Trials@uspto.gov
571-272-7822

Paper 49
Entered: January 30, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARCTIC CAT, INC.,
Petitioner,

v.

POLARIS INDUSTRIES INC.,
Patent Owner.

Case IPR2015-01783
Patent 8,827,028 B2

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

KAUFFMAN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION

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

I. INTRODUCTION

A. PROCEDURAL OVERVIEW

Arctic Cat, Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 60–69, 74, 75, and 78–86 of U.S. Patent No. 8,827,028 B2 (Ex. 1002, "the '028 patent"). Pet. 1. Polaris Industries Inc. ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp.") to the Petition. We instituted an *inter partes* review of claims 60–62, 64–69, 74, 75, and 78–86, but we did not institute a review of claim 63. Paper 7, "Dec." In response to Patent Owner's request for rehearing, we determined that the reasons for not instituting on claim 63 were applicable to claims 64, 74, and 75. Paper 9 (Patent Owner Request), Paper 17 (Decision on Rehearing). Trial proceeded on claims 60–62, 65–69, and 78–86.

Subsequently, Patent Owner filed a Patent Owner Response (Paper 21, "PO Resp."), and Petitioner filed a Reply (Paper 31, "Pet. Reply").

Patent Owner's request for authorization to file a Motion to Strike and related follow-on actions, as well as each party's Motion to Seal, are discussed in the *Preliminary Matters* Section.

Patent Owner submitted a Motion for Observations Regarding Cross Examination of a Reply Witness, and Petitioner submitted a response.

Papers 41, 45, respectively. This information was considered in our analysis.[1]

Patent Owner did not file a motion to amend.

Oral hearing was held on Monday October 3, 2016, and a transcript of that hearing is included in the record.[2] Paper 48 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 60–62, 65–69, and 78–86 of the '028 patent are unpatentable.

B. RELATED PROCEEDINGS

The parties indicate that the '028 patent is at issue in *Polaris Industries Inc. v. Arctic Cat Inc.*, No. 1:14-cv-3412 (D. Minn. 2014). Pet. 1; Paper 5, 2.

This proceeding is part of a family of cases between these parties. The '028 patent is also the subject of *inter partes* review 2015-01781. Pet. 1; Paper 5, 2. U.S. Patent 8,746,719 B2, which is not related via continuity to the '028 patent, is the subject of *inter partes* reviews 2015-01788 ("the '1788 IPR") and 2015-01789. Previously, U.S. Patent No. 8,596,405 B2, a

[1] The majority of the information presented in the Motion for Observations deals with the relationship between a "pair of . . . seating surfaces" and a "front drive shaft" as recited in the claims. This information is not meaningful given our analysis of that relationship below.

[2] The hearing was held in conjunction with the hearing for IPR2015-01783, IPR2015-01788, and IPR2015-01789, and a single transcript was produced.

patent issuing from a continuation application of the application that became the '028 patent, was the subject of *inter partes* review 2014-01427 ("the '1427 IPR").[3] In the '1427 IPR, the Board held that Petitioner had demonstrated that claims 1–38 are unpatentable. *Arctic Cat, Inc. v. Polaris Indus., Inc*., Case No. IPR2014-01427 (PTAB Feb. 4, 2016) (Paper 58); *see also* Paper 66, (denying Request for Rehearing);[4] Paper 67 (appealing the Final Written Decision to the Court of Appeals for the Federal Circuit).

A significant difference between this proceeding and *inter partes* review 2015-01781 is that Patent Owner does not present secondary considerations in this proceeding.

II. PRELIMINARY MATTERS

A. SCOPE OF REPLY AND INCORPORATION

Patent Owner requested a conference call to seek authorization to file a Motion to Strike portions of Petitioner's Reply. *See* Paper 35 (order regarding that call). We did not authorize filing a Motion to Strike, but issued an order authorizing Patent Owner to file a two-page paper in the form of a list providing location and a concise description of: (1) that portion of Petitioner's Reply that Patent Owner contends improperly incorporates by reference, and (2) that portion of Petitioner's Reply that allegedly includes a rationale that was not asserted in the Petition.[5] Paper 35, 2–3. Patent Owner requested clarification of that order, asking if the

[3] *See* Ex. 1002 (21) (application No. 11/494,891); '1427, Ex. 1002 (63).

[4] The Final Written Decision in the '1427 IPR can be found at Exhibit 1024, subsequently referred to as "'1427 IPR, Paper 58."

[5] This order also authorized a response by Petitioner.

alternative request to file a sur-reply and expert testimony was denied. *See* Paper 37 (clarification order) Ex. 3002 (email request for clarification, also filed as paper 36). We clarified by expressly denying the request to file a sur-reply and expert testimony, as was implied in the previous order. Paper 37 (referring to paper 35). As authorized, Patent Owner submitted a list, and Petitioner submitted a response. Papers 38, 43, respectively.

Patent Owner contends that three arguments in Petitioner's Reply improperly incorporate large portions of expert testimony by reference. Paper 38, 2.[6] The identified arguments follow:

> *1. "Polaris's expert (Mr. Jarosz) applied an invalid analytical framework to his analysis. (Id.[7] at ¶¶ 51-87, 132-40.)." (quoting Pet. Reply, 25).*
>
> *2. "[T]he claims are not limited to a vehicle requiring the attributes Polaris argues contributed to the RZR's alleged commercial success. (AC1033 at ¶ 89; see also ¶¶ 93-131, 141.)" (quoting Pet. Reply 26).*
>
> *3. "Under nearly identical facts concerning a related patent, the Board previously found Polaris failed to establish a nexus. (See IPR2014-01427, Paper 58 at 35; see also AC1033 at ¶¶ 88-92.)" (quoting Pet. Reply 25).*

Patent Owner contends that each identified sentence is conclusory, and incorporates large amounts of information ((46 paragraphs or 33 pages), (41 paragraphs or 29 pages), and (5 paragraphs or 4 pages), respectively). Paper 38, 2.

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[6] Page 3 of this Paper deals with issues in IPR2015-01788 and IPR2015-01789 and does not pertain directly to this proceeding.

[7] This "*Id.*" refers to "AC1033" which is Exhibit 1033 (the Declaration of Mr. Bakewell.

Petitioner responds that each identified sentence "properly points to underlying testimony/facts that confirms the contention made in the quoted sentence, but the quoted sentence does not require incorporation of text from any of the cited paragraph numbers." Paper 43, 1. Regarding the second and third items listed above, Petitioner adds that the "*see also*" citations do not incorporate text from any of the cited paragraphs into the Reply. Petitioner also contends that Patent Owner cites declarations in a similar manner in Patent Owner's Response. *Id.* at 1–2.[8]

We agree with Petitioner that Patent Owner cites information in a similar manner. In our analysis below, we consider the argument and evidence of each party to the extent that it is explained sufficiently in the corresponding brief. *See* 37 C.F.R. § 42.6(a)(3) ("Arguments must not be incorporated by reference from one document into another document."); 37 C.F.R. § 42.22(a)(2) (requiring motions to include a detailed explanation of the significance of evidence); 37 C.F.R. § 42.23 (applying the content requirements of motions to oppositions and replies). These rules are consistent with preventing circumvention of page and word count limits. 37 C.F.R. § 42.24.

[8] Providing as examples: Paper 20, 25 (a single-sentence contention followed by a citation to "PO2031 ¶¶ 48–72) which refers to 25 paragraphs (10 pages) of argument); 30 (a single-sentence contention followed by a citation to "PO2013 ¶ 33-35, 38, 63–65, 70–72, 101–102," which refers to 14 paragraphs (9 pages) of argument); 68 (a single-sentence contention followed by a citation to "PO2031 ¶ 33; *see also* ¶¶ 64, 72, 87, 89, 92–98, 100, 102," which refers to 14 paragraphs (16 pages) of argument).

B. MOTIONS TO SEAL

Patent Owner and Petitioner each filed a Motion to Seal. Papers 20, 30, respectively. We note that this proceeding contains evidence regarding secondary considerations that was not asserted in any paper and therefore was not relied upon in this decision.

There is a strong public policy in favor of making information filed in an *inter partes* review open to the public, especially because the proceeding determines the patentability of claims in an issued patent and, therefore, affects the rights of the public. *See Garmin Int'l v. Garmin Speed Techs., LLC*, Case IPR2012-00001 (PTAB Mar. 14, 2013) (Paper 34). Under 35 U.S.C. § 316(a)(1) and 37 C.F.R. § 42.14, the default rule is that all papers filed in an *inter partes* review are open and available for access by the public; a party, however, may file a concurrent motion to seal and the information at issue is sealed pending the outcome of the motion. It is, however, only "confidential information" that is protected from disclosure. 35 U.S.C. § 316(a)(7); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,760 (Aug. 14, 2012). The standard for granting a motion to seal is "for good cause." 37 C.F.R. § 42.54(a). The party moving to seal bears the burden of proof in showing entitlement to the requested relief, and must explain why the information sought to be sealed constitutes confidential information. 37 C.F.R. § 42.20(c).

In reviewing the underlying documents that are sought to be sealed, we conclude that they may contain confidential information. Accordingly, we are persuaded that good cause exists to have some of the documents remain under seal. In that respect, the Motions to Seal are granted, except for information that is discussed in or relied on by this decision. With regard

to such information, pertinent to substantive patentability analysis, we discern no reason to shield them from the public. The parties have shown no good cause to seal such information.

