prior art. *See* Paper 50, 2–3. As Petitioner summarizes, Petitioner collectively asserts, in the two proceedings, that “different known positions [for mounting sway bars] were associated with different predictable benefits before 2010.” *See id.* at 3. Patent Owner’s briefing does not show persuasively how asserting the obviousness of a sway mounting location based on certain prior art and evidence contradicts asserting the obviousness of a different sway mounting location based on different prior art and evidence. *See* Paper 48.

Patent Owner filed a Motion for Observation and Petitioner filed a Response to Patent Owner’s Motion for Observation. Papers 39 and 43. Considering the two Papers in light of the record, Patent Owner’s Motion for Observation does not materially undermine Dr. Davis’s testimony or show a material inconsistency in his testimony that adequately undermines Petitioner’s position.

7. Secondary Considerations of Nonobviousness

Patent Owner also alleges evidence of secondary considerations of nonobviousness. PO Resp. 57–65. Patent Owner contends that third parties “have specifically highlighted and touted the XP 900/1000 vehicles’ patented structure (particularly the rear suspension and four-wheel-drive capability) as being a vital differentiator and part of the XP900 and XP 1000s’ success.” PO Resp. 64 (citing Ex. 2026, 54; Ex. 2027, 20; Ex. 2028, 102, 106; Ex. 2030, 16–18). Patent Owner asserts a “significant” (redacted) sales figure over the years 2011–14. *See id.* at 58 (citing *Ecolochem, Inc. v.*

S. Cal. Edison Co., 227 F.3d 1361, 1377 (Fed. Cir. 2000)), 64 (citing Exs. 2017–2020 (sales figures)); Paper 21, 64 (citing confidential figure). Patent Owner contends that it “establishes a prima facie case of nexus by showing that there is commercial success, and that the product that is commercially successful is the invention disclosed and claimed in the patent.” *Id.* at 58 (quoting *Ecolochem*, 227 F.3d at 1377).

Petitioner replies that

the documents identified by Polaris also identify a panoply of unclaimed features, such as tire type and fuel capacity. . . . Indeed, it is telling that in connection with earlier proceedings before this same Board, Polaris has argued that different claim elements (other than those in the challenged claims of the ’719 patent) are the drivers of demand for the RZR. . . . Polaris has made no showing that any purported benefits of the claimed invention in the ’719 patent drive consumer demand as opposed to any of the unclaimed advertised features.

Pet. Reply 22–23 (citing IPR2014-01427, Paper 58, 35; Ex. 2022, 7).

As our reviewing court has explained, “when secondary considerations are present, though they are not always dispositive, it is error not to consider them.” *In re Huai–Hung Kao*, 639 F.3d 1057, 1067 (Fed. Cir. 2011). More recently, our reviewing court explained that even if some claims may be broader than “the praised embodiment,” the Board should have afforded the proffered evidence (of praise)

some weight, taking into account the degree of the connection between the features presented in evidence and the elements recited in the claims. There is no hard-and-fast rule for this calculus, as “[q]uestions of nexus are highly fact-dependent and, as such are not resolvable by appellate-created categorical rules and hierarchies as to the relative weight or significance of proffered evidence.” . . . Here, because claims 2 and 14 are considerably broader than the particular features praised in the

articles, it would be reasonable for the Board to assign this evidence little weight.

ClassCo, Inc. v. Apple, Inc., 838 F.3d 1214, 1221–22 (Fed. Cir. 2016) (quoting *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1331 (Fed. Cir. 2016) (emphases added).

Similar to the situation in *ClassCo*, we afford the evidence of commercial vehicle sales and praise little weight, because we determine that the broadly recited claims capture features well-known in the art, and they do not recite or require several features that Patent Owner’s cited literature touts as important and describes as part of an “entire [vehicle] package.” See Ex. 2027, 26 (describing the “ultimate thrill ride this *entire package* creates”) (emphasis added). In making these findings as outlined below with more particularity, we stress that we do not require Patent Owner to show success for each commercial or disclosed embodiment that falls in the scope of the challenged claims. See *infra* notes 11 (nexus presumed), 14 (summarizing some cited precedent).

Claims 1–6 do not require the “four-wheel-drive capability” that Patent Owner states contributes “particularly” to its commercial success or praise. See PO Resp. 64. In addition, Patent Owner generally cites to its “rear suspension” as contributing to its success and as garnering praise (see *id.*), but Patent Owner fails to describe any particular praised “rear suspension” features and fails to point to a claim that requires a particular feature that the articles praise. Dr. Moskwa unpersuasively relates some of the *unclaimed* praised features to claim limitations, as discussed further below. See Ex. 2044 ¶ 164 (“The literature identifies Polaris’s 3-link rear suspension as including ‘two extra-long radius rods and a far forward-

connecting trailing arm’” (citing Ex. 2021; 2027, 20) (emphasis added)); *see id.* at App. A (addressing claim limitations).

