

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IGB AUTOMOTIVE LTD. and I.G. BAUERHIN GMBH,
Petitioner,

v.

GENTHERM GMBH,
Patent Owner.

Case IPR2014-00664
Patent 8,360,517 B2

Before JOSIAH C. COCKS, BENJAMIN D. M. WOOD, and
RICHARD E. RICE, *Administrative Patent Judges*.

WOOD, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

IGB Automotive Ltd. and I.G. Bauherin GmbH (collectively, “IGB”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–5 and 7–20 of U.S. Patent No. 8,360,517 B2 (Ex. 1001, “the ’517 patent”). Gentherm GmbH (“Gentherm”)¹ filed a Preliminary Response (Paper 6, “Prelim. Resp.”). We instituted an *inter partes* review based on the ground that claims 1–5 and 7–9 of the ’517 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Bajic,² Nelson,³ Pfahler,⁴ and Knoll ’113.⁵ Decision on Institution (“Dec.”) 20.

After the Board instituted trial, Gentherm filed a Patent Owner Response (Paper 15, “PO Resp.”), to which IGB replied (Paper 19, “Pet. Reply”). Oral Hearing was held on June 9, 2015, and the Hearing Transcript (Paper 28, “Tr.”) has been entered in the record.

For the reasons explained below, we determine that IGB has shown by a preponderance of the evidence that claims 1–5 and 7–9 are unpatentable as obvious over Bajic, Nelson, and Knoll ’113; and over Bajic, Nelson, and Pfahler.

¹ The Petition names W.E.T. Automotive Systems, AG (“W.E.T”), as the Patent Owner. Paper 1, cover page. In its Mandatory Notice Information filed May 9, 2014 (Paper 5), Gentherm gave notice that W.E.T., which originally owned the ’517 patent, merged with Gentherm, which now owns all right, title, and interest in the ’517 patent. Paper 5, 1.

² WO2005/037601 A2 to Bajic (Apr. 28, 2005) (Ex. 1003).

³ US 6,884,965 B2 to Nelson (Apr. 26, 2005) (Ex. 1004).

⁴ US 6,626,488 B2 to Pfahler (Sept. 30, 2003) (Ex. 1005).

⁵ US 7,862,113 B2 to Knoll (Jan. 4, 2011, filed Jan. 30, 2006) (Ex. 1006).

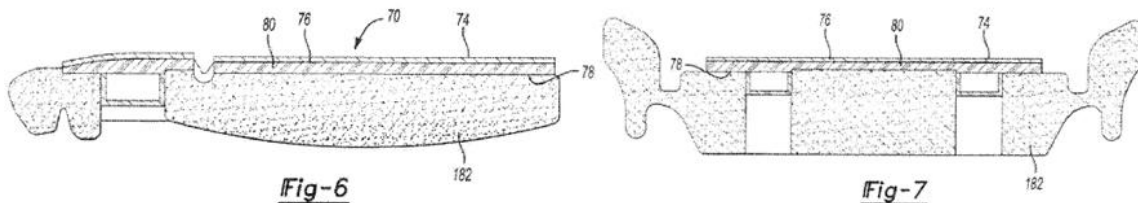
B. Related Proceedings

The '517 patent is involved in *W.E.T. Automotive Systems, Ltd. v. IGB Automotive Ltd.*, Civ. No. 2:13-CV-11536-AJT-PJK (E.D. Mich.). Pet. 2; Paper 5, 1.

C. The '517 Patent

The '517 patent issued January 29, 2013 from an application filed March 28, 2012. The '517 patent describes “an insert suitable for placement within an automotive vehicle seat to provide heating, cooling, ventilation or a combination thereof to an occupant in the seat.” Ex. 1001, 2:33–36. The insert fits within a cavity in a backrest or seat cushion, and is covered by an air-permeable trim surface. Ex. 1001, 1:47–51, Fig. 1. The insert typically comprises a bag made from an air-impermeable barrier material that encloses a “spacer material.” *Id.* at 1:44–46; 2:36–50.

Figures 6 and 7, reproduced below, depict side and front sectional views, respectively, of an embodiment of the invention:



Figures 6 and 7 depict insert 70 applied to seat cushion 182. Ex. 1001, 12:62–65. The insert includes forward layer 76 (which faces the occupant), and rearward layer 78 (which faces the cushion), connected together along their edges to form a bag that encloses spacer layer 80. *Id.* at 10:41–46. “[E]ach of the layers 76, 78, 80 may include multiple layers or sub-layers.” *Id.* at 10:46–48. A heater layer 74 is attached to an outer

surface of forward layer 76. *Id.* at 11:12–17. A plurality of air-mover housings project from the rearward layer into through-holes or ducts cut into the seat cushion. *Id.* at 11:30–42, Figs. 13A–13C. Air movers, mounted inside the housings, blow air through spacer layer 80 and out through a plurality of holes cut into forward layer 76. *Id.* at 11:39–42, 12:53–65, 13:17–20, Figs. 6, 7, 13A–13B, 14. Heater 74 may heat the air as it exits the insert to heat the seat. *Id.* at 3:40–48, 9:39–43.