> The Office Patent Trial Practice Guide provides the following
>
> *Expungement of Confidential Information*: Confidential information that is subject to a protective order ordinarily would become public 45 days after denial of a petition to institute a trial or 45 days after final judgment in a trial. There is an expectation that information will be made public where the existence of the information is referred to in a decision to grant or deny a request to institute a review or is identified in a final written decision following a trial. A party seeking to maintain the confidentiality of information, however, may file a motion to expunge the information from the record prior to the information becoming public. § 42.56. The rule balances the needs of the parties to submit confidential information with the public interest in maintaining a complete and understandable file history for public notice purposes. The rule encourages parties to redact sensitive information, where possible, rather than seeking to seal entire documents.

77 Fed. Reg. at 48,766.

Consequently, 45 days from entry of this decision, all information subject to a protective order will be made public by default. In the interim, a party seeking to maintain confidentiality of information that was not relied upon in this decision, may file a motion to expunge that information. *See* 37 C.F.R. § 42.56.

III. CLAIMED SUBJECT MATTER

A. INTRODUCTION TO THE SUBJECT MATTER

The ’028 patent relates to trail-compliant side-by-side all-terrain vehicles (ATVs). Ex. 1002, 1:5–8.

As background, the ’028 patent describes that recreational interest in ATVs has increased. *Id.* at 1:13–18. In particular, ATVs in which the driver and passenger are seated beside each other on laterally spaced-apart seats, so called “side-by-side” ATVs, have grown in popularity because such seating permits the passenger to share the driver’s viewpoint and riding experience. *Id.* at 1:18–25. Most side-by-side ATVs are at least 54 inches wide, and consequently their use on most state and national park trails is unacceptable or impractical because those parks have an established maximum ATV width of about 50 inches. *Id.* at 1:25–34.

The ’028 patent describes an ATV embodiment having an overall width C of about 50 inches. *Id*. at 4:32–43, Figs. 3, 4. The ’028 patent describes that other embodiments “may be constructed to other suitable widths, however the present invention contemplates ATVs having a trail compliant width or [sic] less than about 54 inches.” *Id.* at 4:43–46.

An illustrative embodiment of side-by-side ATV 10 includes the following: frame 15, a pair of laterally spaced-apart seating surfaces, an engine (modular engine assembly 34) coupled to transmission 136, a pair of front wheels (front tires 22*a* and wheels 24*a*), and a pair of rear wheels (rear tires 22*b* and wheels 24*b*). *Id.* at 3:45–56; 6:5–8, Figs. 1, 2, 9, 15. Figure 1 follows.

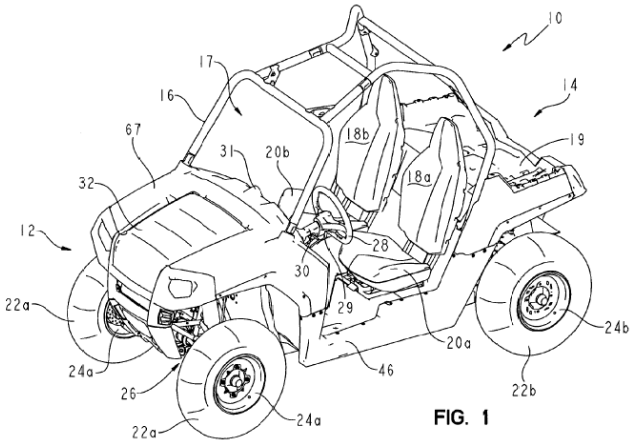


FIG. 1

Figure 1 is a perspective view of an embodiment of a side-by-side ATV. *Id.* at 2:12–13.

B. ILLUSTRATIVE CLAIMS

Claim 60, the sole independent challenged claim is reproduced below:

60. An all-terrain vehicle including:

a frame, comprising a front frame portion, a mid frame portion and a rear frame portion;

a pair of laterally spaced-apart seating surfaces supported by the mid frame portion;

an engine supported by the rear frame portion and positioned longitudinally behind the pair of laterally spaced-apart seating surfaces;

a transmission coupled to the engine, the transmission including a portion positioned rearward of the engine;

a pair of front wheels operably coupled to the front frame portion, and drivingly coupled to the transmission;

a pair of rear wheels operably coupled to the rear frame portion, and drivingly coupled to the transmission;

a front axle assembly supported by the front frame portion drivingly coupled to the front wheels;

a front drive shaft extending forwardly from the transmission wherein the front drive shaft extends laterally intermediate innermost sides of the laterally spaced apart seating surfaces, and is drivingly coupled to the front axle assembly;

> a rear axle assembly supported by the rear frame portion and drivingly coupled to the rear wheels;
> the rear frame portion comprising a lower rear frame portion and an upper rear frame portion, the upper rear frame portion at least partially extending over at least one of the engine and transmission rearward of the pair of laterally spaced-apart seating surfaces; and
>
> a passenger compartment intermediate the front and rear wheels, the passenger compartment comprising a front panel rearward of the front wheels, a floorboard rearward of the front panel, a base portion extending under the seating surfaces and a protective panel extending rearwardly of the seating surfaces and forwardly of the engine.

C. CLAIM CONSTRUCTION

In an *inter partes* review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation approach).

1. Previous Determinations

In the Institution Decision, we determined that a front, mid, and rear frame portion as recited in claim 60 should be given their plain and ordinary meaning, with no further construction being necessary. Dec. 6–7. In the Institution Decision, we adopted Petitioner's interpretation that broadest reasonable construction the claim term "vertical member" recited in claim 67, was "a member generally perpendicular to the horizontal axis of the vehicle." Dec. 7. In the Institution Decision, we also determined that claim 60 does not required that the floorboard and base portions of the passenger compartment be distinct. Dec. 8–9. Neither party challenges these

determinations, and, accordingly, we adopt them here. *See SAS Institute, Inc. v. ComplementSoft, LLC.*, 825 F.3d 1341, 1351 (Fed. Cir. 2016) (The Board may not change claim interpretation from the institution decision where neither party anticipated that "already-interpreted terms were actually moving targets.").

2. All-Terrain Vehicle

The preamble of claim 60 recites "[a]n all-terrain vehicle."

Patent Owner contends that the preamble of claim 60 is limiting. PO Resp. 13–15. In particular, Patent Owner contends that the '028 patent discloses repeatedly that the invention is an "all-terrain vehicle," and the preamble was used to distinguish the claimed invention over prior art during prosecution. *Id.* at 13–14 (analogizing to *Rotatable Techs. LLC v. Motorola Mobility. LLC,* 567 F. App'x 941, 943 (Fed. Cir. 2014)).

Petitioner contends that the preamble of independent claim 60 does not "give life, meaning, and vitality" to the claims. Pet. Reply 2 (quoting *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)). Petitioner goes on to assert that if the Board interprets the preamble as limiting, the broadest reasonable interpretation is a "vehicle capable of driving on a variety of terrains." *Id.* (citing Ex. 1002, 1:13-14).

Each of the grounds of unpatentability relies on Nechushtan, and Nechushtan discloses a space frame for "all-terrain vehicles." Ex. 1008, 1:17–20, Figs. 1, 2; Pet. 8 (Nechushtan is an all-terrain vehicle). We need not determine if the preamble of claim 60 is limiting, because each of Petitioner's proposed combinations is for an all-terrain vehicle. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)

(stating that only those terms which are in controversy need to be expressly construed, and only to the extent necessary to resolve the controversy).

3. Front drive shaft positional relationship to laterally spaced apart seating surfaces

Independent claim 60 requires "a pair of laterally spaced apart seating surfaces," and "a front drive shaft" that extends longitudinally "while remaining laterally intermediate inner most sides of the laterally spaced apart seating surfaces." This limitation is discussed as part of the patentability analysis below.

4. Other Claim Terms

To the extent it is necessary for us to construe other claim terms in this Decision, we do so below in the context of analyzing whether the prior art renders the claims unpatentable.

IV. PATENTABILITY

A. INTRODUCTION

We must now determine whether Petitioner has established by a preponderance of the evidence that the specified claims are unpatentable over the cited prior art. 35 U.S.C. § 316(e). In this connection, we previously instructed Patent Owner that "any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived." Paper 8, 3. Additionally, the Board's Trial Practice Guide states that the Patent Owner Response "should identify all the involved claims that are believed to be patentable and state the basis for that belief." Office Patent Trial Practice Guide, 77 Fed. Reg. at 48,766.

We instituted trial on the following grounds:

Claims Challenged	**References(s)**
60–62, 65–69, 78, 80, 81	Nechushtan[9] and Hill[10]
86	Nechushtan, Hill, and Furuhashi[11]
79	Nechushtan, Hill, and Kraus[12]
82	Nechushtan, Hill, and Enokimoto[13]
83, 84	Nechushtan, Hill, and Hart[14]
85	Nechushtan, Hill, Hart, and Fujimori[15]

Dec. 21.

