Trials@uspto.gov
Tel: 571-272-7822

Paper 24
Entered: February 2, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NHK SEATING OF AMERICA, INC.,
Petitioner,

v.

LEAR CORPORATION,
Patent Owner.

Case IPR2014-01202
Patent 5,378,043 C2

Before RICHARD E. RICE, MITCHELL G. WEATHERLY, and CARL M. DeFRANCO, *Administrative Patent Judges.*

WEATHERLY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a)

I. INTRODUCTION

A. BACKGROUND

NHK Seating of America, Inc. ("NHK") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 2, 4, 6, 8, 9, 13–20, 28–31, 43–49, 55–60, 62–68, 70, 78, 80, 81, 84–90, 93, and 94 of U.S. Patent

No. 5,378,043 C1 (Ex. 1001, "the '043 patent").[1] NHK supported the Petition with a declaration from Richard W. Kent, PhD (Ex. 1012). Lear Corporation ("Lear") timely filed a Preliminary Response. Paper 6 ("Prelim. Resp."). On February 3, 2015, based on the record before us at the time, we instituted an *inter partes* review of all challenged claims, Paper 7 ("Institution Decision" or "Dec."), on the following grounds:

References	**Basis**	**Claims challenged**
Japanese Utility Model Registration Request S55–34468 ("JP '468") (Ex. 1007 with certified translation at Ex. 1008)	§ 102(b)	2, 4, 6, 8, 9, 28–31, 57, 78, and 80
U.S. Patent No. 3,802,737 ("Mertens") (Ex. 1009) and U.S. Patent No. 3,186,763 to R.A. Ferrara ("Ferrara") (Ex. 1010)	§ 103	2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94

Dec. 15–16.

After we instituted this review, Lear filed a Patent Owner Response in opposition to the Petition (Paper 11, "Resp.") that was supported by the declaration of David C. Viano, PhD (Ex. 2004). NHK filed a Reply in support of the Petition (Paper 13, "Reply").

[1] When we cite to any portion of Exhibit 1001, we will include a reference to the original version of the '043 patent or the reexamination certificate, series C1, as needed for clarity. Additionally, Exhibit 1001 includes only the first of two reexamination certificates for U.S. Patent No. 5,378,043. The second reexamination proceeding resulted in U.S. Patent No. 5,378,043 C2, reflecting that the patentability of claims 2–9, 13–51, and 54–96 was confirmed and claims 52 and 53 were not subject to reexamination during the second reexamination proceeding. Exhibit 1006, 9.

Lear also filed a Motion to Strike and/or Exclude the Testimony of NHK's Expert, Richard W. Kent. Paper 15 ("Motion" or "Motion to Exclude"). NHK opposed the Motion to Exclude. Paper 17 ("Mot. Opp."). Lear filed a Reply in support of the Motion. Paper 19 ("Mot. Reply"). Lear did not move to amend any claim in the '043 patent.

We heard oral argument on September 9, 2015. A transcript is entered as Paper 23 ("Tr.").

For the reasons expressed below, we conclude that NHK has demonstrated, by a preponderance of evidence, that claims 2, 4, 6, 8, and 28–31 are unpatentable but has failed to do so for claims 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94. We also deny Lear's Motion to Exclude.

B. Related Matters

NHK identified as a related proceeding the following co-pending district court proceedings as potentially being affected by a decision in this proceeding: *Lear Corporation v. NHK Seating of America, Inc.*, Case No. 2:13-cv-12937-SJM-RSW (E.D. Mich.), filed July 5, 2013, and served July 24, 2013; *Lear Corporation v. TS Tech USA Corporation, et al.*, Case No. 2:11-cv-00245-MHW-NMK (S.D. Ohio), filed March 21, 2011; and *Lear Corporation v. TS Tech USA Corporation, et al.*, Case No. 2:10-cv-14302, filed October 26, 2010 (E.D. Mich). Pet. 1. NHK also identified as related proceedings four completed *Ex Parte* Reexaminations including: 90/009,250 filed August 14, 2008; 90/011088 filed July 9, 2010; 90/012,770 filed January 23, 2013, and 90/012,999 filed September 16, 2013. *Id*. Lear identified six other *inter partes* review proceedings as being directed to patents alleged to be infringed in the district court litigation with NHK,

including: IPR 2014-00925 (U.S. Patent No. 8,434,818); IPR 2014-00957 (U.S. Patent No. 7,455,357); IPR 2014-01079 (U.S. Patent No. 6,631,949); IPR 2014-01101 (U.S. Patent No. 6,631,955); IPR 2014-01026 (U.S. Patent No. 6,655,733); and IPR 2014-01200 (U.S. Patent No. 6,955,397). Prelim. Resp. 1.

C. THE '043 PATENT

The '043 patent is directed to "seat headrest arrangements." Ex. 1001, 1:5–6. Claims 2 and 57 are the only independent claims among the challenged claims, with claim 2 being illustrative and reciting:

> 2. A vehicle seat and headrest arrangement comprising:
>
> a seat bun frame having fore and aft ends;
>
> a seatback frame joined to the bun frame means adjacent the aft end of the bun frame; and
>
> a headrest pivotally attached with the seatback frame along a pivotal axis generally perpendicular to the fore and aft direction whereby, upon a rear impact of a vehicle in which the arrangement is mounted, the pivotal attachment allows the headrest to move in a forward direction toward the head of an occupant of the vehicle seat, wherein the headrest has a cushion portion;
>
> an impact target operatively associated with the cushion portion and pivotally associated with the seatback frame, wherein a force upon the impact target causes the headrest to rotate forwardly; and
>
> a spring operatively associated with the seatback frame biasing the headrest against pivotal movement.

Ex. 1001, C1, 1:26–45.

The '043 patent describes two embodiments of the headrest in which "upon a rear vehicle impact, the headrest moves in a forward direction toward the head of a vehicle seat occupant." Ex. 1001, Abstract. The

colorized versions of Figures 2 and 3 shown below illustrate the first embodiment.

