

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THOR INDUSTRIES, INC.,
KEYSTONE RV COMPANY, and JAYCO, INC.,
Petitioner,

v.

GRAND DESIGN RV, LLC,
Patent Owner.

IPR2022-00411
Patent 10,046,690 B1

Before BARRY L. GROSSMAN, SCOTT C. MOORE, and
PAUL J. KORNICZKY, *Administrative Patent Judges*.

KORNICZKY, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Thor Industries, Inc., Keystone RV Company, and Jayco, Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1, 2, 6–9, 11 and 13 of U.S. Patent No. 10,046,690 B1 (Ex. 1001, “the ’690 patent”). Paper 1 (“Pet.”). Grand Design RV, LLC (“Patent Owner”) filed a Preliminary Response opposing institution. Paper 7 (“Prelim. Resp.”).

Under 35 U.S.C. §§ 6(b)(4), 314 and 37 C.F.R. § 42.4(a), we have authority to institute an *inter partes* review if “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). After considering the Petition, Preliminary Response, and other evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood of showing the unpatentability of at least one of the challenged claims. Thus, we deny Petitioner’s request to institute an *inter partes* review of claims 1, 2, 6–9, 11, and 13 of the ’690 patent.

II. BACKGROUND

A. *Real Parties-in-Interest*

As required by 37 C.F.R. § 42.8(b)(1), each party identifies the real party-in-interest. Petitioner identifies Thor Industries, Inc., Keystone RV Company, and Jayco, Inc. as real parties-in-interest. Pet. 1–2. Patent Owner identifies Grand Design RV, LLC and Winnebago Industries, Inc. as real parties-in-interest. Paper 6, 1.

B. Related Proceedings

As required by 37 C.F.R. § 42.8(b)(2), Petitioner and Patent Owner identify the judicial or administrative matters that would affect or be affected by a decision in this proceeding. Petitioner and Patent Owner state the '690 patent is the subject matter of *Grand Design RV, LLC v. Thor Industries, Inc., et al.*, Civil Action No. 3:21-cv-00025, pending in the United States District Court for the Northern District of Indiana (“the Indiana litigation”). Pet. 2; Paper 6, 1.

C. Overview of the '690 Patent (Ex. 1001)

The '690 patent is titled “Toy Hauler Recreational Vehicle.” Ex. 1001, code (54). The '690 patent relates to recreational vehicles and, in particular, to a “toy hauler” recreational vehicle, which is a recreational vehicle that includes a garage for transporting “toys” such as snowmobiles, dirt bikes, or other items. *Id.* at 1:2–3, 3:55–57. Figure 1, reproduced below, illustrates this recreational vehicle.

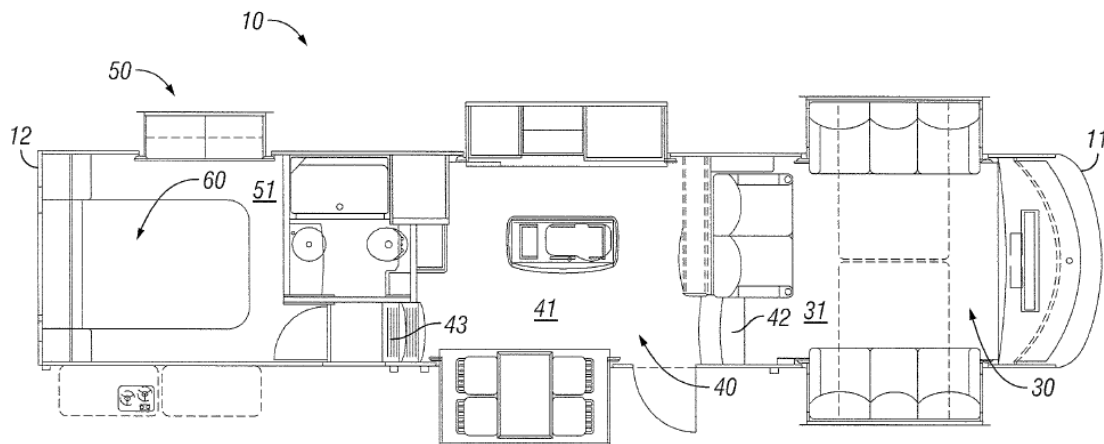
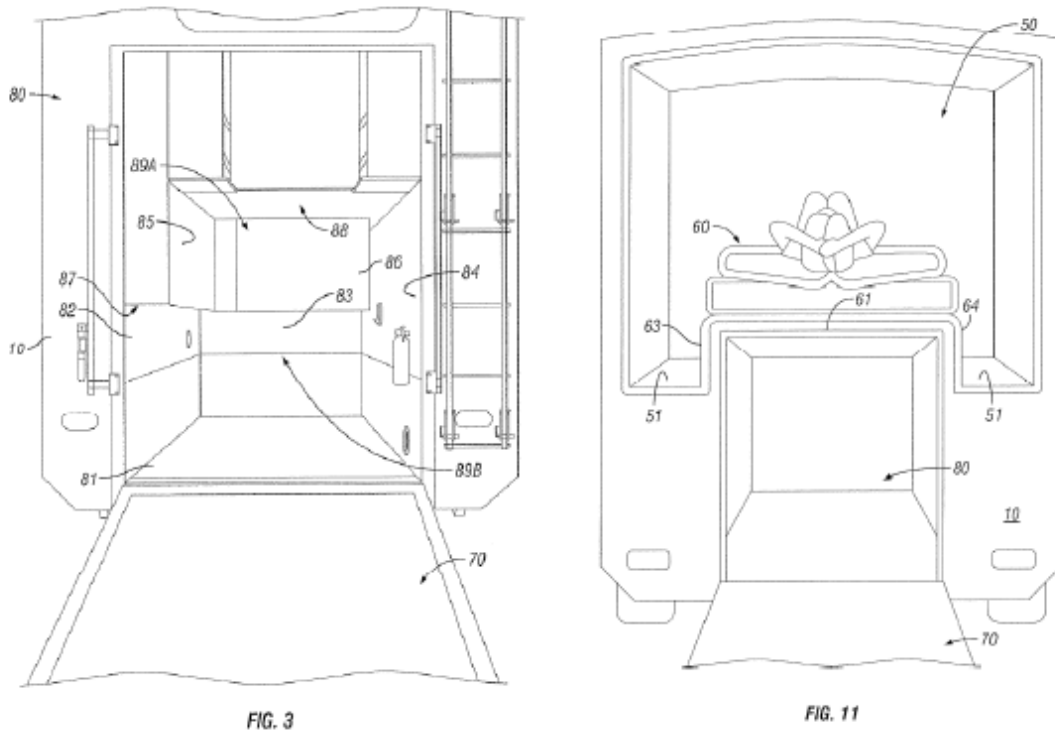


FIG. 1

Figure 1 is a plan view of the interior of a recreational vehicle 10. *Id.* at 1:65–67. Recreational vehicle 10 has front end 11 and a rear or garage/bedroom end 12. *Id.* at 2:33–35.

Garage 80, which is shown in Figures 3 and 11 reproduced below, is used to store “toys” such as snowmobiles, dirt bikes. *Ex.* 1001, 3:55–57.



Figures 3 and 11 are rear elevational and perspective views, respectively, of the recreational vehicle with the garage ramp door in the open position. *Id.* at 2:4–6, 2:24–25, 2:49–51.

Referring to Figure 1 above, the interior of recreational vehicle 10 includes first living area 30 having floor 31, second living area 40 having floor 41, and third living area 50 having floor 51. *Ex.* 1001, 2:35–38. Third living area 50 is located above the garage and can be used at the same time as the garage. *Id.* at 3:47–52.

Chassis 90 designed to accommodate garage 80 and third living area 50 is shown in Patent Owner's annotated Figures 7 and 9, reproduced below. Prelim. Resp. 4; *see* Ex. 1001, 3:21–58.

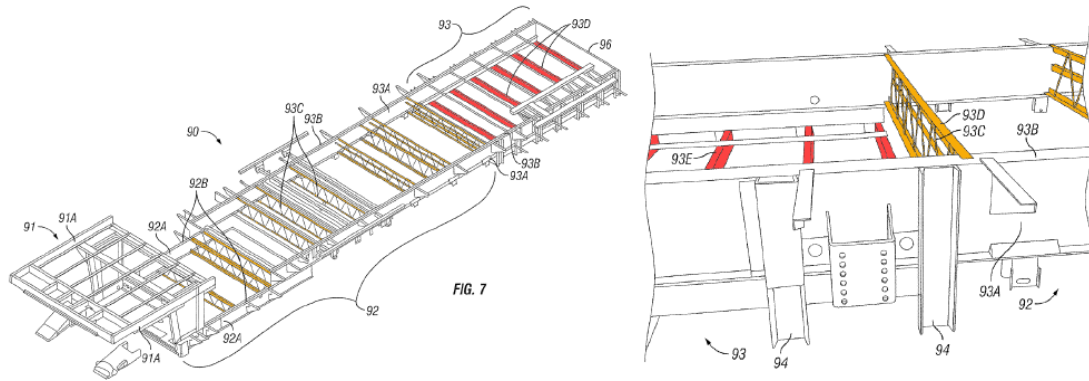


Fig. 9

Figures 7 and 9 are perspective views of the chassis and have been annotated by Patent Owner to illustrate (1) trusses 93C (shown in orange) in the second section 92 and (2) beams 93D (shown in red) in the third section 93. Prelim. Resp. 4–5 (citing Ex. 1001 at 3:21–46). According to the '690 patent, third section 93 includes beams 93D (red) and does not include trusses 93C (orange). Ex. 1001, 3:26–28.

Referring to Figure 9, the '690 patent explains that configuring beams 93D (red) to be lower than trusses 93C (orange) permits garage floor 81 to be lower than floor 41 of second area 92. Ex. 1001, Fig. 9, 3:47–52. This configuration provides sufficient clearance in third living area 50 for users to stand upright or for platform 61 of bed 60 to be raised without positioning it uncomfortably close to the ceiling of third living area 50 while at the same time providing sufficient clearance in garage 80 for storage of the toys. *Id.* at 3:51–55.

D. Illustrative Claim

The '508 patent contains 14 claims. As mentioned above, Petitioner challenges claims 1, 2, 6–9, 11, and 13. Claim 1, the only independent claim, is reproduced below.¹ Ex. 1001, 4:2–28.

