

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COSTCO WHOLESALE CORP.,
Petitioner,

v.

ROBERT BOSCH LLC,
Patent Owner.

Case IPR2016-00039
Patent 7,228,588 B2

Before PHILLIP J. KAUFFMAN, WILLIAM V. SAINDON, and
BARRY L. GROSSMAN, *Administrative Patent Judges*.

KAUFFMAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. OVERVIEW

Costco Wholesale Corp. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1, 12, and 14 of U.S. Patent No. 7,228,588 B2 (Ex. 1001, “the ’588 patent”). Pet. 1. Robert Bosch LLC (“Patent Owner”) filed a Preliminary Response (Paper 18, “Prelim. Resp.”) to the Petition. We instituted *inter partes* review of claims 1, 12, and 14.

We discuss preliminary matters, such as motions, in Section II below.

We held an oral hearing on January 18, 2017. *See* Paper 67 (“Tr.”); *see also* Ex. 1206 (Petitioner’s transcript errata).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the claims on which we instituted trial.

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 12, and 14 the ’588 patent are unpatentable.

B. RELATED PROCEEDINGS

The parties indicate that the ’588 patent is at issue in: *Robert Bosch LLC v. Alberee Products Inc. et al.*, No. 12-574-LPS (consolidated with No. 14-142-LPS) (D. Del.) (“the related litigation”). Pet. 1; Paper 6, 1.

The parties are currently involved in the following *inter partes* proceedings (“these proceedings”):

Case #	U.S. Patent #	Abbreviation
IPR2016-00034	6,973,698	“the ’698 patent”
IPR2016-00036	6,944,905	“the ’905 patent”
IPR2016-00038	6,292,974	“the ’974 patent”
IPR2016-00039	7,228,588	“the ’588 patent”
IPR2016-00040 ¹	7,484,264	“the ’264 patent”
IPR2016-00041	8,099,823	“the ’823 patent”

Two of the patents at issue in these proceedings, the ’905 patent and the ’974 patent, were at issue in prior litigation between Patent Owner and Pylon Manufacturing Corporation. Paper 39, 2. *Robert Bosch LLC v. Pylon Manufacturing Corporation* (D. Del., Case No. 08-542 (SLR)) (“the Pylon litigation”). See Paper 36, 1.

In these proceedings, sometimes a party submitted an identical paper or exhibit in all of the proceedings even though that paper or exhibit may not be applicable, or applies in a different manner, to a particular proceeding. At other times, we are able to apply the analysis of one proceeding to another.

¹ The ’264 patent (IPR2016-00040) is a division of the application that became the ’588 patent. IPR2016-00040, Ex. 1001, 1 (62). The remaining patents are not related.

C. EVIDENCE AND ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner asserts that the challenged claims are unpatentable under the following grounds:

Claims Challenged	§	References(s)
1, 12, 14	103(a)	Kotlarski ² and Prohaska ³
1, 12, 14	103(a)	Merkel ⁴ and Prohaska

In the patentability analysis below, we address these grounds as obvious over Prohaska and either Kotlarski or Merkel.

II. PRELIMINARY MATTERS

A. PETITIONER’S MOTION TO STRIKE AND MOTION TO EXCLUDE

Petitioner’s Motion to Strike (Paper 36), Motion to Exclude (Paper 53), and associated papers are quite similar to those submitted in IPR2016-00038. We adopt that analysis here with the distinctions noted below.

² PCT WO 99/02382, published Jan. 21, 1999 (Ex. 1006). The certified English translation begins at page 27.

³ U.K. Patent Application No. GB 2 106 775 A, published Apr. 20, 1983 (Ex. 1003).

⁴ PCT WO 99/12784, published March 18, 1999 (Ex. 1014). The certified English translation begins at page 20. References to “Merkel,” mean this prior art, while references to “Mr. Merkel” pertain to that person.

1. *Analysis of Motion to Strike*

Petitioner's Motion to Strike and associated papers⁵ do not differ from the Motion to Strike in IPR2016-00038 in any meaningful way, and accordingly, that Motion is *denied*.