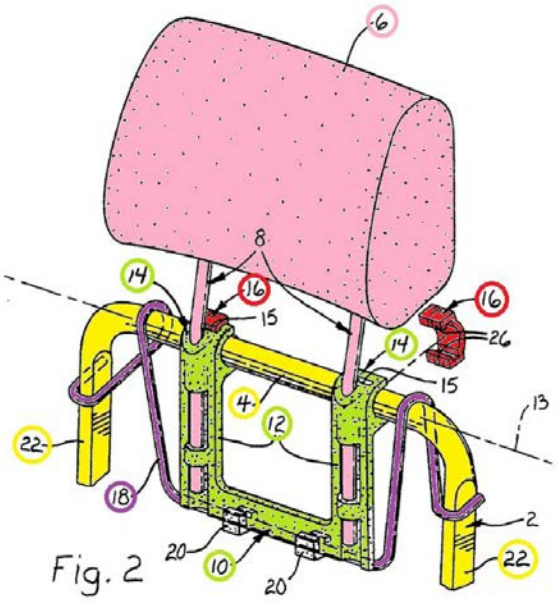

Fig. 2

Figure 2 of the ’043 patent illustrates the upper portion of a seatback frame and an embodiment of the active headrest arrangement.

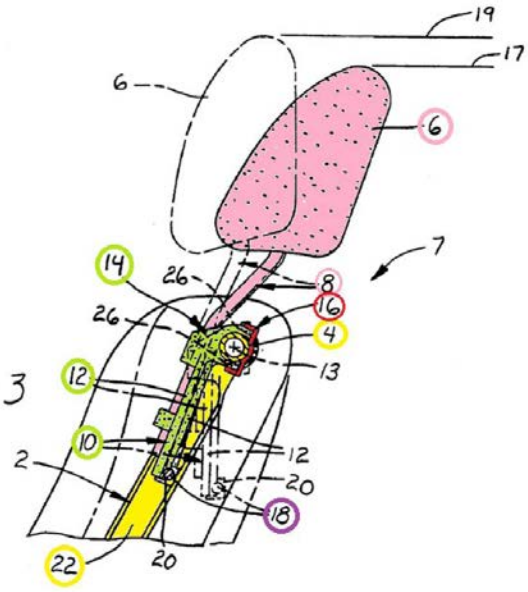

Fig. 3

Figure 3 of the ’043 patent illustrates a side view of the headrest of Fig. 2 indicating the way in which the headrest moves forward at impact.

Two posts 8 (pink) extend from headrest cushion 6 (pink) and are held to impact plate 10 (green) via alignment members 12 (green). *Id*. at 1:43–50. Impact plate 10 (green) is pivotally connected to cross frame member 4 (yellow) with clips 16 (red) so that impact plate 10 (green) pivots around cross member 4 (yellow) along axis 13. *Id*. at 1:45–56. Spring 18 (purple), which is held to impact plate 10 (green) by clips 20, wraps around frame sides 22 (yellow) and cross member 4 (yellow) to bias headrest cushion 6 (pink) against rotation. *Id*. at 1:59–64. Rearward loading of impact plate 10 (green) will cause headrest cushion 6 (pink) to overcome the biasing force of spring 18 (purple), causing headrest cushion 6 (pink) to pivot about fixed pivotal axis 13 toward the head of a seat occupant. *Id*. at 1:64–66.

The colorized versions of Figures 4 and 5 of the ’043 patent shown below illustrate the second embodiment of the headrest.

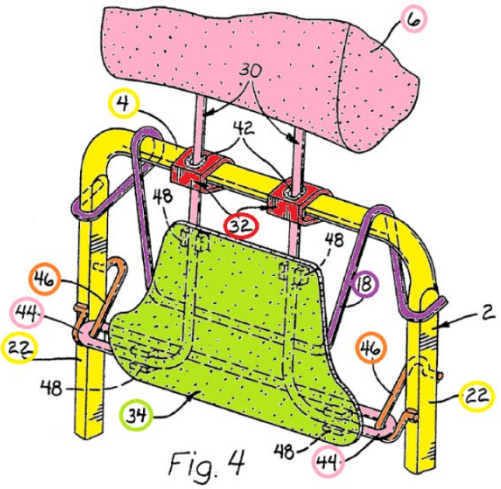

Figure 4 of the ’043 patent illustrates the upper portion of a seatback frame and a second embodiment of the active headrest arrangement.

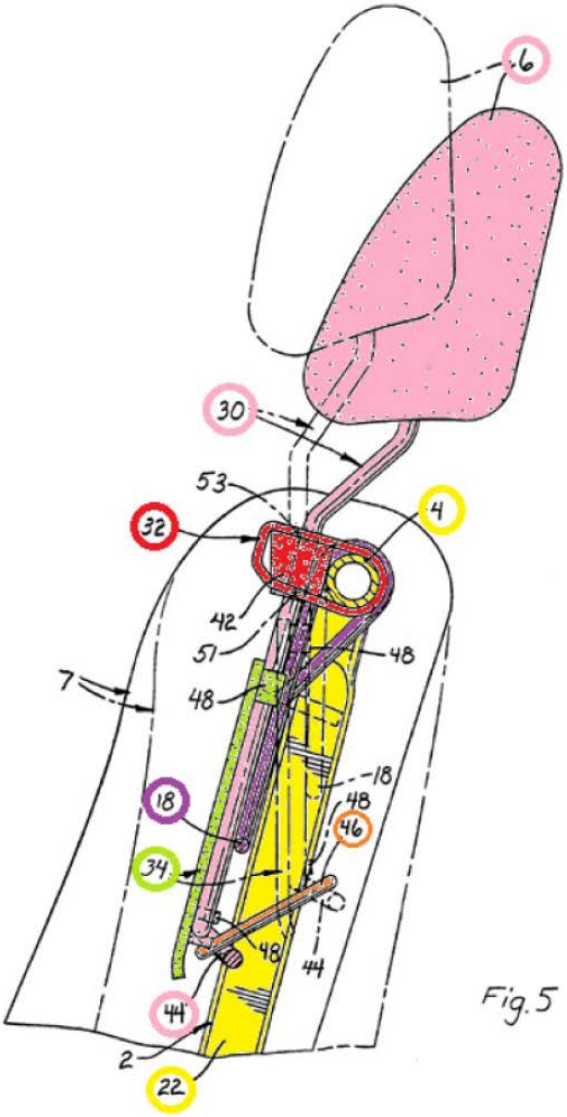

Figure 5 of the ’043 patent illustrates a side view of the headrest of Fig. 4 indicating the way in which the headrest moves upward and forward at impact.