1. **[A]** A recreational vehicle comprising:

[B] a first living area **[C]** having a floor;

[D] a second living area **[E]** having a floor located at a level below the floor of the first living area;

[F] a third living area **[G]** having a floor located at a level above the level of the floor of the second living area;

[H] a garage **[I]** having a floor and located below the third living area;

[K] a chassis **[L]** having a first section located beneath the first living area, **[M]** a second section located beneath the second living area, **[N]** a third section located beneath the third living area and the garage, and **[O]** a pair of longitudinally extending side rails extending the length of the third section and extending a portion of the length of the second section, **[P]** the side rails having an upper surface;

[Q] a truss located in the second section, **[R]** the truss having a first end connected to one of the side rails and **[S]** a second end connected to the other side rail, **[T]** the truss having an upper surface; and

[U] a beam located in the third section, **[V]** the beam having a first end connected to one of the side rails and **[W]** a second end connected to the other side rail, **[X]** the beam having an upper surface located at a level lower than the upper surface of the truss,

[Y] wherein the third section includes an unobstructed area above the beam and between the side rails.

¹ For ease of reference, we use Petitioner's claim numbering scheme.

E. Evidence and Asserted Grounds

Petitioner relies upon the following evidence:

- (1) Raptor Toy Hauler brochure, published March 2013 (Ex. 1002, “Raptor”);
- (2) New Vision Sportster brochure, published 2008 (Ex. 1003, “New Vision”);
- (3) Torque Toy Hauler brochure, published 2014 (Ex. 1015, “Torque”);
- (4) U.S. Patent 8,419,037 B2, issued April 16, 2013 B2 (Ex. 1006, “Graber ’037”);
- (5) U.S. Patent 9,409,603 B2, issued August 9, 2016 (Ex. 1040, “Garceau ’603”); and
- (6) U.S. Patent 4,869,545, issued September 26, 1989 (Ex. 1005, “Notermann ’545”).

Petitioner submits declarations from Messrs. Bruce Hopkins (Ex. 1012, “Hopkins Decl.”), James Keough (Ex. 1013, “Keough Decl.”), and Gary Denton (Ex. 1014, “Denton Decl.”) in support of its contentions.²

² The substantive discussion in Petitioner’s three declarations are essentially identical to each other and to the Petition. For example, pages 40–74 of the Petition are essentially identical to a single paragraph in each of the declarations — Hopkins Decl. ¶ 88 on pages 54–92, Keough Decl. ¶ 88 on pages 63–97, and Denton Decl. ¶ 65 on pages 46–81. Thus, we question whether the declarations provide independent analysis and we give the declarations little, if any, weight. *See Intex Recreation Corp. et al. v. Team Worldwide Corp.*, IPR2018-00875, Paper 129 at 40, n. 15 (PTAB Sept. 11, 2019) (“We further note that Dr. Stevick’s testimony is nearly identical to the language appearing in the Patent Owner Response, down to the case citation. This identity in language causes us to attribute less weight to a declarant’s testimony.” (citations omitted)).

Patent Owner submits a declaration from Dr. Charles F. Reinholtz in support of its contentions. Ex. 2001 (“Reinholtz Decl.”).

Petitioner challenges the patentability of the ’690 patent claims on the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. § ³	Reference(s)/Basis
1	1, 2, 6–9, 11, 13	102	Raptor
2	1, 2, 6–9, 11, 13	103	Raptor, New Vision, Torque
3	1, 2, 6–9, 11, 13	103	Raptor and either Graber ’037 or Garceau ’603 ⁴
4	1, 2, 6–9, 11	102	Notermann ’545
5	1, 2, 6–9, 11	103	Notermann ’545, Graber ’037
6	13	103	Notermann ’545, Graber ’037, Raptor

Pet. 5–6.

³ The ’690 patent was filed after the effective date (i.e., March 16, 2013) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), and we apply the AIA versions of 35 U.S.C. §§ 102 and 103. Our decision is not impacted, however, by which version of the statute applies.

⁴ At pages 5–6 of the Petition, Petitioner states this Ground is based on the combination of Raptor (Ex. 1002) and New Vision (Ex. 1003) and either Graber ’037 (Ex. 1006) or Garceau ’603 (Ex. 1040). However, at pages 62–66, Petitioner states this Ground is based on Raptor and either Graber ’037 or Garceau ’603 and presents evidence based on these three references, and does not present evidence as to New Vision. Thus, we understand the statement on pages 5–6 is a typographical error.

III. ANALYSIS

A. *Legal Standards*

Petitioner bears the burden of persuasion to prove unpatentability, by a preponderance of the evidence, of the claims challenged in the Petition. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we determine that the information presented in the Petition and Patent Owner’s Preliminary Response shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the Petition. 35 U.S.C. § 314(a).

As mentioned above, Petitioner’s challenge is based on anticipation and obviousness. Pet. 5–6. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc., v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987); *see also Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008) (to anticipate a patent claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation”). Moreover, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). Whether a reference anticipates is assessed from the perspective of

one of ordinary skill in the art. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368–69 (Fed. Cir. 2003) (“‘[T]he dispositive question regarding anticipation [i]s whether *one skilled in the art* would reasonably understand or infer from the [prior art reference’s] teaching’ that every claim element was disclosed in that single reference.” (second and third alterations in original) (quoting *In re Baxter Travenol Labs.*, 952 F.2d 388, 390 (Fed. Cir. 1991))).

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in the record, objective evidence of nonobviousness.⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of

⁵ At this stage of the proceeding, the parties have not directed us to any objective evidence of non-obviousness. Pet. 74–75; Prelim. Resp. 62–64.

the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.*

Petitioner, with supporting declaration testimony, asserts that a person of ordinary skill in the art

cannot, as of 2015 (just prior to the effective filing date of the ‘690 Patent) be defined in terms of a certain level of formal college degrees or specific years of work experience. Instead, that is most accurately defined in terms of the skills and knowledge which a typical worker would have actually had. Specifically, a POSITA would have:

1. worked in RV sales and marketing, worked in RV production, and/or actually used RVs for camping or off-road purposes long enough to be aware of at least each of the enumerated structural arrangements noted above, as well as the above-referenced design objectives and constraints, as well as how primary existing RV features and functions operate and are used;
2. familiarity with common terminology in the RV field;
3. good mechanical aptitude, in terms of general construction and assembly techniques, and good spatial perception, so as to understand permissible feature orientations when combining structural arrangements;
4. significant experience in RV consumer preferences, supplier availability, and team building (including the ability to seek advice and comment from others with specialized knowledge), since rarely would a single person ever be the sole designer of a complete RV floor plan;
5. at least general knowledge that utility requirements exist for an RV, including HVAC, electrical systems, and

plumbing, since those utilities must be taken into account in the floor plan layout; and

6. sufficient awareness of the various governmental regulations applicable to RVs, and of the ANSI standards the Recreation Vehicle Industry Association applies to its members.

Pet. 19–20 (citing Hopkins Decl. ¶ 62; Keough Decl. ¶ 62; Denton Decl. ¶ 55).

Patent Owner submits that a person of ordinary skill in the art would be “an individual with either a degree in mechanical engineering or a closely related field and at least two years of experience in structural design of chassis or similar dynamically loaded structures.” Prelim. Resp. 15 (citing Reinholtz Decl. ¶ 31). Patent Owner explains that such “education and experience would provide a [person of ordinary skill in the art] with an understanding of mechanical stresses and strains experienced by a chassis during operation of the vehicle” and such a person “would be familiar with the different types of RVs and RV floorplans.” *Id.*

We agree with Patent Owner that Petitioner’s definition is unclear. Prelim. Resp. 14. Petitioner’s definition includes unclear and subjective requirements such as that the person of ordinary skill in the art have (a) worked “**long enough** to be aware of” certain items, including unexplained “**primary** existing RV features,” (b) familiarity with unexplained “**common** terminology,” (c) “**good** mechanical aptitude,” (d) “**good** spatial perception,” (e) “**significant** experience” with a wide variety of roles, and (f) “**sufficient** awareness of the various governmental regulations applicable to RVs.” *Id.* (citing Pet. 18–20).

Patent Owner’s proposed definition of the person of ordinary skill in the art appears to be consistent with the level of skill in the art reflected in

the prior art of record and the disclosure of the '690 patent. *See GPAC Inc.*, 57 F.3d at 1579. For purposes of this Decision, we adopt the definition of the level of ordinary skill in the art proposed by Patent Owner.

C. Claim Construction

In an *inter partes* review, the claims are construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2021). This claim construction standard includes construing the claim in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art. *Id.*; *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005). In construing claims in accordance with their ordinary and customary meaning, we consider intrinsic evidence such as the specification and the prosecution history of the patent. *Phillips*, 415 F.3d at 1315–17. Extrinsic evidence, including expert and inventor testimony, dictionaries, and treatises, may also be used but is less significant than the intrinsic record. *Id.* at 1315. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* Any special definitions for claim terms must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Independent claim 1 recites (1) “a truss located in the second section” which is positioned below that second living area and (2) “a beam located in the third section” which is positioned below the third living area. Ex. 1001, 4:18–22. The parties disagree about the meaning of the recited “truss” and “beam.”

Petitioner argues that “each of the terms of the challenged claims in this Petition should be given their ordinary and customary meaning to a [person of ordinary skill in the art], as demonstrated in the prior art and as articulated herein” but significantly does not propose any construction of these two terms. Pet. 36. Petitioner agrees there is a structural difference of some sort between the elements referred to a “truss” and a “beam.” Pet. 35. Nevertheless, Petitioner argues a person of ordinary skill in the art “would use the terms ‘beam,’ ‘cross member,’ ‘truss,’ and ‘tube’ interchangeably, without regard to precision of terminology” because their “focus is merely that whatever framing is used will be selected to meet the engineering requirements for the RV strength, weight, and cost needs, as a matter of mere design choice, in a given application.” *Id.* at 35.

In support of its position, Petitioner points to testimony by its three declarants and discussions in three patents. *Id.* at 34–35. The persuasiveness of this testimony is undermined by the fact that the testimony in each of the three declarations is identical to each other and to language in the Petition. *Compare* testimony in Hopkins Decl. ¶ 65–66, Keough Decl. ¶ 65–66, Denton Decl. ¶ 58–59, *with* Pet. 34–35.