2. *Analysis of Motion to Exclude*

For the reasons given below, Petitioner's Motion to Exclude is *granted-in-part* and *denied-in-part*.

a) *Mr. Merkel's former testimony*

In the Pylon litigation, Mr. Merkel's testimony related to the patent at issue in IPR 2016-00038, but here that is not the case (*i.e.*, the '588 patent was not at issue in the Pylon litigation.). We agree with Petitioner that this distinction is significant. *See* Paper 53, 10–11. Patent Owner acknowledges this distinction, and states that it does not preclude admissibility. Paper 61, 6; *see also* 5 (acknowledging the '588 patent was not at issue in the Pylon litigation, and that Mr. Merkel "did not discuss the '588 patent on direct examination").

To demonstrate identity of issues between the Pylon litigation and the case at hand, Patent Owner's asserts that "some of the same prior art" is at issue. Paper 61, 5. As Petitioner correctly points out, Mr. Merkel's testimony does not address any of the prior art at issue in this proceeding, and as a result Pylon could not have cross-examined Mr. Merkel on any of that prior art. Paper 53, 10. Consequently, the only issue that Patent Owner

⁵ *See* Paper 34 (authorizing the Motion), Paper 36 (Petitioner's Motion), Paper 39 (Patent Owner's opposition).

identifies as common to the Pylon litigation and the case at hand is not relevant because it was not part of Mr. Merkel's testimony.

In light of this, Patent Owner has not persuaded us that Pylon had opportunity and motive to develop Mr. Merkel's testimony through cross-examination as Petitioner would have here. *See United States v. Kennard*, 472 F.3d 851, 856 (11th Cir. 2006) (citation omitted); *United States v. Omar*, 104 F.3d 519, 522 (1st Cir. 1997) ("And, the evidence in question being hearsay, it was the defendants' burden to prove each element of the [804(b)(1)] exception they invoked."). Accordingly, Patent Owner has not demonstrated that the exception of Fed. R. Evid. 804(b)(1) applies.

The analysis in IPR2016-00038 of whether Mr. Merkel's testimony qualifies for the residual hearsay exception is applicable here.

Petitioner has demonstrated that Mr. Merkel's testimony from the Pylon litigation (Ex. 2005, 210–264) is inadmissible hearsay, and with respect to this evidence, Petitioner's Motion is *granted*.

b) Mr. Kashnowski's testimony

Our analysis in IPR2016-00038 is applicable here, and consequently, with respect to this evidence (Ex. 2007 ¶¶ 6, second, third, and fourth sentences) Petitioner's Motion to Exclude is *denied*.

c) Related Portions of Patent Owner's Response

We do not exclude any portion of Patent Owner's Response, but will not consider any citations to the excluded portion of Exhibit 2005.

B. PATENT OWNER'S MOTION TO EXCLUDE

The Motion to Exclude and associated papers⁶ have no meaningful distinction from the Motion to Exclude in IPR2016-00038, and consequently Patent Owner's Motion to Exclude portions of Mr. Peck's Declaration (Ex. 1100 ¶¶ 7, 9–11, 15, 18, 19, 21, and 23–26) is *denied*.

C. MOTIONS FOR OBSERVATION

Patent Owner submitted a Motion for Observation on cross-examination of Mr. Peck, and Petitioner submitted a response. Papers 54, 60. We considered these observations in making our analysis below. Generally, we are persuaded by each of Petitioner's responses.

⁶ See Papers 37, 49, 57, 63.

