

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS, INC.,
Petitioner

v.

AMERICAN VEHICULAR SCIENCES, LLC
Patent Owner

Case IPR2016-00364
U.S. Patent 9,043,093

PATENT OWNER'S NOTICE OF APPEAL
35 U.S.C. § 142 & 37 C.F.R. § 90.2

Pursuant to 37 C.F.R. § 90.2(a), Patent Owner, American Vehicular Sciences, LLC, hereby provides notice of its appeal to the United States Court of Appeals for the Federal Circuit for review of the Final Written Decision of the United States Patent and Trademark Office (“USPTO”) Patent Trial and Appeals Board (“PTAB”) in Inter Partes Review 2016-00364, concerning U.S. Patent 9,043,093 (“the ’093 patent”), entered on May 19, 2017, attached hereto as Appendix A.

ISSUES TO BE ADDRESSED ON APPEAL

- A. Whether the PTAB properly construed the following claim limitation: “a single airbag extending across at least two seating positions of a passenger compartment of a vehicle ... the at least two seating positions comprising a first seating position in a first seat row of seats of the vehicle and a second seating position in a second seat row of seats of the vehicle longitudinally displaced from the first seat row of seats”?
- B. Whether the PTAB erred in concluding that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 would have been obvious under 35 U.S.C. § 103 over Leising and Lau?
- C. Whether the PTAB’s reliance on attorney argument and unsupported expert testimony is inadequate to support the PTAB’s obviousness

conclusions?

Simultaneous with submission of this Notice of Appeal to the Director of the United States Patent and Trademark Office, this Notice of Appeal is being filed with the Patent Trial and Appeal Board. In addition, this Notice of Appeal, along with the required docketing fees, is being filed with the United States Court of Appeals for the Federal Circuit.

Dated: July 14, 2017

Respectfully submitted,

/Gregory J. Gonsalves/

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CERTIFICATE OF SERVICE

The undersigned certifies that in addition to being filed electronically through the Patent Trial and Appeal Board's Patent Review Processing System the foregoing PATENT OWNER'S NOTICE OF APPEAL was served on the Director of the United States Patent and Trademark Office, at the following address (in accordance with 37 C.F.R. §§ 90.2(a), 104.2):

Director of the United States Patent and Trademark Office
c/o Office of the General Counsel
United States Patent and Trademark Office
P.O. Box 1450 Alexandria, Virginia 22313-1450

CERTIFICATE OF FILING

The undersigned certifies that on July 14, 2017, a true and correct copy of the foregoing PATENT OWNER'S NOTICE OF APPEAL was filed electronically with the Clerk's Office of the United States Court of Appeals for the Federal Circuit at the following address:

Clerk of Court
United States Court of Appeals for the Federal Circuit
717 Madison Place NW
Washington, DC 20005

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing PATENT OWNER'S NOTICE OF APPEAL was served on July 14, 2017, by filing this document through the PTAB's E2E system as well as by delivering a copy via electronic mail to the attorneys of record for the Petitioners as follows:

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Appendix A

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS INC.,
Petitioner,

v.

AMERICAN VEHICULAR SCIENCES, LLC,
Patent Owner.

Case IPR2016-00364
Patent 9,043,093 B2

Before TREVOR M. JEFFERSON, JENNIFER MEYER CHAGNON, and
SCOTT C. MOORE, *Administrative Patent Judges*.

CHAGNON, *Administrative Patent Judge*.

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

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, we determine that Petitioner has shown, by a preponderance of the evidence, that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 of U.S. Patent No. 9,043,093 B2 (Ex. 1001, “the ’093 patent”) are unpatentable.

A. Procedural History

Unified Patents Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1, 8, 10, 12, 17–19, 26, 27, and 36 of the ’093 patent. Paper 2 (“Pet.”). Petitioner provided a Declaration of Priyaranjan Prasad, Ph.D. (Ex. 1005) to support its positions. American Vehicular Sciences, LLC (“Patent Owner”) filed a Preliminary Response (Paper 8, Paper 7 (redacted version)).

Pursuant to 35 U.S.C. § 314(a), on June 27, 2016, we instituted *inter partes* review to determine whether claims 1, 8, 10, 12, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103 as obvious in view of Leising¹ and Lau²; and whether claims 1, 10, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103 as obvious in view of Karlow³ and Lau. *See* Paper 13 (“Inst. Dec.”). Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 22 (“PO Resp.”)), along with a Declaration of Michael Nranian P.E. (Ex. 2021) to support its positions. Petitioner filed a Reply (Paper 26 (“Pet. Reply”)) to the Patent Owner Response, along with a

¹ U.S. Patent No. 3,897,961, issued Aug. 5, 1975 (Ex. 1002).

² U.S. Patent No. 5,273,309, issued Dec. 28, 1993 (Ex. 1003).

³ U.S. Patent No. 5,588,672, issued Dec. 31, 1996 (Ex. 1004).

Second Declaration of Dr. Prasad (Ex. 1021). An oral hearing was held on January 23, 2017. A transcript of the hearing is included in the record. Paper 34 (“Tr.”). We also have considered Patent Owner’s Observations on Cross-Examination (Paper 29) and Petitioner’s Response thereto (Paper 32).

B. Related Proceedings

The parties indicate that the ’093 patent is the subject of the following ongoing district court proceedings: *Am. Vehicular Scis. LLC v. Hyundai Motor Co.*, No. 5:16-cv-11529-JEL-APP (E.D. Mich.); *Am. Vehicular Scis. LLC v. Nissan Motor Co.*, No. 5:16-cv-11530-JEL-APP (E.D. Mich.); *Am. Vehicular Scis. LLC v. Toyota Motor Corp.*, No. 5:16-cv-11531-JEL-APP (E.D. Mich.); and *Am. Vehicular Scis. LLC v. Am. Honda Motor Co.*, No. 5:16-cv-11532-JEL-APP (E.D. Mich.). *See* Paper 19, 1.

C. The ’093 Patent

The ’093 patent is titled “Single Side Curtain Airbag for Vehicles,” and was filed as U.S. application No. 11/930,330 on October 31, 2007. Ex. 1001, at [21], [22], [54]. The ’093 patent claims priority, via a chain of continuation-in-part and divisional applications, to U.S. application No. 08/571,247, filed on December 12, 1995. *Id.* at [60]. The ’093 patent relates to an airbag system for a vehicle, in which “the airbag for the front and rear seats are combined, i.e., the airbag deploys along substantially the entire side of the vehicle alongside both the front seat and the rear seat.” *Id.* at 65:29–32.

Figure 56 of the '093 patent is reproduced below.

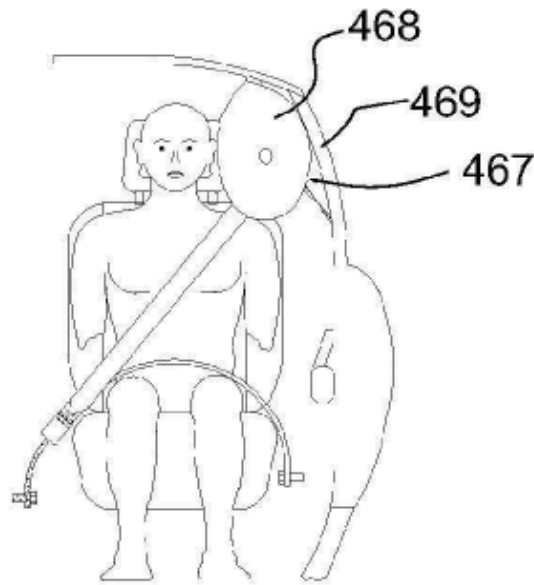


FIG. 56

Figure 56, reproduced above, shows an exemplary embodiment of a side curtain airbag. *Id.* at 6:4–8. According to the '093 patent, the side curtain arrangement “results in significantly greater protection in side impacts when the windows are broken.” *Id.* at 65:32–34.