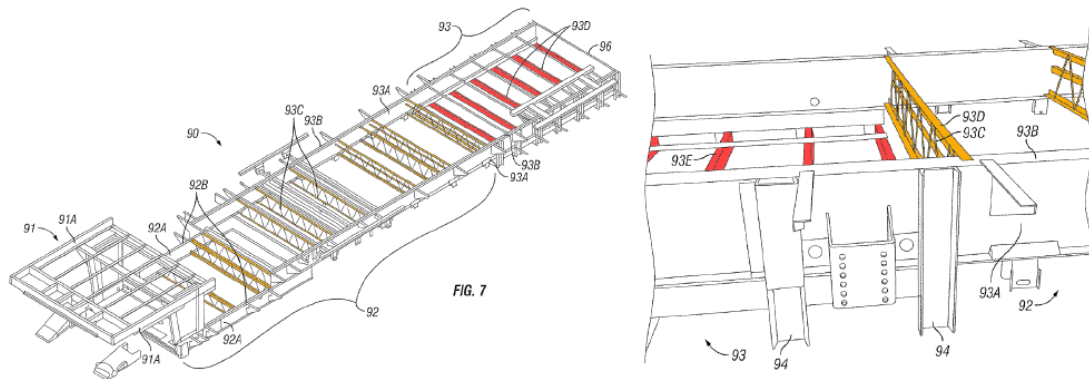
The three patents (i.e., U.S. Patent Nos. 3,891,231 (Ex. 1036); 8,505,974 B2 (Ex. 1021); 8,419,037 B2 (Ex. 1006)) show that terms such as “truss” and “beams” have been used interchangeably for different structural

support members. *See* Ex. 1036, *compare* Fig 1 (I-beam is element 13V), *with* 2:56–59 (calling I-beam 13V in Figure 1 a “truss-like configuration”); Ex. 1021, *compare* Fig. 6 (a truss is labelled element 76), *with* 6:56–57 (calling element 76 a “cross beam”); Ex. 1006, *compare* Fig. 4 (showing trusses and beams 92), *with* 4:64–5:4 (calling elements 92 a “support beam”). Despite that fact that *different* structural support members have been called a “truss” or “beam” in these three patents, Appellant does not describe what are their proper “ordinary and customary meanings.” Appellant also does not cite to any intrinsic evidence in the Specification of the ’690 patent or its prosecution history to support its argument that truss and beam are interchangeable terms.

Patent Owner disagrees with Petitioner’s position, arguing that the terms truss and beam are not interchangeable. Prelim. Resp. 11. To support its position, Patent Owner refers to the claim language and usage in the Specification, and extrinsic evidence such as Dr. Reinholtz’s testimony. According to Patent Owner, the claims of the ’690 patent “use different terms, ‘truss’ and ‘beam,’ to claim certain structural elements” and “different claim terms are presumed to have different meanings.” *Id.* at 10 (citing Ex. 1001, claim 1, and *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008)).

Patent Owner also argues that the Specification confirms that “truss” and “beam” refer to “separate structural elements of the chassis” and “are not interchangeable.” Prelim. Resp. 11. Patent Owner refers to the Specification which states that “[t]russes 93C provide structural support and rigidity to second section 92 of chassis 90. ***Third section 93 of chassis 90 does not include trusses. Rather, third section 93 includes a plurality of***

beams 93D that are connected at opposite ends to side rails 93A.” *Id.* at 11 (citing Ex. 1001, 3:22–27, Figures 7–10). Patent Owner also refers to its annotated Figures 7 and 9 (which are reproduced again below for convenience).



Patent Owner explains that these annotated Figures 7 and 9 show structural differences between the “trusses” (shown in orange) and the “beams” (shown in red) of the ’609 patent. *Id.* at 11–12.

Patent Owner also explains that the Specification “describes that a ‘truss’ and ‘beam’ serve different purposes in the chassis design. For example, the [S]pecification states that ‘Trusses 93C provide structural support **and rigidity**.’” Prelim. Resp. 12 (citing Ex. 1001, 3:24–26 (emphasis added)). The Specification states that third section 93 includes a plurality of beams 93D and does not include trusses. Ex. 1001, 3:28. According to Patent Owner, the Specification states that, in third section 93, “beams” provide “support” while “reinforcing members” provide rigidity. Prelim. Resp. 12 (citing Ex. 1001, 3:47 (beams 93D support floor) and 3:34–38 (“In order **to provide sufficient support and rigidity** to third section 93 of chassis 90 **without the use of trusses 93C, a plurality of vertically extending reinforcing members 94 are connected** (as by welding) to the

outer surface of side rails 93A in third section 93 of chassis 90.”) (emphases added)).

Finally, Patent Owner argues that the extrinsic evidence such as Dr. Reinholtz’s testimony and dictionary definitions are consistent with the intrinsic evidence. Prelim. Resp. 12–13. Dr. Reinholtz testifies that a person of ordinary skill in the art would understand (1) “a ‘truss’ and ‘beam’ to be two different structures, to serve different purposes, and to provide different benefits to the overall design of a chassis,” (2) “a ‘truss’ is typically a more complex structure than a beam and includes various crossing and connecting members in addition to beams,” and (3) “for a given weight, a ‘truss’ is likely to provide more rigidity but have a larger profile, whereas a ‘beam’ is likely to provide more flexibility but have a smaller profile.” *Id.* at 13 (Reinholtz Decl. ¶¶ 54, 56–60, 107, 123).

According to Patent Owner, “dictionaries and textbooks confirm that ‘truss’ and ‘beam’ are different structures that are not interchangeable.” Prelim. Resp. 13 (citing Reinholtz Decl. ¶¶ 54–59). For example, Dr. Reinholtz explains that, according to the McGraw-Hill Dictionary of Scientific and Technical Terms, a beam is a “body, with one dimension large compared with the other dimensions, whose function is to carry lateral loads (perpendicular to the large and bending dimension) and bending movements” and a truss is a “frame, generally of steel, timber, concrete, or a light alloy, built from members in tension and compression.” Reinholtz Decl. ¶ 54 (citing Ex. 2003). He further explains that, according to the textbook “Engineering Mechanics Statics,” beams are described as “structural members which are designed to support loadings applied

perpendicular to their axes” and trusses are a “structure composed of slender members joined together at their end points.” *Id.* ¶¶ 55–56.

While we generally agree with Patent Owner that a person of ordinary skill in the art would understand that a truss and beam, as used in the ’690 patent, are two different structures, serve different purposes, and provide different benefits to the overall design of a chassis, Patent Owner identifies the function, but not the structure, of a truss and beam. After considering the extrinsic and intrinsic evidence, we construe:

(1) a beam to be a “body, with one dimension large compared with the other dimensions, configured to carry lateral loads (perpendicular to the large and bending dimension) and bending movements;” and

(2) a truss to be a “frame built from members in tension and compression.” These definitions are consistent with the support structures shown in Figures 7 and 9 and discussed in column 3, lines 21–48 of the Specification. Referring to Figures 7 and 9, for example, truss 93C is a frame built from members in tension and compression and beam 93D has one large dimension and supports loads applied to its perpendicular axis. In addition, third section 93 of chassis 90 has beams, not trusses. Ex. 1001, 3:26–28.

D. Ground 1: Asserted Anticipation of Claims 1, 2, 6–9, 11, and 13 by Raptor

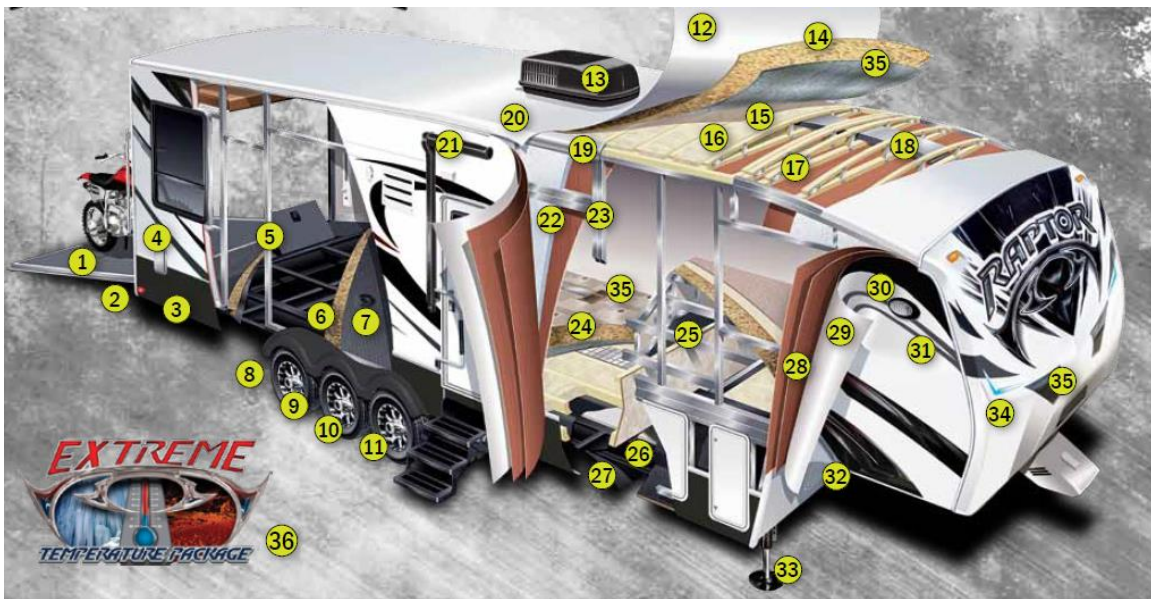
Petitioner asserts that claims 1, 2, 6–9, 11, and 13 are unpatentable under 35 U.S.C. § 102 as being anticipated by Raptor. Pet. 40–53. Petitioner provides a limitation-by-limitation comparison of Raptor to the challenged claims, citing the declarations of Messrs. Hopkins, Keough, and Denton. *Id.* Patent Owner opposes. Prelim. Resp. 21–36. Based on the

evidence of record, we conclude Petitioner has not shown a reasonable likelihood of prevailing on its anticipation challenge.

Below, we present a brief overview of Raptor and then address the parties' contentions, focusing on the parties' contentions as to claim limitations 1Q, 1U, and 1X which are dispositive.

1. *Overview of Raptor (Ex. 1002)*

Raptor is a product brochure for the Raptor Toy Hauler made by Keystone RV Company. Ex. 1002, 1. A figure from page 12 is reproduced below.



This figure illustrates a cut-away drawing of the fifth-wheel toy hauler type recreational vehicle. It shows a ramp door into a rear garage (around reference 1) and a chassis frame (around references 5 and 6).