Further, regarding the rear suspension system, Patent Owner attributes success to left and right *upper and lower* control arms as part of its commercial product’s rear suspension system—arms which symmetrically attach to both rear ground engaging members (wheels). *See* PO Resp. 59–62 (describing CL1, CL2, CU1, CU2). Yet, none of the challenged claims require left and right upper and lower control arms coupled to both rear ground engaging members (wheels). Similarly, Patent Owner attributes success to the combination of a rear suspension system with upper and lower control arms coupled to both rear wheels, and four wheel drive (FWD, or alternatively, all-wheel drive (AWD)), but not one of the challenged claims requires that combination of features. *See* PO Resp. 58–59, 64 (stating that third parties “touted the XP 900/1000 vehicles’ patented structure (*particularly the rear suspension and four-wheel-drive capability*) as being a *vital differentiator and part of the XP[]900 and XP 1000s’s success*”) (citing Ex. 2026, 54; Ex. 2027, 20; Ex. 2028, 102, 106; Ex. 2030, 16–18).

Patent Owner contends that it “consistently touted those features in its marketing literature.” PO Resp. 64 (citing Ex. 2021–24). Nevertheless, Patent Owner also consistently touted *a myriad* of features in each of the cited advertising brochures. *See* Exs. 2021–24. Apart from generally citing “RZR portions of (PO2021-2024),” Patent Owner does not direct attention to which parts of the four advertising brochures support its showing. *Id.* at 64.

As an example, Patent Owner cites as evidence, Exhibit 2023. *Id.* Exhibit 2023 advertises the RZR® 800 model (and other models), in addition to the RZR® XP 900 and RZR® XP 1000 models that Patent Owner relies

upon in this proceeding to show commercial success and industry praise. *See* Ex. 2023, 11; PO Resp. 59 (“Polaris’s RZR XP 900 and XP 1000 vehicles embody the invention disclosed and claimed by at least claims 1–10, 12–14, and 16.”) (citing Ex. 2044 ¶¶ 156–167, App. A (addressing claim features related to commercial vehicle pictures)).

Patent Owner states that sales for the RZR[®] XP 900 and 1000 were “significant” over the years 2011–2014. PO Resp. 64. Nevertheless, the sales sheets reflect sales for other models, including several types of RZR[®] 800 models. For example, the unit sales for the RZR[®] 800 model appear to dominate sales in 2011 relative to the relied-upon XP 900 and XP 1000 (later) models. *See* Ex. 2017. Corroborating this sales evidence for RZR[®] 800 models, Patent Owner presents evidence of commercial success and industry praise for the RZR[®] 800 in related IPR 2015-01781. For example, Patent Owner contends that the RZR[®] 800 had significant sales with “particularly strong” commercial success, based on its “extremely low center of gravity.” IPR 2015-01781, Paper 20, 61–62.⁸ Apart from providing a list of sales units in this proceeding, Patent Owner does not provide any analysis that compares its sales or market share for the RZR[®] 800 relative to sales for the XP 900 and XP 1000.⁹ Patent Owner also does not provide any market

⁸ Considering the two proceedings, Patent Owner’s evidence shows virtually equal sales for the RZR[®] 800 model versus the collective sales for the XP 900 and XP 1000 models in confidential Responses and evidence—sales we refer to as “significant”—based on Patent Owner’s characterizations thereof. *Compare* Paper 21, 64 (citing confidential figure for the XP 900 and 1000 models collectively), *with* IPR2015-01781, Paper 19, 61 (citing confidential figure of same magnitude for the RZR[®] 800).

⁹ Patent Owner does not number the pages of Exhibit 2023. The cited page numbers correspond to brochure pages numbered by the panel.

share data for the XP 900 and XP 1000 relative to competitors. *See In re DBC*, 545 F.3d 1373, 1383–84 (Fed. Cir. 2008) (“DBC has done little more than submit evidence of sales,” and “[h]owever substantial those sales, that evidence does not reveal in any way that the driving force behind those sales was the claimed [invention].”); *Vandenberg v. Dairy Equip. Co., a Div. of DEC Int’l, Inc.*, 740 F.2d 1560, 1566–67 (Fed. Circ. 1984) (“The evidence does indicate that appellants’ device achieved a certain amount of acceptance in the market place, with sales peaking at \$192,000 in 1980. As the district court pointed out, however, appellants failed to show how sales of the patented device *compared to sales of their previous model, or what percentage of the market their new model commanded.*” (emphasis added)).

