

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NUNA BABY ESSENTIALS, INC. and
NUNA INTERNATIONAL B.V.,
Nuna Baby,

v.

BRITAX CHILD SAFETY, INC.,
Britax.

IPR2019-00663
Patent 9,187,016 B2

Before LINDA E. HORNER, SCOTT A. DANIELS, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DANIELS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

Nuna Baby filed a Petition to institute an *inter partes* review of claims 1–19 of U.S. Patent No. 9,187,016 B2 (“the ’016 patent”). Paper 3 (“Pet.”). Britax filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). We instituted an *inter partes* review of all the challenged claims in the ’016 patent on all of the grounds asserted by Nuna Baby. Paper 8 (“Dec. Inst.”). Britax filed a Patent Owner Response (Paper 10, “PO Resp.”) and Nuna Baby filed a Reply (Paper 12, “Reply”). Britax subsequently filed a Sur-Reply. Paper 14. Based on the parties’ requests we conducted an oral hearing on June 2, 2020. Papers 15, 16. A copy of the transcript from the oral hearing is entered in the record of this proceeding. Paper 19 (“Tr.”).

Having reviewed the arguments of the parties and the supporting evidence on the complete record before us, we find that Nuna Baby has demonstrated by a preponderance of the evidence that each of challenged claims 1, 2, 12, 14–16, 18, and 19 of the ’016 patent is unpatentable. Nuna Baby has not demonstrated that claims 3–11, 13, and 17 are unpatentable.

B. Related Proceedings

Neither party indicates that the ’016 patent is involved in any other judicial or administrative matter that would affect, or be affected by, a decision in this proceeding. Pet. 92; Paper 6, 3.

C. The ’016 Patent

The ’016 patent (Ex. 1001), titled “Child Seat with Belt Tensioning Mechanism for Improved Installation,” describes “a child safety seat including a tensioning mechanism for applying tension to a seat belt to more fully secure the child safety seat to a car seat.” Ex. 1001, 1:18–20. Figure 1 of the ’016 patent is reproduced below.

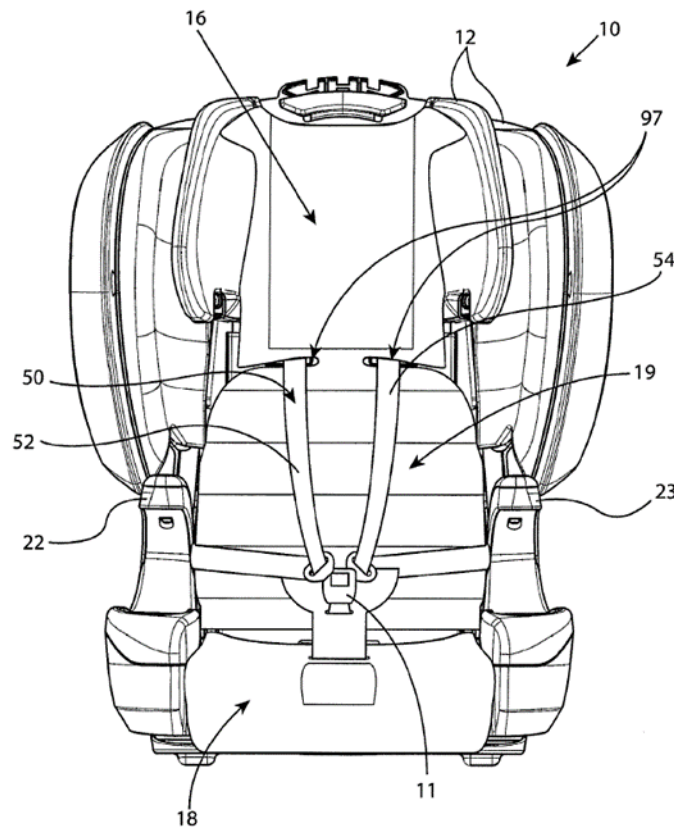


FIG. 1

Figure 1 of the '016 patent “shows a front view of a child safety seat.” *Id.* at 4:30. Child safety seat 10 includes seat base 12 having seat portion 18 and backrest portion 16, where the seat portion 18 and backrest portion 16 “may define a seat shape that is configured to receive an occupant, such as a child.” *Id.* at 6:17–22. This embodiment of seat 10 further includes padding 19, arm rests 22, 23 and harness 50 to secure the child in the child safety seat. *Id.* at 6:23–46. The '016 patent explains that “padding 19 may be configured to at least partially cover a tensioning mechanism 30.” *Id.* at 6:48–49. Tensioning mechanism 30 is shown in annotated Figure 6 of the '016 patent, reproduced below.

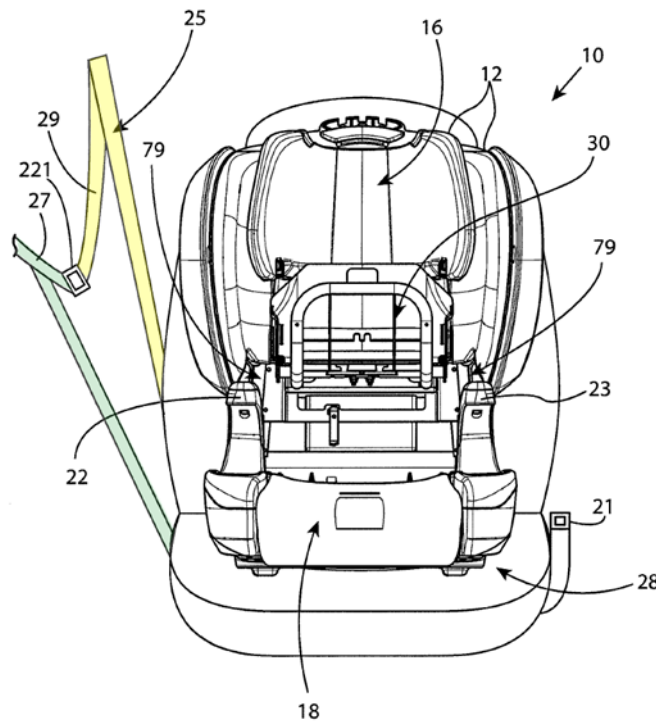


FIG. 6

Figure 6 of the '016 patent, above, as annotated by the Board, “shows a front view of the child seat” and tensioning mechanism 30 as well as vehicle seat belt 25. *Id.* at 5:6, 12:17–21. Vehicle seat belt 25 includes lap section 27 shown highlighted in green, and shoulder section 29 shown highlighted in yellow. The '016 patent explains that “the tensioning mechanism 30 is configured to receive a portion of the lap section 27 of the belt 25 and a portion of the shoulder section 29 of the belt . . . along a belt path, such as within the belt guide channel 79.” *Id.* at 12:36–40.

A safety concern that child safety seat 10 and tensioning mechanism 30 is intended to address is slack or looseness, i.e., not enough tension in a vehicle seat belt as the seat belt secures the child safety seat to a vehicle seat. *See id.* at 1:39–44 (The '016 patent explains that “maintaining a proper

amount of tension in the seat belt can also be difficult. Indeed, an improper amount of tension is undesirable and may negatively affect the safety of the occupant secured within the child seat.”). To address this safety concern, tensioning mechanism 30 is designed to apply tension *to both* the lap and shoulder sections 27, 29 of seat belt 25 and eliminate any slack or looseness. *See id.* at 12:40–44, 12:58–13:3. The ’016 patent states that “the tensioning mechanism is configured to apply tension to the portion of the lap section and the portion of the shoulder section of the belt to secure the child seat to the car seat in a tensioned configuration.” *Id.* at 1:66–2:3. Annotated Figure 7 of the ’016 patent is reproduced below.

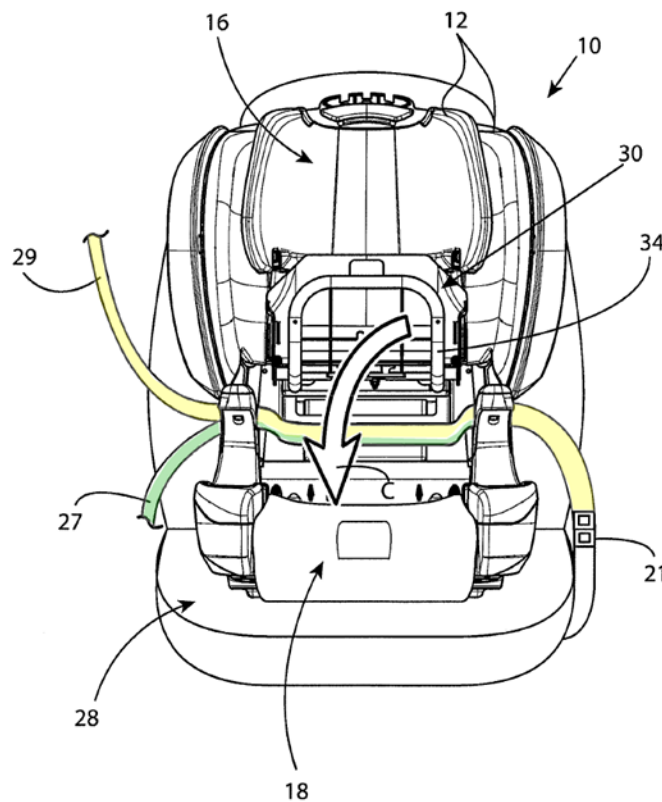


FIG. 7

Annotated Figure 7, above, highlights both lap and shoulder sections 27, 29 of the seat belt received in tensioning mechanism 30. *Id.* at 12:63–66 (The ’016 patent explains that “the tensioning mechanism 30 may be rotated (e.g., in the direction of arrow C) to apply tension to the portion of the lap section [27] and the portion of the shoulder section 29 of the belt 25 engaged with the tensioning mechanism 30.”).

D. Illustrative Claim

Of the challenged claims 1–19, claims 1, 12, 15, and 19 are independent. Each of claims 2–11, 13, and 14, depends from claim 1, and claims 16–18 depend from claim 15. Claim 1 illustrates the claimed subject matter and is reproduced below with emphasis added to particular limitations of importance:

1. A child seat configured to be secured to a seat of a car, the child seat comprising:

a seat base defining a seat portion and a backrest portion, wherein the backrest portion defines a front side and a rear side, wherein the seat portion defines a top side and a bottom side, wherein the seat base is configured to be positioned on the seat of the car such that the rear side of the backrest portion is positioned adjacent a backrest portion of the seat of the car and the bottom side of the seat portion is positioned adjacent a seat portion of the seat of the car, wherein the seat base is further configured to receive a belt of the seat of the car such that the belt is positioned around at least one of the front side of the backrest portion or the top side of the seat portion and the belt is engaged with a buckle of the seat of the car to secure the child seat to the seat of the car in an untensioned configuration, wherein the belt defines a lap section and a shoulder section; and

a tensioning mechanism attached to the backrest portion of the seat base, wherein the tensioning mechanism is rotatable between a first position substantially adjacent to at least the backrest portion of the seat base and a second position disposed

therefrom, wherein, in the second position, the tensioning mechanism is configured to receive a portion of the lap section of the belt and a portion of the shoulder section of the belt, wherein, in the first position, *the tensioning mechanism is configured to apply tension to the portion of the lap section and the portion of the shoulder section of the belt to secure the child seat to the seat of the car in a tensioned configuration*, wherein, when in the first position, the tensioning mechanism defines a generally vertical orientation, and wherein, when in the second position, the tensioning mechanism defines a generally horizontal orientation.

Ex. 1001, 14:31–64 (emphasis added).

E. The Alleged Grounds of Unpatentability

Nuna Baby contends that the challenged claims are unpatentable on the following specific grounds.¹

References	Basis	Claims Challenged
Yamazaki ² and Washimi ³	§ 103	1–5, 12, 14–19
Yamazaki, Washimi, and Parker ⁴	§ 103	6, 13
Yamazaki, Washimi, and Hutchinson ⁵	§ 103	7–11

F. The Level of Ordinary Skill in the Art

Factors pertinent to a determination of the level of ordinary skill in the art include: “(1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology, and

¹ Nuna Baby supports its challenge with a Declaration of Andrew Bowman, B.S.M.E., M.S. (Ex. 1003) and Britax relies on the Declaration of Richard Kent, B.S.M.E., M.S., Ph.D. (Ex. 2010). *See infra*.

² Ex. 1005, U.S. Patent No. 6,508,510 B2 (Jan. 21, 2003).

³ Ex. 1012, certified translation of Japanese Laid-open Patent Application, Publication No. Hei 5-185869 (July 27, 1993).

⁴ Ex. 1007, U.S. Patent No. 5,061,012 (Oct. 29, 1991).

⁵ Ex. 1008, U.S. Patent Appl’n. Pub. No. 2009/0001791 A1 (Jan. 1, 2009).

(6) educational level of workers active in the field.” *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. Ltd, Inc. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

In determining a level of ordinary skill, we also may look to the prior art, which may reflect an appropriate skill level. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Additionally, the Supreme Court informs us that “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Nuna Baby argues that a person of ordinary skill in the art has “a Bachelor’s Degree in Mechanical Engineering or a related subject and two or more years of experience working with child safety seats . . . [l]ess work experience may be compensated for by a higher level of education, such as a Master’s Degree, and vice versa.” Pet. 5–6 (citing Ex. 1003 ¶ 23). Britax’s definition is mostly similar, “a bachelor’s degree in mechanical engineering or other similar subjects and either a Master’s degree in mechanical engineering, or two or more years of experience in the field of child safety seats.” PO Resp. 20 (citing Ex. 2010 ¶ 28). Britax explains that “for individuals with different educational backgrounds, a person could still be of ordinary skill in the art provided that person’s additional experience compensates for any differences in that person’s education.” *Id.* (citing Ex. 2010 ¶ 29).