III. THE CLAIMED SUBJECT MATTER

A. ILLUSTRATIVE CLAIM

The independent challenged claims are reproduced below:

1. A wiper blade (**10**) to clean windshields (**14**), in particular of automobiles, with an elongated belt-shaped, flexible spring support element (**12**), on the lower belt surface (**22**) of which that faces the windshield is located an elastic rubber wiper strip 24 sitting against the windshield that extends parallel to the longitudinal axis and on the upper belt surface (**16**) of which a wind deflection strip (**42** or **112**) is located that has an incident surface (**54** or **140**) facing the main flow direction of the driving wind (arrow **52**), said deflection strip extending in the longitudinal direction of the support element, characterized in that the wind deflection strip has two sides (**48, 50** or **136, 138**) that diverge from a common base point (**46** or **134**) as seen in a cross section, that the incident surface (**54** or **140**) is located at the exterior of one side (**50** or **138**) and that the profile of the cross section of the wind deflection strip is the same along its entire length, in that between the two sides (**48, 50** or **136, 138**) of the wind deflection strip (**42** or **112**) there is at least one support means (**58** or **144**) located at a distance from their common base point (**46** or **134**) that stabilizes the sides, and in that the support means is made up of a wall (**58** or **144**) connected to both sides (**48, 50** or **136, 138**) that extends in the longitudinal direction of the wind deflection strip (**42** or **112**).

14. A wiper blade (10) to clean windshields (14), in particular of automobiles, with an elongated belt-shaped, flexible spring support element (12), on the lower belt surface (22) of which that faces the windshield is located an elastic rubber wiper strip 24 sitting against the windshield that extends parallel to the longitudinal axis and on the upper belt surface (16) of which a wind deflection strip (42 or 112) is located that has an incident surface (54 or 140) facing the main flow direction of the driving wind (arrow 52), said deflection strip extending in the longitudinal direction of the support element, characterized in that the wind deflection strip has two sides (48, 50 or 136, 138) that diverge from a common base point (46 or 134) as seen in a cross section, that the incident surface (54 or 140) is located at the exterior of one side (50 or 138) and that the profile of the cross section of the wind deflection strip is the same along its entire length, characterized in that between the two sides (48, 50 or 136, 138) of the wind deflection strip (24 or 112) there is at least one support means (58 or 144) located at a distance from their common base point (46 or 134) that stabilizes the sides, and characterized in that the support element (12) includes two flexible rails (36) each of which sits in a longitudinal notch (34) associated with it, respectively, said longitudinal notches being open toward the opposite lateral sides of the wiper strip (24), that the outer strip edges (38) of each of said flexible rails extend out of these notches, and that the support means (58 or 144) are positioned at a distance from the support element (12).

Claim 12 depends from claim 1.

B. CLAIM INTERPRETATION

In an *inter partes* review, we interpret the claims of an unexpired patent using the broadest reasonable construction. *See* 37 C.F.R. § 42.100(b).

In our Institution Decision, we stated

We determine that the “at least one support means” of independent claim 1 is not a means-plus-function limitation governed by 35 U.S.C. § 112 ¶ 6, but the support means of claim 14 is a means-plus-function limitation governed by 35 U.S.C. § 112 ¶ 6. We emphasize that these claim constructions are based on the record to this point, and are preliminary.

Dec. 10.

Neither party challenges this determination or otherwise addresses construction of these terms. We adopt our analysis from the Institution Decision. *See* Dec. 7–10.

We do not expressly construe any other claim terms. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only those terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy).

IV. PATENTABILITY

A. SCOPE OF REPLY

Patent Owner contends that portions of Petitioner’s Reply are improper, and consequently, the Board should not consider those portions. Paper 57. Petitioner disagrees. Paper 59.

In our order authorizing submittals on this issue, we informed the parties that a portion of Petitioner’s Reply is improper if: (1) that portion is beyond the scope of a reply under 37 C.F.R. § 42.23(b), or (2) Patent Owner did not have sufficient notice and opportunity to respond (*see, e.g., Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir. 2015) (applying a similar standard in *inter partes* review as in prosecution: “this court has

determined whether the Board relied on a ‘new ground of rejection’ by asking ‘whether applicants have had fair opportunity to react to the thrust of the rejection.’”). *See* Paper 47. In the patentability discussion below, we apply that standard, and address each of Patent Owner’s contentions.⁷

B. CREDIBILITY OF DR. DAVIS

There is no meaningful distinction between the argument on this issue here and that in IPR2016-00038. *See* PO Resp. 18–22; Pet. Reply. 20–21. Here, as in IPR2016-00038, the factors discussed detract slightly from Dr. Davis’s testimony, but not so much to warrant that we give his testimony overall little or no weight. Our analysis below reflects this determination.