D. Illustrative Claims

Of the claims under review, claim 1 is independent, and is drawn to a seat assembly that comprises a seat cushion and insert. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A seat assembly comprising:
 - a) a seat cushion comprising:
 - i. a cavity and
 - ii. a duct extending through the seat cushion;
 - b) an insert comprising:
 - i. a forward layer for facing a passenger;
 - ii. a rearward layer for facing the seat cushion; and
 - iii. a spacer material located between the forward layer and the rearward layer creating an open space within the insert;
 - iv. an edge sealed substantially around a periphery of the insert;
 - v. a heater comprising:
 - a. a polymer film having one or more openings for allowing air flow therethrough,
 - b. a resistive polymer layer disposed on the polymer film, and
 - c. two or more buss bars disposed on the polymer film that are spaced apart and electrically in communication with each other through the resistive polymer layer;

- vi. one or more air movers located underneath the insert and projecting from the rearward layer, the one or more air movers being in fluid communication with the open space within the insert, and being adapted to fit within the duct in the seat cushion; and
- vii. a protective layer that is a fibrous layer attached to the heater;

wherein the cavity in the seat cushion receives the insert;
wherein the heater is integrated with, placed between, and/or attached to one or a combination of the forward layer, the rearward layer, or the spacer material;
wherein the forward layer, the rearward layer, or both include one or more openings in fluid communication with the open space within the insert.

II. ANALYSIS

A. Claim Construction

The claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1281 (Fed. Cir. 2015). Under this 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). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

IGB contends that “the terms should be given their ordinary and custom[ary] meaning as understood by a person of ordinary skill in the art,” and proposes constructions for 15 claim terms. Pet. 10–14. Gentherm responds that while “no express claim construction by the Board” is

required, it proposes, out of an “abundance of caution,” constructions for “spacer material” and “buss bar.” PO Resp. 14.

For purposes of this decision, we construe the terms “duct” and “cavity.”

a. “duct”

IGB proposes construing “duct” as “an opening extending through a cushion.” Pet. 10 (citing Ex. 1001, 6:1–5, Figs. 6, 7, 9, 14). Gentherm does not oppose this proposed construction. See PO Resp. 13–16. We determine that IGB’s proposed construction is the broadest reasonable construction consistent with the Specification.

b. “cavity”

IGB proposes construing “cavity” as “an inset.” Pet. 10 (citing Ex. 1001, 9:5–7, 33–34). Gentherm does not oppose this proposed construction. See PO Resp. 13–16. We determine that IGB’s proposed construction is the broadest reasonable construction consistent with the Specification.

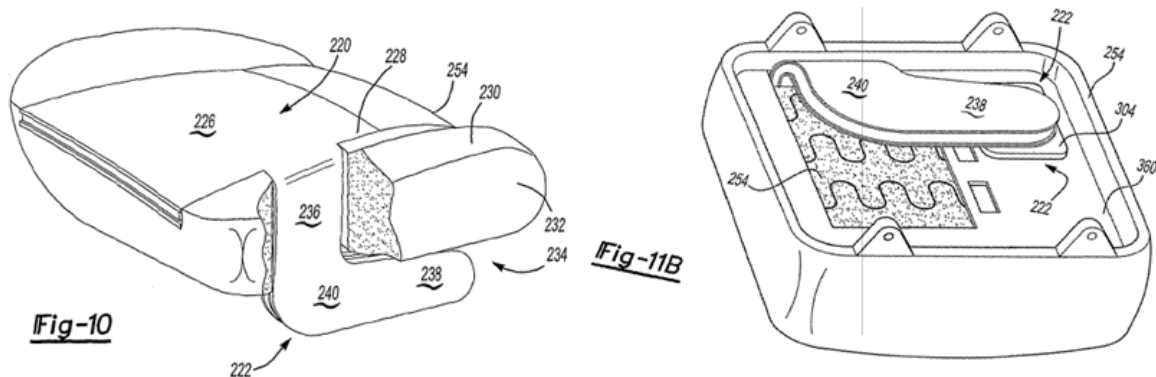
B. *Claims 1–5 and 7–9—Obviousness over Bajic, Nelson, Pfahler, and Knoll ’113*

IGB contends that the combination of Bajic, Nelson, and either Knoll ’113 or Pfahler renders unpatentable claims 1–5 and 7–9 under 35 U.S.C. § 103. Pet. 14–31.

Bajic describes “a sealed insert for providing heating, ventilation or a combination thereof to a seat of an automotive vehicle.” Ex. 1003 ¶¶ 2, 7. The insert is placed between a seat or backrest cushion and an air-permeable outer trim layer. *Id.* ¶ 4. The insert “includes a middle layer sandwiched and between a forward layer and a rearward layer and sealed about a peripheral edge.” *Id.* ¶ 6, Fig. 1C. The middle layer comprises a spacer

material, which provides an “open space” so that a fan or other air mover can blow air through an opening in the forward or rearward layer, into and throughout the spacer material, and out through a plurality of openings in the forward layer. *Id.* ¶¶ 4–6, 30. The forward layer may include a heater sub-layer. *Id.* ¶ 27.

The insert may also include an extension that extends to the backside of the seat or backrest cushion, where it connects the insert to the fan. *Id.* ¶ 47. Figures 10 and 11B, reproduced below, illustrate this arrangement:

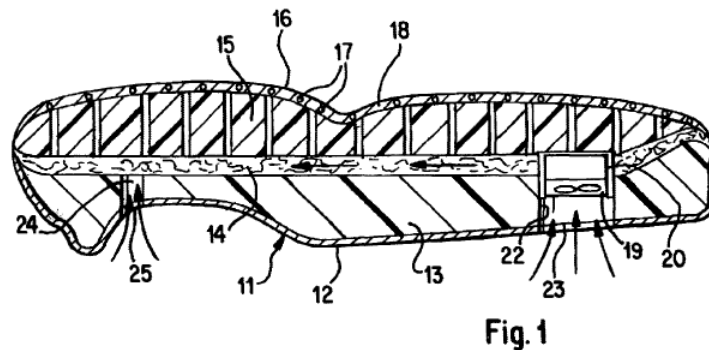


Figures 10 and 11B depict insert 220, with body portion 226 and extension 222, overlaying seat cushion 232. *Id.* ¶¶ 90–91. Extension 222 extends into and through opening 250 in the cushion and attaches to an air mover mounted underneath the cushion. *Id.* ¶ 91. Bajic discloses a similar arrangement with a backrest cushion, in which body portion 202 of insert 10 overlays a cavity in backrest cushion 206, and extension 139 of insert 10 extends through opening 210 and attaches to air mover 210 behind the backrest cushion. *Id.* ¶¶ 87, 88, Figs. 7, 8A.