We do not find a significant difference in these definitions proposed by the parties for the level of ordinary skill in the art. Both definitions allow for an undergraduate or higher professional degree and alternatively a reasonable period of time and work experience in the field of child safety seats. For purposes of this decision and on the record currently before us, we adopt Britax’s proposed definition. We emphasize that adopting Nuna Baby’s definition would not alter the outcome of this Decision.

II. CLAIM CONSTRUCTION

A. Legal Standard

We interpret a claim “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).” 37 C.F.R. § 42.100(b).⁶ Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.* Furthermore, we expressly construe the claims only to the extent necessary to resolve the dispute. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to

⁶ The Office has changed the claim construction standard in AIA proceedings to replace the broadest reasonable interpretation (“BRI”) standard with the same claim construction standard used in a civil action in federal district court. *Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51340 (Oct. 11, 2018). The change applies to petitions filed on or after November 13, 2018. *Id.* The present Petition was filed on February 28, 2019, so we construe the claims in accordance with the federal district court standard, now codified at 37 C.F.R. § 42.100(b) (2019).

the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

B. Untensioned configuration

Nuna Baby proposes that the term, “untensioned configuration,” as recited in claim 1, “must be construed to mean ‘a not fully tensioned configuration.’” Pet. 6–7 (citing Ex. 1003 ¶ 29). Britax contends that this term should simply be given its plain and ordinary meaning which “is clear not only to a person of ordinary skill in the art but also to a lay person.” PO Resp. 21–2 (citing 2010 ¶ 47). This term is not reasonably in dispute, nor does any part of our Decision turn on a specific construction of this term. We find the claim language clear on its face and therefore agree with Britax that “untensioned configuration” should be given its plain and ordinary meaning—that is, not tensioned, as understood by a person of ordinary skill in the art.

C. Seat base and backrest portion

The ’016 patent describes that “[t]he child seat 10 comprises a seat base 12 defining a seat portion 18 and a backrest portion 16.” Ex. 1001, 6:18–20. Britax argues that “seat base” should be construed to be “a component of a child safety seat that defines a seat shape to directly receive an occupant of the child seat when the child seat is in use.” PO Resp. 26. Also, Britax argues that “backrest portion” should be construed as “a component of the child seat configured for supporting an occupant’s back when the child seat is in use.” *Id.* We address the terms “seat base” and “backrest portion” in turn, below.

1. seat base

In support of its proposed construction for the term “seat base,” Britax points to description in the ’016 patent that explains for instance that “[t]he seat portion 18 and backrest portion 16 may define a seat shape that is configured to receive an occupant, such as a child.” *Id.* at 23 (citing Ex. 1001, 6:17–22). Britax argues that the ’016 patent explains that “tensioning mechanism 30 may be pivotably attached to the backrest portion 16 of the seat base 12.” *Id.* (citing Ex. 1001, 6:63–67). Britax also argues that “child seat 10 may comprise a padding 19 that is attached to the backrest portion 16 of the seat base 12.” *Id.* at 24 (citing Ex. 1001, 6:44–56). Based on this disclosure in the ’016 patent, Britax’s declarant, Dr. Kent, testifies that “the seat base 12 is clearly configured for receiving an occupant during use in a moving vehicle and that the tensioning mechanism is operably connected to the seat base 12.” *Id.* (citing Ex. 2010 ¶ 53).⁷

Nuna Baby argues that the plain language of the claims does not support Britax’s construction. Reply 2. Nuna Baby argues specifically that “the term ‘*seat shape*’ does not appear in the claims, the claims do not recite limitations requiring such a “*seat shape*” to ‘*directly receive an occupant of the child seat,*’ and the claims do not identify that this receiving is to happen ‘*when the child seat is in use.*’” *Id.* Nuna Baby argues that reading the claims in light of the specification, “the backrest portion and seat portion do

⁷ Britax argues that “[a] person of ordinary skill in the art, particularly in view of the specification and prosecution history, would have had this understanding of the meaning of the terms.” Pet. 22 (citing Ex. 2010 ¶ 49). Neither the Patent Owner Response nor Dr. Kent, however, identify any aspect of the prosecution history to support this testimony. *See* Ex. 2010 ¶¶ 50–56 (making no mention of the prosecution history of the ’016 patent).

not directly receive an occupant of the child seat, but are further configured with padding and cushions to receive an occupant.” *Id.* at 3 (citing Ex. 1001, 6:44–46).

The specification of the ’016 patent is clear that child seat 10 “comprises a seat base 12 defining a seat portion 18 and a backrest portion 16.” Ex. 1001, 6:19–20. Then, the specification explains that “[t]he *seat portion 18 and backrest portion 16* may define a seat shape that is configured to receive an occupant, such as a child.” *Id.* at 6:20–22. Nowhere does the specification state that seat base 12 defines any particular shape. Indeed, the claims do not recite the term, “seat shape.” For intrinsic evidence, we have mainly the specification’s description that it is the seat portion 18 and backrest portion 16 which “may define a seat shape.” *Id.* at 6:21. We are not persuaded to import a limitation into the claims that runs contrary to the express description in the specification which reads “[t]he *seat portion 18 and backrest portion 16* may define a seat shape that is configured to receive an occupant, such as a child.” *Id.* at 6:20–22.

In addition, each of the independent claims recites the structure of “a seat base defining a seat portion and a backrest portion” and functionally recites interaction with “a belt,” and “a seat of a car.” Ex. 1001, 14:33–42, 16:14–23, 59–63, 18:6–11. Britax does not point to any functional or structural explanation or recitation in any of the independent claims that expresses where or how an occupant is arranged directly, or otherwise, relative to the “seat base,” “seat portion,” or “backrest portion.” We also find no disclosure in the specification, nor does Britax point us to any, which persuasively explains that the child seat claimed in the ’016 patent must be a unitary design or that the seat cannot be a two-component seat. Rather, the

specification states that “[i]ndeed, these inventions may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein.” *Id.* at 5:41–43.

Even if the claims required a “seat shape,” which they do not, we also do not find, nor does Britax persuasively point to sufficient, support in the specification that a “seat shape” must “directly receive an occupant of the child seat.” Moreover, neither Britax nor Dr. Kent explain satisfactorily the meaning of the term “directly,” which is also not present in the claims. PO Resp. 25, *see* Ex. 2010 ¶ 54 (Dr. Kent testifying that “the ’016 patent describes the ‘seat base’ 12 as a structure in which an individual, such as a child, can direct[l]y sit while the child seat is in use.”).

We are not persuaded to read limitations into the claims that have little or no support in the specification and where the meaning of such limitations creates ambiguity as to the scope and meaning of the claims. *See In re Hiniker Co.*, 150 F.3d 1362, 1368 (Fed. Cir. 1998) (“Although operational characteristics of an apparatus may be apparent from the specification, we will not read such characteristics into the claims when they cannot be fairly connected to the structure recited in the claims.”). The independent claims 1, 12, 15, and 19 are clear on their face, requiring “a seat base defining a seat portion and a backrest portion.” Ex. 1001, 14:33. This claim recitation is understandable and consistent with the specification and a plain reading of the written description. *See id.* at 6:18–20 (“The child seat 10 comprises a seat base 12 defining a seat portion 18 and a backrest portion 16.”).

2. backrest portion

Britax argues that the term “backrest portion” would be understood by a person of ordinary skill in the art as referring to a component of the child seat configured for supporting an occupant’s back when the child seat is in use.” PO Resp. 26 (citing Ex. 2010 ¶ 56). Nuna Baby basically agrees with this premise. *See* Reply 4 (“Petitioner agrees with PO’s suggestion that the plain and ordinary meaning of “backrest portion” includes supporting an occupant’s back when the child seat is in use to the extent that support can be direct or indirect support.”). However, Nuna Baby does not agree that “backrest portion” should be construed as part of the seat base, to “directly receive an occupant of the child seat when the child seat is in use,” as Britax’s claim construction may presuppose. *See* PO Resp. 22 (“Britax arguing that “the plain language of the claim makes clear that the seat base includes a seat portion and a backrest portion that are portions of a seat shape to directly receive an occupant of the child seat when the child seat is in use.”).

For the same reasons we do not construe “seat base” in the manner Britax proposes as “a component of a child safety seat that defines a seat shape to directly receive an occupant of the child seat when the child seat is in use,” we also do not read the “directly receive” limitation into the meaning of “backrest portion.” To the extent “backrest portion” needs to be construed, a plain reading of the written description reveals that together with the seat portion, the backrest portion “may define a seat shape that is configured to receive an occupant, such as a child.” Ex. 1001, 6:21–22. Also, understanding that the logical meaning of “backrest portion” relates to an occupant’s back, this is generally consistent with Britax’s proposal.

However, the written description does not describe that the backrest portion provides “direct” support. Therefore, we determine that the “backrest portion” is “a component of the child seat configured for supporting an occupant’s back when the child seat is in use,” although the support need not be “direct.”

III. ANALYSIS

We turn now to Nuna Baby’s asserted grounds of unpatentability and Britax’s arguments in its Patent Owner Response to determine whether Nuna Baby has met its burden under 35 U.S.C. § 316(e).

A. The Legal Constructs of Obviousness

Section 103(a) forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when available, evidence such as commercial success, long-felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *see KSR*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls.”). The Court in *Graham* explained that these factual inquiries promote “uniformity and definiteness,” for “[w]hat is obvious is not a

question upon which there is likely to be uniformity of thought in every given factual context.” *Graham*, 383 U.S. at 18.

The Supreme Court made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. To reach this conclusion, however, it is not enough to show merely that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness additionally requires that a person of ordinary skill at the time of the invention “would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.” *Id.*

A claimed invention may be obvious even when the prior art does not teach each claim limitation, so long as the record contains some reason why one of skill in the art would modify the prior art to obtain the claimed invention. *See Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1307 (Fed. Cir. 2006). And, as a factfinder, we also must be aware “of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR*, 550 U.S. at 421. This does not deny us, however, “recourse to common sense” or to that which the prior art teaches. *Id.*

Nuna Baby must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Against this general background, we consider the references, other evidence, and arguments on which the parties rely.

B. Claims 1–5, 12, and 14–19—Alleged obviousness over Yamazaki and Washimi

Nuna Baby asserts that claims 1–5, 12, and 14–19 would have been obvious over Yamazaki and Washimi. Pet. 7–47. Nuna Baby has established by a preponderance of the evidence that claims 1–5, 12, and 14–19 would have been obvious for the reasons explained below.

3. Yamazaki

Yamazaki is titled “Child Car Seat” and describes a child car seat base 10 that is secured to vehicle seat 7, to which a seat body is then attached.⁸ Ex. 1005, 1:50–54, 3:20–22. Figure 1 of Yamazaki, below, is an example of base 10 secured to vehicle seat 7.

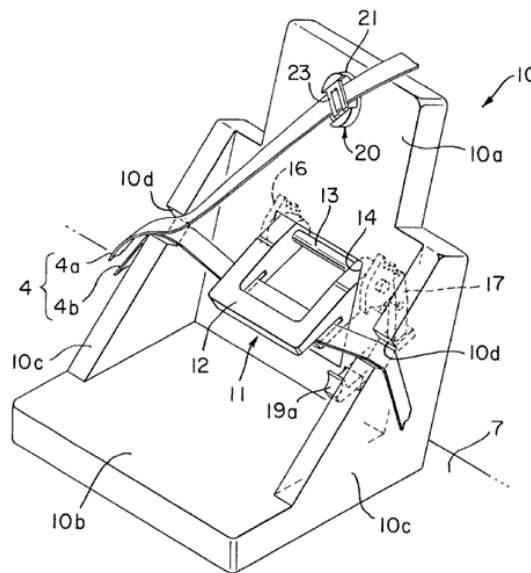


FIG. 1

⁸ The seat body is not shown in Figures depicting Yamazaki’s invention. Yamazaki shows, in Figure 9, a prior art “seat body 2” set on base 3. Ex. 1005, 1:11–43. Referring to Figure 9, Yamazaki states that “a known child car seat 1 has a seat body 2 and a base 3 supporting the seat body 2 thereon.” *Id.* at 11–12.

Yamazaki's Figure 1, above, illustrates base 10 with seat belt tightening mechanism 11 engaged with seat belt 4 to thereby secure the base to the vehicle seat 7. *Id.* at 3:20–22, 30–31, 37–40. Yamazaki describes that base 10 has back plate 10a, bottom plate 10b, and side plates 10c and 10c extended between the sides of back plate 10a and bottom plate 10b. *Id.* at 3:22–25.