The airbag system of the '093 patent utilizes a single gas-providing system with only one inflator to inflate the airbag. *Id.* at 187:4–6. The airbag includes a plurality of compartments in flow communication with each other. *See, e.g., id.* at 169:27–33. An example of an airbag having such compartments is shown in Figure 84 of the '093 patent, reproduced below.

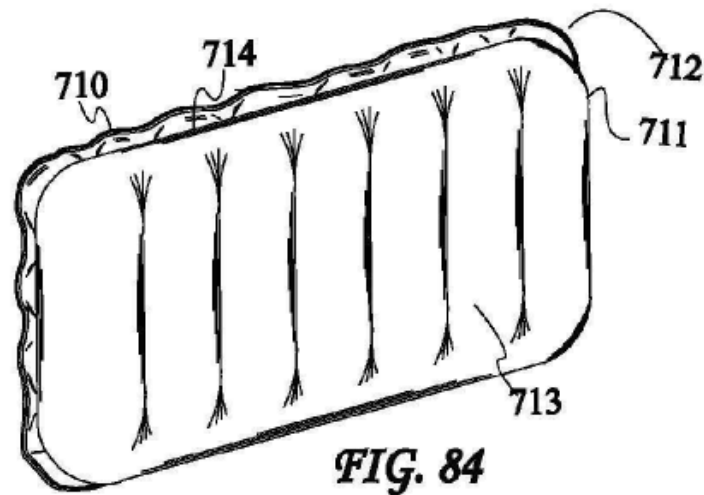


Figure 84, reproduced above, shows exemplary airbag 710 formed of “long tubular shaped mini-airbags 713” (also referred to in the ’093 patent as “compartments”). *Id.* at 93:21–26. As described in the ’093 patent, the compartments allow the airbag to be formed of the desired shape, while minimizing stress concentrations, as well as the weight of the airbag. *Id.* at 81:14–19.

D. Illustrative Claim

Of the challenged claims, claims 1, 26, and 36 are independent. Claims 8, 10, 12, and 17–19 depend from claim 1; and claim 27 depends from claim 26. Claim 1 of the ’093 patent, reproduced below, is illustrative of the challenged claims.

1. An airbag system of a vehicle, the airbag system comprising:

a single airbag extending across at least two seating positions of a passenger compartment of a vehicle, the single airbag arranged to deploy into the passenger compartment along a lateral side of the vehicle and adjacent each of the at least two seating positions;

a cover interposed between the single airbag and the passenger compartment to cover the single airbag prior to deployment;

a single gas-providing system that has only one inflator that provides gas to inflate the single airbag and which is arranged apart from the single airbag; and

a conduit leading from the single gas-providing system to provide gas to inflate the single airbag, the conduit being arranged to deliver the gas from the single gas-providing system into the single airbag;

the at least two seating positions comprising a first seating position in a first seat row of seats of the vehicle and a second seating position in a second seat row of seats of the vehicle longitudinally displaced from the first seat row of seats, along the lateral side of the vehicle;

wherein the single airbag has a plurality of compartments for receiving the gas, and wherein the plurality of compartments are in flow communication with each other.

Ex. 1001, 186:61–187:18.

II. ANALYSIS

A. *Principles of Law*

To prevail in its challenges to the patentability of the claims, a petitioner must establish facts supporting its challenges by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner.

See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc., 800 F.3d 1375, 1378–79 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burdens of persuasion and production in *inter partes* review).

A claim is unpatentable as obvious under 35 U.S.C. § 103(a) if 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. *See 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) objective evidence of nonobviousness.⁴ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Further, an invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. Rather, “there must be some articulated

⁴ Neither party directs our attention to specific objective evidence of nonobviousness.

reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

In an *inter partes* review, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016). The “factual inquiry” into the reasons for “combin[ing] references must be thorough and searching, and the need for specificity pervades.” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (internal quotations and citations omitted). A determination of obviousness cannot be reached where the record lacks “explanation as to how or why the references would be combined to produce the claimed invention.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016); *see Nuvasive*, 842 F.3d at 1382–85; *Magnum Oil*, 829 F.3d at 1380–81. Thus, to prevail Petitioner must explain how the prior art would have rendered the challenged claim unpatentable.

At this final stage, we determine whether a preponderance of the evidence of the record shows that the challenged claims would have been obvious in view of the asserted prior art. We analyze the asserted grounds of unpatentability in accordance with those principles.

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art “would have been a mechanical engineer having the equivalent of a post-graduate education, such as a master’s degree or equivalent knowledge obtained through work experience, and several years of experience in the design of vehicle occupant protection systems.” Pet. 13 (citing Ex. 1005 ¶ 36). Patent

Owner does not address the level of ordinary skill in its Patent Owner Response, but Mr. Nranian testifies that such a person “would have at least a Bachelor’s degree in electrical, electronic, mechanical, or automotive engineering, and at least three years of experience in the integration of airbag, safety, and vehicle occupant protection devices in automotive vehicles, or equivalent knowledge obtained through work experience in the relevant field.” Ex. 2021 ¶ 36. We do not discern a difference between these formulations as applied to the issues in dispute in this proceeding.

For purposes of this Final Written Decision, and based on the parties’ proposed formulations and the complete record now before us, we adopt the following definition of one of ordinary skill in the art: a person having at least a Bachelor’s degree in electrical, electronic, mechanical, or automotive engineering, or equivalent coursework, and having several years of experience in the design of vehicle occupant protection systems in automotive vehicles, or equivalent knowledge obtained through work experience in the relevant field. The level of ordinary skill in the art further is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Pursuant to that standard, the claim language should be read in light of the specification, as it would be interpreted by one of ordinary skill in the art. *In re Suitco Surface, Inc.*,

603 F.3d 1255, 1260 (Fed. Cir. 2010). We generally give claim terms their ordinary and customary meaning. *See Translogic Tech.*, 504 F.3d at 1257 (“The ordinary and customary meaning ‘is the meaning that the term would have to a person of ordinary skill in the art in question.’” (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc))).

The claims, however, “should always be read in light of the specification and teachings in the underlying patent,” and “[e]ven under the broadest reasonable interpretation, the Board’s construction ‘cannot be divorced from the specification and the record evidence.’” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (citations omitted). In other words, “[u]nder a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history.” *Trivascular*, 812 F.3d at 1062 (citing *Straight Path IP Grp., Inc. v. Sipnet EU S.R.O.*, 806 F.3d 1356, 1362 (Fed. Cir. 2015)). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). However, limitations are not to be read from the specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

The parties’ dispute does not require express construction of any claim term. *See, e.g., Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to 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)). We address certain aspects of Patent Owner’s proposed constructions in our substantive discussion below.