2. *Claim Limitations 1Q and IU*

Claim limitations 1Q and 1U recite: “[Q] a truss located in the second section” which is positioned below that second living area and “[U] a beam

located in the third section” which is positioned below the third living area.
Ex. 1001, 4:18–22.

Petitioner discusses how Raptor teaches claim limitations 1Q and 1U.
Pet. 46–48. Petitioner’s annotated Figure 7 is reproduced below.

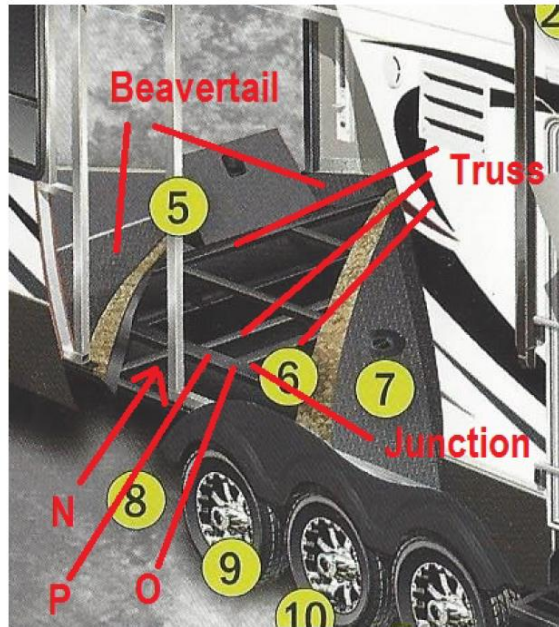


Figure 7 is an enlarged portion of the cut-away view of Raptor’s toy hauler shown on page 12 of Raptor. Ex. 1002, 12. Petitioner has annotated and labelled this figure to illustrate claim limitation N — “a third section located beneath the third living area and the garage.” Pet. 46. Petition also labelled the purported truss recited in claim limitation Q. *Id.* at 47.

According to Petitioner, a person of ordinary skill in the art would realize that

a truss (Q) would necessarily have to be present in the second section M of the chassis in order to join the two I-Beams together at the forward end of the chassis. This is expressly suggested to a [person of ordinary skill in the art] by the presence of such trusses in the illustration of the third section of the chassis, shown herein as Fig. 7. Whether that truss was a true “truss” in a dictionary sense would not matter to a [person

of ordinary skill in the art], so long as it served the RV truss function of joining the two I-Beams.

Pet. 47.

Patent Owner argues that Raptor does not disclose the claimed “truss” located in the second section or any of the related “truss” limitations and there is no “truss” shown in any of the cut-away images of the chassis. Prelim. Resp. 25 (citing Reinholtz Decl. ¶ 45). According to Patent Owner, Petitioner “incorrectly calls a horizontal member (i.e., a beam) of the chassis located in a third section of the chassis a ‘truss’ and then improperly argues that such a structure must inherently be located in the second section.” *Id.* at 26 (citing Reinholtz Decl. ¶ 47). We agree.

First, annotated Figure 7 above shows a portion of Raptor’s chassis in the area under the garage and labels a horizontal structural member as a “truss.” We agree with Patent Owner that this horizontal structural member is a beam, not a truss. Based on the present record, this structural member body has one large dimension compared with the other dimensions and carries lateral loads and it does not have a frame built from members in tension and compression. Petitioner improperly refers to this horizontal structural member as a “truss,” and then improperly equates a beam with a truss. Prelim. Resp. 27. The testimony of Petitioner’s three declarants is not persuasive because their use of the terms “beam” and “truss” differs from the plain and ordinary meaning used in the ’690 patent, as discussed in Section III.C. Recognizing that Raptor’s horizontal structural member is more a beam than a truss, Petitioner incorrectly asserts that whether “that truss was a true ‘truss’ in a dictionary sense would not matter to a [person of ordinary skill in the art], so long as it served the RV truss function of joining the two I-Beams.” Pet. 47.

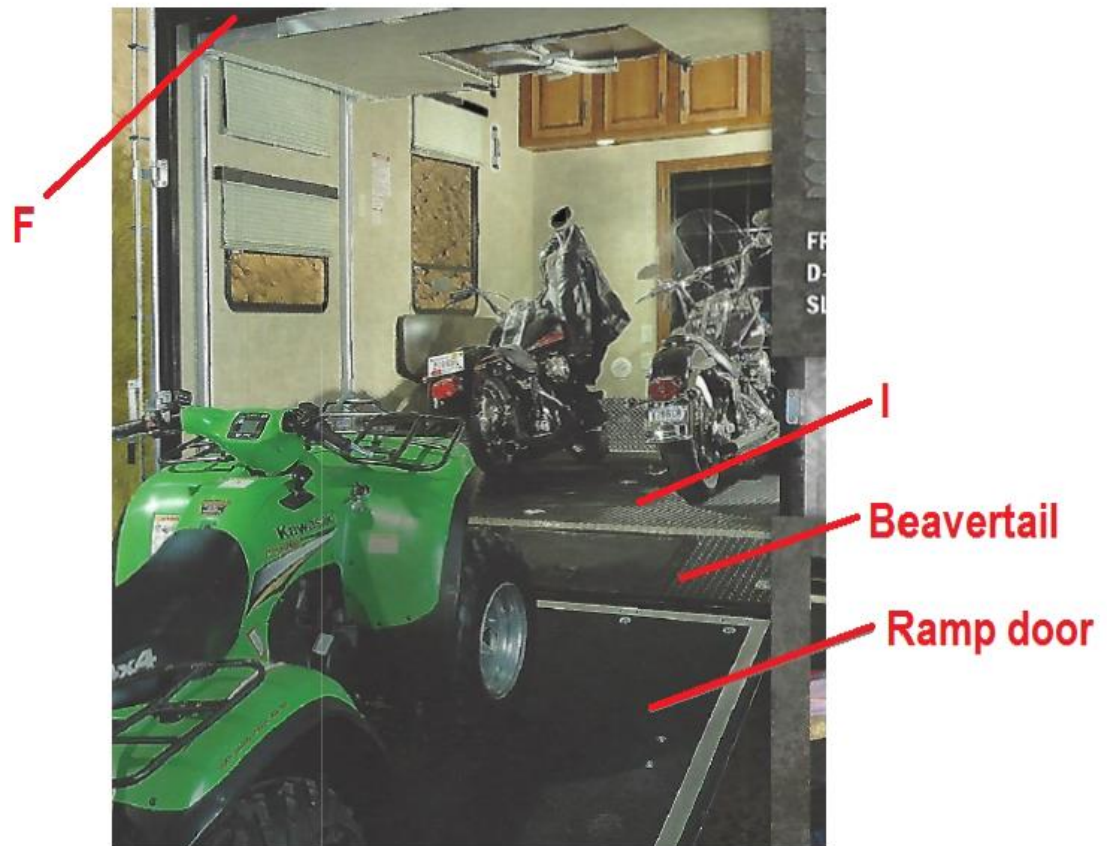
Second, Petitioner’s attempt to show a “truss” in the third section of the chassis does not help Petitioners because the claims specifically require a *truss* in the *second* section of the chassis and a *beam* in the *third* section of the chassis. To remedy this problem, Petitioner argues that a person of ordinary skill in the art “would realize immediately from looking at page 12 of Ex. 1002 that a truss (Q) would necessarily have to be present in the [second] section M of the chassis in order to join the two I-Beams together at the forward end of the chassis.” Pet. 47. Petitioner does not cite any persuasive evidence to support this asserted conclusion. To the extent Petitioner relies on testimonial evidence from its declarants, we have determined above that the redundant, nearly identical testimony of Messrs. Hopkins, Keough, and Denton have little, if any, weight. Moreover, we also determine that the testimony of Messrs. Hopkins, Keough, and Denton on this specific issue of what a person of ordinary skill would realize fails to disclose the underlying facts or data on which their opinions are based. For this additional reason, the testimony of Messrs. Hopkins, Keough, and Denton is entitled to little or no weight. 37 C.F.R. § 42.65(a).

Accepting, for the sake of argument, Petitioner’s contention that the horizontal structural members in third section (i.e., rear garage section of Raptor’s toy hauler) would extend into the second section (e.g., middle-living section of Raptor toy hauler), then Raptor merely shows that beams, not trusses, are present in the second section. We also agree with Patent Owner that none of Raptor’s figures or description show a truss in the chassis (i.e., a frame built from members in tension and compression). See Prelim. Resp. 28 (citing Reinholtz Decl. ¶ 61 (stating Raptor does not show any trusses in the chassis)).

3. *Claim Limitation 1X*

Claim limitation 1X recites: “[X] the beam having an upper surface located at a level lower than the upper surface of the truss.” Ex. 1001, 25–26.

Petitioner discusses how Raptor teaches claim limitation 1X. Pet. 48–49. Petitioner’s annotated Figure 8 is reproduced below.



Annotated Figure 8 shows a photograph of the rear of the Raptor toy hauler and is annotated by Petitioner to certain alleged claim limitations. *Id.* According to Petitioner, annotated Figures 7 and 8 show a “beaver tail portion of the garage area.” *Id.* at 48. According to Petitioner, a person of ordinary skill in the art would understand that the beaver tail “inclines downward from the rest of the garage floor (I) toward the ramp door, so as

to lower the angle needed for an accessory vehicle to enter or leave the garage” and “there would necessarily have to be some beam (U) or cross member connected between the two side rail I-Beams in order to support the beaver tail.” *Id.* at 48–49. Petitioner also asserts that because “beaver tail beam U is at the lower end of the beaver tail, its upper surface (X) would necessarily have to be lower than the upper surface of any truss supporting the higher garage floor I.” *Id.* at 49. Thus, Petitioner asserts the upper surface X of the beam in the second section must be at a lower level than upper surface T of the truss in the third section, as recited in claim limitation 1X. *Id.* at 50.

Patent Owner contends that Petitioner’s assertion that a person of ordinary skill in the art “would know that at least at the lower portion of the beaver tail, there would necessarily have to be some beam (U) or cross member connected between the two side rail I-Beams in order to support the beaver tail” is without support. Prelim. Resp. 30 (citing Pet. 49).

We agree with Patent Owner. A person of ordinary skill in the art could use different support structures for the beaver tail. For example, Petitioners’ declarant James Keough admits, “a sufficiently thick metal plate could be attached free-standing between the longitudinal beams to form the beaver tail ramp.” Keough Decl. ¶ 51; *see also* Reinholtz Decl. ¶ 69.