A rotary disc style seat belt fastening mechanism 20 is used to secure a shoulder portion 4a of seat belt 4 to the base 10. *Id.* at 4:5–12. This fastening mechanism fixes the length of seat belt 4 to be used. *Id.* at 4:59–63. A lap portion 4b of seat belt 4 can be positioned in recesses 10d in side plates 10c of the base 10. *Id.* at 3:25–26, 4:39–40. A lever 12 of the seat belt tightening mechanism 11 is used to engage the seat belt lap portion 4b and to deflect it downward, thereby tightening the seat belt and securing the base in place. *Id.* at 4:37–45. Once the base 10 is secured to the vehicle seat, a seat body can be attached to the base. *Id.* at 1:50–62.

Yamazaki teaches that securing the seat belt to the rotary disc style seat belt fastening mechanism 20 and then tightening the seat belt with the seat belt tightening mechanism 11 eliminates the need for “the simultaneous performance of two actions for keeping the length of the seat belt fixed and tightening the seat belt,” and the child car seat can be more easily fixed in place. *Id.* at 4:62–66.

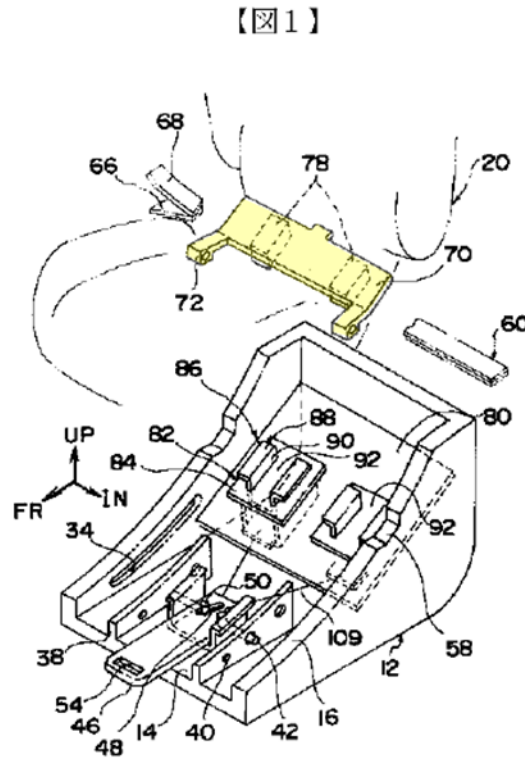
4. Washimi⁹

Washimi is titled “Child car seat” and describes a car seat that “makes it possible to install a child seat to a vehicle seat by a simple operation,

⁹ We refer in our Decision to the certified English translation of Washimi, Ex. 1012.

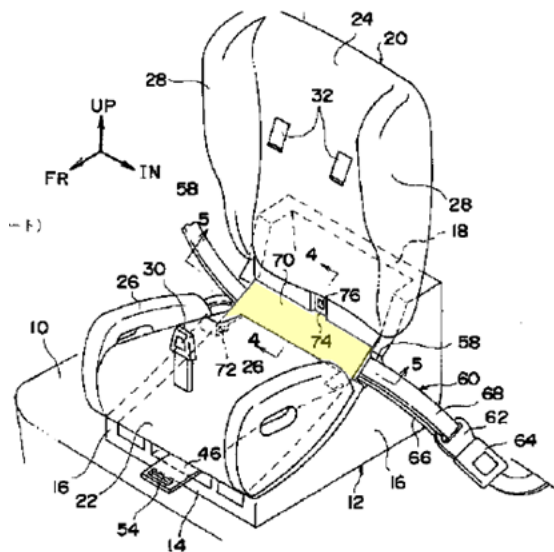
eliminates the possibility of loss of a part necessary for installation, and further prevents webbing from becoming loose due to a reclining action.”

Ex. 1012 ¶ 46. Figure 1 of Washimi, below, as annotated by the Board, is an exploded view of a safety seat and a seat belt. *Id.* at [Brief description of the drawings].



Washimi Figure 1, above, shows an exploded view of the child safety seat, with base 12 in solid lines and seat main body 20 in phantom lines, including lid 70, highlighted in yellow, that rotates about shaft part 72. *Id.* Annotated Figure 2, below left, is a perspective view of the child safety seat set on a vehicle seat 10, highlighting lid 70. *Id.* at [Brief description of the drawings]. Annotated Figure 5, below right, is a cross-section of the child seat taken along line 5-5 of Figure 2 also showing lid 70 in yellow. *Id.*

【例 2】



【图5】

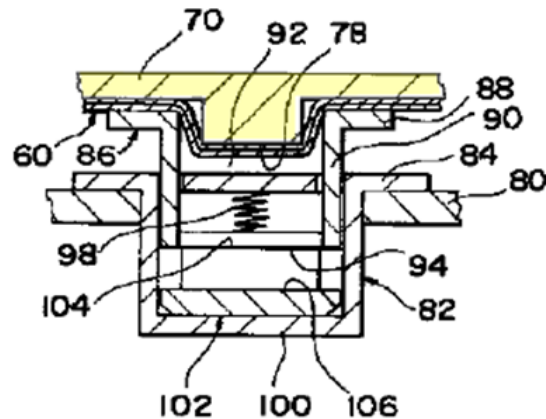


Figure 2, above left, shows seat main body 20 connected to base 12 with both the lap and shoulder portions of seat belt 60, i.e., webbing 66 and 68, engaged underneath lid 70. *Id.* ¶¶ 16–18, 22–24. Figure 5, above right, shows lid 70 securing seat belt 60 in engagement recess 92. *Id.* ¶ 27.

Lid 70 is positioned across straddling part 56, between seat part 22 and backrest part 24. *Id.* ¶¶ 21, 24, Figs. 2, 3. To secure the child seat, lid 70 is rotated about shaft part 72 until stopper piece 74 engages stopper 76 in backrest part 24. *Id.* ¶¶ 24, 35. Engagement protrusions 78 on lid 70 force lap webbing 66 and shoulder webbing 68 of seat belt 60 into engagement recesses 92 to lock the child seat in place with respect to vehicle rear seat 10. *Id.* ¶ 34, Fig. 5.

5. Claim 1

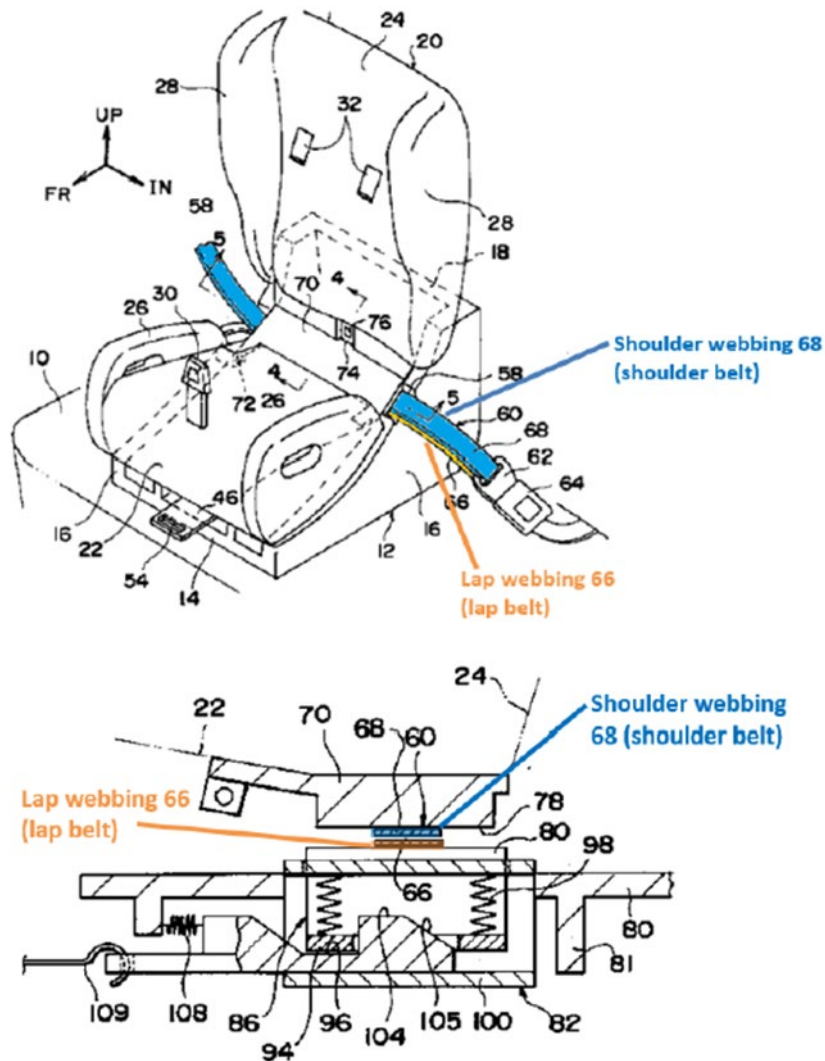
Nuna Baby's Arguments

Nuna Baby argues that Yamazaki teaches, *inter alia*, a child safety seat “configured to be secured to a seat of a car” as called for in the

preamble of claim 1. Pet. 13 (citing Ex. 1005, Abst., 3:19–22). Nuna Baby argues that Yamazaki’s child seat has a seat base 10 including a “seat portion,” a “backrest portion,” and is “configured to be positioned on the seat of the car,” as recited in claim 1. *Id.* at 13–16 (citing Ex. 1005, 3:22–25, Figs. 1, 6; Ex. 1003 ¶ 47). According to Nuna Baby, Yamazaki teaches that seat base 10 engages with a car seat belt “such that the belt is positioned around at least one of the front side of the backrest portion or the top side of the seat portion,” as claim 1 recites. *Id.* at 16–17 (citing Ex. 1005, 3:25–26, 4:37–49, Fig. 1; Ex. 1003 ¶¶ 49–50). Nuna Baby also argues that Yamazaki discloses “a tensioning mechanism attached to the backrest portion of the seat base . . . rotatable between a first position substantially adjacent to at least the backrest portion of the seat base and a second position disposed therefrom.” *Id.* at 21–22 (citing Ex. 1005, 3:38–45, Fig. 6; Ex. 1003 ¶¶ 58; 1003 ¶¶ 57–59).

Nuna Baby contends that Yamazaki meets all the limitations of claim 1 “except that *Yamazaki* does not expressly disclose the tensioning mechanism interacting with both the lap and shoulder sections of the belt.” Pet. 10. To address this deficiency, Nuna Baby argues that a person of ordinary skill in the art “would have looked to improve *Yamazaki*’s tightening mechanism 11 with *Washimi* because it teaches a tensioning mechanism that interacts with both a lap section and a shoulder section of the belt.” *Id.* at 11 (citing Ex. 1003 ¶ 41). Nuna Baby argues further that “[i]n *Washimi*, the two sections of webbing are stacked on top of each other when the belt interacts with the tensioning mechanism, as shown below in Figures 2 and 6.” *Id.* at 19 (citing Ex. 1012 ¶¶ 22–23). Nuna Baby provides the following annotated Figures 2 and 6 from *Washimi* illustrating the

stacked webbing sections 66, 68, highlighted in orange and blue respectively, extending through the tensioning mechanism.



Washimi's Figures 2 and 6, above, as annotated by Nuna Baby in its Petition, show shoulder webbing 68 highlighted in blue, and lap webbing 66 highlighted in orange.

Nuna Baby argues that a person of ordinary skill in the art understood that loose seat belts are a common child safety seat installation error and would have looked to improve Yamazaki's lap belt tensioning mechanism

with “*Washimi* because it teaches a tensioning mechanism that interacts with both a lap section and a shoulder section of the belt.” Pet. 10–11 (citing Ex. 1003 ¶¶ 40–41). Nuna Baby’s expert, Mr. Bowman, testifies that a person of ordinary skill in the art “would have been motivated to make this modification to *Yamazaki*’s child seat to more securely fasten the child seat to the vehicle seat.” Ex. 1003 ¶ 42. Mr. Bowman testifies further that a person of ordinary skill in the art would have known that child safety seats, such as *Yamazaki*’s, were ready for improvement because “the industry regarded tightly securing a child seat to a car to be a common source of error.” *Id.* (citing Ex. 1010, 14, 26).

Britax’s Arguments

Britax does not expressly dispute the appropriateness of the combination of *Yamazaki* and *Washimi*. PO Resp. 34. Britax’s primary argument is that *Yamazaki* and *Washimi* “fail to teach or suggest ‘a tensioning mechanism attached to the backrest portion of the seat base,’ as recited in independent claims 1 and 15 and similarly recited in claims 12 and 19.” *Id.* at 35.¹⁰ This is so, Britax contends, because *Yamazaki*’s seat base 10 and back plate 10a “do not correlate to the terms ‘seat base’ and ‘backrest portion’ as recited in the claims of the ’016 patent.” Similar to its claim construction arguments, Britax maintains that “a person of ordinary skill in the art would have understood, in light of the ’016 Patent, that the claimed backrest portion 16 of the seat base 12 is referring to a component of the child seat configured for supporting an occupant’s back when the child seat

¹⁰ Britax argues independent claims 1, 12, 15, and 19 essentially as a group, as they contain mostly similar limitations. To the extent independent claims 12, 15, and 19 differ from claim 1, we point out these differences in our Decision where we address each independent claim.

is in use, for example, within a moving vehicle.” *Id.* at 36 (citing Ex. 2010 ¶ 79).