D. Obviousness in View of Leising and Lau

Petitioner asserts that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103(a) as obvious in view of Leising and Lau. Pet. 21–43. Patent Owner argues that the cited combination of Leising and Lau does not disclose all elements of the independent claims, and that Petitioner has not provided a sufficient reason to combine these references with a reasonable expectation of success. PO Resp. 29–59. We have reviewed the entire record before us, including the parties’ contentions and supporting evidence presented during this trial. For the reasons explained below, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 are unpatentable as obvious in view of Leising and Lau.

1. Summary of Leising

Leising relates to an “[i]nflatable restraint apparatus for automotive vehicle occupants including an inflatable torso bag structure” and “[i]nflatable side curtains . . . deployed from the roof.” Ex. 1002, at [57]. Figure 2 of Leising is reproduced below.

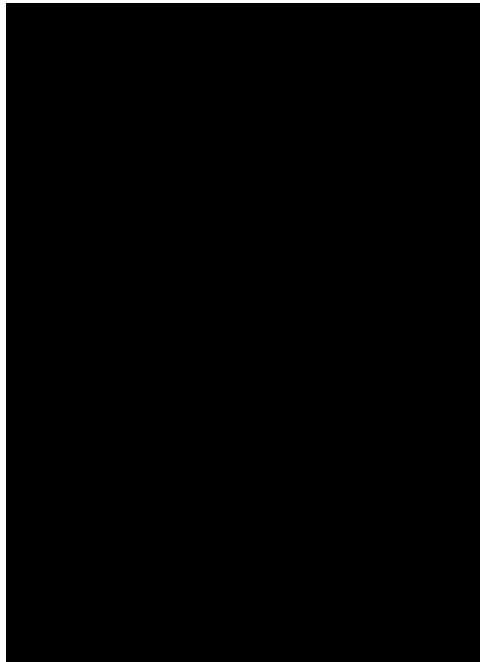


Figure 2, reproduced above, illustrates a plan view of a vehicle including a restraint system. *Id.* at 2:46–50. The inflatable restraint apparatus of Leising includes torso restraining bag 43 and side curtain 41. *Id.* at 1:33–38, 3:32–33. Gas source 33 supplies gas to the inflatable restraints. *Id.* at 3:24–25. Gas reservoir 35 is connected to conduit 37, which extends along the roof to housing area 39, which is located in the roof over the front seat area. *Id.* at 3:27–31. Conduit 37 is connected to side curtain 41 and torso bag 43. *Id.* at 3:32–33.

“The side curtains and inflated torso restraining bag may be interconnected to facilitate positioning or filling of the inflated structures.” *Id.* at [57]; *see id.* at 4:19–23. When deployed, the side curtains extend downwardly between the passenger and the door. *Id.* at 4:40–41, 5:34–35. Prior to deployment, the restraint apparatus is “adapted to be conveniently and aesthetically stowed in the vehicular roof structure.” *Id.* at 5:36–39.

Figure 8 of Leising is reproduced below.

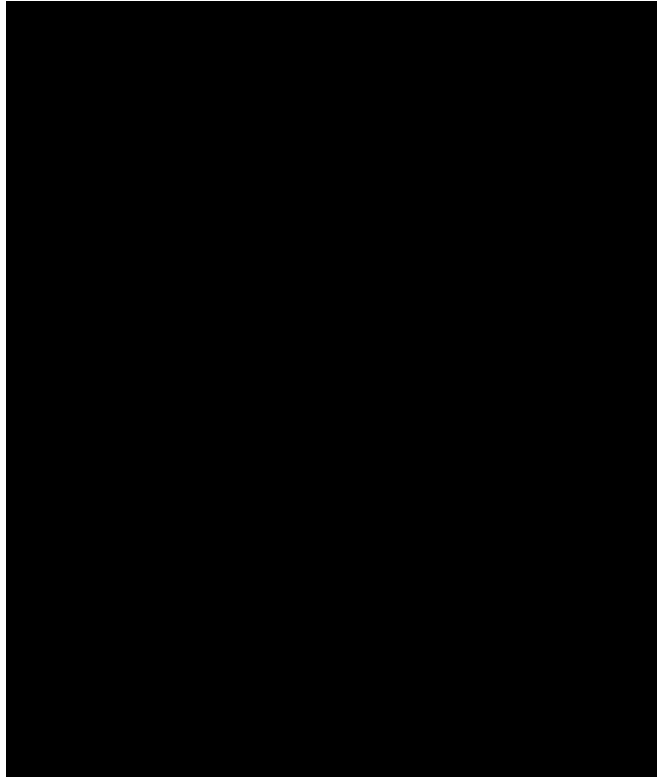


Figure 8, reproduced above, is an enlarged side elevation of a side curtain forming part of the restraint apparatus of Leising. *Id.* at 2:62–63.

A plurality of restraining webs 53 maintain side curtain 41 in a generally flat condition upon inflation. *Id.* at 3:43–46. Each web 53 includes a notch or recess 55 at upper and lower ends thereof. *Id.* at 3:50–51.

2. Summary of Lau

Lau relates to airbag assembly 30, which includes inflator 38, front seat air bag 40 and rear seat air bag 42. Ex. 1003, 2:12–15. Figure 1 of Lau is reproduced below.

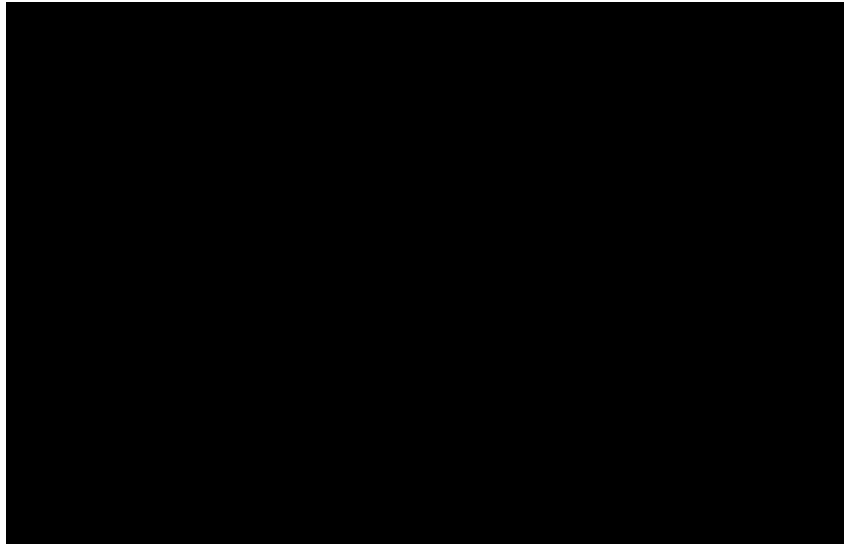


Figure 1, reproduced above, is a side view of a vehicle showing front and rear seat air bags 40, 42 in the deployed condition. *Id.* at 1:39–42. In the deployed positions, the “air bags extend between the seated occupants and the adjacent vehicle door.” *Id.* at 2:32–34. Prior to deployment, “air bags 40 and 42 are rolled to a stored condition and respectively concealed behind break away doors 43 and 45 . . . which conceals the air bag from view.” *Id.* at 2:15–18.

3. Independent Claims 1, 26, and 36

Petitioner’s Contentions

Claim 1 recites an “airbag system of a vehicle.” As discussed above, Leising and Lau each disclose such an airbag system. *See* Pet. 21–25.