Furthermore, contrary to Patent Owner’s showing, Exhibit 2023 advertises the same features and groups the RZR[®] 800 and RZR[®] 900 models together as providing “RAZOR SHARP PERFORMANCE.” Ex. 2023, 10–12, 20. This “RAZOR SHARP PERFORMANCE” includes “POWER” (“THE ULTIMATE in Side[-by-]Side Power” that “features high horsepower-to-weight ratio”), “SUSPENSION” (which “BOASTS SORT-TUNED SUSPENSION” and “feature[s] the longest suspension travel (up to 14 [inches])”), and “AGILITY” (with “PATENTED ENGINE-BEHIND-THE-SEAT TECHNOLOGY” to give “the absolute lowest center of gravity”) for the “RANGER RZR family.” *Id.* at 10. Exhibit 2023 also advertises “ON-DEMAND TRUE ALL-WHEEL DRIVE” (“AWD”) as a “hallmark Polaris feature” that “keeps you moving, automatically engaging all four wheels when you need more forward traction and reverting back to 2WD when you don’t.” *Id.* at 3. This “ON-DEMAND TRUE AWD/2WD” also applies to all the RANGER RZR[®] models and RZR[®] 800 models. *Id.* at

12. The brochure also recites “SMOOTH RIDING DUAL A-ARM INDEPENDENT REAR SUSPENSION.” *Id.* at 2, 4. According to Exhibit 2023, the dual A-arm feature applies to the rear suspension of the RZR[®] 800 models (garnering 12 inches of wheel travel), whereas the RZR[®] XP 900 employs the “TRAILING ARM” suspension (garnering 14 inches of wheel travel) that Dr. Moskwa appears to rely upon. *Id.* at 12; Ex. 2044 ¶ 164 (referring to “Polaris’s 3-link rear suspension”). Dr. Moskwa verifies this understanding. *See* Ex. 2044 ¶ 31 (listing “Double A-arm” rear suspension for two RZR[®] 800 models and “RZR 900s” models, and listing “[m]ulti-link trailing arm” rear suspension for the RZR[®] XP 900 and RZR[®] XP 1000).

None of the claims require the dual A-arm suspension that the literature touts (and Patent Owner does not appear to rely on that feature).¹⁰ As noted above, in addition to relying upon 4WD/AWD, Patent Owner relies upon its rear suspension, and generally cites Dr. Moskwa, who testifies that “Polaris has consistently touted the RZR XP[]900s’ rear suspension.” Ex. 2044 ¶ 162 (citing Ex. 2021); *see* PO Resp. 59 (generally citing Ex. 2044 ¶¶ 156–67). Dr. Moskwa testifies, as noted above, that Patent Owner highlighted the “NEW! 3-LINK TRAILING ARM LONG TRAVEL IRS’ (or independent rear suspension).” *Id.* (citing “*E.g.*, PO2021, PO2023, PO2024”). He also testifies that “[i]ndustry publications also have recognized and highlighted the XP900 rear suspension system as being very

¹⁰ As noted above in the discussion of claims 8–10, Patent Owner argues that a single control arm of a (single) A-Arm in Enokimoto cannot be a control arm. It is not clear what “dual A-arm” encompasses, as Patent Owner does not rely upon or describe a *dual* A-arm suspension as advertised with respect to the RZR[®] 800 (and some XP 900 models). None of the challenged claims require a dual A-arm suspension.

important,” in reference to the “NEW! 3-LINK TRAILING ARM LONG TRAVEL IRS.” *See* Ex. 2044 ¶¶ 162–163.

Nevertheless, not only does the RZR[®] 800 model include the dual A-arm suspension touted in the literature (and that model exhibits sales comparable to the RZR[®] XP 900 and 1000 as discussed above), Exhibit 2024 reveals that the Ranger XP 900 model also includes dual A-arm IRS rear suspension (“HARDEST WORKING SMOOTHEST RIDING”)—i.e., instead of the touted and relied upon 3-link trailing arm suspension that Patent Owner appears to ascribe (via Dr. Moskwa) to the XP 900 models. *See* Ex. 2024, 6; PO Resp. 64; Ex. 2044 ¶ 162. In other words, Patent Owner draws specific attention to the “RZR XP 900 and XP 1000 models,” but also more generally appears to draw attention to the “XP[]900 and XP 1000s’ success.” PO Resp. 64. If Patent Owner intends to rely generally on the XP 900 and XP 1000, the record undercuts Dr. Moskwa’s reliance on the 3-link rear suspension system, because the XP 900 models include at least two types of rear suspension systems—the dual A-arm and the 3-link trailing arm. *See* Ex. 2044 ¶¶ 162, 164; Ex. 2024, 6. Furthermore, other RZR[®] models include double A-arm suspension as Dr. Moskwa shows, including the RZR[®] 800 and 900 series. Ex. 2044 ¶ 31.