Britax’s argument relies essentially on the fact that Yamazaki’s child safety seat includes seat base 10 and *separate* child seat body (not shown). Ex. 1005, 1:50–54, 3:20–22. Britax argues that the ’016 patent principally describes and claims a safety seat that is a unitary structure that is both secured to the vehicle seat and receives a child occupant. In support of Britax’s argument, Dr. Kent testifies that “a person of ordinary skill in the art would have immediately understood that Yamazaki describes a ‘two-component’ car seat that requires both a seat body 2 and base 3 supporting the seat body 2 to provide a viably functional car seat for use in a moving vehicle.” Ex. 2010 ¶ 83 (citing Ex. 1005, 1:11–14). Based on Dr. Kent’s testimony, Britax argues that Nuna Baby “seems to disregard or ignore that the tightening mechanism 11 disclosed in Yamazaki is attached to a base that is configured only to receive a seat body and does not define a seat for a child when in use.” PO Resp. 37 (citing Ex. 2010 ¶ 81).

Analysis of claim 1

An important difference to note between the ’016 patent and the prior art is that both Yamazaki and Washimi expressly teach a two-component base and seat body. *See, e.g.*, Ex. 1005, 3:20–22 (Yamazaki describing “a base 10 to be set on a passenger seat 7 of a vehicle, and a seat body, not shown, to be set on the base 10”). Claim 1 of the ’016 patent, for example, does not recite that the claimed “child seat” is either a unitary structure or a two-component structure as in Yamazaki and Washimi.

We do not entirely disagree with Dr. Kent’s opinion as it relates to the teachings in Yamazaki and Washimi of a two-component car seat. Ex. 2010

¶ 83 (citing Ex. 1005, 1:11–14). As discussed above, what we cannot do, however, is read the claim language of the '016 patent in the manner that Britax and Dr. Kent propose that rewrites claim 1 to be essentially a unitary structure so as to differentiate the independent claims from the prior art. Dr. Kent states that “Yamazaki is attached to a base that is configured only to receive a seat body and does not define a seat for a child when in use.” Ex. 2010 ¶ 81. While this may be true about Yamazaki, it is not a persuasive argument because the independent claims of the '016 patent do not recite that the seat base must “define a seat for a child when in use.” *See, e.g.*, Ex. 1001, 14:33 (Claim 1 reciting “a seat base defining a seat portion and a backrest portion”).

As discussed in our claim construction section *supra*, it is not appropriate to read the claims in the way Britax proposes now to structurally and functionally differentiate the claimed “seat base” in the '016 patent from the seat base 10 shown and described in Yamazaki. Nowhere in claim 1, or in any of the other independent claims, is there express language or limitations directed to how or where an occupant interacts with the child seat. We also are not apprised of disclosure in the written description which persuasively explains that the child seat claimed in the '016 patent must be a unitary design or that the seat cannot be a two-component seat. As we noted above, the specification explains “[i]ndeed, these inventions may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein.” Ex. 1001, 5:41–43.

Yamazaki teaches a seat base 10 that includes bottom plate 10b and back plate 10a, which correspond to the “seat base defining a seat portion and a backrest portion,” as recited in claim 1 and also in each of the other

independent claims. We determined in our claim construction that a reasonable meaning of “backrest portion” is “a component of the child seat configured for supporting an occupant’s back when the child seat is in use.” As a practical matter, when we consider Yamazaki’s written description and figures we understand that when child car seat 1 is in use by an occupant, that occupant is secured in the seat body (Ex. 1005, 1:10–15, Fig. 9), and Yamazaki’s seat base 10, bottom plate 10b and back plate 10a support the seat body and hence the corresponding anatomy of the occupant. Ex. 1005, 1:50–54. It follows logically that Yamazaki’s back plate 10a is therefore a component of the seat base that is configured for supporting the occupant’s back when the child seat is in use, whether the support is direct or indirect.

We determine that Yamazaki teaches all of the limitations of independent claim 1 except for the limitation that “the tensioning mechanism is configured to receive a portion of the lap section of the belt *and* a portion of the shoulder section of the belt.” Ex. 1001, 14:54–56 (emphasis added). For example, besides Yamazaki’s child seat comprising “a seat base defining a seat portion and a backrest portion” as discussed above, Yamazaki illustrates that “the seat base is configured to be positioned on the seat of the car.” Ex. 1005, 3:19–21, Fig. 1. Yamazaki teaches that seat base 10 is secured to the vehicle seat with a vehicle seat belt, so that “the seat base is further configured to receive a belt of the seat of the car such that the belt is positioned around at least one of the front side of the backrest portion or the top side of the seat portion” as called for in claim 1. *Id.* at 3:30–36, Fig. 1. Yamazaki also teaches “a tensioning mechanism attached to the backrest portion of the seat base,” as claim 1 recites. *See id.* at 3:37–38, (“A seat belt tightening mechanism 11 is set on the back plate

10a of the base 10”), Fig. 1. Yamazaki teaches that tensioning mechanism 11 is rotatable between a first position and a second position and a portion of the lap belt is received by the tensioning mechanism in the second position, and then tension is applied by the tensioning mechanism to the lap belt in the first position, “to secure the child seat to the seat of the car in a tensioned configuration,” as called for in claim 1. *Id.* at 3:41–44, Figs 1, 2, 5.

However, as shown in Figures 1, 2, and 5 of Yamazaki, tensioning mechanism 11 only engages lap belt section 4b *not* shoulder belt section 4a. *See id.* at 3:38–40 (“The seat belt tightening mechanism 11 includes a lever 12 for pressing the lap section 4b of the seat belt 4 toward the passenger seat 7.”).

Washimi also teaches a child safety seat for mounting on a vehicle seat. *See* Ex. 1012, 2 [claim 1] (“A child car seat to be installed to a vehicle seat.”). Washimi teaches seat main body 20 supported on base 12 and “a straddle part over which the webbing straddles so that said webbing is laid across the seat main body together with the base.” *Id.* It is clear, observing for example Washimi’s annotated figures 2 and 6, above, straddle part 56 captures *both* lap belt webbing 66 and shoulder webbing 68 between protrusions 78 on rotatable lid 70 and locking member 86 extending upwards from base 12. Ex. 1012 ¶ 26. Washimi also explains that the child safety seat is secured to the vehicle seat “with the lap webbing 66 and shoulder webbing 68 being stacked, and the webbing is pressed between the flanges of the locking members 86 and the bottom surface of the lid 70 facing the flanges and is locked.” *Id.* ¶ 27.

Mr. Bowman, referring to a 2009 National Highway Traffic Safety Administration report, testifies that it was well known in the industry that

lack of sufficient tension on seatbelts securing child seats in vehicles was a problem and that “[l]oose installation errors are common.” Ex. 1003 ¶ 40 (citing Ex. 1010, 14). Based on this testimony, Nuna Baby argues that one of ordinary skill in the art would have been motivated to improve Yamazaki and looked to Washimi because it teaches that tensioning *both* lap and shoulder belts reduces the likelihood that the lap belt will loosen. Pet. 10 — 11 (citing Ex. 1012 ¶ 38; Ex. 1003 ¶ 41). Mr. Bowman explains that Washimi expressly describes the benefit of tensioning both lap and shoulder belts so “the webbing 60 will not follow the tilting movement of the seat main body 20, thus preventing the lap webbing 66 from becoming loose.” Ex. 1003 ¶ 41 (quoting Ex. 1012 ¶ 38).

Mr. Bowman’s testimony on these points is mostly unrebutted on this record. *See, e.g.*, Ex. 2010 ¶ 81 (Dr. Kent asserting that “Bowman seem[s] to disregard or ignore that the tightening mechanism 11 disclosed in Yamazaki is attached to the seat base that is configured only to receive a child seat.”). We find Mr. Bowman’s testimony credible, namely that a person of ordinary skill in the art would have known that child safety seats, such as “*Yamazaki*’s child seat and tensioning mechanism were ready for improvement because even as late as 2009, the industry regarded tightly securing a child seat to a car to be a common source of error.” *Id.* ¶ 42 (citing Ex. 1010, 14, 26). In addition, Mr. Bowman points to probative evidence in Washimi explaining that securing both lap and shoulder belts provides for a more secure attachment of the child safety seat. Ex. 1003 ¶ 41 (citing Ex. 1012 ¶ 38). For the reasons articulated by Mr. Bowman, we are persuaded that one of ordinary skill in the art “[i]n view of the ‘interrelated teachings’ of *Yamazaki* and *Washimi*, the effects of the

demands known to the design community, and the background knowledge possessed by a [person having ordinary skill in the art] it would have been obvious to modify *Yamazaki*’s system to include *Washimi*’s belt configuration for the tensioning mechanism.” *Id.* ¶ 43.

On the full record now before us, we are persuaded that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 1 are disclosed in the combination of *Yamazaki* and *Washimi*. We weigh this evidence of obviousness against Britax’s evidence of secondary considerations of non-obviousness, *infra*, before reaching our final determination as to patentability.

6. Claim 2

Claim 2 depends from claim 1, and requires that “the tensioning mechanism is configured to rotate, in response to receiving a substantially vertical force, from the second position to the first position to apply tension to the portion of the lap section and the portion of the shoulder section of the belt.” Ex. 1001, 14:65–15:2.

Nuna Baby argues that *Yamazaki*’s “[l]ever 12 ‘is turned downwardly to deflect the lap section 4b downwardly[,] [t]herefore, the child car seat sinks into the passenger seat 7. . . and the lap section 4b is tightened when the lap section 4b is depressed,’ thus applying tension and securing the child seat to the vehicle seat *Yamazaki*.” Pet. 30–31 (quoting Ex. 1005, 4:37–39, 45–48). Mr. Bowman testifies, persuasively, that because it is biased upwards by a spring, “lever 12 rotates in response to a force pressing lever 12 down—i.e. vertically—when it is in the open position.” Ex. 1003 ¶ 72 (citing Ex. 1005, 3:44–47).

Britax does not expressly contest Nuna Baby's arguments and evidence as to claim 2. PO Resp. 34–41. We find Mr. Bowman's testimony consistent with our own review and understanding of the structure and functioning of Yamazaki's lever 12 which would be forced downward to engage and tighten the lap belt. *See* Ex. 1005, 3:43–44 (Yamazaki explaining that "[t]he lever 12 is turned on the shaft 13 to press the lap section 4b of the seat belt 4 to tighten the same"). For these reasons, we are persuaded that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 2 are disclosed in the combination of Yamazaki and Washimi.

7. *Claims 3 and 4*

Claim 3 depends from claim 11 and requires, *inter alia*, that "the seat base further defines a first arm rest and a second arm rest, . . . such that the top surface of each arm rest and the bottom surface of the tensioning mechanism define a belt guide channel configured to allow a user to position the portion of the lap section and the portion of the shoulder section of the belt therebetween." Ex. 1001, 15:5–15.

Nuna Baby argues that a person of ordinary skill in the art would have been motivated to modify Yamazaki's side plates 10c with Washimi's side supports 26 to provide a more comfortable arm rest for the occupant. Pet. 33 (citing Ex. 1003 ¶ 75). According to Mr. Bowman, in making such a substitution Washimi's "side supports 26 would have allowed the belt to span between them as described in *Yamazaki*." Ex. 1003 ¶ 75. Mr. Bowman testifies further that "*Yamazaki*'s lever 12 has a bottom surface, which corresponds to the bottom surface of the tensioning mechanism." *Id.* ¶ 76.

Britax counters that that Nuna Baby and Mr. Bowman have failed to adequately support the conclusion that a person of ordinary skill in the art would simply substitute Washimi's side supports to form arm rests and define a belt guide channel as called for in claim 3. PO Resp. 42. Britax argues specifically, supported by testimony from Dr. Kent, that

Yamazaki discloses a base for receiving a separate and distinct seat body, in which the combination of the base and the seat body define a viably functional child seat for use in an operating vehicle. A base for receiving a seat body would have no need for armrests as the base is not intended to form a seating surface for a child.

POPO Resp. 43—44 (citing Ex. 2010 ¶ 95). Dr. Kent testifies further that “armrests on a base are pointless since any seat portion used with the base of Yamazaki would immediately cover up any such structure . . . [and] provide an obstruction for the coupling of the two-components of Yamazaki.” Ex. 2010 ¶ 95.

Nuna Baby responds with three arguments, first asserting that a person having ordinary skill in the art “would have been motivated to modify *Yamazaki* in a way that comports with *Yamazaki*’s disclosed design and not provide an obstruction.” Reply 11 (citing Pet. 35). Second, Nuna Baby argues that “*Washimi* discloses a base 12 as well as side supports 26, and no such obstruction prohibits *Washimi*’s car seat from functioning.” *Id.* (citing Ex. 2012 ¶ 18; Ex. 1011, Fig. 2; Pet. 32–33). Third, Nuna Baby argues that the Examiner, during prosecution of the application that became the ’016 patent, found that “*Yamazaki* teaches a child seat where the seat base further defines a first arm rest and a second arm rest” *Id.* at 11 (quoting 1007, 77). Petitioner argues that the Examiner’s finding is “consistent with Mr. Bowman’s statements that ‘a [person having ordinary

skill in the art] would have been motivated to modify [*Yamazaki*’s side plates 10c] with features of *Washimi*’s side supports 26.’” *Id.* at 11–12 (quoting Ex. 2010 ¶¶ 60, 75). We address, below, the motivation issue and explain why Nuna Baby’s several arguments are not persuasive.