We do not agree with Petitioner that because “beaver tail beam U is at the lower end of the beaver tail, its upper surface (X) would necessarily have to be lower than the upper surface of any truss supporting the higher garage floor I.” Pet. 49. As an initial matter, there is no support that “beaver tail” necessarily includes the claimed “beam” or that such a beam, even if present, would have to be lower than the upper surface of any claimed truss.

See Reinholtz Decl. ¶ 71. Petitioner’s annotated Figure 7 shows that the upper surface of the beams (i.e., what Petitioner’s incorrectly labels truss) are at the same level. Furthermore, in response to Petitioner’s statement that the “upper surface of a truss Q in second section is not going to be lower than the upper surface of a truss in third section N” (Pet. 50), the claimed truss is in the *second* section of the chassis, not in the *third* section or area supporting the garage floor.

Petitioner’s failure to show that Raptor discloses a truss in the second section, as required by claim 1, is fatal to its challenge of claim 1, as well as claims 2, 6–9, 11, and 13 which depend from claim 1. Thus, we find that Petitioner does not demonstrate a reasonable likelihood of showing the unpatentability of claims 1, 2, 6–9, 11, or 13.

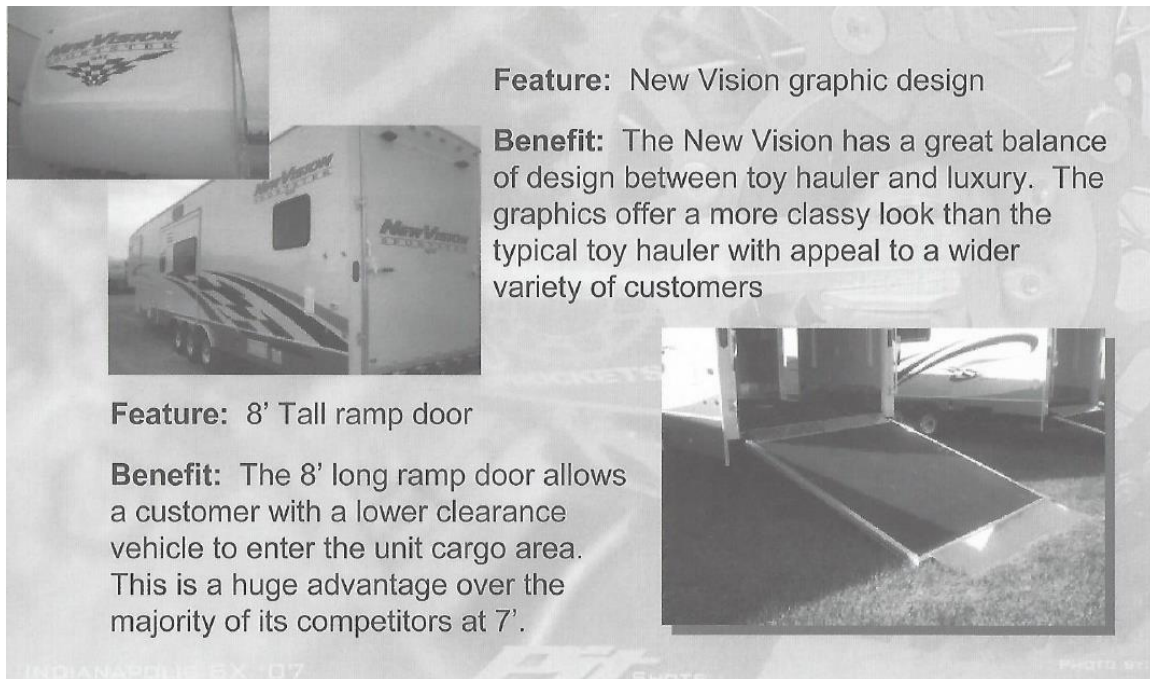
E. Ground 2: Asserted Obviousness of Claims 1, 2, 6–9, 11, and 13 Over Raptor, New Vision, and Torque

Petitioner asserts that claims 1, 2, 6–9, 11, and 13 are unpatentable under 35 U.S.C. § 103 as being obvious over Raptor (Ex. 1002), New Vision (Ex. 1003), and Torque (Ex. 1015). Pet. 53–62. Petitioner provides a limitation-by-limitation comparison of Raptor, New Vision, and Torque to the challenged claims, citing the declarations of Messrs. Hopkins, Keough, and Denton. *Id.* Patent Owner opposes. Prelim. Resp. 36–43. Based on the evidence of record, we conclude Petitioner has not shown a reasonable likelihood of prevailing on its obviousness challenge.

Below, we present a brief overview of New Vision and Torque and then we address the parties’ contentions, focusing on the parties’ contentions as to claim limitations 1Q and 1U which are dispositive.

1. *Overview of New Vision (Ex. 1003)*

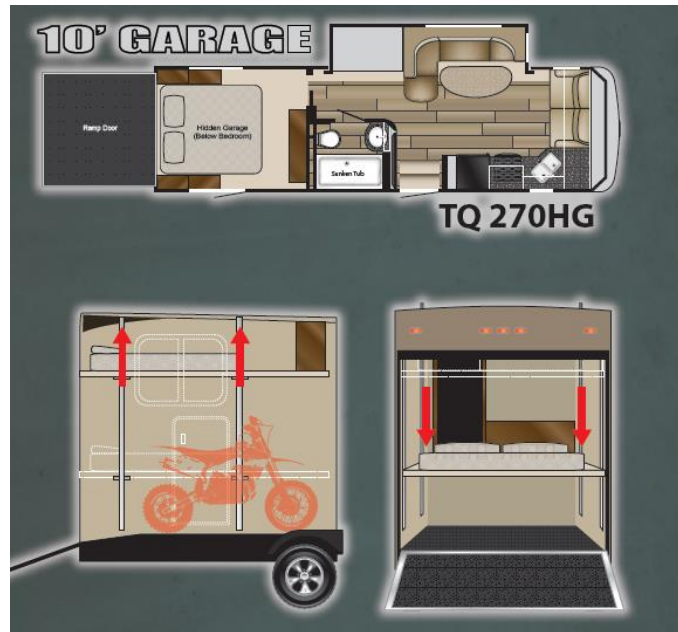
New Vision is a product brochure for the New Vision Sportster made by K-Z. Ex. 1003, 1. A figure from page 2 is reproduced below.



This figure illustrates a fifth-wheel toy hauler type recreational vehicle and shows a ramp door into a rear garage.

2. *Overview of Torque (Ex. 1015)*

Torque is a product brochure for the Torque Toy Handler made by Heartland. Ex. 1015, 1. A figure from page 2 is reproduced below.



This figure illustrates a fifth-wheel toy hauler type recreational vehicle. *Id.* at 2. The top illustration shows a layout of the RV. *Id.* The bottom left illustration shows schematic drawing of the garage holding a motorcycle and a bed being elevated so there is room for the motorcycle in the garage. *Id.* The bottom right illustration shows an end view of the garage without the motorcycle and a bed being lowered. *Id.*

3. *Claim Limitations 1Q and 1U*

Petitioner argues that, if Raptor does not inherently teach the limitations in the challenged claims, then New Vision and Torque “expressly teach those features, and it would have been obvious for a [person of ordinary skill in the art], to combine the teachings of those references.” Pet. 54.

As to Torque, Petitioner does not assert that Torque remedies Raptor’s deficiencies related to claim limitations 1Q and 1U.

As to New Vision, Petitioner provides annotated Figure 11, which is reproduced below.

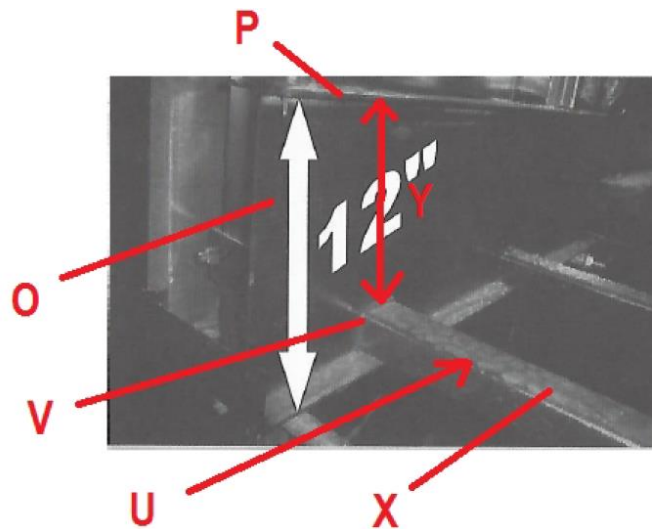


Fig. 11

According to Petitioner, Figure 11 illustrates the rear of toy hauler and the support structure for a beaver tail portion of the toy hauler. Pet. 54–55. Patent Owner has annotated Figure 11 to illustrate certain limitations in claim 1. *Id.* at 55.

Petitioner states that New Vision does not expressly discuss the support structure for the beaver tail portion of the toy hauler garage floor in its text but argues that Figure 11 shows the beaver tail support structure and the end of the chassis side rail I-Beam at the rear of the toy hauler, adjacent to where the ramp door would be mounted, with the floor plate of the beaver tail removed. Pet. 55. Petitioner states a person of ordinary skill in the art would understand that beam U is located in third section N of chassis K under the rear portion of garage H and beam U has an upper surface X. *Id.* Because upper surface X is lower than the upper surface P of the side rail, Petitioner asserts a person of ordinary skill in the art would understand that (1) because “beam U is lower, to allow the beaver tail portion of the garage

floor to have a downward incline, the normal trusses across the side rails would have upper surfaces higher than upper surface X,” and (2) a truss in the second portion of the chassis under the second living area would also have an upper surface T which is higher than upper surface X. *Id.* at 56–57.

Patent Owner argues that neither New Vision nor Torque remedies the deficiencies in Raptor, including, for example, the claimed “trusses.” We agree.

We find that Petitioner does not provide persuasive evidence to support its conclusory arguments that (1) because “beam U is lower, to allow the beaver tail portion of the garage floor to have a downward incline, the normal trusses across the side rails would have upper surfaces higher than upper surface X,” and (2) a truss in the second portion of the chassis under the second living area would also have an upper surface T which is higher than upper surface X.” As we stated above, to the extent Petitioner relies on testimonial evidence from its three declarants, we have determined above that the redundant, nearly identical testimony of these declarants have little, if any, weight. Moreover, we also determine that the testimony of Messrs. Hopkins, Keough, and Denton on this specific issue of what a person of ordinary skill would realize fails to disclose the underlying facts or data on which their opinions are based. For this additional reason, the testimony of Messrs. Hopkins, Keough, and Denton is entitled to little or no weight. 37 C.F.R. § 42.65(a).