Nelson describes a flexible heater for automobile seats. Ex 1004, 1:53–56. The heater includes a flexible “electrically insulative substrate,” to which a conductor material is attached. *Id.* at 2:7–10, Figs. 2–3. The

conductor layer may have “a main buss, a main buss ground, a small buss, a third buss, and a third buss ground.” *Id.* at 2:29–31. A resistive element or layer, typically a polymer thick film, is applied over the conductor. *Id.* at 2:17–27. The resistive layer can be a positive temperature coefficient (PTC) material, meaning that the material’s resistance increases with increasing temperature. *Id.* at 2:19–22. Apertures can be provided in the heater assembly to allow air to flow through it. *Id.* at 2:38–44.

Pfahler is drawn to a ventilated motor vehicle seat cushion. Ex. 1005, 1:10–11. Figure 1, reproduced below, depicts an embodiment:



Pfahler Figure 1 depicts foam block 13 lying on cushion support 11 and covered by air-permeable fabric layer 14 that “serves as the ventilation or air guide layer of the active ventilation of the cushion.” *Id.* at 2:65–67. Each of several miniature fans 19 is “integrated into” the cushion by suspending it in ventilation channel 22 that passes through foam block 13 and fabric layer 14. *Id.* at 3:5–7, 18–25, Fig. 1. Each fan 19 is suspended with its fan housing in a plastic cylindrical sleeve 20 to dampen vibration. *Id.* at 3:9–11.

Knoll ’113 is drawn to “an improved ventilation diffuser bag for an occupant support comfort system.” Ex. 1006, 1:35–36. Figure 2, reproduced below, depicts an embodiment:

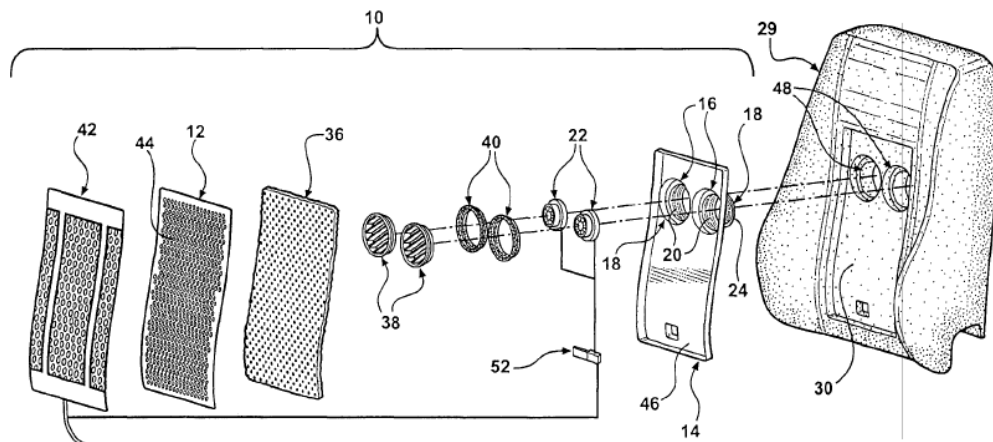


Fig. 2

As depicted in Figure 2 of Knoll '113, diffuser bag 10 includes a perforated, occupant facing side 12 and opposite non-perforated support surface facing side 14 enclosing air permeable material 36. *Id.* at 3:23–25, 4:17–21, Fig. 1. Non-perforated side 14 includes opening 16 to allow air flow into diffuser bag 10. *Id.* at 3:41–42. Air mover support 18, integral with non-perforated side 14, extends from opening 16 and receives air mover 22. When diffuser bag 10 is placed on top of upper back rest portion 29, air mover support 18 and air mover 22 extends into through-hole 48 in occupant support 28. *Id.* at 3:59–4:2.

1. *Whether Knoll '113 is Prior Art*

a. Gentherm's Contentions

Gentherm asserts that Knoll '113 is not prior art under 35 U.S.C. § 102(e), as IGB alleges. PO Resp. 19–49. Knoll '113 issued January 4, 2011 from an application filed January 30, 2006. Ex. 1006, at [22], [45]. Gentherm contends that “the '517 patent claim elements allegedly present in Knoll '113 . . . were conceived by the '517 patent inventors at least five days earlier, on January 25, 2006,” and “embodiments were diligently reduced to practice at least as early as February 28, 2006.” PO Resp. 19. In support of

this contention, Gentherm provides declarations from two of the four named inventors, Marinko Lazanja and Ed Marlovits (“the Inventors”).⁶ *Id.* (citing Ex. 2011, Ex. 2012). Gentherm further contends that the Inventors’ testimony is corroborated by the testimony of four non-inventor witnesses: Tim Normand and Margaret Krzywinski, who worked with the Inventors in 2005–2006; Scott Chapple, the Inventors’ patent attorney; and Michael Gutierrez, a specialist in electronically stored information forensics. *Id.* at 19–20 (citing Ex. 2010, Ex. 2013, Ex. 2014, Ex. 2015).