Nuna Baby’s initial reliance on “simple substitution” is not persuasive because it fails to sufficiently acknowledge that both prior art references require a seat main body in which an occupant is received and a separate seat base upon which the seat main body is secured. Ex. 1005, 3:21–22; Ex. 1011 ¶ 3. We are not persuaded that replacing or modifying *Yamazaki*’s side plates 10c on seat base 10, with arm rests (side supports 26) from *Washimi*’s seat main body, would have been only a “simple substitution and would have predictably provided a more comfortable arm rest to the child.” Pet. 33 (citing Ex. 1003 ¶ 75). Neither Nuna Baby nor Mr. Bowman explains *why* an arm rest on base 10, rather than a seat main body, would have been more comfortable for an occupant. It seems that the converse would be more likely, namely—that arm rests on the seat main body in which the occupant is received would be the most comfortable.

It might make sense that a person of ordinary skill in the art would have substituted arm rests from one seat main body to another to “provide a more comfortable arm rest to the child” as Mr. Bowman alleges. Ex. 1003 ¶ 75. This does not explain, however, why the arm rests (side supports 26) from *Washimi*’s seat main body 20, which receives an occupant, would be substituted onto *Yamazaki*’s base 10 for side plates 10c. In our opinion neither Nuna Baby nor Mr. Bowman explain persuasively why one of ordinary skill in the art would have added arm rests to *Yamazaki*’s base 10 when a child occupant does not sit in base 10 without benefit of a seat main

body. *See* Ex. 1001, 3:21–22 (Yamazaki describing “a seat body, not shown, to be set on the base 10”). *See Unigene Labs*, 655 F.3d at 1360 (“[O]bviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention.”).

In addition, as Britax argues, Nuna Baby’s reasoning based on “simple substitution” does not explain how a separate main seat body would interact with, and be secured upon, a seat base having arm rests without covering or impeding the use of the arm rests. *See* Ex. 1003 ¶ 75 (Mr. Bowman testifying that “*Washimi*’s side supports 26 would provide a simple substitution to side plates 10c.”), *see also* Ex. 2010 ¶ 95 (Dr. Kent testifying that “any modification of Yamazaki to add arm rests would provide an obstruction for the coupling of the two-components of Yamazaki”).

Mr. Bowman testifies that substituting side supports 26 from *Washimi* would also provide “a belt guide channel formed between the two horizontal planes, as claimed.” Ex. 1003 ¶ 77. This testimony does not explain sufficiently how a main seat body containing an occupant would interact with the seat base and arm rests so that the occupant could utilize the arm rests. Without sufficient explanation from Nuna Baby and Mr. Bowman as to how the substitution of arm rests onto Yamazaki’s seat base would, for example, improve the comfort, structure, design, or safety of the child seat, we give more weight to Dr. Kent’s testimony that “a base that is designed only to receive and secure a seat body would have no need for arm rests, and [would] in fact provide additional structures that must be accounted for in any coupling of the two-components in Yamazaki.” Ex. 2010 ¶ 95.

We also do not find the several arguments from Nuna Baby's Reply persuasive. Reply 10–13. First, Nuna Baby's argument that a person of ordinary skill in the art would have been motivated to modify Yamazaki's base 10 with arm rests to be more comfortable, is unsupported by persuasive evidence or testimony. *Id.* at 10–11 (citing Ex. 1003 ¶¶ 75, 77). As discussed above, Mr. Bowman offers no substantive explanation as to how and why a person of ordinary skill in the art would make such an alteration, simply concluding that “a simple substitution to side plates 10c and would provide a more comfortable arm rest to the child.” Ex. 1003 ¶ 75.

With respect to the second argument in its Reply, Nuna Baby's assertion that Washimi's side supports 26 do not impair the functioning of the child safety seat, fails to acknowledge and address the fact that Washimi's arm rests (side supports 26) are on the seat main body, not on the base as Nuna Baby's combination asserts. *Id.* at 11.

And, considering Nuna Baby's third argument, the Examiner conducting the underlying prosecution did not have the benefit of the testimonial evidence that we have before us from Mr. Bowman and Dr. Kent that better informs our understanding of obviousness in terms of the level of ordinary skill in the art. *Id.* at 11–12. Weighing the testimony of both declarants, we find Dr. Kent's testimony on behalf of Britax more persuasive that “while a seat for an occupant may have armrests to make the seating surface more comfortable for the occupant, a base that is designed only to receive and secure a seat body would have no need for arm rests, and in fact provide additional structures that must be accounted for in any coupling of the two-components in Yamazaki.” Ex. 2010 ¶ 95.

On the full record now before us, Nuna Baby has not met its burden to show by a preponderance of the evidence that claim 3 is rendered unpatentable as obvious over Yamazaki and Washimi. Because claim 4 depends from claim 3 Nuna Baby has likewise not met its burden to show obviousness of the subject matter of claim 4 over Yamazaki and Washimi.

8. *Claim 5*

Dependent claim 5 depends from claim 1 and is a quasi-combination of claims 3 and 4, reciting in part “wherein the seat base further defines a first arm rest and a second arm rest, wherein each arm rest defines an angled surface proximate the backrest position.” Ex. 1001, 15:24–25. For claim 5, Nuna Baby argues that Yamazaki’s “side plates 10c include recesses 10d, corresponding to the angled surface, and are proximate to the back portion.” Pet. 38. Nuna Baby argues that the recesses 10d “act as an angled surface engaging and aligning belt 4 in the tensioned configuration” as called for in claim 5. Pet. 38–39 (citing Ex. 1003 ¶ 85).

Nuna Baby does not address the limitations in claim 5 that “the seat base further defines a first arm rest and a second arm rest,” Nuna Baby appears to be relying on its earlier arguments with respect to claim 3, that a person of ordinary skill in the art would have modified Yamazaki’s base 10 and side plates 10c with Washimi’s arm rests (side supports 26). See Pet. 35 (Nuna Baby arguing that “[w]hen incorporating *Washimi*’s side supports 26, a [person having ordinary skill in the art] would have been motivated to create a similar configuration between the top of side supports 26 and *Yamazaki*’s lever 12”). For the same reasons as set forth above with respect to claim 3, we are not persuaded that Nuna Baby has shown by a preponderance of the evidence that one of ordinary skill in the art would

have replaced or modified Yamazaki's side plates 10c on seat base 10 with arm rests from Washimi's main body as a simple substitution.

9. *Claim 12*

Independent claim 12 is a method claim “for manufacturing a child seat configured to be secured to the seat of a car,” and includes basically the same limitations as claim 1. The main difference being that claim 12 recites “*providing* a seat base defining a seat portion and a backrest portion . . .” and “*attaching* a tensioning mechanism to the seat base . . .” Ex. 1001, 16:14–15, 30 (emphasis added). As noted previously, Britax argues independent claim 1, 12, 15, and 19 as a group. PO Resp. 35. For the same reasons as discussed above with respect to claim 1, we are persuaded that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 12 are disclosed in the combination of Yamazaki and Washimi.

10. *Claim 14*

Claim 14 depends directly from claim 1 and recites the additional limitations:

wherein the seat base is configured to receive the belt of the seat of the car such that the belt can be positioned around the backrest portion and seat portion and engaged with the buckle of the seat of the car without feeding the belt through a hole in the seat base.

Id. at 16:52–56.

Nuna Baby argues that the Yamazaki and Washimi combination teaches that “the belt would be positioned around the backrest portion and would engage with the buckle of the seat of a car without feeding the belt through a hole in the base of *Yamazaki*.” Pet. 40 (citing Ex. 1003 ¶¶ 91–92). Britax does not provide substantive arguments with respect to claim 14. PO Resp. 51–53.

Our analysis of Yamazaki and Washimi is consistent with Nuna Baby's argument. Observing Figures 1 and 5 of Yamazaki, and Figures 1 and 2 of Washimi, in both references the seat belts are pulled around the seat and backrest portion and are "engaged with the buckle of the seat of the car without feeding the belt through a hole in the seat base" as recited in claim 14. On the full record now before us, we are persuaded that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 14 are disclosed in the combination of Yamazaki and Washimi.

11. Claims 15–18

Claim 15

Nuna Baby argues that independent claim 15 includes similar limitations to claim 1. Pet. 40–41 (citing Ex. 1003 ¶¶ 93–105). Nuna Baby points out two limitations that are unique to claim 15, that before tensioning "the belt is 'in a horizontal plane defined by the tensioning mechanism and at least one of the seat portion or the backrest portion,'" and that "the tensioning mechanism is configured to displace the portion of the lap section and the portion of the shoulder section of the belt out of the horizontal plane to apply tension to the belt." Ex. 1001, 17:3–11. Nuna Baby argues that these limitations are taught by Yamazaki so that "[w]hen tightening mechanism 11 rotates to tighten the belt, tightening mechanism 11 deflects the belt out of the horizontal plane to be closer to base 10." Pet. 42 (citing Ex. 1005, 1:66–2:3, Fig. 6; Ex. 1003 ¶ 102).

Britax does not provide any substantive arguments with respect to claim 15. PO Resp. 51–53.

Our analysis is consistent with Nuna Baby's comparison of claim 15, including the noted additional limitations to Yamazaki. Observing

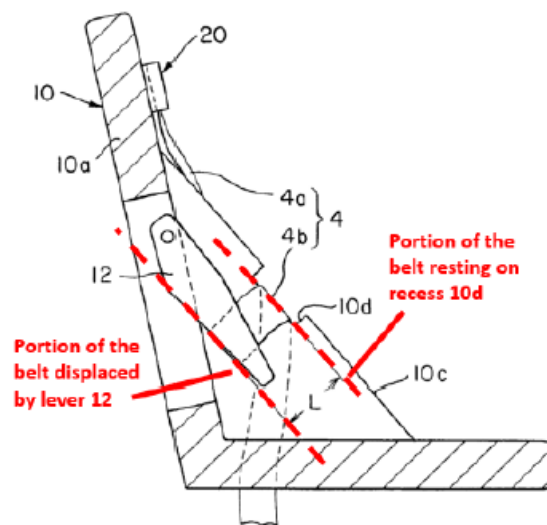
Yamazaki's Figures 1, 2, and 5, we observe the belt in the tensioning mechanism 12 in a first, tensioned and generally vertical arrangement (Figure 5), and in a second untensioned substantially horizontal arrangement (Figures 1 and 2). Ex. 1005 at 4:25–48. These figures and seat belt arrangement are commensurate with the functional description provided in Yamazaki which explains that to tighten the seat belt “[t]he lever 12 of the seat belt tightening mechanism 11 is turned downwardly to deflect the lap section 4b downwardly.” *Id.* at 4:37–39.

We are persuaded for the same reasons as for claim 1, as well as the reasons set forth just above for independent claim 15, that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 15 are disclosed in the combination of Yamazaki and Washimi.

Claim 16

Claim 16 depends from claim 15 and additionally requires that in the first po[sition], a second portion of the lap section of the belt and a second portion of the shoulder section of the belt remains positioned in the horizontal plane such that additional tension is applied to the belt to secure the child seat to the seat of the car in the tensioned configuration.

Ex. 1001, 17:17–22. In other words, claim 16 requires that when the belt is tensioned in the first position, a portion of the lap and shoulder belts remain in the horizontal plane defined by the tensioning mechanism in the second position. Nuna Baby using annotated Figure 6, reproduced below, argues that “*Yamazaki* teaches the belt spanning across recesses 10d through a horizontal plane.” Pet. 43 (citing Ex. 1005, 4:39–41).



Yamazaki's Figure 6, as annotated by Nuna Baby, is shown above illustrating the displacement L of belt portion 4b by rotation of lever 12 downwards.

Britax does not expressly dispute that Yamazaki teaches the limitations of claim 16. (PO Resp. 51–53).

Our analysis is consistent with Nuna Baby's comparison of claim 16 to Yamazaki, including that a portion of the belt crossing recesses 10d of Yamazaki's base 10 teaches the "remains positioned in the horizontal plane" limitation, even when the seat belt is tensioned in the first position. Ex. 1005, Figs. 1, 2, 5. Observing Yamazaki's Figure 5, we see portions of the seat belt crossing recesses 10d and remaining in the same horizontal plane during tensioning, as before tensioning. This seat belt configuration is commensurate with the functional description provided in Yamazaki which explains that during tensioning "the lap section 4b extending *between* the recesses 10d and 10d of the base 10 is deflected downwardly by a distance L as shown in FIG. 6." *Id.* at 4:39–41 (emphasis added). For these reasons,

Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 16 are disclosed in the combination of Yamazaki and Washimi.

Claim 17

Claim 17 depends from claim 16 and recites:

wherein the seat base further defines an arm rest that is configured to engage with the second portion of the lap section of the belt and the second portion of the shoulder section of the belt in the horizontal plane when the tensioning mechanism is in the first position.

Ex. 1001, 17:23–28.

Nuna Baby appears to rely on the side plates 10c as arm rests, asserting that “[i]n th[e] displaced state, part of the belt remains engaged with the recesses 10d in the horizontal plane of the arm rests.” Pet. 45. Britax argues that “Yamazaki does not teach a seat base having arm rests . . . Yamazaki only teaches a base that is designed to receive a child seat to secure the child seat to a vehicle seat.” PO Resp. 53. Britax has the better argument here because the specification of the ’016 patent explains that arm rests are specifically for an occupant:

[i]n some embodiments, the child seat 10 may comprise arm rests for the occupant. In the depicted embodiment, the seat base 12 defines a first arm rest 22 and a second arm rest 23. With reference to FIG. 1A, each arm rest 22, 23 may extend outwardly from the seat base 12 to enable the occupant to rest their arms while being secured within the child seat 10.