Claim 1 further recites that the airbag system includes “a single airbag extending across at least two seating positions of a passenger compartment

of a vehicle, the single airbag arranged to deploy into the passenger compartment along a lateral side of the vehicle and adjacent each of the at least two seating positions.” Further, the claimed “at least two seating positions” include “a first seating position in a first seat row of seats of the vehicle and a second seating position in a second seat row of seats of the vehicle longitudinally displaced from the first seat row of seats, along the lateral side of the vehicle.” In other words, “the airbag for the front and rear seats are combined, i.e., the airbag deploys along substantially the entire side of the vehicle alongside both the front seat and the rear seat.” Ex. 1001, 65:29–32.

Petitioner relies on the combination of Leising and Lau as teaching these claim features. *See* Pet. 26–28, 31. Petitioner asserts that “Leising discloses a vehicle safety system that includes side curtain and torso airbag portions.” *Id.* at 21; *see* Ex. 1002, 1:33–38, 3:38–48, 5:58–60, Figs. 2, 3. Side curtain 41 of Leising “deploys into the passenger compartment across the side window 19.” Pet. 28 (citing Ex. 1002, 3:38–48, Figs. 1–3; Ex. 1005 ¶ 64). According to Petitioner, Leising includes “explicit disclosure of integrating multiple airbag portions that extend across multiple occupants to form a single airbag.” *Id.* at 26 (citing Ex. 1002, 4:19–23; Ex. 1005 ¶ 58); *see id.* at 22–23 (citing Ex. 1002, 3:21–22, Figs. 2, 3; Ex. 1005 ¶ 50). Petitioner also points to Lau, which teaches an airbag assembly that provides side airbag protection for both front and rear occupants. *Id.* at 25 (citing Ex. 1005 ¶ 55); *see* Ex. 1003, Fig. 1. Petitioner further asserts that Leising teaches a second row of seats (i.e., the back seats) that are longitudinally displaced from the first row of seats (i.e., the front seats). Pet. 31 (citing Ex. 1002, 3:19–21, Figs. 2, 3; Ex. 1005 ¶ 70).

Petitioner argues that “it would have been obvious to a person of skill in the art to extend the side curtain 41 of Leising to protect occupants in the back seat based on Lau.” Pet. 26 (citing Ex. 1005 ¶ 58). According to Petitioner, Leising and Lau “are in the same field (use of airbags in vehicles)” and “address the same problem (how to effectively provide side airbag protection during an accident).” *Id.* (citing Ex. 1005 ¶ 58). Further, Petitioner indicates the “motivation [for such a modification would be] the personal safety of back seat occupants,” and asserts that the “extension could be made by merely elongating the side curtain 41 and roof storage area of Leising.” *Id.* at 27 (citing Ex. 1005 ¶ 58). Petitioner continues, arguing that such a “modification . . . would have produced the expected result of providing rear seat occupants with protection during a side impact.” *Id.* (citing Ex. 1005 ¶ 59).

The airbag system of claim 1 further includes “a cover interposed between the single airbag and the passenger compartment to cover the single airbag prior to deployment.” Petitioner asserts that it would have been obvious to use break away doors as taught in Lau (*see* Ex. 1003, 2:14–17, Fig. 1), to store the airbag of Leising in an aesthetic manner. Pet. 29 (citing Ex. 1002, 3:38–41, 5:36–39, Fig. 5; Ex. 1005 ¶ 64). According to Petitioner, “the break away doors would be placed in the roof area and would provide the expected result of allowing the side curtain of Leising to deploy when needed, while keeping the side curtain concealed from view before use.” *Id.* (citing Ex. 1005 ¶ 64).

Claim 1 further recites “a single gas-providing system that has only one inflator that provides gas to inflate the single airbag and which is arranged apart from the single airbag.” Petitioner points to Leising’s “single

gas source 33 for supplying gas to side curtain 41,” which has “only one inflator 35 . . . arranged behind the passenger compartment,” as teaching this claim feature. Pet. 30 (citing Ex. 1002, 3:23–25, 3:27–28, Figs. 2, 3; Ex. 1005 ¶ 66). Petitioner further notes that Lau “discloses a single airbag module that uses a single inflator for providing side airbag protection for front and rear occupants.” *Id.* at 25 (citing Ex. 1005 ¶ 55). In other words, as Petitioner notes, “Leising and Lau both disclose to use a single inflator for multiple airbag portions.” *Id.* at 27 (citing Ex. 1005 ¶ 59).

Regarding the claimed “conduit leading from the single gas-providing system to provide gas to inflate the single airbag, the conduit being arranged to deliver the gas from the single gas-providing system into the single airbag,” Petitioner points to Leising’s tube 37 that extends from single gas reservoir 35 to side curtain 41, and delivers gas thereto, as disclosing this claim feature. *Id.* at 30 (citing Ex. 1002, 3:28–33, Figs. 2, 3; Ex. 1005 ¶ 68).

Finally, claim 1 recites that “the single airbag has a plurality of compartments for receiving the gas, and wherein the plurality of compartments are in flow communication with each other.” Petitioner points to disclosure in Leising of the use of “‘restraining webs’ to form compartments for receiving gas from the single gas-providing system,” as teaching this claim feature. *Id.* at 31 (citing Ex. 1002, 3:43–49, Figs. 8, 10, 11; Ex. 1005 ¶ 72). According to Petitioner, the “areas between the restraining webs 53 form a plurality of compartments in the vertical direction.” *Id.* (citing Ex. 1005 ¶ 72). Petitioner further asserts that “restraining webs 53 do not extend completely to the bottom of the side curtain 41,” and, thus, “the compartments . . . are in flow communication around the lower portions of the restraining webs 53 because the gas that

enters the side curtain 41 . . . can flow from one compartment to another compartment.” *Id.* at 33 (citing Ex. 1002, 3:37–42; Ex. 1005 ¶ 75).

Petitioner notes that the “compartments are also in flow communication with each other around top portions of the restraining webs 53, as shown in Figure 10 of Leising.” *Id.* (citing Ex. 1005 ¶ 75).

Regarding independent claims 26 and 36, Petitioner relies on similar arguments and evidence as presented with respect to claim 1, for corresponding limitations. *See* Pet. 37–43; Ex. 1005 ¶¶ 95–117, 122–145. Claim 26 recites method steps that generally correspond to the elements of claim 1, but does not include the claimed cover.

Claim 36 further recites that the airbag is “arranged to deploy downward into the passenger compartment and the conduit is arranged at or adjacent to a top edge of the single airbag.” Petitioner asserts that “side curtain 41 of Leising, when modified in view of Lau, would deploy downward into the passenger compartment,” and further notes that Leising “discloses that the tube 37 is arranged at or adjacent to a top edge of the single airbag.” Pet. 43 (citing Ex. 1002, 3:28–31, 3:38–48, Figs. 1–3, 8; Ex. 1005 ¶¶ 146–147).

We agree with Petitioner’s mapping of Leising and Lau to the claims, as we have described above, and adopt it as our own.

Patent Owner’s Contentions

In its Response, Patent Owner argues that several limitations of the independent claims are missing from Petitioner’s proposed combination. *See* PO Resp. 30–33, 57–59. Specifically, Patent Owner asserts that the cited combination does not teach or suggest “a single airbag extending across . . . a lateral side of the vehicle” across two passenger compartments;

that the airbag “deploys downward”; or “a plurality of compartments [with] flow communication.” *Id.* Patent Owner also argues that Petitioner fails to show that it would have been obvious to modify Leising in view of Lau with any reasonable expectation of success. *Id.* at 33–56. We address each of Patent Owner’s arguments in turn.