Petitioner relies on a first and second Declaration of Dr. Davis. Exs. 1001, 1032. Patent Owner relies on the Declaration of Dr. John J. Moskwa and Mr. John C. Jarosz. Exs. 2030, 2031.[16]

B. LEVEL OF SKILL IN THE ART

The analysis of Petitioner's expert, Dr. Davis, is predicated on the level of skill in the art being either: (1) a bachelor's degree in mechanical engineering or a related field, and at least one year of experience working in automotive engineering or a related field, or (2) experience working in the field of automotive engineering for 2–3 years. *See* Ex. 1001 ¶ 27. Patent Owner does not contest Petitioner's assertion. The prior art of record

[9] U.S. Patent No. 5,954,364, issued Sept. 21, 1999 (Ex. 1008).
[10] U.S. Patent No. 3,407,893, issued Oct. 29, 1968 (Ex. 1010).
[11] U.S. Patent No. 5,327,989, issued July 12, 1994 (Ex. 1009).
[12] U.S. Patent No. 4,693,134, issued Sept. 15, 1987 (Ex. 1012).
[13] U.S. Patent No. 5,251,713, issued Oct. 12, 1993 (Ex. 1015).
[14] Hart's Hunter, Dirt Wheels Magazine, Dec. 1998 (Ex.1004).
[15] U.S. Patent No. 7,270,336, issued Sept. 18, 2007 (Ex. 1013).
[16] Exhibit 2032 is a redacted public version of Exhibit 2031.

reflects a level of skill consistent with that asserted by Petitioner. We apply this level of skill to our analysis below.

C. GROUNDS OF UNPATENTABILITY

1. Obviousness over Nechushtan and Hill

Petitioner contends that claims 60–62, 65–69, 78, 80, 81 are unpatentable under 35 U.S.C. § 103(a) over Nechushtan and Hill. Pet. 14–37. For the reasons explained below, Petitioner has established this contention by a preponderance of the evidence.

a) Nechushtan

Nechushtan (Ex. 1008) is titled, "Space Frame for Vehicle." Ex. 1008 (54). Nechushtan discloses that space frames for vehicles are typically found in vehicles intended for off-road driving, such as "dune buggies" and "all-terrain vehicles." *Id.* at 1:17–20, Figs. 1, 2; Pet. 8–10. In light of this, Nechushtan is a side-by-side ATV.

b) Hill

Hill is titled, "Motor Vehicles Having Four-Wheel Drive," and includes a front drive shaft extending from a rear engine and transmission to the front drive. Ex. 1010, 1:2–3, Fig. 2; Pet. 10–11.

c) Claim 60

As an overview, Petitioner contends that Nechushtan discloses the subject matter of claim 60 except the configuration of the engine, transmission, and front drive shaft. According to Petitioner, it would have been obvious to a person of ordinary skill in the art to modify Nechushtan in two respects: one, to configure the engine and transmission as in Hill (mid-mounted engine), and two, to include four-wheel drive with a front

driveshaft positioned along the vehicle centerline as taught by Hill and Nechushtan. Pet. 14–18.

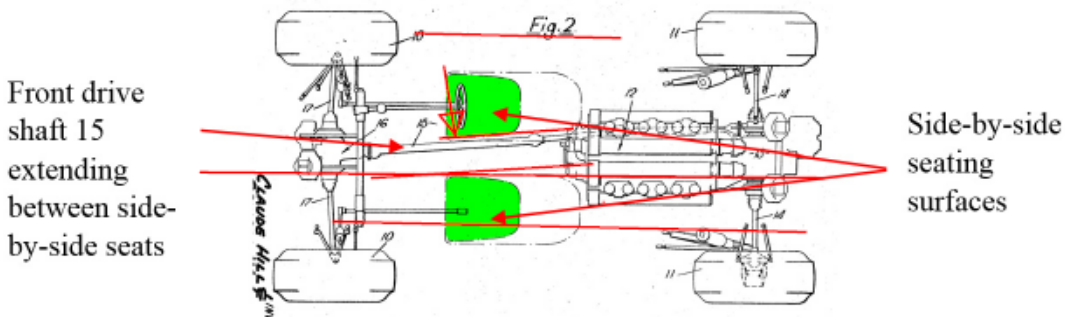
(1) Petitioner's Contentions

Petitioner contends that Nechushtan discloses an all-terrain vehicle that includes: a frame comprised of front, mid, and rear frame portions; a pair of laterally spaced-apart seating surfaces supported by the mid-frame portion; an engine supported by the rear frame portion; a transmission coupled to the engine, a pair of front wheels; and a pair of rear wheels as claimed. Pet. 8–10, 18–23; Ex. 1008, Figs. 1, 2; Ex. 1001 ¶¶ 79–80, 85, 132–138.

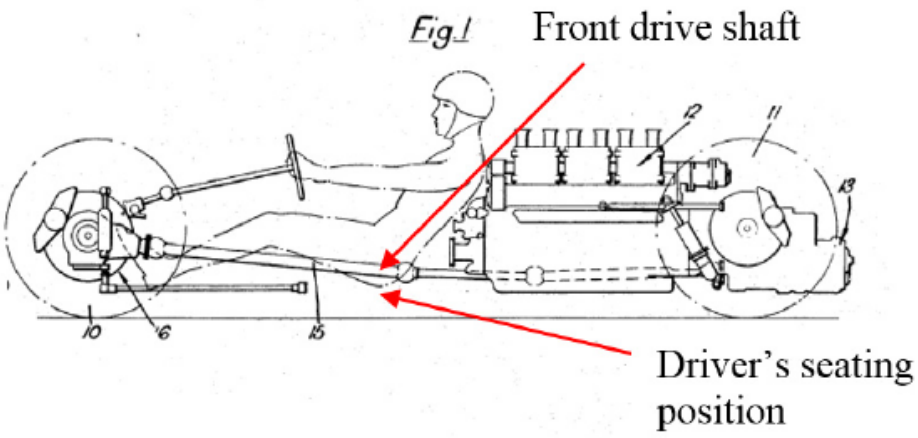
Petitioner contends that Nechushtan's cage portion 107 supports a differential. Pet. 21–22; Ex. 1008, 5:10–12; Ex. 1001 ¶¶ 85, 137–138. Dr. Davis opines that a person of ordinary skill in the art would have understood that the presence of a front differential indicates that Nechushtan's front wheels are driven, and that power would have been transmitted from the rear engine/transmission to the front differential by a front drive shaft. Ex. 1001 ¶ 137.

Petitioner contends that to the extent that Nechushtan does not expressly disclose a front drive shaft coupling the transmission to the front differential to drive the front wheels, Hill discloses a front drive shaft (front propeller shaft 15). Pet. 23–24; Ex. 1010, 2:55–65, Figs. 1, 2; Ex. 1001 ¶ 85. In support, Petitioner provides the following annotated version of Hill's Figure 2[17]:

[17] The Petition mistakenly cites to it as Figure 1. *See* Pet. 24.



Annotated Figure 2 is a plan view of Hill's racing vehicle, and includes Petitioner's highlighting in green of the portions alleged to correspond to seating surfaces as claimed. *See* Ex. 1001 138; Pet. 24–25. Petitioner contends that Hill's Figure 2 depicts the front drive shaft extending along-side the driver. Pet. 24; (citing Ex. 1001 ¶ 138). In support, Dr. Davis provides an annotated version of Hill's Figure 1:



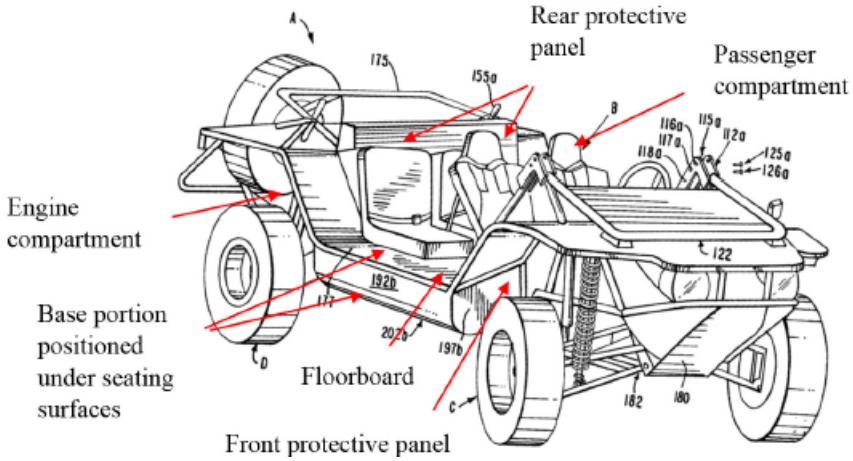
Annotated Figure 1 is a side elevation showing part of Hill's racing vehicle with Dr. Davis's annotation of the front drive shaft and the driver's seating position. Ex. 1001 ¶ 138. Dr. Davis opines that Hill's configuration permits the seats to be placed low in the frame without interfering with the front drive shaft. *Id.*

Petitioner contends that Hill's driveshaft (propeller shaft 15) extends longitudinally while remaining laterally intermediate the innermost sides of the laterally spaced apart seating surfaces, permitting the seat to be placed lower in the vehicle without interfering with the front driveshaft, and lowering the center of gravity. Pet. 17–18, 24–26; Ex. 1001 ¶ 138–139. Petitioner contends, with support from Dr. Davis, that a person of ordinary skill would have implemented this concept from Hill on Nechushtan's longitudinal frame member because it offers a direct line to the front axle assembly, and provides a support without the need for significant frame modification. Pet. 17–18; Ex. 1001 ¶ 138–39 (providing an annotated version of Nechushtan's Figure 2 identifying the longitudinal frame member involved).

Regarding a rear axle assembly, Petitioner contends that Nechushtan discloses a rear axle assembly supported by the rear frame portion and coupled to the transmission to drive the rear wheels. Pet. 26; Ex. 1008, 6:43–47; Ex. 1001 ¶ 140. According to Petitioner a person of ordinary skill would have understood that Nechushtan's rear transaxle drives the rear wheels. Pet. 46; Ex. 1001 ¶ 140. Alternatively, Petitioner contends that Hill's transmission 13 drives rear wheels 11. Pet. 46; Ex. 1001 ¶ 140; Ex. 1010, Figs. 1, 2; *see also* Ex. 1010, 2:57–62 (describing that engine 12 is connected by transmission 13 to rear half shafts 14 connected to rear wheels 11).