Headrest posts 30 (pink) are held to cross member 4 (yellow) by penetration through bushings 42 (white) that are mounted in clips 32 (red) fitted onto cross member 4 (yellow). *Id*. at 2:15–18. Posts 30 (pink) extend

through bushings 42 (white) and have loop sections 44 (pink) that extend around angular cam guides 46 (orange). *Id*. at 2:18–23. Cam guides 46 (orange) have a generally downward slope projecting forward from sides 22 (yellow). *Id*. An impact plate 34 (green) is attached to the posts 30 (pink) by clips 38. *Id*. at 2:22–23. Spring 18 (purple) wraps around frame sides 22 (yellow) and cross member 4 (yellow) to bias headrest cushion 6 (pink) against rotation. *Id*. at 2:23–24.

> The axis of rotation 51 will be constant with respect to the clips 32 [red]. However, the projection of the axis of rotation on the post 30 at the initial impact will be translated to point 53 due to the extending upward motion of the posts 30. Therefore, the axis of rotation of the post 30 with respect to the cross member 4 is nonfixed with respect to the post 30.

Id. at 2:38–45. Accordingly, as posts 30 (pink) and headrest 6 (pink) are simultaneously rotated and translated, the original location of axis of rotation 51 moves to point 53. As a result, posts 30 (pink) and headrest 6 (pink) pivot about a moving axis of rotation during actuation. *Id*. at 2:25–45.

II. CLAIM INTERPRETATION

The ’043 patent expired June 1, 2013. For claims of an expired patent, our claim interpretation analysis is similar to that of a district court. *See In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). Claim terms are given their ordinary and customary meaning as those terms would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). We apply this standard to the claims of the expired ’043 patent.

NHK proposes interpretations for (1) “pivotally attached,” Pet. 17, (2) “operatively associated” and “operably associated,” *id*. at 18,

(3) "bushing," *id*. at 18–19, (4) "at least one cam guide member" and "a cam guide," *id*. at 19, and (5) "effectively extends upwardly" and "extend upwardly," *id*. at 19–20.

We determine that of these terms, only "pivotally attached with" and "pivotally mounted to" require express interpretation to address issues that the parties present regarding the differences between the prior art and the challenged claims. We address "pivotally attached with" and "pivotally mounted to" below and otherwise interpret the remaining terms according to the standard referenced above.

A. Headrest Pivotally Attached with the Seatback Frame

The entire disputed phrase at issue recites "a headrest pivotally attached with the seatback frame." Ex. 1001, C1 1:32–33 (claim 2), C1 4:12–13 (claim 57). The "headrest" is recited as having "a cushion portion" and no other affirmatively recited elements in independent claim 2. *Id*. at C1 1:38. The "headrest" in independent claim 57 is recited without referring to any particular component of the headrest. *Id*. at C1 4:8–27. Both claims require that rearward force applied to an impact target causes the headrest to rotate or pivot forwardly. *Id*. at C1 1:41–43 (claim 2), C1 4:23–25 (claim 57).

In the Petition, NHK argued that we should interpret "pivotally attached" to mean that "an 'element is attached to and rotates on a point.'" Pet. 17 (citing Ex. 1013; Ex. 1012 ¶ 40). In its Reply, NHK maintained its initial interpretation of "pivotally attached" and contended that interpretation of the term was not necessary to resolve issues in this proceeding. Reply 5. Lear contends that "'pivotally attached' requires interpretation" and provides a proposed interpretation, discussed below. Resp. 11. NHK contends that

Lear's proposed interpretation is improper. Reply 8–11. For the reasons expressed below, we adopt neither party's interpretation of "headrest pivotally attached with the seatback frame."

Lear argues that we should interpret "pivotally attached" to mean "pivotally joined or fastened" but excluding "unattached contact." Resp. 13–14 (citing Ex. 2004 ¶ 84). Lear relies in substantial part upon testimony from Dr. Viano, an inventor of the '043 patent, to support its argument that a headrest being "pivotally attached" requires "an affirmative joining or fastening of the headrest to the seatback frame such that if the seatback frame is detached from the seat bun frame and removed from the vehicle the headrest would remain attached." *Id*. at 27 (citing Ex. 2004 ¶¶ 77–82, 91–93). We consider Dr. Viano's testimony on the meaning of "pivotally attached" to be extrinsic evidence entitled to little weight regarding the ultimate conclusion on the meaning of "pivotally attached with."[2] Lear's argument is unpersuasive because, as explained below, we find that it is inconsistent with the Specification and language in certain claims that depend from claims 2 and 57, and would preclude claims 2 and 57 from covering all embodiments disclosed in the Specification.

[2] "[E]xtrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) "[E]xtrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence. *Id*. at 1319; *see also Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) ("Experts may be examined to explain terms of art, and the state of the art, at any given time, but they cannot be used to prove the proper or legal construction of any instrument of writing.") (internal citations omitted).

The Specification describes two embodiments in which structures are "joined or fastened" to the seatback frame, namely, a first embodiment in which plate 10 having clamped ends 14 with clips 16, and springs 18 are joined to the frame 2, *id*. at 1:54–64, and a second embodiment in which spring 18, clips 32, and cam guides 46 are joined to frame 2, *id*. at 2:15–24. Headrest cushion 6 never touches frame 2 in either embodiment, but instead is connected to posts 8 (first embodiment) or 30 (second embodiment). "[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (citation omitted). Dependent claims 6 and 59 recognize that the posts are structures different than the headrest by reciting that the headrest "is separated from the seatback frame by a post." Ex. 1001, C1 1:52–54 (claim 6), C1 4:31–32 (claim 59). The principle of claim differentiation instructs us to interpret "headrest" in claims 2 and 57 to refer to the headrest without the posts. Even if we were to interpret "headrest" to encompass the posts, however, posts 8 (first embodiment) and posts 30 (second embodiment) also never touch the seatback frame. Instead, the posts along with other structures functionally link the headrest to the frame.

For the first embodiment, headrest 6 on "posts 8 are adjustable vertically with respect to the plate 10 in a manner conventional for that of vehicle seat headrests." Ex. 1001, 1:51–53. That is, posts 8 slide up and down relative to plate 10. Figures 2 and 3 of the Specification illustrate posts 8 in a manner that implies the ability to remove posts 8 entirely from alignment members 12 in impact plate 10. *See id*. Figs. 2, 3. Posts 8 of the first embodiment are thus in sliding and perhaps easily removable contact

with impact plate 10, which is in turn pivotally "joined" to cross member 4 with clips 16. *Id*. at 1:56–59. Nevertheless, posts 8 neither touch nor are joined to cross member 4.