Furthermore, the brochures each tout “a panoply of unclaimed features,” as Petitioner argues. Pet. Reply 22. Several models tout these unclaimed features.¹¹ For example, they tout suspension in the RZR[®] 800

¹¹ When broad claims capture a single (or multiple) commercial embodiment(s), nexus is presumed. *See ClassCo*, 838 F.3d at 1222 (nexus presumed when the commercial “products embodied the claimed features” and the “Board’s blanket dismissal of it was in error”). In this situation, the

models and the XP 900 models as having similarly large wheel travel. As one example, Exhibit 2023 touts one RZR[®] 800 model as having “PERFORMANCE-BASED LONG-TRAVEL SUSPENSION AND SHOCKS,” including “12 [inches] of front and rear travel [to] soak up the rough terrain with ease.” *Id.* at 11. It similarly touts a Ranger RZR[®] XP 900 model as having “3-LINK TRAILING-ARM LONG-TRAVEL IRS to handle all that *massive power* and keep the ride smooth,” and “[p]aired with adjustable Fox Podium 2.0 Shocks, it features “14 [inches] of rear travel and an *astounding* 13.5 [inches] of front travel.” *Id.* (italics added).

Exhibits 2024 and 2025 advertise similar features for several RZR[®] models. *See* Ex. 2024; Ex. 2025, 14 (comparing models, advertising a host of features, including trailing arm suspension with 14 inch travel and 875 cc engine for the XP-900 and 18 inch travel and 999 cc engine for the XP-1000, and on-demand true all wheel/two wheel drive). Exhibit 2025 describes 107 HP, “THE MOST POWERFUL ENGINE IN THE INDUSTRY” for the ALL NEW! ProStar[™] 1000, “unmatched throttle response and acceleration,” 18 inches of wheel travel, “NEW High Performance On Demand AWD” that “offers faster engagement and full torque to pull through corners,” “Standard EPS and nimble 18 [inch] turning radius offer agile response to driver.” Ex. 2025, 3.

Exhibit 2025 also makes it clear that Patent Owner considers all the RZR[®] models to be “HIGH PERFORMANCE: For riders who want the best

Board must evaluate the evidence “taking into account the degree of the connection between the features presented in the evidence and the elements recited in the claims.” *See ClassCo*, 838 F.3d at 1221 (explaining that “[t]here is no hard-and-fast rule for this calculus”).

sport performance machine delivering the ultimate combination of power, suspension, and agility check out the RZR XP 1000, RZR 900 *and* RZR S 800 models.” Ex. 2025, 5 (emphasis added). Exhibit 2025 also lists the RZR® S and RZR® 800 and three other RZR® models as having dual A-arm rear suspension. *Id.* at 14. All of the RZR® models, including the XP 900 and 1000 models, use dual A-arm front suspension. Ex. 2025, 14 (listing wheel travel with suspensions).

The cited articles by third parties, who were provided with information by Patent Owner according to a note at the end of at least one of the articles (Ex. 2030, 18), similarly describe a myriad of features pertaining to the whole vehicle package. *See* PO Resp. 64 (citing Exhibit 2026, 54; Ex. 2027, 20; Ex. 2028, 102, 106, and 2030, 16–18).¹² Patent Owner’s Response does not point to any specific passage in any of the articles to support its showing.

Notwithstanding the myriad of features touted in the brochures and articles, claims 10–12 come closest to broadly reciting some of the features Patent Owner generally argues provide a nexus (*i.e.*, lower and upper control arms, radius arms, and front wheel drive). *See* PO Resp. 60–61, 64. Nevertheless, claims 10–12 only require the upper and lower control arms with respect to one ground engaging member (*i.e.*, one rear wheel), and none requires the specific 3-link features praised in the articles that Dr. Moskwa relies upon, as discussed further below. *See* Ex. 2044 ¶¶ 162–164, App. A, 119–125 (Dr. Moskwa addressing touted 3-link rear suspension with respect to claims 9–12). Also, none of the challenged claims require automatic front

¹² Patent Owner does not cite Exhibit 2029 as showing praise.

wheel drive as advertised and as discussed above (i.e., none require *fully automatic AWD/2WD*—presumably automatically shifting from AWD to 2WD or vice versa).