According to Gentherm’s proffered testimony, the Inventors were employed by W.E.T., Gentherm’s predecessor-in-interest, at the time of the events in question. Ex. 2011 ¶ 3; Ex. 2012 ¶ 3. In late 2005 and early 2006, some of W.E.T.’s engineers, including Mr. Lazanja, met with Keith Ferguson, a Project Manager with Daimler Chrysler, one of W.E.T.’s customers. Ex. 2011 ¶ 4; Ex. 2012 ¶ 4; Ex. 2014 ¶ 6. According to Gentherm’s witnesses, Mr. Ferguson explained that Chrysler was interested in purchasing a vehicle seat trim bag for two of its upcoming 2008 model cars, and wanted the trim bags to include thin heaters manufactured by “Ecotemp,” and small fans or blowers manufactured by “Papst.” Ex. 2011 ¶ 4; Ex. 2012 ¶ 4; Ex. 2014 ¶ 5. Gentherm’s witnesses testify that the named inventors subsequently worked with Tim Normand, a Product Specialist at W.E.T., to develop the requested vehicle seat trim bag. Ex. 2011 ¶ 5; Ex. 2012 ¶ 5; Ex. 2014 ¶¶ 3, 6. According to Mr. Lazanja,

⁶ For simplicity, we will refer to Mr. Lazanja and Mr. Marlovits as “the Inventors,” with the understanding that they are only two of the four named inventors.

We came up with trim bag designs that included multiple layers, this included bags with spacer material, such as spacer fabric from a company called Müller, surrounded by sealed layers of polymer film, as well as an optional fleece layer. We designed the bags so that the blowers could attach to the bottom or foam-facing side of the bag and extend away from the bags.

Ex. 2011 ¶ 5. Mr. Lazanja and Mr. Marlovits also testified, in identical fashion, that “[t]he vehicle seat foams would include ducts or channels through them to accommodate the blowers.” Ex. 2011 ¶ 5; Ex. 2012 ¶ 6.

Gentherm’s witnesses further testify that on or about January 23, 2006, the named inventors summarized some of their designs in a document titled “Flat Heater + Comfort Cools Assembly,” which they emailed to Scott Chapple, W.E.T.’s patent counsel, on January 23. Ex. 2011 ¶ 7; Ex. 2012 ¶ 8. This document is in the record as Exhibit 2022. An excerpt from the first page of Exhibit 2022 is reproduced below:



Comfort Cools Trim Bag



Flat Heater



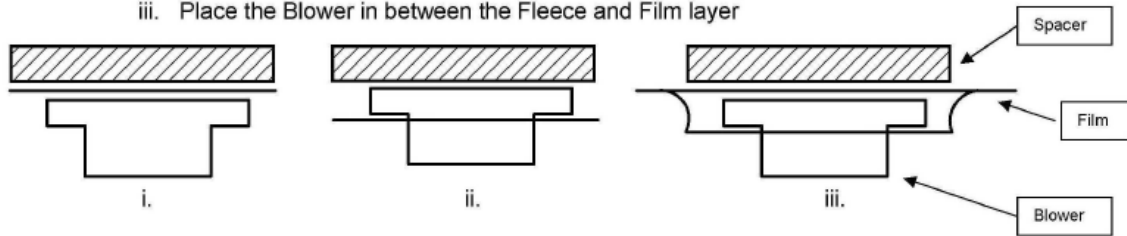
Blower Assemblies

The excerpt from the first page of Ex. 2022 depicts components to be used in W.E.T.’s design—e.g., the trim bag, flat heater, and blower assemblies. Ex. 2022, 1. An additional excerpt from the first page of this exhibit is reproduced below:

1. Blower / Boot Assembly to the Comfort Cools Trim Bag

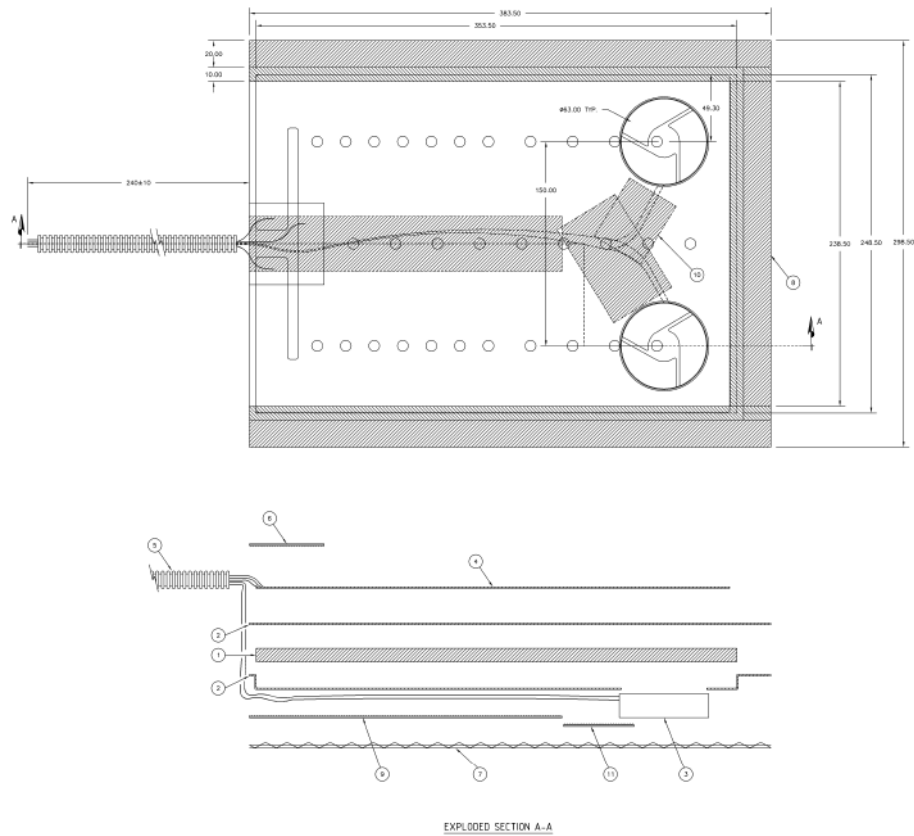
Location of the Blower:

- i. Place the Blower Lip and seal to an inside layer in the bag
- ii. Secure the entire Blower to the outside layer of the bag
- iii. Place the Blower in between the Fleece and Film layer



This excerpt depicts various ways of attaching the blower/boot assembly to the trim bag, e.g., attaching the blower lip to an inside layer in the bag, attaching it to an outside layer, or placing it between an optional fleece layer and a film layer. *Id.*

The Inventors further testify that around January 23, 2006, they worked with Tim Normand to prepare schematic drawings to be used to build prototypes of their designs. Ex. 2011 ¶ 9; Ex. 2012 ¶ 10; Ex. 2014 ¶ 7. These drawings were completed on January 25, 2006. *Id.* The drawings are in the record as Exhibits 2024 and 2026. Exhibit 2024 depicts a design for a “FSBK” or “Front Seat Back” trim bag, which was designed to be placed on the occupant-facing side of the seat’s back-rest foam. Ex. 2011 ¶ 10. An excerpt from Exhibit 2024 is reproduced below:



The excerpt from Exhibit 2024 depicts a top-down view and an elevation view of the FSBK trim back design.

Exhibit 2026 depicts a design for a “FSCH” or “Front Seat Cushion” trim bag, which was designed to be placed on the front or occupant-facing side of the seat cushion. *Id.* ¶ 11. An excerpt from Exhibit 2026 is reproduced below:



The excerpt from Exhibit 2026 depicts a top-down view and an elevation view of the FSCH trim back design.

Mr. Normand testifies that around January 26, 2006, he began working with Margaret Krzywinski, the Technology Center Coordinator for W.E.T.'s Prototyping Department, to prepare a "Prototype Requisition" form, which was needed to authorize the production of prototype samples of the trim bags. Ex. 2014 ¶ 11. Mr. Normand testifies that on January 31, 2006, when the Prototype Requisition form was completed, he "instructed Margaret to prepare one sample of each FSCH and FSBK trim bag and harness according to the prototype drawings," and also "to prepare the cushion and back foams to accommodate the sample trim bags." *Id.* Mr. Normand states that "[t]he cushion and back foams were to include a cavity

for holding the trim bags and ducts through the cushions to accommodat[e] the Papst fans.” *Id.* The Inventors and Mr. Normand testify that DaimlerChrysler provided W.E.T. with seat foams that would match the seats in which the trim bags would be used. Ex. 2011 ¶ 12; Ex. 2012 ¶ 13; Ex. 2014 ¶ 12.

On January 31, 2006, Ms. Krzywinski assigned an operator, Elzbieta Kolodziejczyk, to build the first samples. Ex. 2014 ¶ 14; Ex. 2015 ¶ 9. Ms. Kolodziejczyk was also instructed, by Mr. Normand, to prepare the foam cushions to accommodate the trim bags; i.e., according to Ms. Krzywinski, Mr. Normand told Ms. Kolodziejczyk that “[t]he foam cushions were to include a cavity for holding the trim bags and ducts through the cushions to accommodat[e] the Papst fans.” Ex. 2015 ¶ 9. Ms. Kolodziejczyk prepared samples according to the schematic drawings that day. *Id.* ¶ 13. Additional samples were built on February 1 and 2, 2006, and the samples were shipped to DaimlerChrysler. Photographs of these samples are in the record at Exs. 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2100, 2102, 2104, and 2106. *Id.* ¶ 20.

Based on the above evidence, Gentherm contends that “the inventors had, at least as early as January 25 [2006], conceived of inserts that included air movers (Papst blowers) located underneath the insert and projecting from the rearward layer . . . , the air movers in fluid communication with the open space within the insert . . . , and being adapted to fit within the duct in the seat cushion.” PO Resp. 40. Gentherm further contends that “the evidence confirms that the inventors conceived and diligently reduced to practice many more claimed features,” including a seat cushion with a duct extending through it. *Id.* at 42–43.

b. IGB's Response

IGB responds that “the alleged January 23, 2006 document (Ex. 2022) and the subsequent CAD drawings (Ex. 2024, Ex. 2026) do not in any way show or describe an air mover fit within a duct in a cushion.” Pet. Reply 2. Further, IGB contends that Kevin Ferguson, the DaimlerChrysler engineer who met with the Inventors in 2005, conceived the “critical limitations of the ’517 patent,” including the idea of mounting fans within ducts cut into the seat cushion. *Id.* at 4. In support of this contention, IGB submits a declaration from Mr. Ferguson in which he testifies that he “submitted a DaimlerChrysler Invention Development Record dated May 31, 2005” that describes key features of the claimed invention. Ex. 1020 ¶ 5. According to Mr. Ferguson, this Invention Development Record described a vehicle seat heating and ventilation system with “seat foam [that] included ducts extending through the seat foam and located in specific regions of the seat[, and] [f]an units . . . mounted in each duct of the seat foam.” *Id.*; see Ex. 1021. Mr. Ferguson states that a prototype of this design was built by Ecotemp, and that he showed the prototype to Mr. Lazanja and Mr. Normand when he met with them in late 2005. Ex. 1020 ¶ 8. Finally, Mr. Ferguson testifies that he reviewed the photos shown near the top of page 1 of Exhibit 2022 (the January 23, 2006 report prepared by the inventors) and that the three photos show the plenum bag, Ecotemp heater, and Papst blower assembly, respectively, that he told W.E.T. to include in the heating and ventilation insert. *Id.* ¶ 10.

c. Analysis

Petitioner bears the burden of persuasion, by a preponderance of the evidence, that challenged claims 1–5 and 7–9 are unpatentable. 35 U.S.C.