Regarding a passenger compartment, Petitioner contends that Nechushtan discloses a passenger compartment intermediate the front and rear wheels that includes: a front panel, a floorboard rearward of the front panel, a base portion positioned under the seating surfaces, and a protective

panel positioned rearward of the seating surfaces and forward of the engine. Pet. 27–30; Ex. 1001 ¶ 145; Ex. 1008, 7:8–12, Fig. 2. In support, Petitioner provides an annotated version of Nechushtan's Figure 1.



Annotated Figure 1 is a front perspective view of Nechushtan's vehicle, and includes Petitioner's annotations of the components of the passenger compartment. Ex. 1008, 2:38–39; Fig. 1.

(2) Patent Owner's Contentions

As detailed below, Patent Owner makes two arguments regarding elements of claim 60. Patent Owner makes several arguments regarding rationale, obviousness analysis, and secondary considerations of obviousness.

(a) *Front drive shaft*

In the Institution Decision, we interpreted claim 60 as requiring that the front drive shaft remain intermediate of the part of each of the seating surfaces closest to the vehicle centerline, *as viewed in plan view*. Dec. 9–11. At the oral hearing we discussed a broader, yet reasonable interpretation, namely, that the limitation should be viewed in any horizontal plane that includes both the seating surfaces and the front drive shaft. *See* Tr. 12:10–16

(Petitioner agreeing with this interpretation), 28:9–35:6 (Patent Owner disagreeing). A plan view is a two-dimensional representation of a three-dimensional object. We observe that interpreting this limitation from plan view would appear inappropriately to narrow the limitation at issue in that it requires the front drive shaft to be laterally intermediate the inner most sides of the seating surfaces even in a horizontal plane that does not include both the seating surfaces and the front drive shaft. Interpreting the limitation at issue in such a manner would appear to be at odds with the use of the term "lateral," as the lateral direction referred to in claim 88 is not just orthogonal to the longitudinal centerline of the vehicle, but also lies in a horizontal plane. Lateral distance would not be meaningful if measured at an angle to a horizontal plane, as would be required under "plan view." Consequently, a more reasonable interpretation would appear to only require that the front drive shaft remain laterally intermediate of the part of each of the seating surfaces closest to the vehicle centerline, *in any horizontal plane that includes both the seating surfaces and the front drive shaft.* In any case, however, we need not determine if this broader interpretation is applicable because, as detailed below, the asserted ground of unpatentability positions the front drive shaft so that it is remains laterally intermediate the inner most side of the seating surfaces under either claim interpretation.

Patent Owner argues that Hill's propeller shaft 15 does not remain laterally intermediate the part of the seating surfaces closest to the vehicle centerline both with regard to the lower and the upper seating surfaces. PO Resp. 15–19, 39–47. A good deal of Patent Owner's argument deals with the contention that the limitation at issue applies to both upper and lower seating surfaces. *Id.*

Essentially, Patent Owner argues as if Petitioner proposes to modify Nechushtan to position the front drive shaft exactly as positioned in Hill. In that regard, Patent Owner's argument is unpersuasive because it is not responsive to the ground of unpatentability asserted by Petitioner. *See* Pet. 24–26; Pet. Reply 12–16; Ex. 1032 ¶ 12; Ex. 1001 ¶ 139. As detailed above, Petitioner relies on both Hill and Nechushtan. Petitioner contends that Hill discloses that positioning the front drive shaft between the seats permits the seats to be situated lower in the frame, which lowers the center of gravity. Pet. 24–26; Ex. 1001 ¶¶ 67, 153; Ex. 1010, 2:44–47, Figs 1, 2; *see also* Ex. 1028, 37:8–17 (acknowledging that lowering passengers in the vehicle frame lowers the center of gravity). Petitioner contends that a person of ordinary skill would have applied this teaching from Hill to position the front drive shaft along the centerline of Nechushtan's frame, because doing so offers a direct line to the front axle assembly, and provides support without the need for significant frame modification. *See* Pet. 26; Ex. 1001 ¶ 154. Thus, Petitioner proposes to position the front drive shaft approximately along the centerline of the vehicle so that the seats may be situated lower in the frame. Given that Nechushtan's seats are laterally spaced apart, such configuration would place the front drive shaft laterally intermediate the innermost sides of the seating surfaces (upper and lower surfaces) from both a plan view and in any horizontal plane that includes both the seating surfaces and the front drive shaft.

(b) *Protective Panel*

Claim 60 requires the passenger compartment to include a protective panel positioned rearward of the seating surfaces and forward of the engine. The claim terms "forward" and "rearward" are relational terms with respect

to the front and rear of the ATV. *See, e.g.*, Ex. 1002, 2:16 (describing Figure 3 as a "front view"), 2:32–33 (describing Figure 10 as a perspective view of the "front end of the ATV); 4:8–10 (describing "[r]ear end **14**" of ATV 10); 8:46–48 (describing rear tubes 207 as positioned "rearwardly" of front tubes 204), Figs. 2, 3, 10, 14, 15. In other words, the terms refer to positions along the longitudinal axis of the vehicle with respect to the front and the rear of the vehicle. *Id.* at 5:24–24, Fig. 9 (describing and depicting longitudinal axis 66). In context, "rearward to the seating surfaces" refers to a longitudinal position between the seating surfaces and the rear of the vehicle and "forward of the engine" refers to a longitudinal position between the engine and the front of the vehicle. The claim terms "forward" and "rearward" are not limited with respect to the height (vertical position) of the component on the ATV.

Patent Owner contends that a protective panel, as claimed, protects passengers in an ATV from at least the engine. PO Resp. 47–50 (referring to the related litigation claim construction at Ex. 2036, 13[18]). To the extent that Patent Owner is suggesting that Nechushtan's panel does not protect passengers from an engine related risk, such argument is unpersuasive. Patent Owner's reference to the related litigation claim construction is incomplete, in that the District Court also determined that the claims "say nothing about what specific engine-related or other hazards the panel is intended to protect from." Ex. 2036, 13. The court also noted that the description in the Specification relating to moving engine parts and noise

[18] Patent Owner only cites page 13, but page 12 is relevant as well.

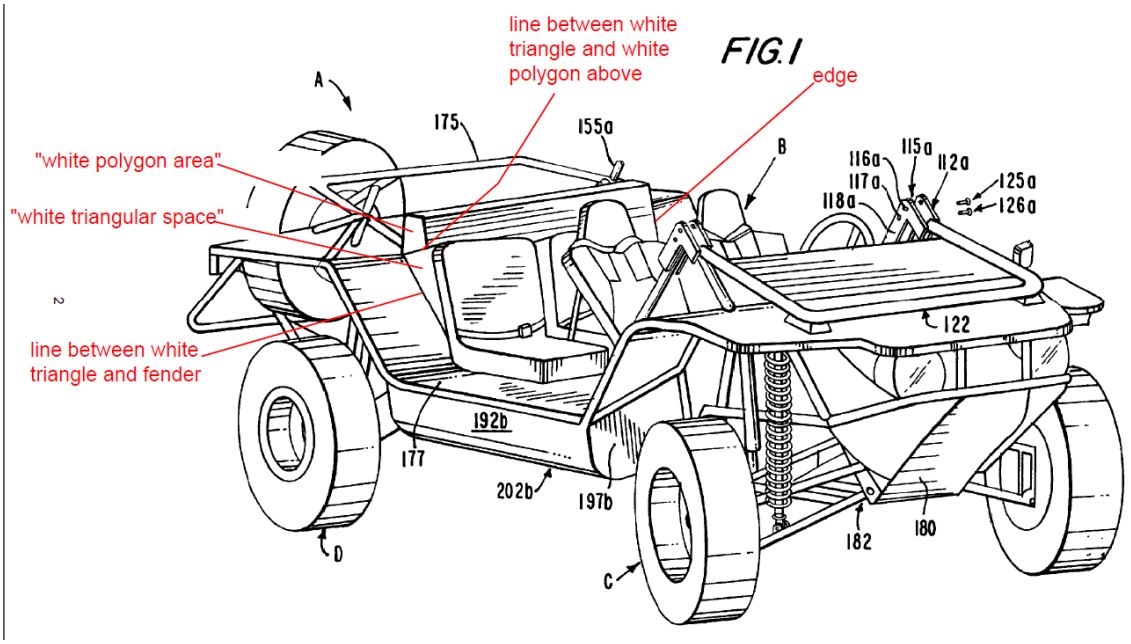
was exemplary.[19] *Id.* Although we differ from the District Court in that we apply a broadest reasonable interpretation, we agree, here, with the District Court's claim construction. Patent Owner made a similar argument regarding the protective panel at issue in the '1427 IPR, and our analysis there is applicable here. *See* Pet. Reply 17; '1427 IPR Paper 58 at 30; *Omega Eng'g Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003) ("[P]resume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.").