Moreover, the cited literature prominently touts what Patent Owner’s engineers focused on—the industry leading high horsepower engine in the XP 900—something that is not recited in any of the challenged claims. For example, “*the Polaris engineers behind this creation walked us through the ins and outs of the machine. The first subject they focused on was the all-new 875cc powerplant. . . . This setup puts out an industry-leading 88 horsepower to the rear wheels through its dual overhead cam, dual 46mm throttle bodies, large valves and 180-degree crankshaft.*” Ex. 2026, 54 (emphases added).

Exhibit 2026 mentions the “rear trailing arm suspension,” but the authors of that cited article note that “[t]his setup gives the XP *an incredible 14 inches of wheel travel* in the rear while minimizing wheel scrub to ensure that you’re getting maximum power to the ground to the most unforgiving terrain.” *Id.* (emphasis added). None of the challenged claims require the touted power, the touted wheel travel, or the touted minimal wheel scrub (let alone the described structure touted—see Ex. 2044 ¶¶ 162, 164). The article also states that “[t]o make sure that the trailing arms can last while taking a beating, all of the pivot locations are equipped with spherical joints.” *Id.* It notes several other unclaimed features:

The final items brought to our attention [by Patent Owner’s engineers] were *the new transmission and drive system, the breaking and steering system and the electronics. This transmission is 22 percent lighter* than the units used in other RZR models *The steering box is 22 percent faster* than any

of the other previous RZR models and *the brake system was beefed up to reduce braking effort by 55 percent.*

Ex. 2026, 54 (emphasis added).

The article also describes the (unclaimed) front suspension system as important: “Up front the dual A-arm suspension keeps the wheels on the ground with 13.5 inches of wheel travel.” *Id.* It touts the types of shocks as important: “To maximize the performance of the suspension design, Polaris teamed with Fox Racing Shox to outfit the XP with compression- and preload-adjustable Podium X 2.0 shocks at all four corners.” *Id.*

Taking a flexible overall view of the cited evidence, Patent Owner’s cited literature shows that a combination of many unclaimed features instigated the literature praise by contributing to the performance of the whole package that makes up its commercial vehicles. As indicated throughout the literature, the unclaimed high power is a paramount feature of the commercial embodiment and praise: “[T]he rumble out of the exhaust let me know there was an abundance of power on tap. . . . I mashed the gas pedal to the floorboard. The rear of the XP went into an acceleration squat and lifted the front end” Ex. 2026, 56.

Exhibit 2027, cited by Patent Owner, appears to be an article by a “third party” (*see* PO Resp. 64), but the Exhibit contains the following nomenclature on roughly every other page of the article: “POLARIS RANGER RZR XP™ 900 PRESS LAUNCH.” Exhibit 2027 describes “the new 3-Link Trailing Arm suspension” system. *See, e.g.*, Ex. 2027, 24. Patent Owner’s Response does not explicitly tie this feature to its claimed system. As noted above, Dr. Moskwa describes that 3-link feature as “two extra-long radius rods and a far forward-connecting trailing arm.” Ex. 2044 ¶ 164. The radius rods correspond roughly to the two broadly recited control

arms (first and third/upper and lower) of claims 10–12, and the trailing arm corresponds roughly to the radius arm as recited in all the claims. *See* Ex. 2044 ¶ 164; App. A, 118–125. But none of the claims recite any respective “extra-long” rods or the “far forward” radius arm feature touted in the articles as part of the 3-link system. In addition, as noted above, claims 9–12 only require the control arms with respect to one rear wheel. (Claim 9 recites first and third arms, and claim 10 recites limitations corresponding to upper and lower arms.)

Further regarding the touted rear suspension feature, Exhibit 2027 refers to “a huge 14 [inches] of travel” attributed to the “all-new 3-Link design [which] consists of two extra-long radius rods and a far forward-connecting trailing arm that combine to make a lightweight yet strong system.” *Id.* at 20; Ex. 2044 ¶ 164 (quoting Ex. 2027, 20).¹³ In short, none of the claims require the features of the “3-Link design” as described. Even claims 10–12, which may be closest to corresponding to the “3-Link design” with first and second or upper and lower control arms (albeit for one wheel only), not only do not require “extra-long” control arms or “far forward-connecting” radius arms, they do not require the “huge travel” (even for one rear wheel) that the article touts. *See* Ex. 2044 ¶ 164 (reciting similar features). None of the claims “enable” or inherently require the huge wheel travel praised in the article—any more than the control and radius arms of Enokimoto upon which the radius arms of claims 9–12 read (*see* Pet. 48–55) would enable or require that huge wheel travel. *See Rambus Inc. v. Rea*, 731

¹³ Claims 14 and 15 respectively recite 10.5 and 13 inches of “ground clearance,” but Patent Owner does not contend that a vehicle with high ground clearance must have any set wheel travel (or vice versa).