§ 316(e). This burden includes, *inter alia*, showing that any reference on which it relies is prior art under 35 U.S.C. § 102. *See Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1576 (Fed. Cir. 1996) (holding that accused infringer “bore the burden of persuasion . . . on all issues relating to the status of [the asserted reference] as prior art”). Knoll ’113 presumptively constitutes prior art under 35 U.S.C. § 102(e) because its January 30, 2006 filing date is prior to the ’517 patent’s March 28, 2012 filing date, giving rise to Gentherm’s burden of coming forward with evidence supporting a date of invention before January 30, 2006. *Mahurkar*, 79 F.3d at 1576–77; *see Technology Lic. Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008) (finding that when party challenging validity came forward with art that is prior to the challenged patent’s application date, the patentee has burden of going forward with evidence that “the asserted claim is entitled to the benefit of a filing date prior to the alleged prior art”).

“To antedate . . . an invention, a party must show either an earlier reduction to practice, or an earlier conception followed by a diligent reduction to practice.” *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001) (internal citation omitted). As noted above, Gentherm contends that it conceived the invention no later than January 25, 2006, and diligently reduced it to practice no later than February 28, 2006. “Conception” is the “formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.” *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986). An inventor’s testimony regarding his own prior inventorship must be corroborated:

It is well-established in our case law that a party claiming his own prior inventorship must proffer evidence corroborating his testimony. . . . “This rule addresses the concern that a party claiming inventorship might be tempted to describe his actions in an unjustifiably self-serving manner in order to obtain a patent or to maintain an existing patent.” . . . “[A] ‘rule of reason’ analysis is applied to determine whether an inventor’s testimony . . . has been corroborated.” In applying the “rule of reason” test, “all pertinent evidence” is examined in order to determine whether the “inventor’s story” is credible. . . . “[E]ach corroboration case must be decided on its own facts with a view to deciding whether the evidence as a whole is persuasive.”

Sandt Tech., Ltd. v. Resco Metal & Plastics Corp., 264 F.3d 1344, 1350 (Fed. Cir. 2001) (internal citations omitted).

Having reviewed the record, particularly the evidence that Gentherm proffers to show prior conception, we are unable to find sufficient evidence that, prior to January 30, 2006, the Inventors conceived of a seat cushion having a duct extending through it and within which one or more air movers are configured to fit. Indeed, arguably, the Inventors did not even allege doing so. The Inventors specifically testify that they “came up with” the trim-bag designs, and that they “designed” the bags so that the blowers could attach to the bottom or foam-facing side of the bag and extend away from the bags, but they did not testify that they “came up with” or otherwise conceived of mounting the fans within ducts cut into the seat foam.

Ex. 2011 ¶ 5; *see* Ex. 2012 ¶ 6. Instead, they both testified only that the “seat foams *would* include ducts or channels through them to accommodate the blowers.” Ex. 2011 ¶ 5; Ex. 2012 ¶ 6 (emphasis added). In that respect, neither of the Inventors testifies that they conceived of this feature at all, much less when they did so. We find significant the absence of a clear

statement regarding the conception of this feature, particularly when compared with the affirmative statements made regarding the conception of other limitations in claim 1.

At oral hearing Gentherm's counsel "appeal[ed] to some common sense," and argued that if the blower is "on the bottom side of the bag, and there is a cushion there that it is mounted into . . . there has to be a duct for that thing," i.e., "there is no other place for [the blowers] to go, because they are put on a seat cushion." Tr. 28:17–29:19; *see also* Tr. 33:9–11 (Gentherm's counsel stating that "[i]f the fans are extending from the bottom of the bag, I would challenge any of us in this room to conceive of a different place for those fans to go than in a cavity in the cushion"). In essence, Gentherm's counsel asks us to assume that the Inventors *must have* conceived of a cushion having a duct extending through it when they conceived of the trim bag having fans attached to the bottom of the bag. But if this were the case, it would have been a simple matter for the Inventors to have said so themselves, rather than making the puzzling statement that the seat foams "would include" ducts through them to accommodate the blowers, a statement that seems written to avoid specifying clearly when or by whom this limitation was conceived. Further, the '517 patent discloses that *either* "through-holes"—i.e., ducts—*or* "cavities" can be used to accommodate fans connected to an insert. Ex. 1001, 12:55–65, Figs. 5, 6, 8, 9. There is no evidence in the record that the Papst blowers needed to be received within ducts rather than cavities in the seat cushion.