For the second embodiment, posts 30 are designed to slide within bushings 42 within clips 32 that are "fitted on the cross member." *Id*. at 2:15–18. Posts 30 are never "in contact" with cross member 4 of frame 2. The way in which loop sections 44 wrap around cam guides 46 would prevent posts 30 from being completely removed from bushings 42. *Id*. at 2:26–32. Nevertheless, the "unattached" sliding relationship between the posts and the frame would not be within the scope of Lear's proposed interpretation of "pivotally attached" because posts 30 neither touch nor are joined to frame 2.

Other dependent claims also support a broad reading of "headrest pivotally attached with the seatback frame." Dependent claims 15 and 65 further recite that the "seatback frame comprises a cross member" and that "the headrest is operably connected to the cross member." These claims imply that a headrest that is "operably connected to the cross member" is a narrower type of "a headrest pivotally attached with the seatback frame." Dependent claims 18 and 68, which depend directly from claims 2 and 57, further recite that the "seatback frame comprises a cross member" and that "the headrest is pivotally connected to the cross member."

The Specification also instructs the reader that the claims define the scope of the invention rather than the embodiments illustrated as follows: "While this invention has been described in terms of preferred embodiments thereof, it will be appreciated that other forms could readily be adapted by one skilled in the art. Accordingly, the scope of this invention is to be

considered limited only by the following claims." *Id*. at 3:23–27. Accordingly, we broadly interpret "a headrest pivotally attached with the seatback frame" in claims 2 and 57 as referring to headrests that are "pivotally attached with the seatback frame" via other structures. The headrest must also be "attached with the seatback frame" in a manner that meets the functional requirement recited in claims 2 and 57 that a force applied to the impact target causes the headrest to rotate forwardly.

B. TARGET . . . PIVOTALLY MOUNTED TO THE SEATBACK FRAME

Independent claim 57 recites "a target pivotally mounted to the seatback."[3] Ex. 1001, C1 at 4:20. NHK does not address this phrase in its Petition except to characterize claim 57 as being "substantially similar" to claim 2. Pet. 33; *see also id*. at 16–20 (interpreting other claim terms). Lear argues that we should interpret "pivotally mounted" to mean the same thing as "pivotally attached," namely "pivotally joined or fastened" and not encompassing "unattached contact." Resp. 17–19. In its Reply, NHK argues that we should interpret "pivotally mounted" more broadly than "pivotally attached." Reply 17. Without analyzing any portion of the Specification or other claims, NHK relies upon a definition of the verb

[3] Lear misquotes claim 57 when arguing whether JP '468 describes the claimed target as "a target pivotally mounted to the seatback frame." Resp. 30. Except for this particular phrase, "seatback" is recited three other times within claim 57 as "seatback frame." Additionally, twenty claims that depend from claim 57 uniformly recite "seatback frame" without once reciting "seatback" alone. *See* Ex. 1001, C1 4:31–6:23 (uniformly reciting "seatback frame" in dependent claims 59, 63–68, 70–76, 78, 82, and 85–88). Accordingly, we interpret this phrase as if it recited "seatback frame" rather than "seatback" alone because we determine that a skilled artisan would interpret the phrase that way.

"mount" in the American Heritage Collegiate Dictionary, Third Edition, as meaning "to set in position for use." *Id*. (citing Ex. 1020).

We are not persuaded that either party's interpretation is completely correct. In describing the first embodiment of the seat arrangement, which is illustrated in the colorized version of Figure 2 shown below right, the Specification uses "pivotally mounted" in relation to the target as follows:

> An impact target or plate 10 [green] is pivotally mounted to the cross member 4 [yellow] along a fixed pivotal axis 13 generally perpendicular to the fore and aft direction of the vehicle. . . .
>
> The plate 10 [green] mentioned previously is *pivotally mounted* with respect to the cross member 4 [yellow] by virtue of its clamped ends 14 [green]. The clamped ends 14 [green] are *joined* to the cross member 4 [yellow] by the use of a metal clip 16 [red] which has flanges 26 [red] that pop into apertures 15 (only one shown) of the claimped end 14 [green].

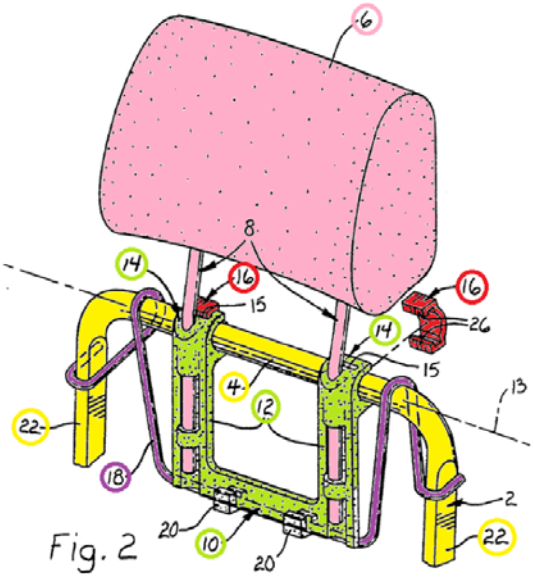

Fig. 2

Ex. 1001, 1:45–59 (emphasis added). This portion of the Specification explains and Figure 2 clearly illustrates that the target (plate 10) is in physical contact with and "joined" to cross member 4 of seatback frame 2 via clips 16 with flanges 26 that "pop into apertures 15" on clamped end 14 of plate 10. Plate 10 is described expressly as capable pivoting along axis 13. *Id*. at 1:45–49. Additionally, the same lay dictionary proffered by NHK defines "mount" in the same sense in which it is used in the Specification as meaning "[t]o fix securely to a support." Ex. 1020. We do not find Lear's reliance on the definition of "mount" at Engineering-Dictionary.org to be of

significant weight because the proffered definition is for the noun form and the claim uses the verb form of "mount." Based on our review of all this evidence, we interpret "a target pivotally mounted to the seatback" to require that the target be directly joined to the seatback in a manner that permits the target to pivot along the axis specified in the claim.

III. THE CHALLENGES TO PATENTABILITY

We instituted a review of the patentability of claims 2, 4, 6, 8, 9, 13–20, 28–31, 43–49, 55–60, 62–68, 70, 78, 80, 81, 84–90, 93, and 94 of the '043 patent on the grounds that those claims may be anticipated or obvious in light of one or more of JP '468, Mertens, and Ferrara. Dec. 7–13.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987) (citation omitted). The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) reaffirmed the framework for determining obviousness as set forth in *Graham v. John Deere Co*., 383 U.S. 1 (1966). As observed by the Court in *KSR*, the factual inquiries set forth in *Graham* that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103(a) are summarized as follows:

1. Determining the scope and content of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence, if present, indicating obviousness or nonobviousness.