F.3d 1248, 1257, 1258 (Fed. Cir. 2013) (stating the “Board did not address any of” Rambus’s evidence that showed that “the claimed dual-edge data transfer functionality is what enabled the praised high-speed transfer of data”—citing a ten-fold speed increase praised in the literature as speed enabled by the claims). Dangauthier also discloses a three-link design (albeit without the length restrictions touted in the article). See Ex. 1004, Figs. 1–5. The article makes it clear that in addition to the “all-new 3-Link design” in the RZR® XP 900 (which it describes as “combine[d] make a lightweight yet strong system”), the RZR® S is “*also* graced with a very capable suspension”—i.e., even though it has dual A-arm rear suspension as noted above. Ex. 2027, 20 (emphasis added). The evidence of praise for the dual A-arm suspension and a myriad of features, tied to the RZR® 800 and other models outside the scope of the claims, and sales evidence for those models, implies that the vast bulk of any commercial success or sales was not due to the “all-new 3-Link design” (even if some of the challenged claims require that, which they do not), let alone the generic rear suspension, or the generic four wheel drive, the sway bar, or a combination thereof.

Exhibit 2027 also touts the “[u]p front . . . Dual-A-Arm suspension [with] 13.5 inches of travel” for the RZR® XP 900. *Id.* at 24. Again, none of the claims require such front wheel travel or any particular front suspension. The article notes that “[e]ven the tires have been designed exclusively for this vehicle.” *Id.* at 25. The article touts “an abundantly powerful 800 Twin” engine (*id.* at 20), praising it as follows:

Among most interesting of the *many freshly designed parts to this heaven sent buggy*, the engine. . . . It features a 180 degree crankshaft, which means it is naturally balanced, and dual overhead cams, large valves, twin 46 mm throttle bodies . . .

which combine to make it a high revving and acceleration-friendly package. It red lines at a whopping 8750 rpm!”

Id. at 25 (emphasis added).

Exhibit 2027 also states that “the *chassis is specifically designed* to maximize the high performance of the suspension, which is built to be able to fully harness the generous 88 hp output delivered by the completely new . . . 4-stroke engine equipped with a worry free and performance enhancing fuel injection system.” *Id.* at 20–23 (emphasis added).

The challenged claims do not require any specific chassis, output power, engine type, or any of the other specifically touted steering, breaking, transmission, shocks, or other features praised in the cited articles. In addition, Patent Owner touts a lower center of gravity as driving success in other proceedings. *See* Pet. Reply 22–23 (citing IPR2014-01427, Paper 58, 35); IPR2015-01781, Paper 20, 61–62 (alleging lower center of gravity for the XP 800 as driving success). By alleging success based on a lower center of gravity implicit in broad claims, as Patent Owner did in the two related cases, Patent Owner acknowledges that any commercial success would have been due to a variety of factors. Exhibit 2023 touts a “LOWER CENTER OF GRAVITY” for the RZR® XP 900 and RZR® 800 models. Ex. 2023, 11. Nevertheless, as noted, Patent Owner does not rely on that feature in this proceeding.

Patent Owner does not attribute consumer demand to any specific portion of its vehicle sales as driven by its broadly recited 4WD drive and/or rear-suspension systems. *See* Pet. Reply 22–23 (attributing any success to a variety of unclaimed features). Exhibit 2027 corroborates that any commercial success, if it follows the praise, would have been due to the “ultimate thrill ride this *entire package* creates.” Ex. 2027, 26 (emphasis

added). *See Tokai Corp. v. Easton Enters.*, 632 F.3d 1358, 1370 (Fed. Cir. 2011) (Sales evidence for a utility lighter product insignificant in the obviousness calculation where “the feature that purportedly distinguishes the claimed inventions from prior art utility lighters” was the lighter’s automatic locking features, but “Tokai proffered no evidence from which one could reasonably infer a nexus between its sales data and its utility lighters’ automatic-locking features.”).