We find that New Vision, at best, discloses beams, as shown in Petitioner’s annotated Figure 11 above. It does not teach or suggest any trusses having a frame built from members in tension and compression or trusses located in the second section, as recited in claim limitations 1Q and

1U. Torque does not disclose any chassis support structures including beams or trusses.

Petitioner's failure to show that Raptor, New Vision, or Torque disclose, teach, or suggest a truss in the second section, as required by claim 1, is fatal to its challenge of claim 1, as well as claims 2, 6–9, 11, and 13 which depend from claim 1. Thus, we find that Petitioner does not demonstrate a reasonable likelihood of showing the unpatentability of claims 1, 2, 6–9, 11, or 13.

F. Ground 3: Asserted Obviousness of Claims 1, 2, 6–9, 11, and 13 Over Raptor and Either Graber '037 or Garceau '603

Petitioner asserts that claims 1, 2, 6–9, 11, and 13 are unpatentable under 35 U.S.C. § 103 as being obvious over Raptor (Ex. 1002) and either Graber '037 (Ex. 1006) or Garceau '603 (Ex. 1040). Pet. 62–66. Petitioner provides a limitation-by-limitation comparison of Raptor to the challenged claims, citing the declarations of Messrs. Hopkins, Keough, and Denton. *Id.* Patent Owner opposes. Prelim. Resp. 43–50. Based on the evidence of record, we conclude Petitioner has not shown a reasonable likelihood of prevailing on its obviousness challenge.

Below, we present a brief overview of Graber '037 and Garceau '603 and then address the parties' contentions, focusing on the parties' contentions as to claim limitation 1X which is dispositive.

1. Overview of Graber '037 (Ex. 1006)

Graber '037 is a patent titled “Fifth Wheel Travel Trailer.” Ex. 1006, code (54). Graber relates to “a fifth wheel travel trailer, including a chassis for a fifth wheel travel trailer.” *Id.* at 1:6–7. Figure 4 is reproduced below.

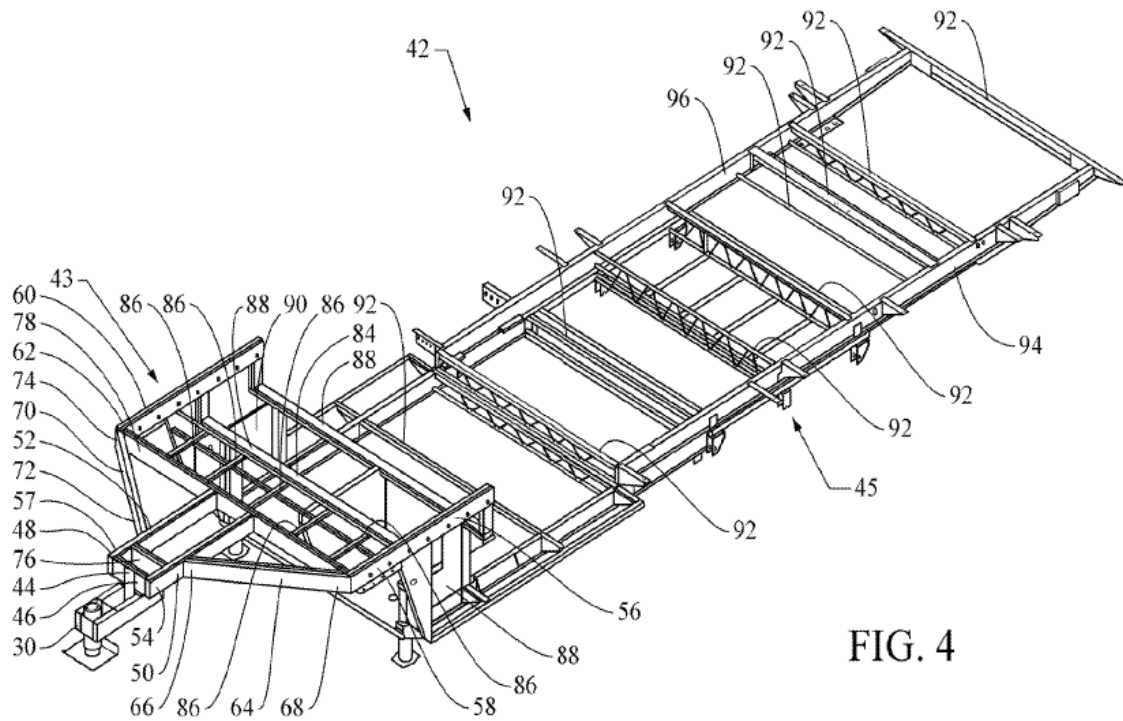


FIG. 4

Figure 4 illustrates an isometric view of chassis 42 of the fifth wheel travel trailer. *Id.* at 2:33–34. Chassis 42 includes a plurality of support beams 92. *Id.* at 5:2–4. We understand that some of these elements are trusses and others are beams.

2. Overview of Garceau '603 (Ex. 1040)

Garceau '603 is a patent titled “Trailer Frame.” Ex. 1040, code (54). Figure 1 is reproduced below.

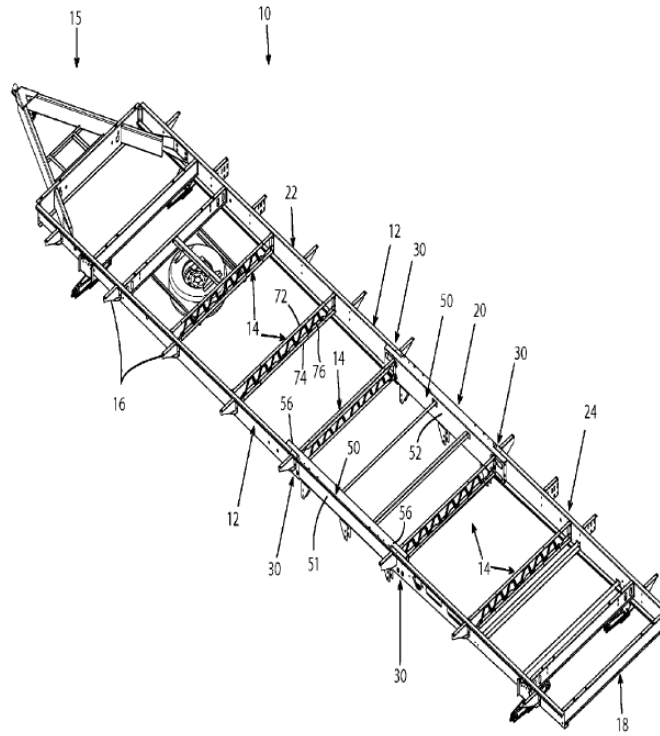


FIG. 1

Figure 1 is a top perspective view of trailer frame 10. *Id.* at 2:59–60. Trailer frame 10 is assembled from plural rails or side frame members 12 and one or more cross members. *Id.* at 3:34–35. We understand that some of these cross members are trusses and others are beams.

3. *Claim Limitation 1X*

Claim limitations 1Q and 1U recite: “[Q] a truss located in the second section” which is positioned below that second living area and “[U] a beam located in the third section” which is positioned below the third living area. Ex. 1001, 4:18–22. Claim limitation 1X recites: “[X] the beam having an upper surface located at a level lower than the upper surface of the truss.” *Id.* at 4:24–26.

Petitioner relies on Graber '037 and Garceau '603 to provide support for the recited truss and beam in claim 1. In particular, Petitioner asserts that a person of ordinary skill in the art would have known that Raptor teaches five structural features:

- a. two parallel I-Beams are used as chassis side rails under both the second and third living areas,
- b. a plurality of trusses would serve as cross members, joining those side rails at each truss end,
- c. such trusses would be used under the second living area,
- d. a different kind of cross member (or beam) would be used at the rear of the chassis, joining the side rails at each end of that beam, and
- e. the upper surface of the trusses would be flush with the upper surface of the side rails.

Pet. 62–63 (citing Hopkins Decl. 79–80; Keough Decl. 84–85; Denton Decl. 68–69). Petitioner, however, then concedes that Raptor “only partially illustrates those features expressly, likely because they are so commonplace in the RV industry as to not be featured in an advertisement.” *Id.* at 63. Accordingly, Petitioner asserts that Graber '037 and Garceau '603 illustrate the above features. *Id.*

Petitioner’s annotated Figures 13–14, respectively, are reproduced below.

Fig. 13

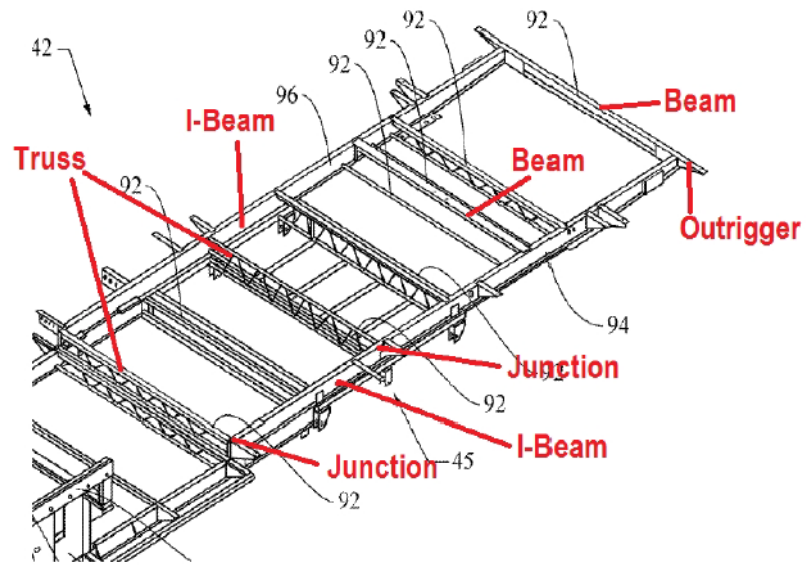
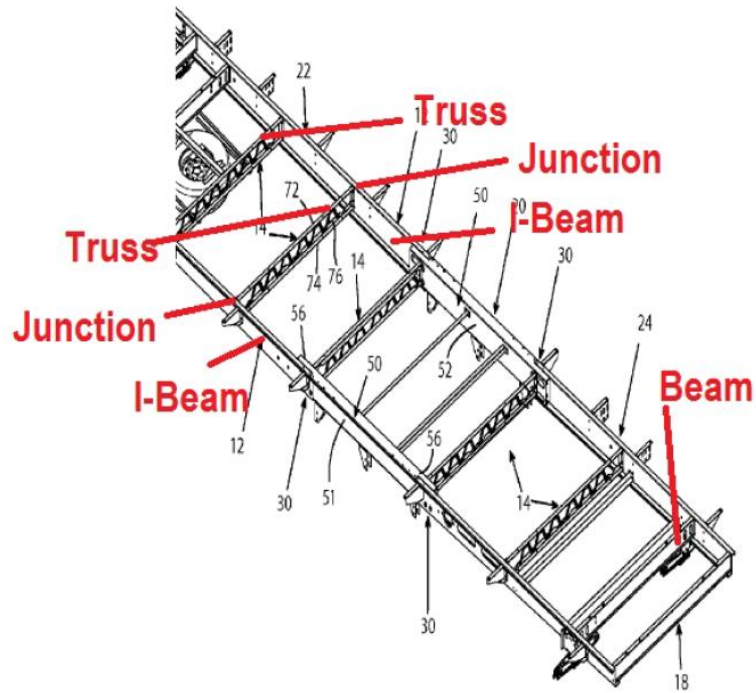