Patent Owner contends that the element of Nechushtan identified by Petitioner is not a protective panel, as claimed; rather, it is a headrest positioned higher than the seatback and utility bed. PO Resp. 48–49. In support of that interpretation, Patent Owner notes that there is a white polygon on the left end of the element of Nechushtan identified by Petitioner, and notes that the shading is not carried down between the seats. *Id.* at 48. Further, according to Patent Owner, there is nothing behind the seatbacks and in front of the engine. *Id.* at 49. In support, Patent Owner identifies a white triangular space under the white polygon that has a clear line between that space and the adjacent shaded fender, and between that space and the white polygon above. *Id.*

[19] The court referred to the '220 patent, but a similar disclosure is found at in the '028 patent. *See* Ex. 1002, 7:47–51. This disclose may refer to the continuously variable transmission (CVT) cover rather than the protective panel. The parties agreed in the related litigation that the structure appearing in Figure 19 is the CVT cover, not the protective panel. *See* Ex. 2045, 47. Either way, the description is exemplary and does not alter our claim construction.

Accepting, for the sake of argument, that Patent Owner is correct that the portion of Nechushtan identified by Petitioner serves as a headrest, that headrest is positioned longitudinally between the seating surfaces and the rear of the vehicle and between the engine and the front of the vehicle. In such position, it serves to at least somewhat protect at least a portion of the passengers (for example, the head and neck of a passenger). Patent Owner has not articulated, and we are unable to ascertain independently, why such "protection," however limited, is insufficient to meet the claim limitation. Consequently, this element corresponds to a protective panel, as claimed. In that regard, Patent Owner's arguments relating to the height of the protective panel with respect to the seatback and utility bed are misplaced. As explained above, claim 60 limits the protective panel with respect to lateral position, but not with respect height to (vertical position on the ATV).

Even aside from the headrest, Patent Owner's assertions are unpersuasive. To facilitate discussion, Nechushtan's Figure 1 is reproduced below with annotations corresponding to Patent Owner's assertions.



Annotated Figure 1 is a front perspective view of Nechushtan's vehicle, and includes annotations corresponding to Patent Owner's assertions.[20] Ex. 1008, 2:38–39; Fig. 1; PO Resp. 47–50. Patent Owner's contention regarding the absence of shading between the rears seats is unpersuasive because, in this perspective view, the edge of the seat behind the driver's seat blocks the view of the portion of the protective panel between the seats. Regarding the border lines of the polygon and triangular white areas, while we agree with Patent Owner that this portion of Figure 1 is not the model of clarity, we find that these lines do not indicate the absence of a protective panel; rather, these lines indicate the transition between materials. To find otherwise requires a tortured logic that these spaces somehow represent empty areas with a line, nevertheless, forming a border between the otherwise empty polygon and triangle Perhaps most importantly, the edge of the protective panel is visible adjacent and outboard of the seat behind the driver's seat, as labeled above. Consequently, we agree with Petitioner that, when the above is considered in the aggregate, a person of ordinary skill would recognize that Nechushtan includes a protective panel rearward of the seating surfaces and forward of the engine. *See* Pet. Reply 17–18.

(c) *Front Drive Shaft and Protective Panel Conclusion*

For the foregoing reasons, we find that Petitioner has established by a preponderance of the evidence that the prior art discloses the front drive shaft and protective panel elements of claim 60. We now turn to the reasons for the proposed modifications.

[20] Patent Owner did not make an assertion regarding the labeled "edge."

(3) Rationale and Other Factors

As mentioned above, Petitioner proposes two modifications of Nechushtan: one, to configure the engine and transmission as in Hill (mid-mounted engine), and two, to include four-wheel drive with a front driveshaft positioned approximately along the vehicle centerline as taught by Hill and Nechushtan. Pet. 34–36. These modifications illustrate the differences between Nechushtan and the claimed subject matter.

Petitioner reasons that modifying Nechushtan's engine and transmission to be configured like Hill's would enhance vehicle balance and drivability.[21] Pet. 16. Petitioner provides three reasons for modifying Nechushtan's front drive shaft: (1) to achieve the predictable benefits of four-wheel drive (e.g., increased traction and better acceleration in off-road conditions), (2) the addition of four-wheel drive was use of a known technique to improve similar devices, and would have led to predictable results, and (3) implementing a front drive shaft laterally intermediate the innermost sides of the laterally spaced apart seating surfaces would allow for a direct path between the transmission and the front axle assembly, and would permit the vehicles seats to be positioned lower in the vehicle without interfering with the front drive shaft, lowering the center of gravity. Pet. 15–18.

Patent Owner contends that Petitioner failed to consider that "an invention can often be the recognition of a problem itself." PO Resp. 21–22

[21] Petitioner presents rationale for both modifications as four reasons and Patent Owner breaks this into six reasons. *Compare* Pet. 34–36, *with* PO Resp. 32–33. Rather than use either of these groupings, we address the rationale associated with each of the two proposed modifications.

(quoting *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc*., 381 F.3d 1371, 1377 (Fed. Cir. 2004); also citing *Nike, Inc. v. Adidas AG*, 812 F.3d 1326 (Fed. Cir. 2016[22]); *Leo Pharm. Prod., Ltd. v. Rea*, 726 F.3d 1346, 1356-57 (Fed. Cir. 2013)). In support of this contention, Patent Owner asserts that the '028 patent: (1) created a missing vehicle type, namely, a side-by-side utility vehicle with recreational attributes, and (2) solved a stability problem before the industry recognized that problem. *Id*. at 22–31. For the reasons that follow, both of these contentions are factually incorrect, and the case law cited does not support the contention asserted.

Regarding creating a new vehicle type, Patent Owner contends that the RZR® is a "sport-focused, high performance, side-by-side vehicle capable of vigorous off-road driving" that filled a need that the industry failed to recognize.[23] PO Resp. 28. Patent Owner contends that prior to the '028 patent, off-road recreational vehicles could be grouped into three types: saddle-ride ATVs, utility vehicles designed for work, and dune buggies designed for desert racing. PO Resp. 22; *see also* Ex. 2030 ¶¶ 48–54 (describing these vehicle types). Patent Owner contends that conventional side-by-side vehicles (*e.g.*, the "Hart Hunter," the Yamaha Rhino, and the Arctic Cat Prowler) emphasized utility functionality at the expense of sport qualities, such as by mounting the engine under the seating area (resulting in a higher center of gravity and less stability and agility). PO Resp. 22–26.

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[22] Patent Owner cites this case as "2006," the correct date is 2016.

[23] In this assertion, Patent Owner consistently refers to the "RZR®" (a brand of vehicles) rather than the RZR® 800 (a specific model of that brand). *See* PO Resp. 23–26; *see also* Ex. 2028 ¶ 2 (referring to "Polaris's RZR® brand vehicles").

Contrary to Patent Owner's assertion, we determine that the '028 patent did not create a new ATV type. No such assertion is made in the '028 patent. Ex. 1002. The recreational side-by-side market is considered to have begun in 2003, well before the '028 patent. *See* Ex. 2041-5; *see also* Ex. 2091, 2 (stating that recreational utility vehicles began with the Polaris Ranger, gained momentum with the Yamaha Rhino and evolved with Polaris Ranger RZR). More importantly, whether the claimed subject matter is a device that creates a new category is not the proper focus of an obviousness inquiry. Categorizing vehicles is a subjective determination. *Compare* Ex. 2064, 50 (categorizing the RZR 800 as a utility task vehicle (UTV)[24] rather than an ATV) *with* Ex. 2039, RZR 800 Owner's Manual (referring to the RZR as a sport vehicle); *see also* Ex. 2068, 7 (noting that the Range RZR has utility attributes: "this vehicle is not just for play"); Ex. 2081, PLRS000567–68 (stating the purpose of the Ranger RZR as play first, work second and stating that it has "more utility").

Regarding the stability problem, Patent Owner contends that from its launch in 2004 the Yamaha Rhino was a market leader in the recreational/utility side-by-side market, and the industry did not appreciate that the Rhino suffered from safety and stability problems. PO Resp. 28–31. Patent Owner contends that the '028 patent centralized the weight of riders, engine, and transmission to lower the center of gravity and increase stability. *Id.* at 29–30; Ex. 2030 ¶¶ 26, 32–34.

Contrary to Patent Owner's assertion, we determine that the '028 patent did not solve an unrecognized stability; rather, as Patent Owner's

[24] *See* Ex. 2049, 1 (defining UTV).

expert has acknowledged, vehicle stability concerns in the ATV industry pre-date the '028 patent. *See* Pet. Reply 9; Ex. 1028, 48:1–19; Ex. 1001 67. Further, to the extent that Patent Owner's argument suggests that the prior art of this ground of unpatentability must be combined for the same reason as the '028 patent, such is not the law. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007) (Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.).

Furthermore, even if Patent Owner's factual assertions were correct, the three cases cited by Patent Owner do not support the contention that invention can be recognition of a problem itself.

Cardiac Pacemakers did not hold that recognition of a problem was invention. Rather, while we acknowledge that the court in that case observed that situations can arise wherein identification of the problem was itself the invention, the court actually held that such was not the case for the invention at issue. *Cardiac Pacemakers*, 381 F.3d at 1377. Therefore, the statement that invention may be identification of the problem is dicta.