KSR, 550 U.S. at 406. With these standards in mind, we address each challenge below.

A. The Parties' Post-Institution Arguments

In our Institution Decision, we concluded that the argument and evidence adduced by NHK demonstrated a reasonable likelihood that: (1) JP '468 anticipated claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80, Dec. 7–9, and (2) the combination of Mertens and Ferrara rendered claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 obvious, *id*. at 11–13. We must now determine whether NHK has established by a preponderance of the evidence that the specified claims are unpatentable over the cited prior art. 35 U.S.C. § 316(e). In this connection, we previously instructed Lear that "any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived." Paper 8, 5; *see also* 37 C.F.R. § 42.23(a) ("Any material fact not specifically denied may be considered admitted."). Additionally, the Board's Trial Practice Guide states that the Patent Owner Response "should identify all the involved claims that are believed to be patentable and state the basis for that belief." Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

In response to the first challenge by NHK listed above, Lear argues that JP '468 fails to describe a headrest "pivotally attached with the seatback frame" as recited in claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80. Resp. 25–29. Lear also argues that JP '468 fails to describe "an impact target operatively associated with the cushion portion and pivotally associated with the seatback frame" as recited in claims 2, 4, 6, 8, 9, and 28–31. *Id*. at 29–30. Lastly, Lear argues that JP '468 fails to describe "a target pivotally mounted to the seatback" as recited in claims 57, 78, and 80. *Id*. at 30. Lear does not

contest that JP ’468 describes all other elements of claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80. In response to the second challenge by NHK listed above, Lear does not contest that the combination of Mertens and Ferrara describes all elements of claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94. *See id*. at 31–45 (arguing only that a skilled artisan would not have been motivated to combine Mertens and Ferrara as NHK suggests). Accordingly, the record now contains unrebutted arguments and evidence presented by NHK regarding the manner in which the asserted prior art teaches all other elements of the claims against which that prior art is asserted. We, therefore, find that the preponderance of the evidence of record developed at trial supports our conclusion the alleged prior art describes all limitations of the reviewed claims except for those that Lear identifies above.

B. Anticipation of Claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80 by JP ’468

NHK contends that JP ’468 anticipates claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80, and sets forth the evidence from JP ’468 to support its contentions in detailed claim charts. Pet. 23–32. NHK also proffers the testimony of Dr. Kent to explain the manner in which JP ’468 describes all the limitations recited in claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80. Ex. 1012, ¶¶ 48–57. Based on the record before us at the time, we preliminarily determined that NHK had established a reasonable likelihood of showing that JP ’468 anticipates claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80. Dec. 7–10. For the reasons expressed below, NHK persuades us by a preponderance of evidence that JP ’468 anticipates claims 2, 4, 6, 8, 9, and 28–31, but fails to do so for claims 57, 78, and 80.

1. Overview of JP '468

The operation of JP '468 may be understood by referring to the colorized version of Figure 1 of JP '468 that is shown below.

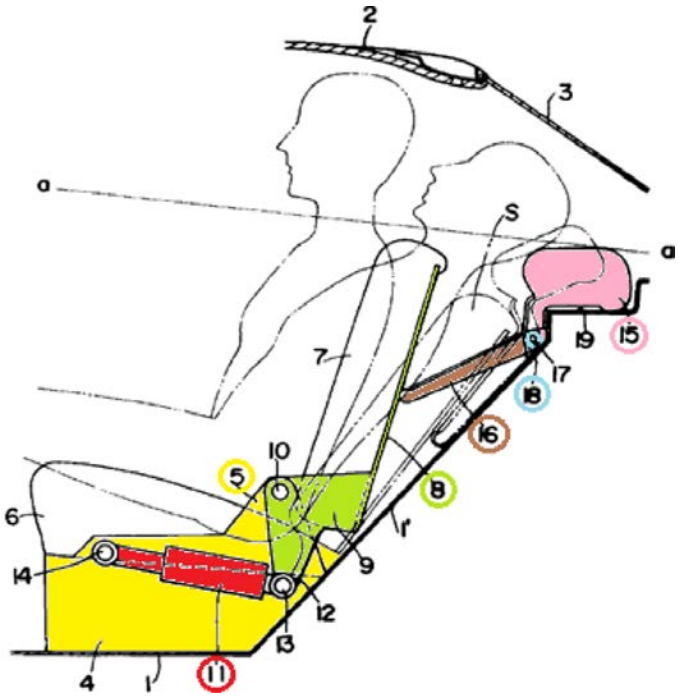

Figure 1 of JP '468 illustrates a mechanism for moving a headrest upward and forward during a rear-end collision.

JP '468 discloses a rear seat assembly having among other elements, seat back 7 with frame member 8 (green) that rotates around axis 10. Ex. 1008, 5. Headrest 15 (pink), which is separated from the seat back 7 by space S, is secured to a top end of arm 16 (brown) and together they are pivotally attached to a bracket 18 (blue) at the top part of the floor member 1′. *Id*. at 6. Headrest 15 is normally held in the position shown in the solid lines of Fig. 1 by its own weight or the biasing force of a spring (not illustrated). *Id*. The bottom end of arm 16 is thus "brought into contact with frame member 8 at the back part of seat back 7 in its normal position." *Id*. at 5. Upon a rear impact to the vehicle, seat back 7 tilts rearward and frame member 8 presses the bottom end of arm 16 toward floor member 1′.

Id. at 7. This rotation of arm 16 causes headrest 15 to rotate upward and forward to meet the occupant's head. *Id*.