*“single airbag extending across . . . a lateral side of the vehicle”
across two passenger compartments*

Patent Owner argues that the “combination of Leising and Lau would not have taught or suggested ‘a single airbag extending across a lateral side of the vehicle’ across two passenger compartments, as required by each of the challenged independent claims.” PO Resp. 30. In this regard, Patent Owner argues that Petitioner “admits that ‘Leising does not explicitly disclose that its airbag extends across two seating positions that are longitudinally displaced along a lateral side of the vehicle’” (*id.* (quoting Pet. 26)), and also argues that “Lau teaches two separate air bags” (*id.* at 31 (citing Ex. 1003, 2:12–14)). Patent Owner continues, arguing that “Lau makes no mention of a single air bag extending laterally across front and rear seating positions, let alone teach or explain how one of ordinary skill in the art would achieve such an air bag,” and that “the two air bags of Lau collectively do not extend across the area between the two rows of seats (i.e., the B-pillar).” *Id.* (citing Ex. 2021 ¶¶ 132–133).

Patent Owner’s arguments focus on the references individually, whereas Petitioner’s asserted ground is based upon the teachings of the combination. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (holding that nonobviousness cannot be established by attacking references individually where the ground of unpatentability is based upon the teachings

of a combination of references). Contrary to Patent Owner's arguments, Petitioner does not rely on either Leising or Lau individually for a teaching of a single airbag extending across two rows of seats. Instead, as discussed above, Petitioner's proposed combination relies on disclosure in Lau of airbag protection of both front and back seat passengers (rather than on Lau's use of two airbags to do so), as evidence that one of skill in the art would also have considered safety protection for rear seat occupants, and would have found it obvious to extend the side airbag of Leising in order to protect also passengers in the back seat. *See, e.g.*, Pet. 26–27 (citing Ex. 1005 ¶ 58); *see also* Pet. Reply 9–10 (“Patent Owner's contentions . . . are unavailing because they fail to properly consider the combined teachings of Leising and Lau, *e.g.*, extending Leising's side air bag to protect rear seat occupants, based on Lau's teaching to use a single unit with one inflator to protect front and rear seat occupants”); Tr. 16:3–25, 47:11–15 (confirming Petitioner's proposed combination). Further, Petitioner, relying on testimony from Dr. Prasad, describes how such a modification of Leising's airbag could be accomplished (*i.e.*, “by merely elongating the side curtain 41 and roof storage area of Leising”). *See* Pet. 27 (citing Ex. 1005 ¶ 58). Based on the evidence presented, we find that it would have been within the level of ordinary skill to extend the side airbag of Leising, and that one of ordinary skill in the art would have done so in order to protect passengers in the back seat.

We have considered Petitioner's arguments and evidence in light of Patent Owner's arguments and evidence presented in its Patent Owner Response. Based on the complete record now before us, we are persuaded that it would have been obvious to extend the side airbag of Leising in order

to protect also passengers in the back seat, based on the teachings of Lau. Thus, we are persuaded that the combination of Leising and Lau teaches or suggests a “single airbag extending across . . . a lateral side of the vehicle” across two passenger compartments, as claimed.⁵

“deploys downward”

Patent Owner argues that the “combination of Leising and Lau would not have taught or suggested that the single, laterally extending airbag ‘deploys downward,’ as required by . . . claim 36.” PO Resp. 32. In this regard, Patent Owner asserts that “there is no teaching in Lau that either of its two separate airbags deploys downward.” *Id.* As discussed above, however, Petitioner, relies on Leising, not Lau, for the teaching that the airbag “deploys downward,” as claimed. *See* Pet. 43 (citing Ex. 1002, 3:28–31, 3:38–48, Figs. 1–3, 8; Ex. 1005 ¶¶ 146–147). Based on the evidence presented, we find that Leising teaches that its airbag “deploys downward.”

Having considered Petitioner’s arguments and evidence in light of Patent Owner’s arguments and evidence presented in its Patent Owner

⁵ Patent Owner proposes that the recited “single airbag extending across at least two seating positions of a passenger compartment of a vehicle . . . ” requires “one airbag extending across a first seating position of a first row of seats and a second seating position of a second row of seats *as well as the area between the first and second seating positions*” (i.e., the B-pillar). PO Resp. 18–19 (emphasis added). Petitioner disagrees. *See* Pet. Reply 2–3. We need not resolve this claim construction issue, however, because Petitioner’s proposed combination, i.e., extending the side airbag of Leising to also protect occupants in the back seat of the vehicle, meets even Patent Owner’s narrower proposed construction. *See Vivid Techs., Inc.*, 200 F.3d at 803; Tr. 42:4–21 (Patent Owner’s counsel agreeing that “[i]f you had an airbag, start in the front and one continuous airbag and went all the way back, it would cover the B-pillar.”).

Response, we are persuaded that the combination of Leising and Lau teaches or suggests that “the single airbag is arranged to deploy downward into the passenger compartment,” as claimed.

“plurality of compartments [with] flow communication”

Patent Owner argues that the portions of Leising upon which Petitioner relies to show a plurality of compartments (Ex. 1002, Figs. 8, 11), “do not, in fact, show more than one compartment.” PO Resp. 57. Rather, according to Patent Owner, “Leising shows an airbag with only one compartment” and “explicitly states that the purpose of the restraining webs is to maintain the side curtain in a flat condition upon inflation.” *Id.* at 57–58 (citing Ex. 1002, 3:43–46; Ex. 2021 ¶ 205). Patent Owner continues, arguing that

Petitioner’s assertion that “Figure 11 . . . is a sectional view showing the compartments of the side curtain 41,” is also wrong. Figure 11 is not a sectional view of the side curtain 41 as alleged by Petitioner; it is instead a section view of only a fragment of the side curtain 41: “FIG. 11 is a fragmentary section taken through the mid portion of the curtain shown in FIG. 10” (Exhibit 1002, Leising, col. 3, ll. 1–2). That is, FIG 11 shows only the center portion of the side curtain containing the restraining webs. Accordingly, FIG. 11 does not show a plurality of compartments in flow communication ([Ex. 2021] ¶ 205).

PO Resp. 58.

We do not find Patent Owner’s arguments persuasive. Patent Owner’s arguments are based on its proposed construction—namely, that “a plurality of compartments” should be construed as “two or more separate chambers.” *Id.* at 19. Patent Owner’s proposal is based on a dictionary definition of “compartment” as “a separate room, section, or chamber.” *Id.* (citing Ex. 2020, 283). Patent Owner argues that because the sections of

Leising's airbag are not completely separate, that they cannot form a plurality of compartments. *See id.* at 58 ("FIG 11 shows only the center portion of the side curtain contain[s] the restraining webs. Accordingly, FIG 11 does not show a plurality of compartments . . ."). The claims, however, require also that the "plurality of compartments are in flow communication with each other." Patent Owner's proposed construction does not explain how "compartments" can be completely separated from each other, yet also be in "flow communication" as required by the claims. We, thus, are not persuaded that "compartments" is limited to completely separate chambers.