C. LEVEL OF SKILL

We do not discern a meaningful difference between the argument on this issue here and that in IPR2016-00038. *See* PO Resp. 1–2; Pet. Reply 1–4. Here, as in IPR2016-00038, the prior art of record is reflective of the level of skill in the art. We address what was known in the art in our analysis below.

⁷ Patent Owner’s disagreement regarding Barth is not applicable to this proceeding because Patent Owner submitted Barth as Exhibit 2009 in conjunction with the Response. *See* Paper 57, 1–2.

D. CHRONOLOGY

The following generally chronological discussion pertains to all four *Graham* factors, and is applicable to all of the challenged claims and both grounds of unpatentability.⁸

1. *Prior to the '588 Patent*

Conventional wipers were known prior to the critical date of the '588 patent. *See* PO Resp. 11; Ex. 1016 ¶¶ 19–20; Ex. 2003 ¶ 21; Ex. 2007 ¶ 2; *see also* PO Resp. 4 (citing Exs. 2008 and 2009 as examples of known conventional wipers). Conventional wipers, also known as yoke or yoke-style wipers, include a series of flexible rails that distribute force along the wiper blade. Ex. 1016 ¶ 19; PO Resp. 4; Ex. 2003 ¶ 21. Barth is an example of a conventional, yoke wiper, as illustrated in Figure 1 below:

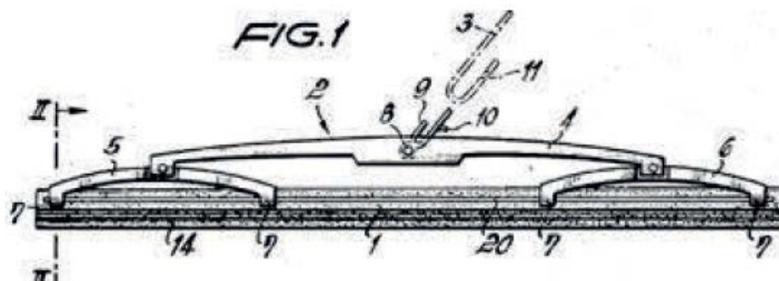


Figure 1 depicts a yoke-style wiper structure, having a support structure comprised of main member 4 and intermediate members 5 and 6 to support blade 14. *See* Ex. 1016 ¶ 19 (reproducing this figure); Ex. 2009, 2:52–53, 3:6–35, Figs. 1, 2.

⁸ Much of what Patent Owner labels as “secondary considerations” (*see* PO Resp. 10–18) pertains to all four *Graham* factors and is addressed in this section.

Beam wipers were known prior to the critical date of the '588 patent. *See* Pet. 13–15; Pet. Reply 3; PO Resp. 12 (“beam blades were described in paper patents long before the invention at issue here”); Ex. 2003 ¶ 23; Exs. 1004, 1005. Beam wipers, also known as flat wipers, use metal strips adjacent the wiper blade to distribute the load along the length of the wiper blade rather than the yokes. Ex. 1016 ¶ 22. Figure 1 of the '588 patent is reproduced below:

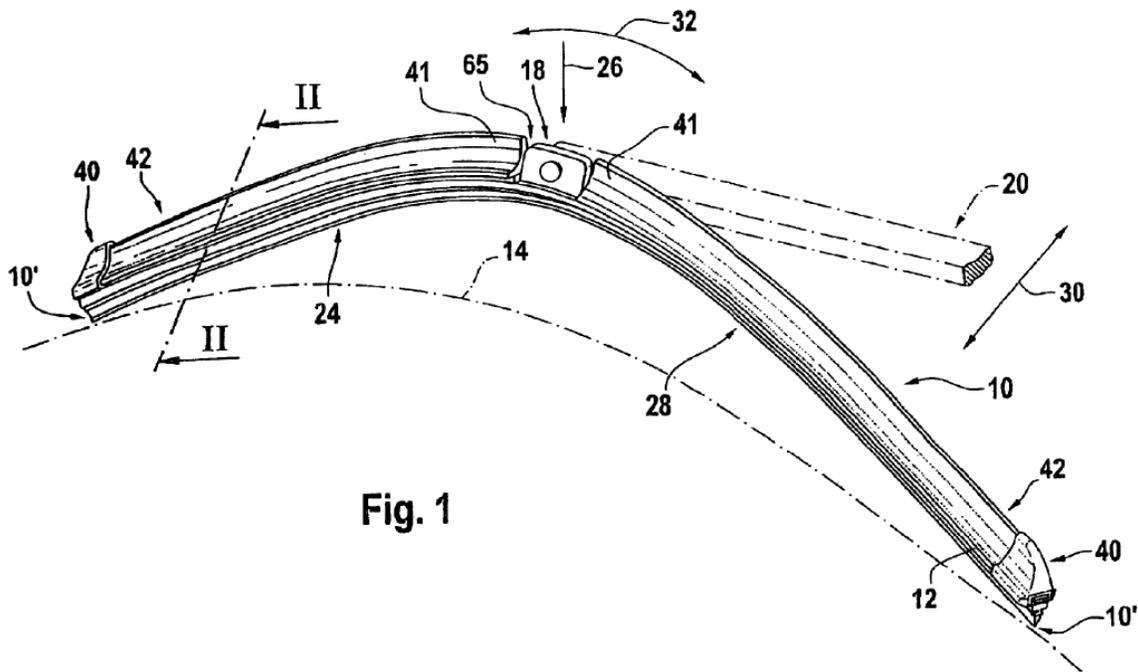


Fig. 1

Figure 1 of the '588 patent is a perspective view of a beam wiper blade with the wiper arm shown as a dot-dashed outline. Ex. 1001, 4:4–6; *see also* Ex. 1006, Fig. 1; Ex. 1006, Fig. 1; Ex. 1014, Fig. 1.

Patent Owner emphasizes that although beam wipers were known, there were no “commercially viable” beam wipers prior to 2002. PO Resp. 12 (citing Ex. 2007 ¶ 3). Even if the beam wipers known prior to 2002 were

not commercially viable, that does not alter the fact that beam wipers were known prior to the '588 patent.

The '588 patent acknowledges that the prior art included a wiper blade provided with a wind deflection strip for producing a force that counters lift off.⁹ Ex. 1001, 1:41–46. Thus, it was known to configure a beam wiper blade with a wind deflection strip that produces a force component directed toward the windshield to counteract the tendency of the wiper blade to lift off the windshield due to airflow at high vehicle speeds. *Id.* at 1:40–46. The cross section of the wind deflection strip was approximately the shape of a right triangle with the hypotenuse representing the incident surface. *Id.* at 1:46–54; *see also* Pet. 15–18 (discussing prior art beam wipers having a spoiler, such as Exs. 1006, 1013). The '588 patent describes that it was known that this configuration had several drawbacks: it required a relatively large amount of material to manufacture that added cost and weight to the design, the increased weight necessitated a more powerful drive system and a more expensive pendulum gear, and it adversely affected bending stiffness. *Id.* at 1:56–67;

In sum, prior to the '588 patent, conventional and beam wipers were known. Use of a spoiler to counter lift off in both conventional and beam wipers was known. *See* Pet. 10–18; Pet. Reply 3. Specifically, use of a hollow spoiler on a conventional wiper (*e.g.*, Ex. 1003) and use of a solid spoiler on a beam wiper (*e.g.*, Exs. 1006, 1013, 1104) were both known. Pet. 11–12, 15–18; Pet. Reply 3.

⁹ German Patent No. DE 197 36 368.7 found at Ex. 1104, with certified English translation at Ex. 1107.

2. *Patent Owner's Mischaracterizations*

Patent Owner argues that conventional thinking at the time of the '588 patent was to avoid adding components to beam blades because beam blades are highly sensitive to additional components. PO Resp. 3–5, 9, 11, 14. In reaction to this, Petitioner argued, with support from Dr. Peck, that the sensitivity of beam blades was a design factor that was understood prior to the '588 patent. *See* Pet. Reply 6 (citing Ex. 1100 ¶ 9), 16–17.