2. Lear's Arguments

Lear argues that JP '468 fails to anticipate various groups of claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80 for three reasons. Namely, JP '468 does not describe: (1) a "headrest pivotally attached with the seatback frame along a pivotal axis" as recited in claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80, (2) "an impact target pivotally associated with the seatback frame" as recited in claims 2, 4, 6, 8, 9, and 28–31, and (3) "a target pivotally mounted to the seatback" as recited in claims 57, 78, and 80. Resp. 25–30. We address each in turn below.

a) Claims 2, 4, 6, 8, 9, 28–31, 57, 78, and 80: Whether JP '468 Describes the Headrest Being Pivotally Attached with the Seatback Frame

Independent claims 2 and 57, and thus dependent claims 4, 6, 8, 9, 28–31, 78, and 80, recite "a headrest pivotally attached with the seatback frame along a pivotal axis." Ex. 1001, C1 1:32–33. Lear argues that JP '468 fails to describe a headrest that meets this limitation because the headrest is not "joined or fastened to the seatback frame" and thus is not "attached" pivotally or otherwise to the seatback frame. Resp. 25–29 (citing Ex. 2004. Lear contends that JP '468 itself confirms that "attached" must mean joined or fastened because JP '468 states that its headrest 15 is pivotally attached to bracket 18 by means of a pin 17. *Id*. at 26 (citing Ex. 1008, 5:5–9; Ex. 2004 ¶¶ 91–105; Ex. 1012 ¶ 50). By contrast to arm 16 being pivotally attached at one end to bracket 18 via pin 17, Lear argues that the other end of arm 16 is merely in sliding contact with the surface of frame member 8 and thus not joined or fastened to frame member 8. *Id*. (citing Ex. 2004 ¶ 98). Lear

contends that headrest 15 is not attached to frame 8 because if seatback frame 8 of JP ’468 were removed from the vehicle, headrest 15 would remain in the vehicle pivotally attached to floor member 1′. *Id*. (citing Ex. 2004 ¶ 92, Ex. 2013, 29:11–30:16). We agree that the preponderance of evidence demonstrates that arm 16 has a free end that is in sliding contact with frame 8 and that the free end of arm 16 is not directly secured to frame 8.

NHK contends that, even though the free end of arm 16 is not directly secured to frame 8, the “headrest is pivotally attached with the seatback frame” because the claim does not require that the headrest be attached *to* the frame but merely that it be attached *with* the frame. Reply 6–7. NHK reasons that Lear’s arguments are based on Lear’s erroneous interpretation of “attached with” as meaning “attached to.” *Id*. NHK argues that Lear ignores a commonly understood meaning of “attach” as referring to “connect.” *See* Reply 8 (citing dictionary definition of “attach” offered by Lear in Ex. 2007). NHK further contends that the ’043 patent “places no restriction on the manner of pivotal attachment beyond there being a pivotal relationship of the elements.” *Id*. NHK also argues that JP ’468 never defines “pivotally attached” as requiring a particular type of connection between elements but instead merely describes one example of pivotal attachment, a pin. *Id*. at 9–10.

NHK persuades us by a preponderance of evidence that JP ’468 describes a headrest that is pivotally attached with the seatback frame. For the reasons expressed in part II.A above, we interpret “headrest pivotally attached with the seatback frame” more broadly than proposed by Lear. We interpret “pivotally attached with” to encompass a relationship between the

headrest and seatback frame that involves the headrest being functionally linked via intervening structures to the seatback frame so that the headrest rotates forward in response to a rearward force applied to an impact target. Under our interpretation, JP '468 describes "a headrest pivotally attached with the seatback frame." We find that intervening structures physically join headrest 15 of JP '468 to its frame member 8. Frame member 8, with its supporting arm 9 (the alleged seatback frame), is pivotally joined at axis 10 to bracket 5 of seat cushion support member 4 (the alleged bun frame), which is joined to floor 1 and thus also floor member 1′. Ex. 1008, 3–5, Figure 1. Headrest 15 is connected to arm 16, which is pivotally joined via pin 17 to bracket 18 "at the top part of floor member 1′." *Id*. at 5. Headrest 15 is attached to frame 8 via the intervening structures described above and pivots about the recited axis. Accordingly, we find that a preponderance of evidence demonstrates that headrest 15 is "pivotally attached with the seatback frame" as recited in claims 2 and 57.

b) Claims 2, 4, 6, 8, 9, and 28–31: Whether JP '468 Describes an Impact Target Pivotally Associated with the Seatback Frame

Independent claim 2, and its dependent claims 4, 6, 8, 9 and 28–31, recites "an impact target operatively associated with the cushion portion and pivotally associated with the seatback frame." Ex. 1001, C1 1:39–41. Lear argues that JP '468 fails to meet these recited requirements based on its interpretation of "pivotally associated with the seatback frame" as meaning "directly or indirectly pivotally attached to the seatback frame such that it actuates the active head restraint independent of the seatback frame position." Resp. 29. Lear cites testimony from Dr. Viano and his understanding of the way in which the embodiments of the seat arrangement

described in the Specification operate as support for its interpretation. *Id*. (citing Ex. 2004 ¶¶ 104–05). Dr. Viano's testimony cites no independent evidence to corroborate his interpretation of "pivotally associated with the seatback frame." *See* Ex. 2004 ¶¶ 104–05. Lear argues that under its interpretation, arm 16 of JP '468 cannot be an impact target because it does not actuate the headrest independent of movement of the seatback frame. Resp. 29–30.

We need not consider extrinsic evidence to discern the meaning of the claim because we find the plain language of the claim to be clear. The claim expressly recites that the impact target is "pivotally associate with the seatback frame." "Pivotally associated" thus merely requires that the impact target pivot in relation to the seatback frame. Additionally, we find that Lear's interpretation improperly attempts to incorporate characteristics of the specific embodiments described in the Specification that are not expressly stated in the claim. The Specification merely describes examples of the claimed invention and explicitly asserts that variations of those embodiments are within the scope of the claims. Ex. 1001, 3:23–27. Moreover, Lear's proposed interpretation of "pivotally associated with the seatback frame" is based on Dr. Viano's otherwise unsupported testimony. We ascribe little weight to that testimony because Dr. Viano, as an inventor, is subject to bias and he cites no independent evidence in support of his conclusions.

NHK persuades us by a preponderance of evidence that arm 16 of JP '468 both pivots in relation to seatback frame 8 and is associated with headrest 15. Arm 16 is secured to the top end of arm 16. Ex. 1008, 6. Headrest 15 is biased rearward either by its own weight or a spring, which

results in arm 16 being biased upward to contact frame member 8. Pet. 27–28 (citing Ex. 1008, 5, Fig. 1). When frame member 8 pivots rearward in response to load imparted by the occupant in a collision, frame member 8 applies rearward force to arm 16 (the alleged impact target) causing arm 16 to rotate relative to frame 8. *Id*. at 28 (citing Ex. 1008, 6). Claim 2 requires nothing more to describe "an impact target operatively associated with the cushion portion and pivotally associated with the seatback frame." Accordingly, NHK persuades us by a preponderance of evidence that JP '468 describes the impact target of claims 2, 4, 6, 8, 9, and 28–31.

c) Claims 57, 78, and 80: Whether JP '468 Describes a Target Pivotally Mounted to the Seatback

Lear argues that JP '468 fails to describe "a target pivotally mounted to the seatback" as recited in claim 57 and thus its dependent claims 78 and 80. Resp. 30 (emphasis removed). Lear contends that we should interpret "target pivotally mounted to the seatback" as requiring that the target be joined or fastened to the seatback frame. *Id*. at 17–19. Lear contends that arm 16 of JP '468 is not joined or fastened to the seatback frame and thus fails to meet this requirement of claim 57.