Figure 11 of Leising clearly shows restraining webs 53 dividing side curtain 41 into several sections, or compartments. Further, regardless of the stated function of restraining webs 53, as seen in Figures 8–10 of Leising, restraining webs 53 include an "elongated notch or recess 55 at the upper and lower ends thereof," through which air will flow upon filling of side curtain 41, thus allowing flow communication between the compartments.⁶ Ex. 1002, 3:50–53; *see* Pet. 31–33; Ex. 1005 ¶¶ 72–73, 75; Ex. 1021 ¶ 12. Mr. Nranian also testified on cross-examination that gas can pass around the restraining webs of Leising's airbag. *See* Pet. Reply 19–20 (citing Ex. 1022, 101:18–102:5). Based on the evidence presented, we find that Leising teaches an airbag with a plurality of compartments in flow communication.

⁶ We note, also, that the '093 patent itself describes that the compartments thereof allow the airbag to be formed of the desired shape, which is similar to the stated function of restraining webs 53 of Leising. *See, e.g.*, Ex. 1001, 81:14–19, Fig. 84.

Patent Owner also presents arguments directed to the airbags of Lau not being in flow communication (*see* PO Resp. 58–59), however, Petitioner does not rely on Lau for teaching this disputed limitation.

We have considered Petitioner’s arguments and evidence in light of Patent Owner’s arguments and evidence presented in its Patent Owner Response. Based on the complete record now before us, we are persuaded that the combination of Leising and Lau teaches or suggests a “plurality of compartments [with] flow communication with each other,” as claimed.

Reason to Combine and Reasonable Expectation of Success

Patent Owner argues that Petitioner “fail[s] to provide any evidence whatsoever that combining the various portions of the references would achieve the particular structure of a single airbag extending laterally across two passenger rows including the area between the two rows (e.g., B-pillar), . . . and deploying downward, . . . with a reasonable expectation of success.” PO Resp. 34. Further, according to Patent Owner, a person of ordinary skill in the art would not have combined the teachings of Leising and Lau because such a person ““would have understood that such a combination would not have protected the passengers of a vehicle and rather, would have caused serious injury and death.”” *Id.* (quoting Ex. 2021 ¶ 158). Patent Owner presents several specific arguments in this regard (*see id.* at 34–56), and we address each of these in turn.

Patent Owner argues that a person of ordinary skill “would have understood that the airbag system resulting from the combination of Lau and Leising cannot provide airbag protection for occupant contact with the B-pillar.” PO Resp. 34. Patent Owner’s arguments in this regard are premised on the fact that in Lau “there is an open space between the two air

bags,” and thus the B-pillar is uncovered. *See id.* at 35 (citing Ex. 2021 ¶ 160). Patent Owner also asserts that a person of ordinary skill “would not have had a reasonable expectation of success combining Lau’s two air bags into one bag as claimed.” *Id.* at 48. According to Patent Owner, the inflator and other components between Lau’s airbags means “the existence of a single airbag is an impossibility.” *Id.* at 49.

These arguments by Patent Owner, however, ignore the proposed combination actually presented by Petitioner, and supported by testimony from Dr. Prasad—namely, that one of skill in the art would have found it obvious to extend the side airbag of Leising in order to protect also passengers in the back seat, based on Lau’s teaching of airbag protection of both front and back seat passengers (*see, e.g.*, Pet. 26–27 (citing Ex. 1005 ¶ 58)). Petitioner does not rely on a bodily incorporation into Leising of the two-airbag disclosure of Lau that Patent Owner asserts is deficient. We also agree with Petitioner (*see* Pet. Reply 10–11) that the claim does not recite airbag protection for occupant contact with the B-pillar, but merely recites that the airbag “extend[s] across at least two seating positions . . . along a lateral side of the vehicle.” As discussed above, we are persuaded that the combination of Leising and Lau teaches or suggests this claim feature.

Patent Owner further argues that “modifying Leising’s air bag with Lau would have rendered the air bag inoperable because Lau’s B-pillar mounted air bag would have been blocked from deploying.” PO Resp. 35. Patent Owner also asserts that a person of ordinary skill in the art “would have been dissuaded from modifying Leising’s air bag with Lau” for several reasons: (1) “because Lau’s B-pillar mounted air bag deployment doors would not have worked properly” (*id.* at 41); (2) “because Lau’s B-pillar

mounted air bag would not have protected OOP [(out of position)] occupants” (*id.* at 43); and (3) “because Lau’s B-pillar mounted air bag would have interfered with the seat belt system” (*id.* at 47). Further, Patent Owner argues that a person of ordinary skill “would not have had a reasonable expectation of success of achieving a curtain air bag extending across two rows and deploying downward because Lau’s B-pillar mounted system has a different design and requires different tests than a curtain air bag.” *Id.* at 50. Again, Patent Owner’s arguments are each premised on a combination in which the airbag of Lau is bodily incorporated into Leising. *See id.* at 35–50. In Petitioner’s proposed combination, however, the airbag is not mounted on the B-pillar as shown in Figure 1 of Lau (the premise on which Patent Owner’s arguments and evidence are based), but is instead “stowed in the vehicle roof structure” as taught by Leising. Pet. 23 (citing Ex. 1002, 5:36–41), 26–27 (citing Ex. 1005 ¶ 58). Although Patent Owner presents extensive testimony from Mr. Nranian in support of these arguments (*see* Ex. 2021 ¶¶ 161–167, 170–176, 179–180), the testimony is not persuasive because the testimony and Patent Owner’s arguments are directed to deficiencies or possible injuries caused by a B-pillar mounted air bag design, and are not directed to Petitioner’s proposed combination.

Further, Petitioner provides testimonial evidence that “Leising’s extended airbag would have provided the same protection for rear seat occupants as it provided for front seat occupants.” Pet. Reply 13 (citing Ex. 1021 ¶ 6). We credit Dr. Prasad’s testimony, and agree with Petitioner, that Patent Owner’s argument—that one of skill in the art would not have modified Leising as proposed by Petitioner because out of position occupants would have been injured—is unpersuasive because “all airbags

hav[e] the potential to cause an unintended injury.” Pet. Reply 14; *see also* Ex. 1022, 21:21–22:2, 33:18–34:5 (Mr. Nranian on cross-examination acknowledging the same).

Dr. Prasad testifies that a person of ordinary skill in the art “would have known how to appropriately mitigate [injury risk] through ordinary skill and routine testing” (Ex. 1021 ¶ 6; Pet. Reply 14) and that choosing an appropriate inflator was also within the level of ordinary skill (Ex. 1021 ¶ 9; Pet. Reply 16). Dr. Prasad further testifies that one of ordinary skill in the art also would have addressed any potential interference between a seat belt and Leising’s modified airbag “through routine testing and adjustments known in the art.” Ex. 1021 ¶ 10; Pet. Reply 17–18; *see also* Ex. 1022, 112:19–113:21 (Mr. Nranian confirming on cross-examination that it was within the skill level of a person of ordinary skill in the art to run tests to avoid seat belt interference). The lack of discussion regarding how to handle potential seatbelt interference in the ’093 patent itself also supports Petitioner’s assertion that it is within the level of ordinary skill in the art. *See* Pet. Reply 17.