Fig. 14



Petitioner's Figure 13 is Figure 7 of the Graber '037. *Id.* at 64. Petitioner's Figure 14 is Figure 1 of Garceau '603. *Id.* Petitioner has annotated structural elements in both figures to show the alleged truss and beam limitations recited in claim 1.

According to Petitioner, a person of ordinary skill in the art would have known that “the trusses were likely under a different living area than the beam, that the trusses and beams joined the side rails at their ends, and that at the truss-side rail junction the respective upper surfaces were elevationally flush.” Pet. 65–66 (citing Hopkins Decl. 82–83; Keough Decl. 87–88; Denton Decl. 71–72). Petitioner also asserts that a person of ordinary skill in the art would have been motivated to combine the chassis features of either Graber ’037 or Garceau ’603 into the Raptor toy hauler because

- a. such prior art chassis were readily known, commercially acceptable and widely available at reasonable prices,
- b. they allow for lighter chassis weight and sufficient structural rigidity across the side rails,
- c. they facilitate flush floor assembly on the chassis[,]
- d. they accommodate the existing beaver tail garage floor format and ramp door entry system for accessory vehicles used in [Raptor,] and
- e. they accommodate the existing multi-level living area system used in [Raptor].

Id. at 65–66.

Patent Owner asserts that Graber ’037 and Garceau ’603 do not remedy the deficiencies of Raptor. Prelim. Resp. 43–44. According to Patent Owner, Petitioner’s Figure 13 “shows that the alleged ‘beams’ relied upon by the Petition do not have an ‘upper surface located at a level lower than the upper surface’ of the identified alleged ‘trusses’—the upper surfaces appear to be at the same level.” *Id.* at 45 (citing Pet. 63, Fig. 13).

We agree with Patent Owner. As an initial matter, we find that Petitioner does not persuasively show that Raptor illustrates the five structural features “because they are so commonplace in the RV industry as to not be featured in an advertisement.” Pet. 63. The testimony of Messrs. Hopkins, Keough, and Denton on this specific issue of what a person of ordinary skill would realize fails to disclose the underlying facts or data on which their opinions are based.

We also determine that Petitioner does not show persuasively, with credible evidence, that Raptor, Graber ’037 and Garceau ’602, either singly or in combination, teach or suggest a “beam having an upper surface located at a level lower than the upper surface of the truss,” as recited in claim limitation 1X. For the reasons discussed in Section III.D.3, Raptor does not teach this limitation. Petitioner admits that Raptor’s upper surface of the trusses are flush with the upper surface of the side rails. Pet. 63. Similarly, Figures 13 (Graber ’037) and Figure 14 (Garceau ’603) also show that the upper of the beams and trusses are flush with each other and the upper surface of the side rails.

We also find Petitioner’s motivation for combining Raptor and Graber ’037/Garceau ’603 is conclusory and unsupported. There is no evidence that Petitioner’s three declarants are knowledgeable about Graber ’037 and Garceau ’603’s chassis or are capable of testifying that they “were readily known, commercially acceptable and widely available at reasonable prices” or “they allow for lighter chassis weight and sufficient structural rigidity across the side rails.” Because Raptor does not disclose the full structural configuration of its chassis, there is no support for the proposition that it is heavier than the prior art chassis. Petitioner’s declarants also do not provide

support that the prior art chassis facilitate flush floor assembly on the chassis, accommodate the existing beaver tail garage floor format and ramp door entry system for accessory vehicles used in Raptor, or they accommodate the existing multi-level living area system used in Raptor.

Petitioner's failure to show that Raptor, Graber '307, and Garceau '603 disclose the limitations required by claim 1 or that a person of ordinary skill in the art would have been motivated to combine these references is fatal to its challenge of claim 1, as well as claims 2, 6–9, 11, and 13 which depend from claim 1. Thus, we find that Petitioner does not demonstrate a reasonable likelihood of showing the unpatentability of claims 1, 2, 6–9, 11, or 13.

G. Ground 4: Asserted Anticipation of Claims 1, 2, 6–9, and 11 by Notermann '545

Petitioner asserts that claims 1, 2, 6–9, and 11 are unpatentable under 35 U.S.C. § 102 as being anticipated by Notermann '545 (Ex. 1005). Pet. 66–72. Petitioner provides a limitation-by-limitation comparison of Notermann '545 to the challenged claims, citing the declarations of Messrs. Hopkins, Keough, and Denton. *Id.* Patent Owner opposes. Prelim. Resp. 50–55. Based on the evidence of record, we conclude Petitioner has not shown a reasonable likelihood of prevailing on its anticipation challenge.

Below, we present a brief overview of Notermann '545 and then address the parties' contentions, focusing on the parties' contentions as to claim limitation 1Q which is dispositive.

1. Overview of Notermann '545 (Ex. 1005)

Notermann '545 is a patent titled "Recreational Vehicle Having Accessory Vehicle Carrying and Unloading Ability." Ex. 1005, code (54).

Notermann '545 relates to recreational vehicles, and more specifically to a recreational vehicle having the ability to carry an accessory vehicle within the vehicle. *Id.* at 1:8–12. Figure 2 is reproduced below.

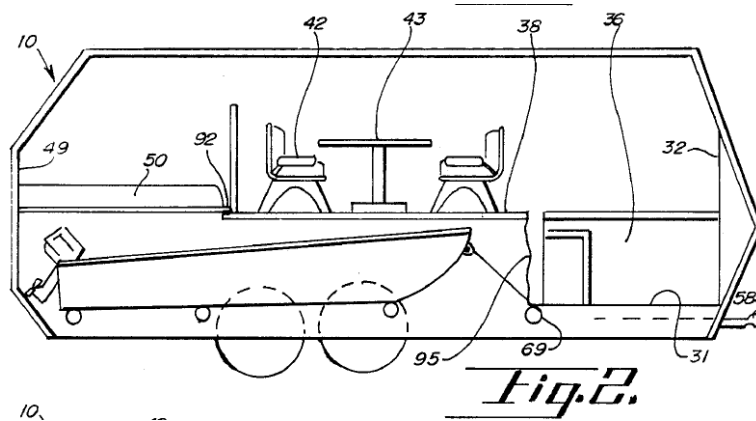


Figure 1 is an environmental view of recreational vehicle 10. *Id.* at 4:25–26. Trailer 10 has floor 31, interior walls 32, storage cabinets 36, middle floor portion 38, and furniture, 42, 42, and bed 50. *Id.* at 46:2–5:8. It also has a garage for storing a boat. *Id.* at 6:30.

Figure 5 of Notermann '545 is reproduced below.

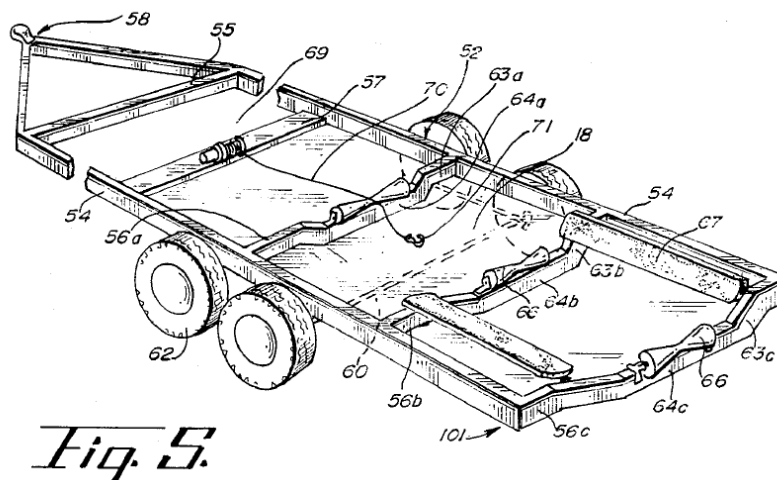


Figure 5 shows a perspective view of the base frame 52 and an integral boat trailer. Ex. 1005, 4:35–36. Frame 52 has rigid strengthening cross members

including front members 55, boat support members 56a, 56b, and 56c, and a flat horizontally extending winch support member 57. *Id.* at 5:9–13.

2. Claim Limitation 1Q

Petitioner asserts that Notermann '545 discloses all of the limitations of claim 1 including claim limitation 1Q — a truss located in the second section. Pet. 66–72. Petitioner's Figures 18 and 19 are reproduced below.