In the Petition, NHK contends that JP '468 describes all elements of claim 57 "for similar reasons listed above with respect to claim 2." Pet. 33. Claim 2, recites "an impact target . . . pivotally associated with the seatback frame" rather than "a target pivotally mounted to the seatback." *Compare* Ex. 1001, C1 1:39–41 (claim 2) *with* C1 4:20 (claim 57). NHK identifies arm 16 as the "impact target" of claim 2 and thus by incorporation also as the "target" of claim 57. NHK argues that the target being "mounted to the seatback" does not require that the target be joined or fastened to the seatback because we should interpret "mounted" to mean "to set in position

for use" based on a proffered definition in a lay dictionary. Reply 17 (citing Ex. 1020).

For the reasons expressed in part II.B above, we interpret "target pivotally mounted to the seatback" to mean that the target is directly joined to the seatback frame in a manner that permits the target to pivot around the axis specified in the claim. Under this interpretation, Lear persuades us that JP '468 fails to describe the target recited in claims 57, 78, and 80. Arm 16 of JP '468 (the alleged target) is directly joined via pin 17 to bracket 18 "at the top part of floor member 1′," not frame 8 (the alleged seatback frame). Ex. 1008, 5. The other end of arm 16 slides along frame 8 while remaining in contact with frame 8 throughout normal operation of headrest 15. Ex. 1008, 5–6, Figure 1; Ex. 2004 ¶¶ 97–102; Ex. 2013, 28:6–9. We find that this type of sliding contact between frame 8 and arm 16 does not constitute being directly joined to arm 16 as required. We determine that a preponderance of evidence establishes that arm 16 is not "a target pivotally mounted to the seatback" as recited in claim 57 and its dependent claims 78 and 80. Accordingly, NHK has not persuaded us that JP '468 anticipates claims 57, 78, and 80.

3. Conclusion

For the reasons expressed above, NHK has persuaded us by a preponderance of evidence that JP '468 describes "a headrest pivotally attached with the seatback frame" and "an impact target operatively associated with the cushion portion and pivotally associated with the seatback frame." For the reasons expressed in part III.A above, NHK has persuaded us by a preponderance of evidence that JP '468 describes all other elements of claims 2, 4, 6, 8, 9, and 28–31. NHK has failed to persuade us

by a preponderance of evidence that JP '468 describes "a target pivotally mounted to the seatback" as recited in claims 57, 78, and 80. Accordingly, we conclude that NHK has demonstrated by a preponderance of evidence that JP '468 anticipates claims 2, 4, 6, 8, 9, and 28–31, but has failed to do so for claims 57, 78, and 80.

C. Obviousness of Claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 in View of Mertens and Ferrara

We preliminarily determined on the record before us at the time that NHK had established a reasonable likelihood of showing that the combination of Mertens and Ferrara renders claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 unpatentable as obvious. Dec. 14–16. The dispute at trial focuses upon whether a skilled artisan would have been motivated to combine the spring biasing the headrest against rotation that is described by Ferrara with the seat arrangement described in Mertens "to mitigate whiplash risk" as alleged by NHK. For the reasons expressed below, NHK does not persuade us that claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 are unpatentable as obvious in view of the combination of Mertens and Ferrara.

1. NHK's Argument and Evidence in the Petition

NHK contends that Mertens describes all elements recited in claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 except for the "spring operatively associated with the seatback frame biasing the headrest against pivotal movement" which is recited in independent claims 2 and 57 and thus required by all claims challenged as obvious. Pet. 57–59. NHK contends that Ferrara describes such a spring and that a skilled artisan would have found it obvious "to employ Ferrara's shaft 22, sleeve 24, and spring 48 to Mertens's headrest frame to mitigate whiplash risk in severe

rear-end collisions by absorbing the impact of the passenger's head hitting the headrest." *Id*. at 58 (citing Dr. Kent's testimony at Ex. 1012 ¶¶ 79–81). Dr. Kent expands upon the obviousness rationale that NHK expresses in the Petition when he testifies that "[a]s shown in FIG. 2d of Mertens '737, the headrest moves slightly backwards in a rear end collision. Thus, it would have been obvious to use the mechanism in Ferrara to cushion the head as it moves backwards as shown in FIG. 2d of Mertens '737." Ex. 1012 ¶ 81. NHK offers nothing more in its Petition to support its obviousness challenge.

2. Analysis of Lear's Arguments and NHK's Reply

Lear does not dispute NHK's contentions that the combination of Mertens and Ferrara describes all elements of claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94. *See* Resp. 1–46 (not addressing any aspect of claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94). Instead, Lear argues that a skilled artisan would not have been motivated to employ Ferrara's spring in Mertens's seat arrangement "to mitigate whiplash risk" as NHK contends. Resp. 31–45.

More specifically, Lear contends that a skilled artisan would have known that incorporating Ferrara's spring into Mertens's headrest would increase rather than decrease the risk of whiplash injury. *Id*. at 40–41. Dr. Viano testifies that "whiplash is associated with neck extension" and is prevented "by limiting the relative movement between the head and the upper torso" and minimizing "rearward movement of the headrest . . . as much as possible." Ex. 2004 ¶ 132. Dr. Viano further testifies that "adding the Ferrara spring to Mertens would increase the risk of whiplash" because Ferrara's spring allows the headrest to move rearward in a collision. *Id*. at

¶ 133. Dr. Viano opines that a skilled artisan would not have even considered adding the spring of Ferrara to Mertens because it would increase the risk of whiplash injury. *Id*. at ¶ 134.