Patent Owner contends that Petitioner's argument is improper because it goes to an artisan's expectation of success in making the claimed combination, and should have been in the Petition. Paper 57, 2 (referring to Pet. Reply 6:16–20). Petitioner's argument properly responds to Patent Owner's argument as required by 37 C.F.R. § 42.23(b). Further, we agree with Petitioner that Petitioner could not have reasonably anticipated that Patent Owner would make such argument when it is contradicted by the disclosure of the '588 patent itself. Paper 59, 2. For that reason, Petitioner's counter argument in the Reply was not required to be in the Petition.

In light of the chronology given above, Patent Owner's argument regarding conventional thinking and the sensitivity of beam blades to modification is directly contradicted by the evidence of record. *See* PO Resp. 3–5, 9, 11; Pet. Reply 4–6. In particular, we repeat that the '588 patent itself acknowledges that the prior art included a wiper blade provided with a wind deflection strip for producing a force that counters lift off. *See* Ex. 1001, 1:41–46.

In association with the argument that the '588 patent took an unconventional approach, Patent Owner characterizes the '588 patent as meeting a long-felt but unresolved need, producing unexpected results, and

being met with skepticism. PO Resp. 11, 14 (citing Ex. 2003 ¶¶ 22–25, 58–60, 65, 73, 77, 79).¹⁰ We agree with Petitioner that the proposed modification was not contrary to conventional thinking at the time. *See, e.g.*, Pet. Reply 16–17 (citing Ex. 1100 ¶¶ 7–8). The '588 patent does not explicitly disclose or fairly imply that providing a beam wiper with a spoiler met a long-felt but unresolved need or produced unexpected results. To the contrary, as mentioned above, the '588 patent itself acknowledges that the prior art included a wiper blade provided with a wind deflection strip.

Patent Owner contends that Petitioner's argument (Pet. Reply 16:11–17:1) is improper because it does not relate to skepticism or unexpected results, but rather asserts the new position that it was conventional to add structures to a beam blade. Paper 57, 2. This argument is unpersuasive because, as discussed in the previous paragraph, Petitioner's argument does relate to skepticism and unexpected results. Further, we agree with Petitioner that Petitioner could not have reasonably anticipated that Patent Owner would make such argument when it is contradicted by the disclosure of the '588 patent itself. *See* Paper 59, 2.

3. *The '588 Patent*

The wiper blade of the '588 patent was designed to eliminate the drawbacks described in the background of the Specification. Ex. 1001, 2:3–13. Wiper blade 10 includes elongated belt-shaped, flexible spring support element 12 and wind deflector strip 42. *Id.* at 4:15–17, 5:9–13; Figs. 1, 2. Wind deflector strip 42 is made of an elastic material such as “a plastic”, and

¹⁰ We note that paragraphs 65, 73, 77, and 79 do not relate to the patent at issue in this case.

36.¹² Specifically, Petitioner contends that Prohaska discloses a wind deflection strip as claimed. Pet. 28–32. Petitioner contends that Kotlarski and Merkel each disclose a wiper as claimed, except that Kotlarski’s and Merkel’s wind deflection strip is not hollow. Pet. 27–33, 35–36. Petitioner proposes to replace the solid spoiler of Kotlarski or Merkel with the hollow spoiler of Prohaska. Pet. 35–36.

Claim 12 depends from independent claim 1 and recites, “characterized in that the wind deflection strip (**42 or 112**) has a longitudinal center section and in that a recess (**65**) is located in the center section of the wind deflection strip (**42 or 112**) at which to place a device (**18**) to connect a drive wiper arm (**20**).” Petitioner adds to the analysis of claim 1 that it would have been obvious to include a recess to connect a drive wiper arm with that recess as close as possible to the support element for transfer of pressure as directly as possible. Pet. 38–39; Ex. 1016 ¶ 66.