Ex. 1001, 6:28–33. Although we do not provide a specific claim construction for “arm rests,” the plain meaning of the term, along with a reasonable reading of the specification indicates that “arm rests” are a structure upon which an occupant can rest their arms. Nuna Baby, simply

referring to side plates 10c as “arm rests,” does not make these equivalent structures. Indeed, by calling the side plates 10c “arm rests” Nuna Baby is moving the ball somewhat, because for claim 3 and its simple substitution argument, Nuna Baby argues that “*Washimi* teaches side supports 26 (claimed first arm rest and second arm rest).” Pet. 32 (citing 2012 ¶ 18; Ex. 1003 ¶ 75). Also, Mr. Bowman testified that “in the proposed *Yamazaki/Washimi* combination, *Washimi*’s side supports 26 would have provided a simple substitution to side plates 10c and would have predictably provided a more comfortable arm rest to the child.” Ex. 1003 ¶ 75.

We give credit to Dr. Kent’s consistent testimony that “Yamazaki does not teach a seat base having arm rests . . . Yamazaki only teaches a base that is designed to receive a child seat.” Ex. 2010 ¶ 113. Our review of Yamazaki provides no description or explanation of side plates 10c as arm rests or any structure that would interact with an occupant of the seat main body, nor does Nuna Baby point to any written description in Yamazaki that the side plates 10c are arm rests. To the extent Nuna Baby is relying on the combination of Yamazaki and Washimi and arguing that Washimi’s arm rests (side supports 26) are substituted for Yamazaki’s side plates 10c, as discussed *supra*, we are not persuaded that Nuna Baby has presented sufficient reasons and evidence to show that a person of ordinary skill in the art would have made such a substitution. *See* Section III.B.7.

On the full record now before us, we are not persuaded that Nuna Baby has shown by a preponderance of the evidence that the subject matter of claim 17 would have been obvious to a person of ordinary skill in the art over Yamazaki and Washimi.

Claim 18

Claim 18 depends directly from independent claim 15 and includes the same subject matter as claim 2. For the same and similar reasons discussed with respect to claim 2, we are persuaded that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 18 are disclosed in the combination of Yamazaki and Washimi.

12. Claim 19

Nuna Baby asserts that independent claim 19 includes similar limitations to claim 15, except that claim 19 is a method claim. Pet. 47 (citing Ex. 1003 ¶¶ 116–117). Nuna Baby argues that the minor differences in terminology are insignificant and do not change the meaning of the limitations as compared to 15 and, therefore, that claim 19 should stand or fall with claim 15.

The main differences are that claim 19 recites the step of “*providing* a seat base defining a seat portion and a backrest portion . . .” and “*attaching* a tensioning mechanism to the seat base” Ex. 1001, 18:5–6, 13 (emphasis added). Britax does not provide any substantive arguments with respect to claim 19 and, as discussed above, essentially argues independent claim 1, 12, 15, and 19 as a group. PO Resp. 35, 51–53. We agree that the claimed method steps do not change the substantive nature or our analysis of the claimed limitations. For the same reasons as discussed above with respect to claim 15, we are persuaded that Nuna Baby has shown by a preponderance of the evidence that all the limitations of claim 19 are disclosed in the combination of Yamazaki and Washimi.

C. Claims 6 and 13 — Alleged obviousness over Yamazaki, Washimi and Parker

Nuna Baby argues that claims 6 and 13, which both depend from independent claim 1, would have been obvious in view Yamazaki, Washimi and Parker. Pet. 48–57.

1. Parker

Parker teaches a child safety seat having an automatically adjusting restraint system 12 including barrier assembly 16 and harness assembly 20 as shown in Figure 1 reproduced below. Ex. 1007, 6:57–58, 7:24–26.

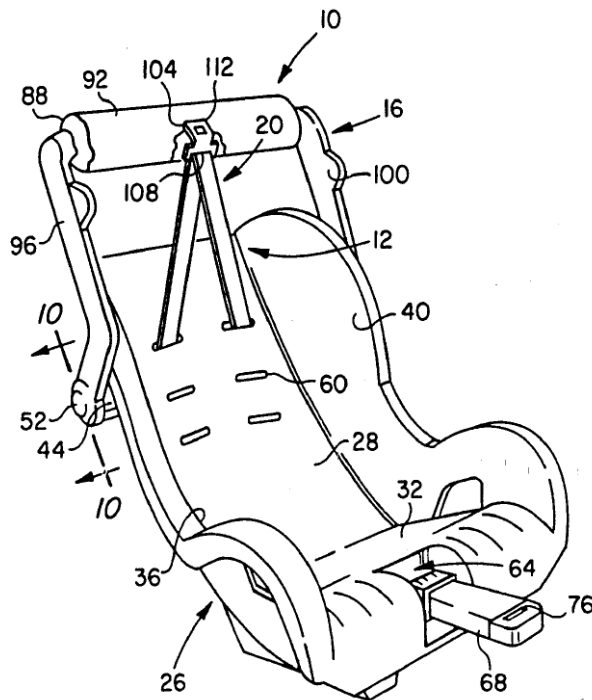


FIG. 1

Figure 1 of Parker, above, illustrates child safety seat 10. Parker explains that “[h]arness assembly 20 interacts with barrier assembly 16 to automatically place shoulder strap 120 about a child within infant car seat 10 in the proper position.” *Id.* at 9:44–46.

Parker also discloses a tensioning system 24, shown in Figure 3 reproduced below, for automatically adjusting shoulder straps 120 of harness 20 to a child in the seat.

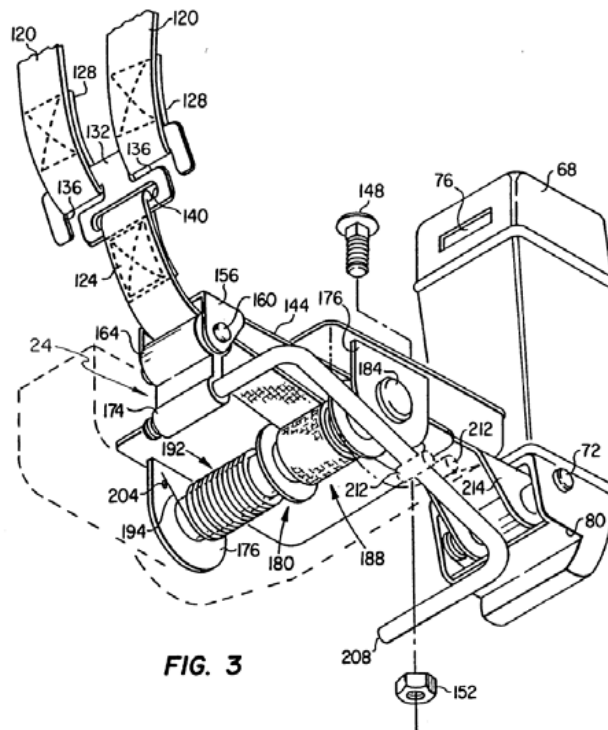


Figure 3 of Parker, above, illustrates shoulder straps 120 connected via extension strap 124 to harness receiver 188 such that torsional spring 194 will “always maintain tension on harness assembly 20 to ensure proper securement of an infant within infant car seat 10.” *Id.* at 10:37–49.

2. Claims 6 and 13

Claim 6

Claim 6 depends directly from claim 1 and requires, among other things, the child seat to have “a harness defining a first belt and a second belt.” Ex. 1001, 15:30–37. Claim 6 also requires that one end of each harness belt is attached to the backrest, and the other ends of the harness belts are attached to the tensioning mechanism and “configured to rotate

with the tensioning mechanism between the first position and the second position.” *Id.*

Nuna Baby argues that a person of ordinary skill in the art, using Parker’s harness “could have improved *Yamazaki*’s lever 12 by attaching the harness to lever 12 so that a first end of the harness extends from the backrest, a second end of the harness extends from lever 12, and each belt of the harness would have a buckle that connects to the crotch strap of the harness.” Pet. 51 (citing Ex. 1003 ¶ 121). With such a harness arrangement, according to Mr. Bowman, “[t]herefore when lever 12 is in the closed position, the child could put on the harness.” Ex. 1003 ¶ 121. Mr. Bowman testifies further that “[l]ike the restraint system in *Parker*, this configuration would have provided a user-friendly child seat that could more securely and reliably connect the child seat and the child to the vehicle.” *Id.* ¶ 122.

Britax argues that the further combination of *Yamazaki* and *Washimi* with *Parker* is not supported by sufficient reasoning and evidentiary underpinnings and is driven by hindsight based on the specification and teachings of the ’016 patent. PO Resp. 55. Because *Yamazaki* teaches base 10 is intended to receive a separate seat body that secures an occupant, Britax argues specifically that

[a] base for receiving a child seat would have no need for a harness as the base is neither intended nor structurally configured to secure a child therein. In other words, while a seat for an occupant may have a harness to secure the child occupant appropriately, a base that is designed only to receive and secure a seat body would have no need for a harness.

Id. at 56 (citing Ex. 2010 ¶ 118).

Parker arguably teaches that a harness for securing an occupant in a child safety seat was known in the art. Ex. 1007, 7:24–28, Fig. 1. But it is

not enough to find in the prior art features which meet the elements of a claim, Nuna Baby must provide a persuasive reason supported by evidentiary underpinnings that a person of ordinary skill in the art would have combined Parker's harness with Yamazaki's base 10 and tensioning mechanism. In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any reason *why* a person of skill in the art would have made the combination. *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1366 (Fed. Cir. 2017). "[W]e also recognize that we cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention." *Id.* at 1367 (citing *KSR*, 550 U.S. at 419, 421).

Nuna Baby's stated reason for combining Parker is that "a system to secure the child to the seat would have been necessary and a harness system was a common feature for child seats." Pet. 50 (citing Ex. 1003 ¶ 120). The evidence relied upon by Nuna Baby to support this reasoning is Mr. Bowman's testimony that

Parker's harness system could have improved Yamazaki's lever 12 by attaching the harness to lever 12 so that a first end of the harness extends from the backrest, a second end of the harness extends from lever 12, and each belt of the harness would have a buckle that connects to the crotch strap of the harness. Therefore, when lever 12 is in the closed position, the child could put on the harness.

Ex. 1003 ¶ 121. This testimony does not, however, acknowledge that Yamazaki's lever is an element of seat base 10, not the seat body. What Mr. Bowman does not explain is how an occupant of Yamazaki's seat body

would be able to put on, or access, a harness that is attached to the lever 12 on the seat base. Mr. Bowman testifies further that “*Parker’s* harness system would have provided the additional advantage of creating a failsafe configuration because the child would not have been able to interact with the restraint system unless *Yamazaki’s* lever 12 was closed.” *Id.* ¶ 122. This testimony also does not explain how an occupant in a seat body can interact with Yamazaki’s seat base 10 and a harness attached thereto, even when Yamazaki’s lever 12 is closed. Based on a plain reading of the disclosures of Yamazaki and Washimi that teach a separate seat base and main body, it is neither apparent, nor do we have persuasive evidence or analysis from Mr. Bowman, that one of ordinary skill would have considered placing an occupant on Yamazaki’s seat base 10 without benefit of a seat body.

We give little weight to Mr. Bowman’s testimony because it does not explain sufficiently why a person of ordinary skill in the art would have been motivated to combine either of Yamazaki or Washimi’s two-component child seats with Parker’s harness and restraint system. Without corroborating evidence and convincing reasons why one of ordinary skill in the art would have combined Parker’s harness with Yamazaki and Washimi, it is not enough that the claimed elements are shown in different references and could have been combined. *See Unigene Labs*, 655 F.3d at 1360 (“Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination.”).

We are not persuaded that Nuna Baby has provided the necessary articulated reasoning supported by evidentiary underpinnings to prove by a preponderance of the evidence that a person of ordinary skill in the art would

have combined Yamazaki, Washimi, and Parker to meet the limitations of claim 6.

Claim 13

Claim 13 depends directly from claim 1 and requires that “the seat base defines padding positioned on and attached to the backrest portion and the seat portion so as to receive an occupant therein.” Ex. 1001, 16:46–49. Claim 13 further recites “wherein the tensioning mechanism is accessible and rotatable between the first position and the second position with the padding attached to the backrest portion.” *Id.* at 16:49–51.

Nuna Baby argues “that providing a child seat that is ‘padded with material’ was ‘well known in the art.’” Pet. 55 (citing Ex. 1007, 9:14–16). Nuna Baby argues that a person of ordinary skill in the art would have been motivated to use Parker’s padding and “[c]onfiguring *Yamazaki* to allow users to access lever 12 even when the padding is on the seat would have improved the usability of the seat because the user would not have been required to remove the padding.” Pet. 56 (citing Ex. 1003 ¶ 130). Mr. Bowman testifies that “*Parker* teaches padding on swing barrier 88, and I believe a [person having ordinary skill in the art] would have known that padding could be similarly added to lever 12 if necessary.” Ex. 1003 ¶ 130.