Even setting aside power, handling, and other touted features, without reciting the front dual A-Arm suspension, without reciting the specifics of the “3-Link design” for each rear wheel, let alone for one (for example “extra-long” control arms and a “far forward-connecting” radius arm for each wheel), and without reciting the specific chassis for that suspension, the challenged claims simply do not require, let alone support, the beneficial suspension system touted in the articles. In *MeadWestVaco Corp. v. Rexam Beauty and Closures, Inc.*, 731 F.3d 1258 (Fed. Cir. 2013), the court held that a district court erred by considering “secondary considerations of non-obvious [that] involved only fragrance-specific uses, but *the claims now at issue are not fragrance-specific.*” *Id.* at 1264 (emphasis added). By analogy, none of the challenged claims in this proceeding are suspension-specific enough to garner the praise Patent Owner attempts to tie to its vehicle sales. Another way of stating the problem with the evidence is that the claims are broad enough to cover devices that *would not* increase performance in the claimed suspension system relative to what the prior art (Enokimoto) discloses. *See id.*

Even if claims 10–12 were deemed to recite specific enough detail to support an inherent increase in suspension performance as touted in the cited

literature for one rear wheel (they are not), one wheel could not support any such touted beneficial suspension system performance. In addition to *MeadWestVaco*, a long line of precedent and guidance from our reviewing court shows that it would be error not to discount this type of evidence. See *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1336 (Fed. Cir. 2010) (finding “objective evidence of non-obviousness fails” “because claims are broad enough to cover devices that either do or do not solve the ‘short fill’ problem”); *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000) (stating the presumption that commercial success is due to the patented invention applies “if the marketed product embodies the claimed features, *and is coextensive with them*” (emphasis added)); *In re Law*, 303 F.2d 951, 954 (CCPA 1961) (“Thus, assuming the affidavits are a proper showing of commercial success, they do not show commercial success of dockboards covered by the appealed claims which are not limited to the bead of claim 13.”)

Similar to *MeadWestVaco Corp.*, in *In re Tiffin*, 448 F.2d 791 (CCPA 1971), the court found that claims that are “too broad” fail to show that the claims are reasonably commensurate with the scope of the objective evidence of non-obviousness: “The solicitor’s position is that the objective evidence of non-obviousness is not commensurate with the scope of claims 1–3 and 10–16, reciting ‘containers’ generally, but establishes non-

obviousness only with respect to ‘cups’ and processes of making them. We agree.” *Id.* at 792.¹⁴

As *Therasense* reasons:

Because the claims are broad enough to cover devices that either do or do not solve the “short fill” problem, Abbott’s objective evidence of non-obviousness fails because it is not “commensurate in scope with the claims which the evidence is offered to support.” *In re Grasselli*, 713 F.2d 731, 743 (Fed.Cir.1983); see also *In re Kubin*, 561 F.3d 1351, 1356 (Fed.Cir.2009) (“[T]he obviousness inquiry requires this court to review the Board’s decision that the *claimed* sequence, not appellants’ *unclaimed* cloning technique, is obvious in light of the abundant prior art.” (emphases added)).

593 F.3d at 1336 (first sentence emphasis added).

In addition, the record shows that Enokimoto discloses the claimed suspension features with the exception of the sway bar. Patent Owner’s Response does not point to evidence that praises the sway bar itself as

¹⁴ We stress that we do not require Patent Owner to show success for each of its embodiments that fall in the claim scope to establish a nexus with some attached weight of evidence of nonobviousness. See *Rambus*, 731 F.3d 1257 (error to impose “[s]uch a strict requirement”). We only cite these precedential cases to emphasize that if the claims are so broad as to capture generically recited features (especially those disclosed in the prior art reference relied upon—i.e., the rear suspension as disclosed in Enokimoto and as generically recited in the challenged claims with two or three arms— analogous to the generically claimed containers in *Tiffen*), we must factor this into the calculus as *ClassCo supra* indicates, and determine if the evidence ties to more specifically described unclaimed features praised or allegedly contributing to success (i.e., the “extra-long” control arms and a “far forward-connecting” radius arm as described in the literature as garnering huge wheel travel and as relied upon by Dr. Moskwa (Ex. 2027, 20; Ex. 2044 ¶ 165)—analogous to the specific and commercially successful cups in *Tiffen*).

important or as contributing beneficially to the claimed combination's overall suspension system performance. A product sheet in Exhibit 2025 lists an "Anti-Sway Bar" as part of RZR[®] 800 and other RZR[®] models with a dual A-arm rear suspension, but does not even list it for the RZR[®] 900 or RZR[®] XP 1000 models with trailing arm suspensions. See Ex. 2025, 14. At the least, it is not consistently touted, if at all, as a praised feature in the cited advertising brochures or articles. Notwithstanding that Dr. Moskwa describes the "XP 900 and XP 1000" models as "not differ[ing] in any material respect" (Ex. 2044 ¶ 161), Dr. Moskwa does not support that statement with evidentiary citations (at least with respect to the sway bar) (see Ex. 2044 ¶¶ 156–164). Given the described lack of a listing for a sway bar for the RZR[®] XP 1000 juxtaposed to a listing for other models (Ex. 2025, 14), Patent Owner fails to show persuasively that the RZR[®] XP 1000 includes a rear sway bar, further indicating the sway bar (coupled to a trailing arm or 3-link suspension system) does not drive success.¹⁵