Patent Owner also asserts that “Leising’s air bag system would have been rendered unsuitable for its intended purpose and inoperative if it were modified to extend across two rows and the B-pillar.” PO Resp. 51. According to Patent Owner, a person of ordinary skill in the art would not have made the proposed combination because the resulting airbag would be dangerous. *See id.* at 51–55 (citing Ex. 2021 ¶¶ 181, 184–187). As discussed above, we do not find this argument persuasive, because “airbags have always posed the risk of injury” (Pet. Reply 15 (citing Ex. 1022, 21:21–22:2)) and, as Dr. Prasad testifies, a person of ordinary skill in the art

“would have been able to employ routine skill and independent judgement to meet [relevant safety] standard[s]” (Ex. 1021 ¶ 8; *see* Pet. Reply 15). Patent Owner’s additional arguments regarding the inoperability of the combination address various alleged deficiencies of the references individually, and do not address Petitioner’s proposed combination. For example, Patent Owner argues that, because Leising only describes protection from the A-pillar and side roof rails, the proposed modification would not provide B-pillar protection for front row occupants, or any protection for second row occupants. PO Resp. 53 (citing Ex. 1002, 5:57–61; Ex. 2021 ¶ 185). Patent Owner also argues that “Lau does not provide any protection from the B-pillar.” *Id.* (citing Ex. 2021 ¶ 185). However, as discussed above, we are persuaded that once the airbag of Leising is extended to the rear seat (as suggested by the teachings of Lau) in accordance with Petitioner’s proposed combination, it will provide protection from the B-pillar as well as for a rear seat passenger. *See* Pet. 26–27; Ex. 1005 ¶ 58.

Finally, Patent Owner asserts that Petitioner did not present “evidence as to why one of ordinary skill in the art would have been able to achieve the structure of the ‘093 patent from the very different structure taught by Leising by modifying it with Lau.” PO Resp. 55. As discussed in detail above, however, Petitioner provides explanation supported by Dr. Prasad’s testimony in support of its assertions that one of ordinary skill in the art would have been motivated to modify Leising based on the teachings of Lau, to arrive at the claimed invention. We find Petitioner’s explanation and supporting testimony persuasive.

We have considered Petitioner’s arguments and evidence in light of Patent Owner’s arguments and evidence presented in its Patent Owner

Response. Based on the complete record now before us, we are persuaded that Petitioner has articulated reasoning with rational underpinning why it would have been obvious to combine Leising and Lau in the proposed manner.

Conclusion Regarding Independent Claims 1, 26, and 36

Based on the evidence of record, we are persuaded that Petitioner has shown that the combination of Leising and Lau teaches or suggests all of the limitations of claims 1, 26, and 36, and has articulated reasoning with rational underpinning why it would have been obvious to combine these references in the proposed manner. We determine Petitioner has shown, by a preponderance of the evidence, that the combination of Leising and Lau renders claims 1, 26, and 36 obvious.

4. Dependent Claims 8, 10, 12, 17–19, and 27

For each of claims 8, 10, 12, 17–19, and 27, Petitioner provides arguments and evidence as to how each claim limitation is taught or suggested by the cited combination of Leising and Lau, and relies upon Dr. Prasad's testimony. *See* Pet. 34–37, 40 (citing Ex. 1002, 3:23–33, 3:38–42, 3:62–64, 5:36–41, Figs. 2, 3, 8, 10; Ex. 1005 ¶¶ 78, 81, 84, 87, 90, 93, 119–120). We agree with Petitioner's mapping of Leising and Lau to these claims, and adopt it as our own. As discussed in more detail above with respect to independent claims 1, 26, and 36, we also are persuaded that one of ordinary skill in the art would have found it obvious to extend the side airbag of Leising in order to protect also passengers in the back seat, based on Lau's teaching of airbag protection of both front and back seat passengers, to arrive at dependent claims 8, 10, 12, 17–19, and 27. *See, e.g.*, Pet. 26–27 (citing Ex. 1005 ¶ 58). Patent Owner does not substantively

discuss dependent claims 8, 10, 12, 17–19, and 27, apart from its discussion of the independent claims, which we have addressed above. *See* PO Resp. 29–59; Paper 14 (Case Management and Scheduling Order), 5 (“The patent owner is cautioned that any arguments for patentability not raised in the response will be deemed waived.”).

Based on the evidence of record, we determine Petitioner has shown, by a preponderance of the evidence, that the combination of Leising and Lau renders obvious claims 8, 10, 12, 17–19, and 27.

E. Obviousness in View of Karlow and Lau

Petitioner asserts that claims 1, 10, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103(a) as obvious in view of Karlow and Lau. Pet. 44–60. Patent Owner argues that the cited combination of Karlow and Lau does not disclose all elements of the independent claims, and that Petitioner has not provided a sufficient reason to combine these references with a reasonable expectation of success. PO Resp. 59–67. We have reviewed the entire record before us, including the parties’ contentions and supporting evidence presented during this trial. For the reasons explained below, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 10, 17–19, 26, 27, and 36 are unpatentable as obvious in view of Karlow and Lau.

1. Summary of Karlow

Karlow relates to a “side impact head restraint with inflatable deployment” for head protection during a side impact collision. Ex. 1004, 2:15–19. The restraint system of Karlow provides a “low cost means of deploying head protection in side impact collisions” that also “meets the

minimal packing space requirements for installation in the side frame area of an automobile door.” *Id.* at 2:3–10.

Figure 5 of Karlow is reproduced below.

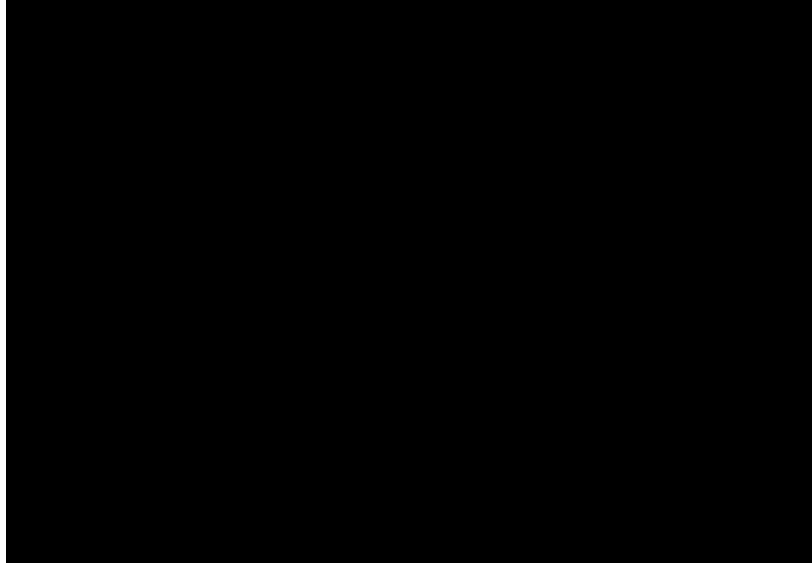


Figure 5, reproduced above, illustrates one embodiment of the deployable restraint system of Karlow. *Id.* at 3:26–29. Upon receipt of a crash signal, gas generator 12 generates gas to inflate the inflatable member, which in the embodiment of Figure 5 includes inflatable fingers 42 and cloth manifold 44. *Id.* at 3:42–44, 4:53–55. When undeployed, the inflatable member is secured behind a trim close-out panel, and a trim tear seam can also be provided to hide the device and enhance the aesthetic quality. *Id.* at 3:50–54. When inflated, slider 31 moves downwardly along track 30, opening the restraint system. *Id.* at 4:9–13.