NHK responds that Lear's contention that using Ferrara's spring would increase the risk of whiplash injury rests upon "conclusory opinions" of Dr. Viano" and is not supported by "actual evidence." Reply 18. NHK contends that Dr. Viano, on cross-examination, "conceded . . . that whiplash can be caused not only by movement of the neck, but also by a ***severe blow to the head***." *Id*. at 20 (citing Ex. 1018, 5:1–52:2[4]). NHK also argues that Dr. Viano "conceded that Ferrara's system is directed to preventing injury, such as a severe blow to the head." *Id*. (citing Ex. 1018, 46:10–48:9). NHK concludes, without citing any evidence, that "Ferrara's system of allowing movement of the headrest to prevent such a blow to the head from striking the rigid headrest would in fact have the effect of ***reducing*** whiplash." *Id*. at 20–21.

On the factual question of whether using Ferrara's spring in Mertens's headrest would increase or decrease the risk of whiplash injury, we are not persuaded by either party's argument. Rather we determine that the preponderance of evidence demonstrates that the presence of Ferrara's spring in the seat arrangement of Ferrara or Mertens would neither increase nor decrease the risk of whiplash injury.

Ferrara's spring is intended to improve a headrest that is "provided to increase passenger comfort, and to lessen or prevent 'whiplash' or similar

[4] Our review of Dr. Viano's testimony reveals that NHK likely intended to cite Ex. 1018, 51:1–52:2. We do not consider the testimony at Ex. 1018, 5:1–50:25 to be probative to NHK's contention.

injuries in the event of certain types of collisions." Ex. 1010, 1:13–16. Ferrara's improvement relies upon its spring 48, which permits the headrest to rotate rearward only when the occupant's head strikes the headrest with sufficient force to "flatten the cushion of the headrest to the point that his head would then impact an essentially rigid structure." *Id*. at 1:16–25, 2:55–3:2. Ferrara says nothing about whether its spring increases or decreases the risk of whiplash but rather focuses on how its spring adds compliance to the headrest to avoid impact-based head injury. Dr. Viano recognized that providing compliance in a headrest has advantages as follows:

> Head injury, which is different than whiplash, is associated with impact between the head and head restraint. The prevention of head injury depends on cushioning the head, thereby extending the duration of loading and lowering the forces. It is desirable to have some cushioning provided by the head restraint, but too much deformation of the head restraint can increase whiplash risks.

Ex. 2004 ¶ 137. Dr. Viano also testifies that whiplash injuries are associated with relatively low-speed collisions and that compliance in the headrest would prevent impact-based head injuries that occur in high-speed collisions. Ex. 2004 ¶ 140; Ex. 1018, 55:23–56:12. Ferrara's spring adds compliance to the headrest by permitting the headrest to move in severe impacts when insufficient compliance in the padding of the headrest results in the headrest being "an essentially rigid structure" that could harm cause impact-based head injury. Ex. 1010, 1:13–25, 2:55–3:2.

Accordingly, we find no evidentiary justification for Lear's argument that Ferrara describes a headrest that increases the risk of whiplash. Rather, we determine that Ferrara describes improving a whiplash-mitigating

headrest so that it does not suffer the disadvantage of causing head injury in severe collisions resulting from the occupant's head hitting a rigid structure.

Similarly, we are not persuaded by NHK's argument that using Ferrara's spring would decrease the risk of whiplash injury. To the extent that Ferrara improves a headrest, it does so by providing the compliance that Dr. Viano recognized to reduce the risk of impact-based head injury in high-speed collisions. Ferrara never describes its spring, which softens a blow to the occupant's head, as reducing the risk of whiplash injury, and the testimony from Dr. Viano that NHK cites does not support such a conclusion. Rather, Dr. Viano merely testifies that it is "possible" for "some blows to the head" to cause whiplash, Ex. 1018, 51:1–52:2, and whether such a blow causes whiplash "depends on so many factors," *id*. at 52:4–53:1. Dr. Viano never testifies that Ferrara's spring reduces the risk of whiplash injury, and NHK cites no evidence to support such a conclusion.

Because NHK fails to establish that using Ferrara's spring in Mertens's headrest would "mitigate whiplash risk," NHK's proffered rationale for using Ferrara's spring in Mertens's headrest and, thus, NHK's obviousness challenge is unpersuasive. "[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). A challenge "on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id*. (quoting *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed.2006)). The argument and evidence proffered by NHK does not establish any credible reason to combine Ferrara's spring with

Mertens's headrest. Nor does NHK proffer any evidence to establish whether a skilled artisan would have considered Ferrara's spring 48 to have been an obvious substitute for Mertens's torsion member 85 to permit rearward rotation of the headrest in severe collisions. NHK bears the burden of proving obviousness of the challenged claims by a preponderance of evidence, and we conclude that it has failed to do so in this case. Accordingly, we conclude that NHK has failed to establish that the combination of Mertens and Ferrara renders claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 unpatentable as obvious under 35 U.S.C. § 103.

IV. LEAR'S MOTION TO EXCLUDE

We have reviewed Lear's Motion to Exclude, NHK's Opposition to the Motion, and Lear's Reply in support of the Motion. Based on our review, we deny the Motion in all respects for one or both of the following reasons: (1) the Motion is moot because it seeks to exclude evidence not considered or relied upon in rendering this Decision or (2) the Motion addresses issues more appropriate to determining the weight ascribed to the evidence rather than the admissibility of evidence. In rendering this Decision, we determine and ascribe the appropriate weight to all proffered evidence and, when appropriate, comment upon the weight ascribed.

V. CONCLUSION

For the reasons expressed above, we conclude that NHK has shown by a preponderance of the evidence that JP '468 anticipates claims 2, 4, 6, 8, 9, and 28–31 of the '043 patent under 35 U.S.C. § 102(b), but has failed to do so for claims 57, 78, and 80. We also conclude that NHK has failed to establish by a preponderance of evidence that the combination of Mertens

and Ferrara renders claims 2, 4, 6, 8, 9, 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 unpatentable as obvious under 35 U.S.C. § 103.

VI. ORDER

For the reasons given, it is:

ORDERED that claims 2, 4, 6, 8, 9, and 28–31 of the ’043 patent are held *unpatentable*;

FURTHER ORDERED that claims 13–20, 31, 43–49, 55–60, 62–68, 70, 81, 84–90, 93, and 94 are *not* held unpatentable;

FURTHER ORDERED that Lear’s Motion to Exclude is *denied*; and

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

IPR2014-01202
Patent 5,378,043 C2

PETITIONER:

William H. Mandir
John F. Rabena
SUGHRUE MION PLLC
wmandir@sughrue.com
jrabena@sughrue.com

PATENT OWNER:

John M. Halan
Frank A. Angileri
BROOKS KUSHMAN P.C.
jhalan@brookskushman.com
fangileri@brookskushman.com