Gentherm's counsel also points out that the Inventors testified that they actually modified the cushions to accommodate the trim bag and blowers. Tr. 29:7–10. Mr. Lazanja testifies that "we had to make some

modifications to the foams,” i.e., “we had to make a cavity or depression to hold the trim bag and ducts or channels through the foams to accommodate and encompass the blowers.” Ex. 2011 ¶ 12. Mr. Marlovits makes the same statement. Ex. 2012 ¶ 13. Neither Inventor, however, specifies when such modifications were made or precisely by whom they were made. Moreover, to the extent the Inventors allege that, prior to January 30, 2006, they conceived of a seat cushion having a duct extending through it and within which one or more air movers are configured to fit, the Inventors’ testimony is uncorroborated. Rather, a review of all pertinent evidence of record makes clear that (1) the modifications to the foam cushion were made at the direction of Mr. Normand, who is not a named inventor (Ex. 2015 ¶ 9); (2) the modification was made by Ms. Kolodziejczyk, also not named as an Inventor (*id.*); and (3) both Mr. Normand’s direction and Ms. Kolodziejczyk’s modification occurred after January 30, 2006 (*id.*). Further, neither the January 23, 2006 report (Ex. 2022) nor the drawings completed on January 25, 2006 (Exs. 2024, 2026) make any reference to a seat cushion, much less a duct extending through it and within which one or more air movers are configured to fit. Indeed, Gentherm concedes that “the cushions themselves are not shown in the drawings.” Tr. 40:21–22.

Finally, we cannot ignore Mr. Ferguson’s testimony that he conceived of a seat ventilation system comprising a seat foam with ducts extending through the foam and with fan units mounted in each duct, and that he showed the Inventors a prototype of this system in late 2005. It is true, as Gentherm’s counsel points out, that this is not a derivation proceeding. Tr. 42:17–20. However, Mr. Ferguson’s Declaration and inventor disclosure

form may help explain the Inventors' reluctance to testify that they conceived of a seat foam with ducts and fan units mounted in the ducts.⁷

In any event, Gentherm does not contend that Mr. Ferguson's Declaration serves to corroborate any Inventor testimony. Indeed, Gentherm *disputes* that Mr. Ferguson showed the Inventors a prototype of his system in late 2005. Tr. 53:11–54:23. Gentherm contends that Mr. Ferguson's Declaration is inconsistent with the Inventors' testimony, which does not mention that Mr. Ferguson showed them a prototype of his system in late 2005. *Id.*; see Ex. 2011 ¶ 4; Ex. 2012 ¶ 4.

Accordingly, on the record before us, we are not persuaded that Gentherm has met its burden of coming forward with evidence that the Inventors conceived of a seat cushion having a duct extending through it and within which one or more air movers are configured to fit prior to January 30, 2006. Accordingly, because Gentherm has not come forward with sufficient evidence to rebut IGB's showing that Knoll '113 predates the earliest filing date on the face of the '517 patent, we are persuaded that IGB has met its overall burden to demonstrate that Knoll '113 constitutes prior art to the '517 patent.

2. *Obviousness over Bajic, Nelson, and Knoll '113*

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter 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. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

⁷ Unfortunately, neither Mr. Ferguson nor any of Gentherm's witnesses were deposed, so we do not have the benefit of their cross-examination testimony.

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 skill in the art; and (4) where in evidence, so-called secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

a. Claim 1

IGB relies on Bajic to teach all of claim 1’s limitations except for the heater-layer limitation (labeled “(b)v” in claim 1) and the requirement for “*one or more air movers located underneath the insert . . . and being adapted to fit within the duct in the seat cushion*” (labeled “(b)vi” in claim 1). Pet. 15–19 (citing Ex. 1003, Abstract, ¶¶ 2, 4, 6, 7, 31–32, 44, 48, 49, 52, 54–56, 62, 64, 66, 70, 72, Figs. 7, 8A, 9–11B). IGB relies on Nelson for limitation (b)v and on each of Pfahler and Knoll ’113, independently, for limitation (b)vi. *Id.* at 32, 35.

IGB contends that Nelson teaches “a heater comprising a polymer film having one or more openings for allowing air flow therethrough, a resistive polymer layer disposed on the polymer film, and two or more buss bars disposed on the polymer film that are spaced apart and electrically in communication with each other through the resistive polymer layer.” Pet. 16–17 (citing Ex. 1004, 1:15–16, 2:7–44, 3:20–25, 52–56, 4:18–32, 55–57, Figs. 2, 3). According to IGB, combining Nelson with Bajic “amounts to use of a known technique to improve a similar device in a similar way” (Pet.

14–15), because Nelson discloses that the heating device is intended for use in automobile seats (*Id.* at 16; *see* Ex. 1004, 1:53–56) and Bajic’s automobile seat insert contains a PTC heater such as that disclosed in Nelson. *Id.* at 17.

Gentherm does not dispute any of the above contentions. We find that Bajic teaches all of the limitations of claim 1 except for a heater having the specific characteristics recited in limitation (b)v in claim 1, and limitation (b)vi in claim 1, requiring air movers “adapted to fit within the duct in the seat cushion.” We further find that a person of ordinary skill in the art at the time of the invention would have had reason to combine Bajic and Nelson for the reasons set forth by IGB.

IGB further contends that Knoll ’113 teaches “one or more air movers located underneath the insert and projecting from the rearward layer, the one or more air movers being in fluid communication with the open space within the insert, and being adapted to fit within the duct in the seat cushion.” *Id.* at 33–35 (citing Ex. 1005, Abstract, 2:62–67, 3:5–25, Fig. 1; Ex. 1006, 3:24–26, 4:17–19, Figs. 1, 2, 4). IGB asserts that it would have been obvious to a person of ordinary skill in the art to combine the “air mover and air mover support of the ventilation diffuser bag 10 of Knoll ’113” with “the vehicle seat insert of Bajic” because “it would have eliminated duct work necessary to connect the air mover of Bajic to the insert and would have simplified installation by eliminating the need to separately mount the air mover to the occupant support.” *Id.* at 35. IGB further contends that “[o]ne of ordinary skill in the art would have looked to this combination as Bajic and Knoll ’113 both teach similar ventilation diffuser insert systems for occupant

supports, and Knoll '113 teaches an improvement over the system disclosed in Bajic.” *Id.*