We tend to agree that a person of ordinary skill in the art could probably add padding to basically any part of Yamazaki’s child seat. But the question is more appropriately *why* would a person of ordinary skill in the art have added padding to Yamazaki’s seat base 10, as Nuna Baby argues, when the occupant is received in a separate seat main body that is then mounted to seat base 10? Neither Nuna Baby nor Mr. Bowman have explained persuasively why a person of ordinary skill in the art would have

placed Parker's padding on Yamazaki's lever 12 or seat base 10 when an occupant is received in a seat body separate from seat base 10. Nuna Baby has essentially side-stepped this question and thus failed to provide sufficiently articulated reasoning for adding padding to Yamazaki's seat base 10 and lever 12.

We are not persuaded that Nuna Baby has provided the necessary articulated reasoning supported by evidentiary underpinnings to prove by a preponderance of the evidence that a person of ordinary skill in the art would have combined Yamazaki, Washimi, and Parker to meet the limitations of claim 13.

D. Claims 7–11 — Alleged obviousness over Yamazaki, Washimi and Hutchinson

Nuna Baby asserts that claims 7–11 would have been obvious over Yamazaki, Washimi, and Hutchinson. Pet. 57–88.

1. Hutchinson

Hutchinson teaches a child safety seat including a seat member 30 “detachably mounted” on a base member 20. Ex. 1008 ¶ 59. Base member 20 is shown below in Figure 1 of Hutchinson.

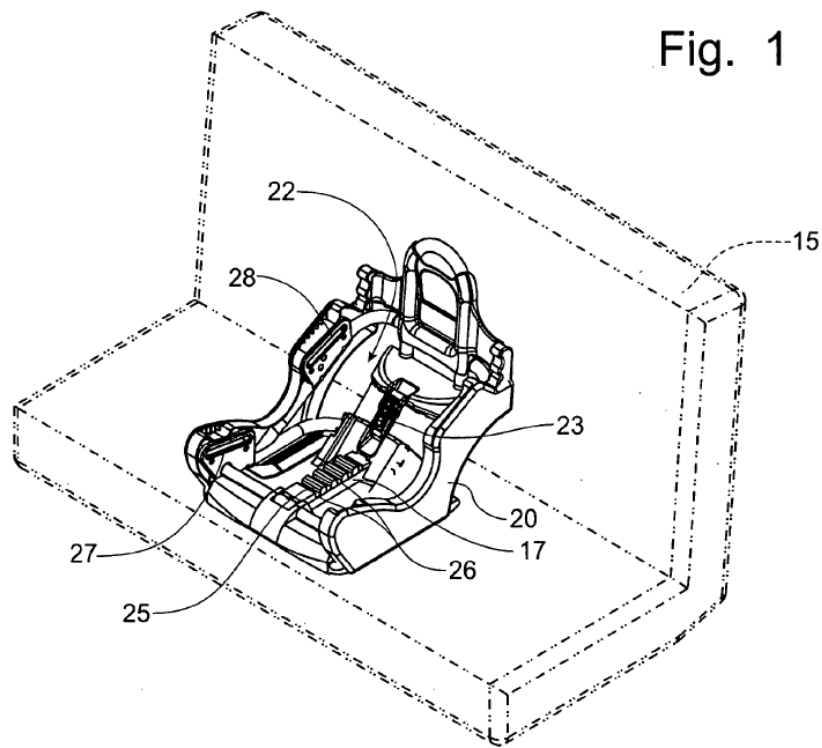
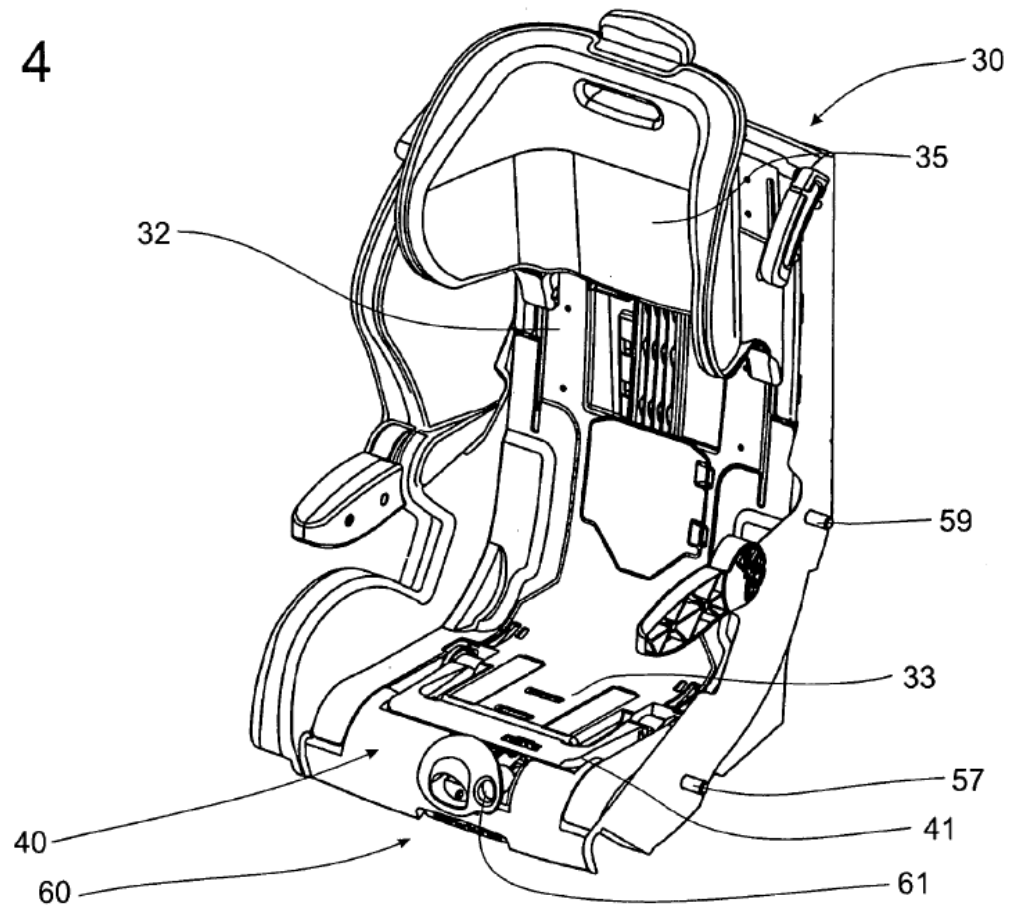


Figure 1 of Hutchinson, above, illustrates base member 20 including control slots 27, 28, with the base member shown positioned on vehicle seat 15 (illustrated in dashed lines).

Hutchinson's seat member 30 has latch pins 57, 59 for engaging with "control slots 27, 28 to trap the seat member 30 on the base member 20." *Id.* ¶ 61. Figure 4 of Hutchinson illustrating seat member 30 is reproduced below.

Fig. 4



Hutchinson's Figure 4, shown above, illustrates a partial cut-away view of seat member 30 illustrating latch pins 57, 59 for engaging with slots 27, 28 shown formed in base member.

Functionally speaking, in Hutchinson, latch pins 57, 59 retract when latch lever 41 is raised, so that the seat member 30 can engage with base member 20. *Id.* Once engaged and with the seat member properly positioned on the base member, latch lever 41 is lowered, and pins 57, 59 extend to engage in slots 27, 28 of the base member 20. *Id.* Hutchinson explains specifically that the latch pins 57, 59 are retracted "into the seat portion 33 of the seat member 30 until the seat member 30 is properly positioned onto the base member 20, whereupon the latch pins 57, 59 are

extended into the respective lower and upper recline control slots 27, 28 to trap the seat member 30 on the base member 20.” *Id.*

2. Claims 7–11

Claim 7 depends from claim 1, and is directed to an embodiment of the claimed child seat “wherein the tensioning mechanism further comprises a locking mechanism . . . [for] locking the tensioning mechanism in the first position.” Ex. 1001, 15:42–49. The locking mechanism comprises, *inter alia*, “two laterally-opposing locking members configured to translate between an extended position and a re[t]racted position.” *Id.* The claim also describes that the locking member extends into “lock receiving portion[s]” in the seat base to lock the tensioning mechanism into the first position. *Id.*

A particular difference from claim 7 is that Hutchinson discloses latch pins 57, 59 on a seat body for engaging with horizontally extending control slots 27, 28 on a base member. Ex. 1008 ¶ 61. Latch member 41 positioned on the seat body actuates the engagement and disengagement of the pins with the slots on the base. *Id.* The slots capture and restrain the pins axially, but allow the pins to slide in the slots transversely permitting the seat member to recline in different positions relative to the base member by operation of a recline apparatus, i.e., recline actuator handle 34. *Id.* ¶¶ 60–61. Thus, Hutchinson discloses securing and regulating the relative positioning of the seat body and base member via the recline apparatus, latch member 41, latch pins 57, 59, and slots 27, 28. On the other hand, the invention recited in claim 7 utilizes the locking mechanism to secure the tensioning mechanism so that it does not, or is not, released inadvertently so that the child seat becomes loose from the vehicle seat.

Although Yamazaki discloses a locking lever 30 and teeth 30a for locking tensioning lever 12 (Figure 7), Nuna Baby argues that Yamazaki's locking lever 30 and teeth 30a "allow for a certain amount of movement of the tightening mechanism 11, or play." Pet. 60 (citing Ex. 1003 ¶ 133). Mr. Bowman testifies that a person of ordinary skill in the art would have "considered a locking mechanism with two laterally-opposing locking members like the one disclosed for the car seat in *Hutchinson* as a more secure and reliable locking mechanism." Ex. 1003 ¶ 134. Mr. Bowman testifies that a person of ordinary skill in the art would have "understood [Hutchinson's] mechanisms would provide a more secure and more reliable lock that would have been out of reach of the child." *Id.* Mr. Bowman opines further that "*Hutchinson's* locking mechanism would have simply provided a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field." *Id.* ¶ 136.

Britax responds by arguing that "the proposed modification of Yamazaki in view of Hutchinson is simply not plausible. Instead, the rationale for combining the cited art appears to rest solely on hindsight." PO Resp. 63. More specifically, Britax contends that Mr. Bowman "offers no support on how a person of ordinary skill in the art would have known to place the locking members located on an exterior of a child seat on the alleged tensioning mechanism." *Id.* at 65. Britax argues that Mr. Bowman's opinions are deficient because they do not take into account important design considerations for latching a seat belt tensioning mechanism as opposed to connecting a seat body and base. *Id.* at 66 (citing Ex. 2010 ¶ 135). Dr. Kent testifies that neither Nuna Baby nor Mr. Bowman has explained or accounted for relevant design considerations such as "latches

experience different loads during installation of the child seat; the latches experience different loading during a crash, and the latches address two different mechanical situations.” Ex. 2010 ¶ 135. Dr. Kent points out that “Hutchinson address[es] an entirely different aspect of child seat crash protection (coupling of the seat to the base) as opposed to coupling a base to a vehicle seat.” *Id.* ¶ 136.

As Dr. Kent explains, Hutchinson’s latch mechanism is utilized for securing a seat body in conjunction with a recline apparatus in a desired relative orientation to a seat base. There is no explicit suggestion in Hutchinson that such a pin and slot mechanism would be used for latching or securing other parts of a child safety seat. Nuna Baby’s stated reasons for modifying Yamazaki’s tensioning mechanism are based on mere substitution of Hutchinson’s pin and slot locking mechanism in place of Yamazaki’s locking lever 30 and teeth 30a because it would yield a predictable result, that a person of ordinary skill in the art would have “found it to be a minor modification,” and that the combination with Hutchinson “would have created additional predictable results by more securely and reliably locking *Yamazaki*’s lever 12 in the closed position.” Pet. 61–62 (citing Ex. 1003 ¶¶ 136–138). We do not find these arguments to be supported by adequate evidence to demonstrate unpatentability by a preponderance of the evidence. Nuna Baby and Mr. Bowman have not provided adequate explanation and evidence to persuade us that one having ordinary skill in the art would have been led to use the seat body latching mechanism to secure Yamazaki’s tensioning mechanism. Pet. 59–63. Nuna Baby provides insufficient evidence and reasoning to show that one of ordinary skill in the art, aware of the safety and mechanical design considerations involved with coupling a

seat member to vehicle seat, would have been motivated to replace the locking lever 30 with such a latch mechanism. The declaration evidence from Mr. Bowman in this case is unsupported by sufficient facts and evidence so as to be persuasive on this issue. Mr. Bowman, for example, testifies that “using latch pins 57 to enter receiving slots 27 would have provided a system that comprised a more robust means of anchoring latch pins 57 by, among other things, increasing the surface area of contact for the locking mechanism.” Ex. 1003 ¶ 134. Yet Mr. Bowman fails to evaluate, or even estimate, the amount of surface area contact that would be present in either Yamazaki or Hutchinson. Also, Mr. Bowman does not explain why locking lever 30 is also not out of reach of an occupant in Yamazaki where base 10 is below the seat body in which an occupant is held. *Id.* Mr. Bowman does not persuasively explain why or how Hutchinson’s latching mechanism “is less likely to have failures due to wear.” *Id.* ¶ 135. Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight. 37 C.F.R. § 42.65(a). Considered as a whole, Mr. Bowman’s declaration does not provide sufficient facts, data, or analysis to demonstrate that the modification would have been a matter of simple substitution or would have led to a predictable result.