Even if the relied-upon RZR[®] XP 1000 model also includes a sway bar, Patent Owner does not rely particularly on any sway bar praise, direct particular attention to it as contributing to success, describe it as solving a particular long-felt problem, or describe it as making the suspension markedly better based on its location or otherwise, so Patent Owner does not

¹⁵ Dr. Moskwa points to a sway bar described in a service manual for the "RZR XP 900" but does not cite a specific page or passage in an advertising brochure or article praising the feature as contributing to suspension performance. See Ex. 2044 ¶ 165 (citing Ex. 2021, Ex. 2023, Ex. 2024, and Ex. 2038, PLRS00107497) and stating "[t]he rear suspension also includes a rear sway bar"); see also *id.* at App. A, 132–133 (citing Ex. 2021, Ex. 2038, PLRS00107497, showing sway bar).

“link [its] commercial success to the features of its invention that were not disclosed in” Enokimoto (or Dangauthier). *See Asyst Techs., Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008) (“[E]ven though commercial embodiments . . . have enjoyed commercial success, Asyst’s failure to link that commercial success to the features of its invention that were not disclosed in Hesser undermines the probative force of the evidence pertaining to the success of Asyst’s and Jenoptik’s products.”); *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006) (“[I]f the commercial success is due to an unclaimed feature of the device, the commercial success is irrelevant. So too if the feature that creates the commercial success was known in the prior art, the success is not pertinent.”); *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997) (“[A]sserted commercial success of the product must be due to the merits of the claimed invention *beyond what was readily available in the prior art.*” (emphasis added)); *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1369 (Fed. Cir. 2011) (“If commercial success is due to an element in the prior art, no nexus exists.”).

Accordingly, following the guidance in *ClassCo*, and the other cases cited above, we afford the evidence of sales and praise little weight with respect to claims 9–12, and less weight with respect to the other challenged claims. We determine that the claims capture features largely well-known in the art, such as the generically recited and known front-wheel drive (i.e., not true demand AWD/2WD as touted in the literature) and known CVT systems (claims 7–16), the generically recited two-link suspension system for two rear wheels (claims 1–6), and the generically recited three-link suspension systems for a single rear wheel (claims 9–16). We also

determine that the evidence of secondary considerations includes important unclaimed features that contribute to the whole vehicle package, such as engine power, handling, and overall suspension improvements attributed at least to specific aspects of a 3-link system for both rear wheels, a specific chassis, and a dual A-arm system for both front wheels, with the latter suspension improvements all contributing to the touted vertical wheel travel, stability, and handling, according to Patent Owner's cited evidence.

Weighing all the evidence together, we determine that the claimed invention amounts to no "more than the predictable use of prior art elements according to their established functions." *See KSR*, 550 U.S. at 401. In *Tokai Corp.*, 632 F.3d at 1371, which involves secondary considerations of nonobviousness as noted above, our reviewing court provides the following post-*KSR* guidance regarding predictable solutions in the mechanical arts:

Although a need in the prior art for safer utility lighters is not disputed, Tokai contends that the solutions to this problem were "not at all predictable" and required "radical modification" of the asserted prior art. We reject these arguments. One of ordinary skill in the art would not have viewed the subject matter of the asserted claims as unpredictable. As the Supreme Court recognized in *KSR*, the nature of the mechanical arts is such that "identified, predictable solutions" to known problems may be within the technical grasp of a skilled artisan. 550 U.S. at 421 . . . ; *see also* [*Rothman v. Target Corp.*, 556 F.3d 1310, 1319 (Fed. Cir. 2009)] (stating that, in the predictable arts, a claimed invention may be invalidated more readily by showing "a

motivation to combine known elements to yield a predictable result).”

Based on the foregoing discussion, Petitioner sufficiently demonstrates the obviousness of the challenged claims by a preponderance of the evidence.

III. CONCLUSION

For the foregoing reasons, Petitioner shows by a preponderance of the evidence that claims 1–6 of the ’719 patent would have been obvious over the combination of Enokimoto and Dangauthier, and claims 7–16 would have been obvious over the combination of Enokimoto, Dangauthier, and Bennett.

IV. ORDER

In consideration of the foregoing, it is hereby
ORDERED that claims 1–16 of the ’719 patent are unpatentable; and
FURTHER ORDERED that, because this Final Written Decision is final, a party to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2015-01788
Patent 8,746,719 B2

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