Nike does not support Patent Owner's assertion. According to Patent Owner, *Nike* reversed the Patent Trial and Appeal Board ("the Board"), "because nothing in the cited prior art appreciated the problem the invention recognized and then solved." PO Resp. 22. The court in *Nike* did not reverse the Board; rather, it affirmed in part, vacated in part, and remanded. *Nike*, 812 F.3d at 1326. More importantly, the remand was not because the prior art failed to recognize a problem; rather, the court remanded due to the

Board's failure to consider secondary considerations, inadequate factual findings, and improper grouping of claims. *Id.*

Leo Pharmaceutical did stated that "[t]he '013 patent, however, is not simply a combination of elements found in the prior art. The inventors . . . recognized and solved a problem . . . that the prior art did not recognize."). *See* PO Resp. 22 *(*quoting *Leo Pharm. Prod., Ltd. v. Rea*, 726 F.3d 1346, 1354[25] 1356–57 (Fed. Cir. 2013)). This statement, however, must be considered in context. Leo Pharmaceutical presented evidence of a teaching away from the claimed subject matter. The Court determined that the Board used improper hindsight because the Board did not address the evidence of teaching away, and because the record showed no reason for the proposed combination. *Id.* at 1354. Therefore, *Leo Pharmaceutical* stands for the proposition that where a solution is taught away from, and there is no reason for the combination, finding that solution can be nonobvious. The case at hand is distinguishable in both respects: we are not persuaded that the claimed subject matter was taught away from, and, as explained below, Petitioner provides an adequate reason for the combination.

Consequently, we agree with Petitioner that Patent Owner's obviousness analysis improperly focuses on categorizing the RZR 800. *See* Pet. Reply 8–9.

Patent Owner contends that Petitioner did not identify a problem recognized by industry or prior art, nor demonstrate why a person of ordinary skill would have deviated from conventional wisdom to arrive at Patent Owner's invention. PO Resp. 31–33. Rather, according to Patent

[25] Patent Owner cites pages 1356–57, but the quoted material is found at 1354.

Owner, Petitioner used impermissible hindsight by simply locating the claimed elements in the prior art. *Id.*

In part, this argument repeats the previous argument that recognition of the problem itself was invention and that Petitioner's ground of unpatentability must seek to solve that same problem. This contention is unpersuasive for the reasons given above. Regarding the allegation that Petitioner simply located the claimed elements in the prior art, such a general assertion does not address persuasively the reasons proffered by Petitioner.

Patent Owner next contends that Petitioner rigidly and prospectively applied *KSR*. PO Resp. 33 (quoting *KSR*, 550 U.S. at 421). Patent Owner contends that the '028 patent "yielded far more than expected," revolutionizing the ATV industry, creating a new sport ATV market segment, and solving unrecognized stability/safety problems. PO Resp. 30. This contention is simply a restatement of the assertion that the '028 patent created a new ATV category. Patent Owner has not persuaded us that Petitioner's references to *KSR* are "too strict."

Patent Owner contends further that Petitioner's use of secondary and tertiary references only makes sense with hindsight, and should be rejected. PO Resp. 34–37. In particular, Patent Owner contends that a person of ordinary skill would not combine Nechushtan and Hill, because Hill is an extremely low-clearance race car unsuited for all-terrain applications. PO Resp. 35–36; Ex. 2030 ¶ 79.

To the extent that Patent Owner's assertion suggests that Hill is nonanalogous art, we disagree. As discussed above, Hill discloses a vehicle having four-wheel drive, a mid-mounted engine, and a front drive shaft

configured to permit the seats to be mounted lower in the frame, all disclosures that are reasonably pertinent to the problem faced by the inventor of the ’028 patent (improving a side-by-side ATV). Further, Petitioner does not rely upon any aspect of Hill that would give the proposed combination low-clearance; rather, Hill is relied upon with regard to the engine and transmission configuration and positioning of the front drive shaft. *See* Pet. 10–11, 15–18, 20–28; Pet. Reply 11–12.

Patent Owner contends also that the proffered reasons are impermissible hindsight because they are general statements applicable to an abundance of prior art references. PO Resp. 37–38. Patent Owner’s contention could perhaps be persuasive if Patent Owner had presented argument or evidence that the modification would not provide the asserted benefits. We agree with Petitioner, however, that Patent Owner did not. *See* Pet. Reply 11. We also agree with Petitioner that Patent Owner’s assertion that other prior art references could provide such enhancement underscores the obviousness of the claimed subject matter. *See id.* at 11–12.

Patent Owner contends additionally that a person of ordinary skill would not have positioned the seats lower in the frame, because it would have necessitated overhauling Nechushtan’s frame structure. PO Resp. 37; Ex. 2030 ¶ 80. This contention is unpersuasive. Patent Owner’s expert presents a single sentence opining that the modification would have required overhauling Nechushtan’s frame structure. Ex. 2030 ¶ 80 (last sentence). This opinion is not accompanied by underlying facts or data, and does not explain persuasively why that is the case. We are persuaded by Petitioner’s argument and evidence that such alterations of the vehicle frame were

predictable and within the ability of a person of ordinary skill to accomplish. Pet. Reply. 12; *see also* Pet. 24–26; Ex. 1008, Fig. 2; Ex. 1001 ¶ 139.

Patent Owner contends further that Petitioner's reasoning that positioning the front drive shaft along the vehicle centerline to "allow for the most direct path between the transmission and the front axle assembly" has no bearing on whether the drive shaft is between the innermost sides of the seats because Petitioner's expert has conceded that the "most direct path typically is angled." PO Resp. 37. We are unpersuaded because Patent Owner's argument and evidence suggests that a non-angled front drive shaft is unusual, which falls short of demonstrating that such positioning is beyond the level of skill in the art, or otherwise nonobvious. Further, even if we were to accept that some angle is present, Patent Owner presumes that the proposed modification positions the front drive shaft at such an angle that it is no longer laterally intermediate the innermost sides of the seating surfaces. Petitioner proposes that the drive shaft be positioned so that it permits the seats to be positioned lower in the frame and so that the drive shaft is supported by Nechushtan's existing centerline longitudinal frame member. Pet. 17–18, 25–26; Pet. Reply 15. Such positioning places the front drive shaft approximately parallel to the longitudinal vehicle centerline, even if somewhat angles.[26]

After considering Patent Owner's contentions, we pivot back to Petitioner's proffered modifications themselves. We are persuaded that modifying Nechushtan to have a mid-mounted engine configuration such as

[26] This is consistent with Dr. Davis's Deposition. *See* 2112, 45:15–46:12 (referring to the front drive shaft as along "roughly the shortest path" rather than as parallel to the longitudinal axis of the vehicle.

Hill's (*i.e.*, the transmission extending rearward of the engine) would enhance vehicle stability and maneuverability. *See* Pet. 16; Pet. Reply 11–12. In making this determination, we credit Dr. Davis's supporting explanation that such configuration places the engine closer to the middle of the vehicle and provides such performance enhancements. *See* Ex. 1001 ¶¶ 130–131.

We are persuaded also that modifying Nechushtan to include a front drive shaft as part of adding four-wheel-drive capability would increase traction and acceleration in off-road conditions and was a predictable use of a known technique to improve similar devices. *See* Pet. 15–18; Ex. 1001 ¶ 148. Further, as Patent Owner admitted in the '1427 IPR, the benefits of four-wheel drive, to include increased traction and better off-road acceleration were known. *See* '1427 IPR, Paper 58 at 17.

We are persuaded additionally that implementing the front drive shaft laterally intermediate the innermost sides of the laterally spaced apart seating surfaces would permit the vehicle's seats to be positioned lower in the vehicle without interfering with the front drive shaft, lowering the center of gravity. Pet. 14–18; Pet. Reply 11–12. We credit Dr. Davis's supporting testimony. Ex. 1001, 158. Further, Patent Owner admitted in the '1427 IPR that it was known that raising the center of gravity of a vehicle relative to an unmodified vehicle decreases vehicle stability, and thus the converse must also have been recognized. *See* '1427 IPR, Paper 58 at 17; *see also* '1788 IPR, Ex. 1023, 42:14–15 (testifying that center of gravity calculations were known in 2006).

(4) Predictability and Reasonable Expectation of Success

As discussed above, Petitioner provides an adequate supporting explanation for each proposed modification.

Patent Owner argues that Petitioner provided no explicit showing of a reasonable expectation of success, and, in fact, that Dr. Davis's testimony casts doubt on that issue. PO Resp. 34–35 (quoting Dr. Davis's testimony at Ex. 2020, 77:13–23, and citing *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1335 (Fed. Cir. 2013)). In the quoted testimony Dr. Davis is asked if Nechushtan's vehicle is stable. Ex. 2020, 77:13–23. This question was asked in the context of reasons for adding a front stabilizer bar to a vehicle, a feature of claim 85. *Id.* at 76:5–82:21. Consequently, this discussion does not pertain to independent claim 60 and does not persuade us that Petitioner has not demonstrated a reasonable expectation of success with regard to claim 60.[27]

Furthermore, we disagree with Patent Owner's application of *KSR*. The cited portion of *KSR* was not discussing a reasonable expectation of success. Rather, in the cited portion of *KSR*, when discussing an obviousness analysis of certain claimed subject matter,[28] the court stated that "[t]o facilitate review, this analysis should be made explicit." *KSR*, 550 U.S. at 418. We are unpersuaded that Petitioner has proffered any modification that would cause us to conclude that there was not a reasonable expectation

[27] We address this assertion in our analysis of claim 85 below.

[28] Matter involving more than the simple substitution of one known element for another or mere application of a known technique to a piece of prior art ready for the improvement.

of success. Indeed, in view of the proffered level of ordinary skill in the art, the modifications appear straightforward and logical.