For these reasons, Nuna Baby has not met its burden to show by a preponderance of the evidence that claim 7 is rendered unpatentable as obvious over Yamazaki, Washimi, and Hutchinson. Claims 8–11 all depend from claim 7, and thus Nuna Baby has likewise not met its burden to show obviousness of the subject matter of claims 8–11 over Yamazaki, Washimi, and Hutchinson for the same reasons.

E. Secondary Considerations

Britax presents certain arguments that are germane to secondary considerations, and which we address below in the context of analyzing the obviousness challenge under the Graham factors. *See Leo Pharm. Prods, Ltd. v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013) (“Objective indicia of nonobviousness play a critical role in the obviousness analysis. They are ‘not just a cumulative or confirmatory part of the obviousness calculus but constitute[] independent evidence of nonobviousness.’”) (quoting *Ortho–McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1365 (Fed. Cir. 2008)). These considerations “are crucial in avoiding the trap of hindsight[,]” *id.*, and “may be the most probative and cogent evidence in the record.” *Apple Inc. v. Int’l Trade Comm’n*, 725 F.3d 1356, 1366 (Fed. Cir. 2013) (internal quotation marks and citations omitted). Britax puts forth evidence of industry praise and long-felt need. PO Resp. 69–77. As explained below, we do not agree with Britax that its evidence of secondary considerations weighs significantly in favor of non-obviousness.

1. Nexus

To be relevant, evidence of non-obviousness must be commensurate in scope with the claimed invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011). Thus, to be accorded substantial weight, there must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). Nexus is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining non-obviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). There is a

“presumption of a nexus” when a product is “coextensive” with a patent claim. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363, 1372 (Fed. Cir. 2013). In *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019), the Federal Circuit explained that “presuming nexus is appropriate when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’”). The Federal Circuit has held that “if the marketed product embodies the claimed features, and is coextensive with them, then a nexus is presumed and the burden shifts to the party asserting obviousness to present evidence to rebut the presumed nexus.” *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000).

Britax asserts that “[t]he ‘016 patent is embodied in the Britax Frontier 90 and Frontier® CLICKTIGHT child seats.” PO Resp. 16 (citing Ex. 2010 ¶ 146). Britax refers us to the product instruction manuals and user guide for the Frontier 90 and Frontier CLICKTIGHT products (Exhibits 2022, 2023). Britax argues that “[t]he CLICKTIGHT installation system embodies the claimed tensioning mechanism and allows for a quick and easy installation of the child seat to the vehicle seat in a secure manner.” *Id.* at 17 (citing Ex. 2010 ¶ 146).

Nuna Baby argues that Britax “provides only bare assertions that three or four elements of the Frontier ClickTight and the Frontier 90 practice independent claim 1 of the ‘016 patent.” Reply 21. Nuna Baby argues that Britax and Dr. Kent’s contention that the claims are tied to the Frontier products is conclusory and insufficient to establish that Britax is entitled to a presumption of nexus. *Id.* at 22.

Our comparison of the independent claims to the description of the Frontier® 90 and Frontier® CLICKTIGHT child seats in the product user guides is more consistent with Britax’s assertions. Claim 1, for example, recites a child seat and various structures such as “a seat base defining a seat portion and backrest portion.” Ex. 1001, 14:31–33. Claim 1 provides functional and structural limitations explaining how the child seat is secured by a seat belt “positioned around at least one of the front side of the backrest portion.” *Id.* at 14:43–44. As components of the child seat, claim 1 further recites specific limitations that pertain to the “CLICKTIGHT” features, starting with “a tensioning mechanism attached to the backrest portion of the seat base.” *Id.* at 14:49–50.

The independent claims are mostly similar and all recite elements of a “child seat,” as a whole, including the tensioning mechanism and its features of capturing and securing both the lap and shoulder belts of a vehicle seat “to secure the child seat to the car in a tensioned configuration.” *Id.* at 14:59–60. Thus, the claims do not recite simply a component of a child seat but mostly the product as a whole, and so we do not find Nuna Baby’s argument that the claims mainly recite a component of the child seat products persuasive. Reply 21–22 (citing *Fox Factory*, 944 F.3d at 1373). In addition, it is a reasonably simple comparison to read the claims in conjunction with the user guides for the Frontier® 90 and Frontier® CLICKTIGHT child seats to which Britax refers. For example, a comparison of page 10 of the Frontier 90 user guide describing installation of the child seat, including the “CLICKTIGHT” feature for securing both lap

and shoulder belts, tracks right along with the child seat and tensioning mechanism as recited in claim 1.¹¹

We acknowledge that neither Britax nor Dr. Kent have undertaken an exemplary comparison of the claims and products as Nuna Baby argues. *See* Reply 21 (Nuna Baby arguing that “[n]either PO nor its expert address the numerous limitations of any of the independent claims in narrative or claim chart form”). However, the claims are reasonably straightforward and descriptive and the product user guides are quite clear as to the relevant corresponding structure and function of the commercial products. We determine that Britax has shown sufficiently in this proceeding that the Frontier® 90 and Frontier® CLICKTIGHT child seats are sufficiently coextensive with the claims to be entitled to a presumption of nexus. To the extent we determine that Britax has met their burden to show sufficiently a presumption of nexus, as discussed below, this is in some ways inconsequential because, as explained below, we do not determine that the weak evidence of praise and long-felt need outweighs the substantial evidence of non-obviousness, including Yamazaki and Washimi.

2. Industry Praise

Britax argues that its Frontier products and CLICKTIGHT technology have garnered significant industry praise which is an indicator of non-obviousness of the claimed child seat. PO Resp. 69–73. In support, Britax cites to a number of internet product reviews that considered either the Frontier® 90 or Frontier® CLICKTIGHT products. PO Resp. 70 (citing Exs. 2011–2020). As representative, Britax points in particular to Exhibit

¹¹ We refer to the actual Frontier® 90 user guide page numbers.

2012, which is a product review by “The Car Crash Detective.” *Id.* at 70–71 (citing Ex. 2012). This product review states about the Frontier 90:

The installation of the seat is a dream. In fact, it’s my second favorite thing about the Frontier after its harness height range. What I’m talking about is the ClickTight seat belt installation system. It’s designed to allow you to make a safe installation through what is essentially an automatic belt tensioner. I love this! All you need to do is lift the cover so you see the ClickTight panel, route the belt through the green path as needed, and then close the cover.

Ex. 2012, 3. We have reviewed this exhibit and each of the user reviews which Britax provides and find that there is certainly a general consensus amongst the reviewers that the Britax Frontier products are safe, at least in part, because they facilitate correct installation of the child seat in a vehicle. *See, e.g.*, Ex. 2013, 7 (“With the CLICKTIGHT Installation System you can drive with ease knowing that you installed properly. It’s practically fail proof!”).

Industry praise for an invention may provide evidence of nonobviousness where the industry praise is linked to the claimed invention. *See Geo. M. Martin Co. v. Alliance Mach. Sys. Int’l LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010); *Asyst Techs., Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008).

Our evaluation of these product reviews reveals that they are mainly user reviews and baby product review blogs directed towards the user’s personal perspective on the safety and use of the Frontier products. *See, e.g.*, Ex. 2018, 7 (One reviewer stating “I was provided with a sample item to facilitate this review. All opinions expressed are completely honest and my own, based on my personal experience. Your experience may differ.”). These exhibits also appear to be the result of product reviews of new or

updated products introduced into the child seat market between 2013 and 2017, and in many cases were provided to the reviewers in exchange for the review. Although one reviewer indicated that Britax did not sponsor or provide a seat for review (Exhibit 1015, 10), we have little or no evidence before us of as to whether the majority of users and reviewers were compensated or provided the products in exchange for a review, thus the independence of these reviews is not entirely clear. However, we do acknowledge that the reviews are consistent in referring to the ease and safety aspects of the CLICKTIGHT system, and therefore we do not entirely discount this evidence, but consider it weak evidence of praise. Moreover, these reviews are also not truly industry praise, for example, by a competitor in the field of child seats or independent national child seat testing organization, and thus we are also not inclined to provide much weight to this evidence. *See WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1334 (Fed. Cir. 2016) (The Court explaining that evidence of industry praise weighs in favor of non-obviousness because “[i]ndustry participants, especially competitors, are not likely to praise an obvious advance over the known art.”).

Britax also points to Exhibit 2011 that appears to be a press release page from Britax’s website that lists several awards for the Frontier® 90 and Frontier® CLICKTIGHT products, including, NHTSA 5-Star Rated - Ease of use rating; BabyCenter Product Awards-2014 “Moms’ Pick for Best Booster Seat”; and NAPPA Gold from National Parenting Publications Awards (NAPPA). The press release however merely lists the awards and does not provide any details about why the award was given or in any way indicate that the awards were based on the CLICKTIGHT feature. Without

at least some level of detail explaining what features of the child seat led to the award, we cannot consider these awards significantly probative of the assertion that the CLICKTIGHT feature was the basis for, or to the extent it was considered in, the determination of the awards. Again, we do not discount this evidence but consider it along with the user reviews weak evidence of industry praise.

3. Long-Felt Need

Britax provides a 2009 technical report from the National Highway Transportation Safety Administration indicating “[t]hree main errors found during the 37 LATCH installations were as follows: (1) loose installation (73%), (2) installation of both seat belt and LATCH systems (45.9%), and (3) twisted lower anchor straps (35.1%).” PO Resp. 74; Ex. 1010, v. Based on this evidence, Britax argues that there was a long-felt need for a child seat that was “user-friendly and easy to install properly and appropriately tensioned to the vehicle seat.” PO Resp. 74. Britax argues, without evidentiary support, that despite the many child seats on the market, “many of these seats suffered from complicated, multiple step installations, which continued to attribute to improper installation of the child seat.” *Id.* Britax relies on Dr. Kent’s testimony that different from Yamazaki and Washimi, for example, the claimed child seat in the ’016 patent eliminates the interface between a seat body and base. *Id.* at 76 (citing Ex. 2010 ¶ 158).

One problem with this argument and Dr. Kent’s testimony as to elimination of the interface between a separate seat base and seat body, is it presumes the incorrect claim construction proposed by Britax, and that the independent claims are specifically directed to a child seat that is not a two-component structure. As we discussed in our claim construction, we are not

persuaded to read such limitations into the independent claims. *See supra* Section II.C.1. Another problem with Britax’s argument is that an improved product and perhaps more efficient mechanism for securing a child seat in a vehicle is not itself persuasive evidence of a long-felt and unmet need. It is not enough in this case to tout the advantages and argue that the Frontier products are better or faster to secure in a vehicle than other child seats, it is incumbent on Britax to show that the problem of securing a child seat to a car with proper tensioning had not been solved before. *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1325 (Fed. Cir. 1999) (evidence of long felt need must show that the problem solved by appellant’s invention was known but not solved prior to the invention). Reviewing the prior art in this case, that does not appear to be the case. *See, e.g.*, Ex. 1005, 1:45–48 (Yamazaki explaining that “[i]t is an object of the present invention to provide a child car seat that is easy to set on a passenger seat of a vehicle and allows for a seat belt for fastening the child car seat in place to be simply and sufficiently tensioned.”).

For these reasons, the evidence of long-felt need and unmet need is entitled to little weight in demonstrating non-obviousness of the claimed invention.

F. Conclusion as to Obviousness

We have weighed the entirety of the evidence in this proceeding, including Nuna Baby’s arguments and evidence of obviousness and Britax’s arguments and evidence of non-obviousness. On balance, we conclude that Nuna Baby has shown by a preponderance of the evidence that the subject matter of claims 1, 2, 12, 14–16, 18, and 19 of the ’016 patent are unpatentable based on Yamazaki and Washimi. Nuna Baby has not

demonstrated that claims 3–5 and 17 would have been obvious over this same prior art. Nuna Baby also has not shown that claims 6 and 13 would have been obvious over Yamazaki, Washimi, and Parker, or that claims 7–11 would have been obvious based on Yamazaki, Washimi, and Hutchinson.

IV. SUMMARY

Nuna Baby has proved by a preponderance of the evidence that claims 1, 2, 12, 14–16, 18, and 19 would have been obvious over Yamazaki and Washimi.

Nuna Baby has not proved by a preponderance of the evidence that claims 3–5 and 17 would have been obvious over Yamazaki and Washimi.

Nuna Baby has not proved by a preponderance of the evidence that claims 6 and 13 would have been obvious over Yamazaki, Washimi, and Parker.

Nuna Baby has not proved by a preponderance of the evidence that claims 7–11 would have been obvious over Yamazaki, Washimi, and Hutchinson.

V. ORDER

For the reasons given, it is

ORDERED, based on a preponderance of the evidence that claims 1, 2, 12, 14–16, 18, and 19 are unpatentable;

FURTHER ORDERED that claims 3–11, 13, and 17 are not unpatentable based on the prior art on which trial was instituted in this proceeding; and

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

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–5, 12, 14–19	103	Yamazaki, Washimi	1, 2, 12, 14– 16, 18, 19	3–5, 17
6, 13	103	Yamazaki, Washimi, Parker		6, 13
7–11	103	Yamazaki, Washimi, Hutchinson		7–11
Overall Outcome			1, 2, 12, 14– 16, 18, 19	3–11, 13, 17

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