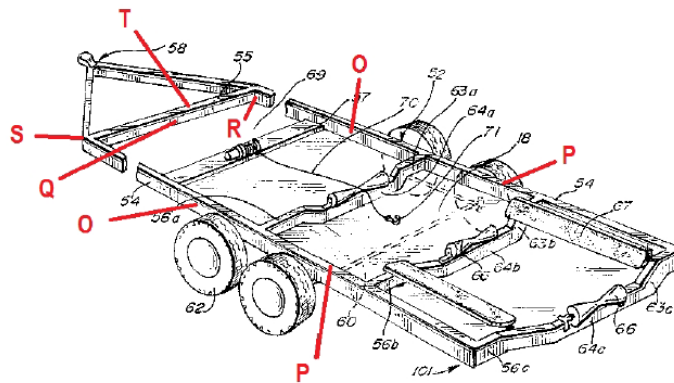


Fig. 18

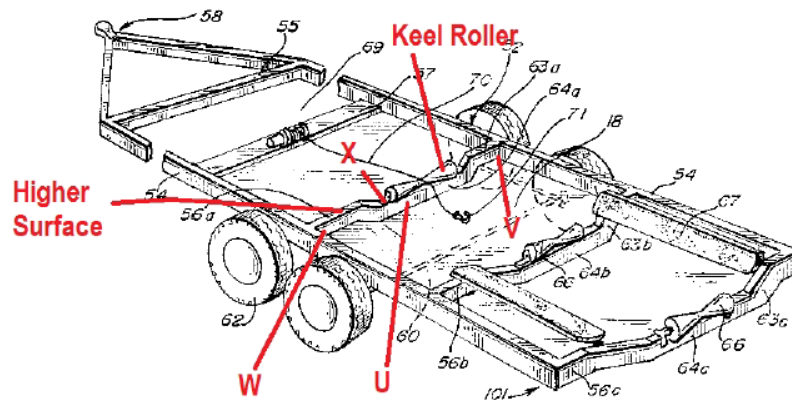


Fig. 19

Petitioner's Figures 18 and 19 are Figure 5 of Notermann '545 which have been annotated to show the alleged truss and beam limitations recited in claim 1. *Id.* at 67–69. Petitioner admits that the "[Notermann] '545 Patent

refers to the chassis cross members as ‘rigid strengthening cross members’” but “[i]t does not expressly distinguish between them as beams or trusses.” *Id.* at 72. Nevertheless, Petitioner states

“Truss Q” is would be understood by a [person of ordinary skill in the art] to be generically a truss element, even though it may or may not meet the dictionary definition of a truss, since it performs the same basic cross member function, and the ‘690 Patent provides no other special definition or differentiation of that element.

Id. at 69.

In response to Petitioner’s arguments, Patent Owner asserts that Petitioner “refuses to take a position on the proper construction of truss”. Prelim. Resp. 51. Relying on supporting testimony from Dr. Reinholtz, Patent Owner argues a person of ordinary skill in the art “would not understand the ‘rigid strengthening cross members’ of the [Notermann] ’545 Patent to disclose the claimed ‘truss,’” and “each ‘rigid strengthening cross Member’ appears to be a single ‘beam,’ lacking the other structural support elements that would combine to form a ‘truss.’” *Id.* at 52 (citing Reinholtz Decl. ¶ 107).

We agree with Patent Owner. Petitioner fails to provide persuasive evidence that cross member 55 in Notermann ’545 is a truss, as we have construed that term, because it is not a “frame built from members in tension and compression.” In addition, referring to boat support member 56a in Figure 19, lead line 56a and Petitioner’s line labelled “higher surface” point to the upper surface of boat support member 56a; line X does not point to the upper surface of member 56a.

Petitioner’s failure to show that Notermann ’545 discloses a truss in the second section, as required by claim 1, is fatal to its challenge of claim 1,

as well as claims 2, 6–9, 11, and 13 which depend from claim 1. Thus, we find that Petitioner does not demonstrate a reasonable likelihood of showing the unpatentability of claims 1, 2, 6–9, or 11.

H. Grounds 5 and 6: Asserted Obviousness of Claims 1, 2, 6–9, 11, and 13

Petitioner asserts that the challenged claims are unpatentable under 35 U.S.C. § 103 as being obvious as follows: (1) claims 1, 2, 6–9, and 11 over Notermann '545 (Ex. 1005) and Graber '037 (Ex. 1006) and (2) claim 13 over Notermann '545, Graber '037, and Raptor (Ex. 1002). Pet. 72–74. Petitioner provides a limitation-by-limitation comparison of these references to the challenged claims, citing the declarations of Messrs. Hopkins, Keough, and Denton. *Id.* Patent Owner opposes. Prelim. Resp. 55–62. Based on the evidence of record, we conclude Petitioner has not shown a reasonable likelihood of prevailing on its obviousness challenge.

Below, we address the parties' contentions, focusing on the parties' contentions as to claim limitation 1X which is dispositive.

1. Claim Limitation 1X

Petitioner asserts that a person of ordinary skill in the art would have recognized from Notermann '545 that “a difference needs to exist between ‘front member 55’ and those ‘boat support members 56,’ and thereby the truss/beam distinction discussed above would be made by a [person of ordinary skill in the art]” and “the plain teaching from the [Graber] '037 Patent is that a variety of cross members can be used as desired, including trusses, beams, channels, etc.” Pet. 72–73. According to Petitioner, “the selection of which to use, truss or beam, is a mere matter of design choice as long as the required function is accomplished” and a person of ordinary skill

in the art would have been “motivated to combine the teachings of these two references because they are in the same field of endeavor and the [Graber] ‘037 Patent teaches a means of saving cost and weight, as may be needed in a given application.” *Id.* at 73 (citing Hopkins Decl. 90–91; Keough Decl. 95–96; Denton Decl. 79–80).

Patent Owner contends that Petitioner’s challenges are erroneous for several reasons. First, Patent Owner contends that Petitioner’s reliance on Graber ’037 for the “truss” limitation does not remedy the deficiencies of Notermann ’545 because Graber ’037’s beams “do not have an ‘upper surface located at a level lower than the upper surface’ of the identified alleged ‘trusses’ as required by all Challenged Claims.” Prelim. Resp. 56 (citing Pet. 63, Figure 13). Patent Owner asserts that the upper surfaces of the beams and trusses appear to be at the same level. For the same reasons discussed in Section III.F.3 as to Graber ’037, we agree with Patent Owner.

Second, Patent Owner contends Petitioner’s reasoning for combining the teachings of Notermann ’545 and Graber ’039 is inadequate. Patent Owner argues “if the Petition’s statements regarding the interchangeability of ‘beams’ and ‘trusses’ are to be given any credit, . . . a [person of ordinary skill in the art] would not have been motivated to modify the trailer disclosed in the ’545 Patent to include a ‘truss’” because “[d]oing so would be unnecessary and lead to no benefit if it were true that ‘the [person of ordinary skill in the art] could not readily articulate what that [structural] difference would be’ if a ‘truss’ was used to replace a ‘beam.’” *Id.* at 57–58 (citing *Bio-Rad Lab ’ys, Inc. v. GE Healthcare Bio-Scis. Ab*, No. IPR2015-01826, Paper 11 at 43 (PTAB Feb. 29, 2016); *see id.* at 58 (“the fact that the

references concern interchangeable components is not in itself a sufficient rationale for making the claimed combination’’)).

In response to Petitioner’s assertion that the motivation to combine the teachings of Graber ’037 and Notermann ’545 are (1) that the two references “are in the same field of endeavor,” and (2) “the ’037 Patent teaches a means of saving cost and weight, as *may* be needed in a given application” (Pet. 73), Patent Owner argues that Petitioner cites no support for these assertions other than its wholesale cut-and-pasted expert declarations, which do not disclose any underlying facts or data for support. Prelim. Resp. 58.

We agree with Patent Owner. We agree that the fact that the two reference are in the same field of endeavor merely goes to whether they are analogous art and does not provide adequate motivation to modify Notermann ’545 with the teachings of Graber ’037. Prelim. Resp. 58–59 (citing *Bio-Rad*, No. IPR2015-01826 at *14 (“[i]n essence, Petitioner asserts that because the 2040 Manual and the 872 Extension Module both disclose interchangeable modules, a skilled artisan would have found it obvious to combine their features. Although that assertion may establish that the references are analogous art, it falls short of an articulated reasoning with a rational underpinning to support the conclusion of obviousness.”)).

We find that the testimony of Petitioner’s three declarants are conclusory and unsupported and merely repeat the attorney argument in the Petition. Their testimony, for example, does not explain why a person of ordinary skill in the art would have been motivated to replace the beams in Notermann ’545 with the trusses in Graber ’037. As described in the Specification of the ’690 patent, the function of the truss and beam are different — truss provide support and rigidity whereas beams provide

support. Ex. 1001, 3:24–48; *see In re Gal*, 980 F.2d 717, 719 (Fed. Cir. 1992) (claimed chip design was not a matter of design choice over the prior art where the claimed design achieved functions different from the prior art).

We credit the testimony of Dr. Reinholtz that a “truss” is typically not a means of saving cost and weight as compared to a beam or other support structure because a “truss” often adds cost and weight compared to a “beam” and a “truss” tends to be larger and use more material is more complex to manufacture, and often must be custom-made. Reinholtz Decl. ¶ 126. We also note that Petitioner’s motivations to combine are contradictory, stating that reduction in cost and weight “*may* be needed in any given application,” and that opposing cost and weight concerns are other considerations such as using “reliable and durable structural elements and component systems” and increasing “towability and/or drivability.” Pet. 8–9, 73.

Finally, we are persuaded by Patent Owner’s contention that a person of ordinary skill in the art would not have had a reasonable expectation of success in substituting Notermann ’545’s beam with Graber ’037’s truss. We credit the testimony of Dr. Reinholtz that not only do beams and trusses serve different functions, but the incorporation of a “truss” would change other structural requirements, like the height of the alleged “side rails.” Reinholtz Decl. ¶¶ 121–123. Dr. Reinholtz explains that (1) a “truss” typically has a larger profile than a “beam” so the location of the connection points with the “side rails” would be different and may require larger side rails and (2) because a “truss” is often heavier, increasing the weight at the front of a trailer can be undesirable because it can make it more difficult for the user to hitch the trailer to a vehicle, and could change the weight balance of the trailer. *Id.*

Petitioner's failure to show that Raptor, Graber '307, and Garceau '603 disclose, teach, or suggest claim limitation 1X and a persuasive rationale to motivation to combine these references is fatal to its challenge of claim 1, as well as claims 2, 6–9, 11, and 13 which depend from claim 1. Thus, we find that Petitioner does not demonstrate a reasonable likelihood of showing the unpatentability of claims 1, 2, 6–9, 11, or 13.

I. Discretionary Denial Under 35 U.S.C. § 325(d)

Because we deny Petitioner's petition for *inter partes* review on the merits, we do not address Patent Owner's request for discretionary denial under 35 U.S.C. § 325(d).

IV. ORDER

For the foregoing reasons, it is
ORDERED that the Petition is *denied*; and
FURTHER ORDERED that no *inter partes* review is instituted.

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