Again, Gentherm does not dispute any of the above contentions. We find that Knoll '113 teaches one or more air movers adapted to fit within the duct in the seat cushion, and further find that a person of ordinary skill in the art would have had reason to combine Knoll '113 with the Bajic/Nelson combination for the reasons set forth by IGB. Accordingly, we determine that claim 1 would have been obvious over Bajic, Nelson, and Knoll '113.

b. Claims 2–5 and 7–9

IGB contends that (1) Bajic discloses the additional limitations of claims 2, 3, 5, and 8; (2) Nelson discloses the additional limitations of claims 7 and 9; (3) Knoll '113 teaches the additional limitation recited in claim 4, i.e., that “the spacer material is not affixed to the forward layer, the rearward layer, or both,” and (4) a person of ordinary skill in the art would have been motivated to incorporate this feature in Bajic’s insert to “reduce[] cost [and] simplif[y] construction.” Pet. 28–30, 39–40 (citing Ex. 1003 ¶¶ 67, 70, 80, 98, Figs. 1C, 3, 5; Ex. 1004, 3:20–25, 33–35, 49–50, 4:19–21; Ex. 1006, 4:17–21, 5:10–19, Fig. 1). Gentherm does not dispute any of these contentions. Having reviewed the record, we find that a preponderance of evidence supports IGB’s contentions, and determine that claims 2–5 and 7–9 would have been obvious over Bajic, Nelson, and Knoll '113.

3. *Obviousness over Bajic, Nelson, and Pfahler*

a. Claim 1

IGB contends that Pfahler teaches an automobile seat cushion assembly including a ventilation fabric layer through which air can flow, and

miniature fans 19 integrated into the cushion to blow air into the ventilation layer, each fan mounted via suspension sleeve 20 in ventilation channel 22 that extends through the cushion. Pet. 33 (citing Ex. 1005, Abstract, 2:62–67, 3:5–25, Fig. 1). IGB asserts that it would have been obvious to a person of ordinary skill in the art to combine Pfahler’s fan 19 and suspension sleeve 20 structure with Bajic’s insert because the combination “amounts to use of a known technique to improve a similar device in a similar way,” and because the combination would have simplified the construction of the insert and saved space by locating the fan entirely within the duct. *Id.* at 32–33. IGB also contends that combining Pfahler with Bajic “would have maintained the respective function of Bajic and Pfahler and would have had predictable results.” *Id.* at 33–34.

Gentherm does not dispute that Pfahler teaches one or more air movers adapted to fit within the duct in the seat cushion. Instead, Gentherm argues that “one of ordinary skill would have had no reasoned motivation to modify Bajic’s insert in view of Pfahler to arrive at the claimed design [or would] have a reasonable expectation of successfully doing so.” PO Resp. 50. Gentherm argues that to minimize the fan noise reaching the seat occupant, Pfahler uses a fan sleeve that is closed at the top, so that air exits through radial opening in the sleeve wall. *Id.* at 50–51. According to Gentherm, lining up these radial openings with Bajic’s open space layer would “require introducing holes in multiple layers to accommodate the sleeve extending through the layers and sealing the outer insert layers to the sleeve walls,” and that such construction would “preclude the use of laminating machines,” making assembly “substantially more difficult.” *Id.* at 52. Gentherm further contends that additional fans would be required

(compared with Bajic’s single-fan system), and that this configuration would “reduce user comfort.”

Gentherm does not dispute, however, that combining Bajic and Pfahler would have been advantageous in that it would have rendered Bajic’s extension unnecessary, and would have saved space by permitting the fan to be located within a duct in the seat rather than underneath the seat. That the combination also may have presented disadvantages does not mean that the combination is not obvious. “The fact that the motivating benefit comes at the expense of another benefit . . . should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.” *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). Further, Gentherm does not contend that the modifications that would be necessary to combine Bajic and Pfahler would have required greater than ordinary skill at the time of the invention. We agree with IGB that a preponderance of the evidence indicates the combination of Bajic and Pfahler would have been obvious to a person of ordinary skill in the art at the time of the invention.

b. Claims 2–4, 7, and 9

For the reasons stated above with respect to the combination of Bajic, Nelson, and Knoll ’113, we determine that the combination of Bajic, Nelson, and Pfahler would have rendered obvious dependent claims 2–4, 7, and 9.

c. Claims 5 and 8

Claims 5 and 8 add the limitation “wherein the one or more air movers include a flange and the one or more air movers are attached to the insert, at least in part, by the flange being fitted between the spacer material and the rearward layer.” Gentherm notes that Pfahler does not teach this

additional limitation. PO Resp. 55–56. However, IGB relies on Bajic, not Pfahler, to teach this additional limitation. Pet. 40. Further, any modifications necessary to combine Bajic and Pfahler in a way that would have accommodated this feature would have been within the skill in the art at the time of the invention. Accordingly, we determine that claims 5 and 8 would have been obvious over the combination of Bajic, Nelson, and Pfahler. Pet. 40.

III. CONCLUSION

For the reasons stated above, we determine that IGB has shown by a preponderance of the evidence that claims 1–5 and 7–9 would have been obvious over Bajic, Nelson, and Knoll '113, and also would have been obvious over Bajic, Nelson, and Pfahler.

IV. ORDER

For the reasons given, it is

ORDERED that claims 1–5 and 7–9 of the '517 patent are held unpatentable.

This is a Final 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.

IPR2014-00664
Patent 8,360,517 B2

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