2. Analysis

Claim 1 recites, in relevant part, that the airbag system includes “a single airbag extending across at least two seating positions of a passenger compartment of a vehicle, the single airbag arranged to deploy into the passenger compartment along a lateral side of the vehicle and adjacent each

of the at least two seating positions.” Further, the claimed “at least two seating positions” include “a first seating position in a first seat row of seats of the vehicle and a second seating position in a second seat row of seats of the vehicle longitudinally displaced from the first seat row of seats, along the lateral side of the vehicle.” Independent claims 26 and 36 include similar features.

Petitioner relies on the combination of Karlow and Lau as teaching these claim features. *See* Pet. 46–47, 50–51, 54–59. Petitioner asserts that “Karlow discloses an ‘inflatable head restraint’ 10, i.e., a single airbag, that deploys to protect an occupant during a side impact collision.” *Id.* at 44; Ex. 1004, 2:15–19, 3:36–41, Fig. 5; Ex. 1005 ¶ 148. The airbag of Karlow “deploys into the passenger compartment along a lateral side of the vehicle.” Pet. 47 (citing Ex. 1004, 3:49–59, 4:39–62, Figs. 1, 2, 3a, 4, 5; Ex. 1005 ¶ 157). Lau teaches an airbag assembly that provides side airbag protection for both front and rear occupants. *Id.* at 25 (citing Ex. 1005 ¶ 55); *see* Ex. 1003, Fig. 1. Petitioner further asserts that, based on Karlow’s disclosure of a rear side window, Karlow suggests a second row of seats (i.e., back seats) longitudinally displaced from the first row of seats (i.e., front seats). Pet. 50–51 (citing Ex. 1004, Figs. 1, 2, 3a, 4, 5; Ex. 1005 ¶ 165). Lau also discloses first and second rows of seats, as claimed. *Id.* at 50 (citing Ex. 1003, 1:58–61; Ex. 1005 ¶ 165).

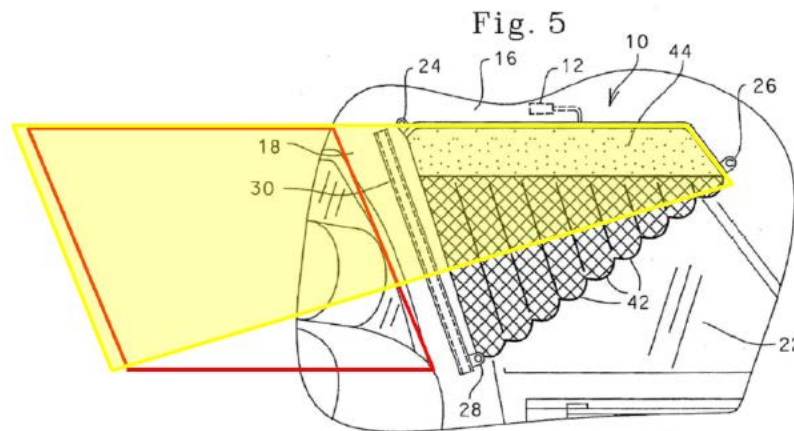
Petitioner asserts that “[i]t would have been obvious to extend the airbag system 10 of Karlow to protect occupants in the back seat based on Lau.” *Id.* at 46 (citing Ex. 1005 ¶ 154). According to Petitioner, Karlow and Lau “are in the same field (use of airbags in vehicles)” and “address the same problem (how to effectively provide side airbag protection during an

accident).” *Id.* (citing Ex. 1005 ¶ 154). Further, Petitioner indicates the “motivation [for such a modification would be] the personal safety of back seat occupants,” and asserts that the “extension could be made by elongating airbag system 10 of Karlow and placing track 30 behind the rear seat window.” *Id.* at 46–47 (citing Ex. 1005 ¶ 154). Petitioner further asserts that such a “modification . . . would have produced the expected result of providing rear seat occupants with protection during a side impact.” *Id.* at 47 (citing Ex. 1005 ¶ 155).

Patent Owner presents several arguments that the cited combination of Karlow and Lau does not disclose all elements of the independent claims, and that Petitioner has not provided a sufficient reason to combine these references with a reasonable expectation of success. *See* PO Resp. 59–67. In general, we do not find these arguments persuasive, for reasons similar to those discussed above with respect to the Leising and Lau combination (e.g., Patent Owner argues the references separately, or presents arguments not directed to the combination proposed by Petitioner). Patent Owner, however, also asserts that Petitioner did not present “evidence as to why one of ordinary skill in the art would have been able to achieve the structure of the ‘093 patent from the very different structure taught by Karlow by modifying it with Lau.” *Id.* at 67. Specifically, Patent Owner argues that “Petitioner did not demonstrate that the side curtain 41 of Karlow could have been modified by Lau’s teachings to achieve the result of protecting the *front and rear seat occupants from a side impact* with a reasonable expectation of success without undue experimentation.” *Id.* (emphases added). We further are mindful that Petitioner has the burden to show why

the claims are unpatentable. *See Harmonic Inc.*, 815 F.3d at 1363; *Dynamic Drinkware*, 800 F.3d at 1378.

As discussed above, in Petitioner’s proposed combination, the airbag of Karlow would be elongated, with the track placed behind the rear seat, rather than on the B-pillar. *See* Pet. 46–47; Ex. 1005 ¶ 154. Petitioner asserts that such a “modification . . . would have produced the expected result of providing rear seat occupants with protection during a side impact.” Pet. 47 (citing Ex. 1005 ¶ 155). Petitioner does not address, however, how the extended airbag maintains sufficient protection for front seat occupants during a side impact. Each of the embodiments of Karlow teaches a similar triangular-shaped airbag (*see* Ex. 1004, Figs. 2, 3a, 4, 5), and merely relocating the track would result in a stretching of the triangular shape of the airbag. By way of illustration, we provide an annotated version of Figure 5 of Karlow, showing Petitioner’s proposed modification, below.



The annotated version of Figure 5 of Karlow, above, shows a rear window (outlined in red) and a modified airbag (in yellow). As seen in the annotated figure, if the airbag of Karlow is elongated, and the track placed behind the rear seat, as proposed by Petitioner, side airbag coverage for the front seat

occupant necessarily would be reduced, unless the shape of the airbag were modified in some way, in addition to relocating the track and extending the airbag. Petitioner does not propose such a modification, or submit any evidence that the front seat coverage of the modified airbag is sufficient. The question before us is not whether the challenged claims are unpatentable as obvious in view of Karlow and Lau, but whether Petitioner has demonstrated such by a preponderance of the evidence. *See* 35 U.S.C. § 316(e).

Based on the complete record now before us, and considering that Petitioner has the burden to show, by a preponderance of the evidence, why the claims are unpatentable, we are not persuaded that Petitioner has demonstrated that independent claims 1, 26, and 36, or claims 10, 17–19, and 27 which depend therefrom, are unpatentable as obvious in view of Karlow and Lau. For the reasons discussed, we are not persuaded that Petitioner has shown by a preponderance of the evidence that the combination of Karlow and Lau renders obvious claims 1, 10, 17–19, 26, 27, and 36.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103 as obvious in view of Leising and Lau. We also determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 10, 17–19, 26, 27, and 36 are unpatentable under 35 U.S.C. § 103 as obvious in view of Karlow and Lau.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1, 8, 10, 12, 17–19, 26, 27, and 36 of U.S. Patent No. 9,043,093 B2 are held *unpatentable*; 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.

IPR2016-00364
Patent 9,043,093 B2

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