In light of Petitioner's and Patent Owner's contentions as discussed above, we are persuaded that Petitioner has demonstrated a likelihood of success in combining references to meet the limitations of claim 60. *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

(5) Conclusion – Claim 60

We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claim 60 is unpatentable under 35 U.S.C. § 103(a) over Nechushtan and Hill.

d) Claims 61, 62, 65–69, 78, 80, and 81

Claims 61, 62, 65–69, 78, 80, and 81 depend, directly or indirectly, from claim 60.

Claim 61 recites, "a low point of the seating surfaces is below a top of the engine." Hill discloses seats having a low point below the top of the engine. Pet. 30; Ex. 1010, Figs. 1, 2; Ex. 1001 ¶ 158. A person of ordinary skill in the art would have modified Nechushtan to position the seats, as disclosed by Hill, to contribute to lowering the vehicle's center of gravity, a desirable characteristic for ATVs. Pet. 34, 36, 48–49; Ex. 1001 ¶ 158.

Claim 62 recites, "wherein the wheels have a wheel base and a ratio of the wheel base to a distance from the frame to the low point of the seating

surfaces is at least 6.0 to 1." Nechushtan discloses this ratio. *See* Ex. 1008, Fig. 1[29], Pet. 30–31; Ex. 1001 ¶ 159.

Claim 65 recites, "wherein the lower rear frame portion at least partially supports the engine or transmission." Nechushtan's basket 152 supports the engine and transaxle. Ex. 1008, 6:43–47; Pet. 33; Ex. 1001 ¶¶ 96, 161.

Claim 66 recites, "wherein the lower rear frame portion is comprised of cross members." Nechushtan disclose a lower rear frame comprised of cross members. Ex. 1008, Fig. 2; Pet 33; Ex. 1001 ¶¶ 97, 161.

Claim 67 recites, "wherein the rear frame portion is comprised of at least one vertical member extending between the lower rear frame portion and the upper rear frame portion." Nechushtan discloses vertical members in the upper rear frame portion. Ex. 1008, Fig. 2; Pet. 33–34; Ex. 1001 ¶¶ 99, 161.

Claim 68 recites, "wherein the upper rear frame portion is comprised of at least one frame member which extends in at least a partial lengthwise direction of the vehicle." Nechushtan discloses an upper rear frame portion having frame members extending in at least a partial lengthwise direction. Ex. 1008, Fig. 2; Pet. 34–35; Ex. 1001 ¶¶ 101, 161.

Claim 69 recites, "wherein the upper rear frame portion is comprised of at least one cross member." Nechushtan discloses an upper rear frame portion having at least one cross member. Ex. 1008, Fig. 2; Pet. 35; Ex. 1001 ¶¶ 102, 161.

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[29] This Figure is not relied upon for a quantitative measurement; rather, it is used to show relative sizes between various components. *See Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1556 (Fed. Cir. 1991).

Claim 78 recites, "wherein the front drive shaft extends under the protective panel." The combination of Hill and Nechushtan analyzed above positions the front drive so that it extends as required by claim 78. *See* Pet. 36.

Claim 80 recites, "further comprising an outer body panel supported by the frame." Claim 81 recites, "wherein the outerbody panel comprises a front body panel and a hood." Nechushtan discloses an outer body panel comprising a front body panel and a hood that is supported by the frame. Ex. 1008, Fig. 1; Pet. 36–37 (see annotated Figure); Ex. 1001 ¶¶ 116, 163.

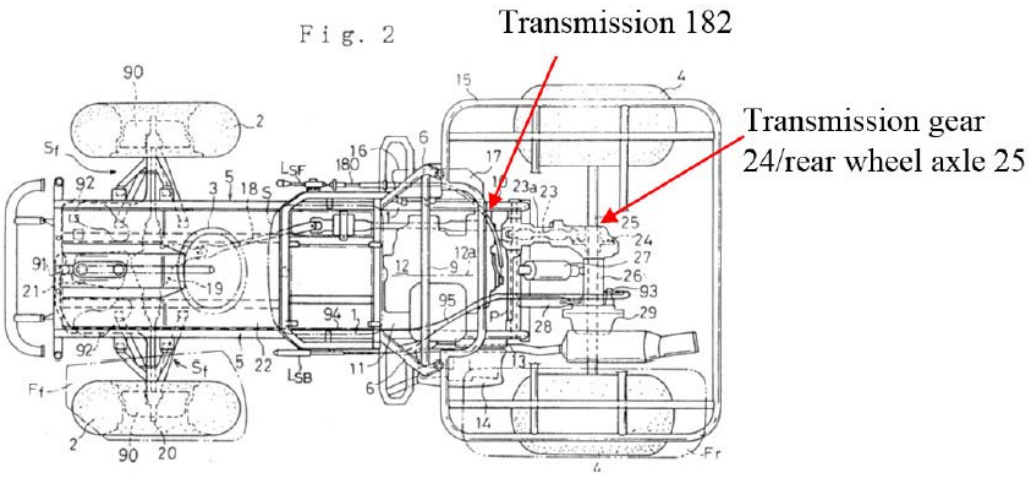
Patent Owner does not present separate argument for these claims. We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claims 61, 62, 65–69, 78, 80, and 81 are unpatentable under 35 U.S.C. § 103(a) over Nechushtan and Hill.

2. Obviousness over Nechushtan, Hill, and Furuhashi

Petitioner contends that claim 86 would have been obvious over Nechushtan, Hill, and Furuhashi. Pet. 37, 40–42.

Claims 86 depends from claim 60, and recites "wherein the rear axle assembly is positioned rearwardly of the transmission."

Furuhashi is a four-wheeled buggy for use as an ATV. Ex. 1009, 1:11–13. Furuhashi's ATV includes a rear axle assembly positioned rearward of the transmission. Pet. 40–41; *see also* PO Resp. 61 (acknowledging this configuration). An annotated version of Furuhashi's Figure 2 follows.



Annotated Figure 2 is a partially schematic top plan view of Furuhashi's ATV, with annotations by Petitioner identifying the transmission and rear wheel axle. Pet. 41; Ex. 1001 ¶ 169. At the time of the '028 patent, it was known that such a configuration improved weight distribution, eliminated or reduced engine/transmission overhand, and improved handling, particularly in off-road conditions. Ex. 1001 ¶¶ 170–171. For example, such a configuration moved the weight forward enough to reduce the vehicles' yaw moment of inertia. Pet. 41; Ex. 1001 ¶ 170.

Petitioner asserts that a person of ordinary skill in the art would have modified the Nechushtan and Hill combination to configure the transmission with respect to the rear axle, as taught by Furuhashi, to obtain the benefits mentioned above. Pet. 41–42.

Patent Owner contends that a person of ordinary skill in the art would not have made the proposed modification for several reasons. First, according to Patent Owner, Hill's extremely compact transmission unit provides greater space for the driver and passenger, which teaches away from Furuhashi's configuration. *Id.* at 61–62. Second, Patent Owner

contends that neither Nechushtan nor Hill includes such motivation. *Id.* at 62–63. Third, the purpose of a rear transaxle is to permit the axle to be placed closer to the engine, and Patent Owner asserts this modification would do the opposite. *Id.* at 63. Fourth, Patent Owner contends Hill discloses transmission components rearward to the rear axle assembly, and Petitioner's expert admitted to never having disassembled and compared the weight of a transmission to a rear axle assembly. Fifth, Patent Owner contends that Petitioner has not identified any instance of a rear transaxle having transmission components heavier than, and forward of, the rear axle assembly. Sixth, Patent Owner contends that including Furuhashi in the combination would result in the front drive shaft being positioned under a seat, rather than laterally intermediate the innermost sides of the seating surfaces. *Id.* at 64.

Regarding teaching away (first reason), we agree with Petitioner that an alternative approach is not a teaching away. *See* Pet. Reply 24. Regarding a motivation in Nechushtan or Hill (second reason), such a contention is not persuasive because it is a rigid application of the teaching, suggestion, or motivation test. Further, such a contention is inapposite in that Petitioner did not contend that either reference provides a reason for the modification, and instead presents expert testimony, which Patent Owner does not challenge, and we determine is adequate. Regarding Furuhashi repositioning the drive shaft (sixth reason), Petitioner is not bodily incorporating Furuhashi with the rear axle assembly some lateral distance from the vehicle centerline. Regarding Petitioner's expert having never disassembled and compared the weight of a transmission to a rear axle assembly (fourth and fifth reasons), we agree with Petitioner that such

contention is irrelevant: moving the transmission forward would shift the horizontal center of gravity forward. Pet. Reply 24.

We agree with Petitioner that Patent Owner's arguments (first and third reasons) seem to be that the proposed combination is not optimal. Pet. Reply 23–24. Patent Owner identifies negative aspects of the combination without balancing those aspects against the benefits identified by Petitioner. *See Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000).

We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claim 86 is unpatentable under 35 U.S.C. § 103(a) over Nechushtan, Hill, and Furuhashi.

3. Obviousness over Nechushtan, Hill, and Kraus

Petitioner contends that claim 79 would have been obvious over Nechushtan, Hill, and Kraus. Pet. 42–43.

Claim 79 depends from claim 60 and recites, "further defining a power to weight ratio, the power to weight ratio being equal to at least 0.045/1 horsepower/pound."

At the time of the invention, it was known that engine and vehicle size can be selected to provide a desired power-to-weight ratio to provide desired performance. Pet. 42; Ex. 1001 ¶¶ 124–125. Krause discloses a vehicle having a high power-to-weight ratio of 0.5 horsepower per pound, and that a known method of increasing this ratio is to increase engine size in relation to vehicle weight. Ex. 1012, 4:63–69; Pet. 42; Ex. 1001 ¶ 126. Petitioner reasons, and we agree, that a person of ordinary skill in the art would have increased the power to weight ratio of the Nechushtan and Hill combination

to achieve the known benefit of increased performance. Pet. 42–43; Ex. 1001 ¶ 127.

Patent Owner does not present separate argument for this claim. We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claim 79 is unpatentable under 35 U.S.C. § 103(a) over Nechushtan, Hill, and Kraus.

4. Obviousness over Nechushtan, Hill, and Enokimoto

Petitioner contends that claim 82 would have been obvious over Nechushtan, Hill, and Enokimoto. Pet. 43–44.

Claim 82 depends indirectly from claim 60 and recites, "further comprising a front storage area positioned under the hood."

Enokimoto discloses a four wheel off road vehicle having a rear engine that includes a front storage enclosure (forward of front wall 116) that is accessible through an upper lid. Ex. 1015, 1:5–6, 2:48–50, 5:33–37; Pet. 43–44; Ex. 1001 ¶ 175. Nechushtan, Hill, and Enokimoto each have a rear engine. *See* Pet. 43–44. Petitioner contends that a person of ordinary skill would modify the Nechushtan and Hill combination to include a front enclosure to provide additional storage.

Patent Owner argues that Nechushtan includes storage (left and right basket portions 67*a*, 67*b*) and for that reason a person of ordinary skill would not modify Nechushtan, as proposed, to increase storage. *See* PO Resp. 50–51, Ex. 2030 ¶¶ 117–118; Ex. 1008, 4:7–48; Figs. 1–2; Ex. 2020 68:1–6 (Petitioner's expert acknowledging that one of Nechushtan's goals was increased storage). Patent Owner adds that there is no motivation in Nechushtan to make such a modification.

We agree with Petitioner that the fact that Nechushtan has some storage does not mean that a person of ordinary skill would have avoided adding more storage. Pet. Reply 22–23. Further, Patent Owner's contention that such motivation is not found in Nechushtan is unpersuasive, because it is a strict application of the teaching, suggestion, or motivation test, and Petitioner instead presents expert testimony, which Patent Owner does not challenge, and we determine is adequate.

We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claim 82 is unpatentable under 35 U.S.C. § 103(a) over Nechushtan, Hill, and Enokimoto.

5. Obviousness over Nechushtan, Hill, and Hart

Petitioner contends that claims 83 and 84 would have been obvious over Nechushtan, Hill, and Hart. Pet. 44–47.

Claim 83 depends from claim 88 and recites, "wherein the vehicle width is less than 54 inches." Claim 84 depends from claim 83 and recites, "wherein the vehicle width is approximately 50 inches."

Hart discloses a side-by-side ATV having a width of approximately 50 inches. Ex. 1004, ¶ 71; Pet. 14, 46.

Petitioner reasons that a person of ordinary skill would have modified the Nechushtan and Hill combination to have a vehicle width of approximately 50 inches, as disclosed by Hart, because it would permit the vehicle to traverse relatively narrow spaces and to comply with state laws mandating such a width. Pet. 44–47; Ex. 1001 ¶¶ 177, 179–180.

Patent Owner contends that nothing in the record suggests anyone identified a need for a 50-inch sport recreational side-by-side vehicle. PO Resp. 51 (mentioning the Hart Hunter as focused on utility rather than sports

driving). To the contrary, as background, the '028 patent states that most trails on public lands have a mandated maximum width requirement (*e.g.*, 50 inches). Ex. 1002, 1:29–34; *see also* Pet. 44–45 (citing this portion of the '028 patent); Ex. 1001 ¶ 178.

Patent Owner contends that Petitioner has oversimplified the modification processes and has not demonstrated a reasonable expectation of success. PO Resp. 52. In particular, Patent Owner emphasizes that the Hart Hunter and Ervin (a background reference mentioned by Petitioner) each disclose a vehicle that is significantly different from the claimed configuration. *Id.* at 52–53. Patent Owner also emphasizes that Petitioner's demonstration regarding a reasonable expectation of success "must" be made explicit. *Id.* at 53–54 (citing *KSR*, 550 U.S. at 418) (emphasis Patent Owner's).

As an initial matter, we disagree with Patent Owner's application of *KSR*. The cited portion of *KSR* was not discussing a reasonable expectation of success. Rather, in the cited portion of *KSR*, when discussing obviousness analysis of certain claimed subject matter[30], the court stated that "[t]o facilitate review, this analysis should be made explicit." *KSR*, 550 U.S. at 418. Notably the court said "should" and here Patent Owner said "must."

Regarding Hart and Ervin, Patent Owner's assertion is essentially that the Hart Hunter and Ervin would not instruct a person of ordinary skill how to reduce the width of the Nechushtan and Hill combination. Such a contention is inapposite because Petitioner did not rely on those references

[30] Subject matter that involves more than the simple substitution of one known element for another or mere application of a known technique to a piece of prior art ready for the improvement.

in that manner. Rather, Petitioner contends that Ervin and the Hart Hunter illustrate that it was known to make ATV's in narrower widths. Patent Owner has to some extent acknowledged as much. *See* Ex. 1002, 1:25–27 (disclosing that "most side-by-side ATVs have a width of at least 54 inches," implying that some ATVs have a lesser width). We agree with Petitioner's response to Patent Owner's argument. In particular, we agree that Patent Owner has ignored the level of skill in the art, and that the proper test is not whether Hart or Ervin could be bodily incorporated into the Nechushtan and Hill combination. *See* Pet. Reply 18–21.

We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claims 83 and 84 are unpatentable under 35 U.S.C. § 103(a) over Nechushtan, Hill, and Hart.

6. Obviousness over Nechushtan, Hill, Hart, and Fujimori

Petitioner contends that claim 85 would have been obvious over Nechushtan, Hill, and Fujimori. Pet. 47–49.

Claim 85 depends from claim 83 and recites, "further comprising a front stabilizer coupled between the front wheels."

Fujimori discloses a torsion bar in the form of an adjustable stabilizer assembly. Ex. 1013, Abstract, 1:8–9. The use of torsional stabilizer bars, both front and rear, was well-known in the automotive industry to decrease roll or lean of the vehicle body during a cornering maneuver. *Id.* at 1:13–14, 1:20–21; Ex. 1001 ¶¶ 185–186; Pet. 47–48.

Patent Owner argues that none of the references disclose a front stabilizer bar for an ATV. PO Resp. 59. This argument is nonresponsive because Petitioner does not contend that Fujimori discloses a stabilizer bar

for an ATV; rather, Petitioner contends Fujimori's automotive torsion bar can be utilized in an ATV.

Patent Owner contends that Fujimori discloses stabilizer bars rather than front stabilizer bars. *Id.* This argument is also nonresponsive. Petitioner relied upon Dr. Davis's testimony that stabilizer bars such as Fujimori's were used on the front and rear of automobiles. *See* Ex. 1001 ¶ 185 ("both front and rear," cited at Pet. 57–58)

Patent Owner contends that Petitioner uses impermissible hindsight because there is no evidence that there was an art recognized problem with ATV stability. *Id.* at 59. Similarly, Patent Owner contends that addition of a stabilizer bar can contribute to understeer and absent proof of a known stability problem, a person of ordinary skill in the art would have no reason to make the proposed modification. *Id.* at 59–60

Patent Owner is arguing, again, that the proposed combination must seek to solve the same problem solved by the '028 patent, and such is not the law. Further, we are not persuaded by a contention that the use of a stabilizer bar has tradeoffs. The evidence shows that stabilizer bars were known in the automotive industry and Patent Owner does not identify any design concern for use of a stabilizer bar that is different in an ATV than in an automobile. This is true even if Patent Owner was the first to apply a stabilizer bar to an ATV. *See* PO Resp. 59–60.

We conclude that Petitioner has demonstrated, by a preponderance of the evidence, that claim 85 is unpatentable under 35 U.S.C. § 103(a) over Nechushtan, Hill, Hart, and Fujimori.

V. ORDER

For the reasons given, it is:

ORDERED that claims 60–62, 65–69, 78, 80, and 81 have been shown by a preponderance of the evidence to be unpatentable as obvious over Nechushtan and Hill;

FURTHER ORDERED claim 86 has been shown by a preponderance of the evidence to be unpatentable as obvious over Nechushtan, Hill, and Furuhashi;

FURTHER ORDERED claim 79 has been shown by a preponderance of the evidence to be unpatentable as obvious over Nechushtan, Hill, and Kraus;

FURTHER ORDERED claim 82 has been shown by a preponderance of the evidence to be unpatentable as obvious over Nechushtan, Hill, and Enokimoto;

FURTHER ORDERED claims 83 and 84 have been shown by a preponderance of the evidence to be unpatentable as obvious over Nechushtan, Hill, and Hart;

FURTHER ORDERED claim 85 has been shown by a preponderance of the evidence to be unpatentable as obvious over Nechushtan, Hill, Hart and Fujimori;

FURTHER ORDERED that the Motions to Seal are granted-in-part and denied-in-part as noted herein; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PETITIONER:

Michael Hawkins
Dorothy Whelan
Conrad Gosen
FISH & RICHARDSON P.C.
hawkins@fr.com
IPR39374-0003IP2@fr.com

PATENT OWNER:

Dennis Bremer
CARLSON, CASPERS, VANDENBURGH, LINDQUIST & SCHUMAN, P.A.
DBremer@carlsoncaspers.com