Petitioner contends that claim 14 would have been obvious over Prohaska and either Kotlarski or Merkel. Pet. 11–12, 15–18, 46–56 (incorporating analysis of similar claim 1). Specifically, Petitioner contends that Kotlarski and Merkel each disclose a wiper as claimed, except that Kotlarski’s and Merkel’s wind deflection strip is not hollow. Pet. 27–33, 35–36. Regarding the at least one support means of the wind deflection strip, Petitioner identifies the claimed function, and specific portions of the specification that describe the structure, materials, or acts corresponding to

¹² See also the Declaration of Dr. Kruger and associated illustrations. Exs. 1015, 1020–1022.

that claimed function, and contends that the prior art discloses the same. *See* Pet. 9–10, 46–54.

Petitioner’s contentions regarding the claimed limitations are supported by a preponderance of the evidence and we adopt them here. As discussed above, Kotlarski (Ex. 1006) and Merkel (Ex. 1014) each disclose beam type wipers, and Prohaska discloses a wind deflection strip. *See* Ex. 1006, Fig. 1; Ex. 1014, Fig. 1; Ex. 1003, Fig. 3. These disclosures must be considered in the context that the ’588 patent “begins with a wiper blade according to the preamble of claim 1,” and that the ’588 patent acknowledges that use of a wind deflection strip to counteract wiper lift off was known. Ex. 1001, 1:40–46. Further, Patent Owner does not dispute that the features of the challenged claims are found in the prior art. *See* Paper 20 ¶ 3 (instructing Patent Owner that “any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived”); Pet. Reply 4–5 (asserting the Patent Owner only argues that the proposed modifications go against conventional thinking at the time); Office Patent Trial Practice Guide, 77 Fed. Reg. at 48,766 (stating that the Patent Owner Response “should identify all the involved claims that are believed to be patentable and state the basis for that belief”).

2. *Contested Aspects*

Patent Owner contests the obviousness of the combination by arguing that a person of ordinary skill would not have made the proposed modifications, and by submitting secondary indicia of nonobviousness.

Petitioner contends that it would have been obvious to substitute Prohaska’s hollow wind deflection strip (spoiler) for either Kotlarski’s or Merkel’s. Pet. 35–36. According to Petitioner, a spoiler with a hollow cross

section such as Prohaska's was lighter, providing the benefits of: reducing stress on wiper drive components, reducing the amount of power needed to drive the wiper, and reducing manufacturing costs through use of less material to produce the components.¹³ Pet. 20–21, 35–36 (referring to this as implicit motivation and citing *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006)). Petitioner contends that such a modification was the mere substitution of one known element for another with a predictable result. *Id.* at 20–21, 35–36; Ex. 1016 ¶¶ 54–56, 64, 66. In light of the chronological discussion above, these contentions are supported by a preponderance of the evidence and we adopt them here.

a) Alleged Hindsight

Patent Owner contends that Petitioner's reasoning for adding Prohaska's spoiler improperly invokes hindsight. PO Resp. 2–3. In particular, Patent Owner emphasizes: (1) fundamental differences between conventional and beam blades, (2) a person of ordinary skill in the art would not have had reason to modify Kotlarski or Merkel, and (3) the disadvantages mentioned by Prohaska of its hollow-shaped Figure 3 conventional spoiler would have led a POSITA to avoid using it, particularly given the highly sensitive beam blade. *Id.* at 3. We analyze these contentions in turn.

¹³ Petitioner cites Eckhardt for the proposition that a hollow spoiler reduces manufacturing cost through use of less material. *See* Ex. 1008, col. 3–4 (reference does not include line numbering). Petitioner cites Hoyler in support of the proposition that reducing component weight reduces wiper drive stress. Ex. 1005, 5 (col. 2).

(1) Fundamental Differences

According to Patent Owner, conventional and beam blades are so fundamentally different that a person of ordinary skill would not have combined conventional and beam blade teachings. PO Resp. 3–5 (citing Ex. 2003 ¶¶ 21–25, 58–61, 65–67, 72–74). This statement is contradicted by the evidence of record, in that conventional and beam wipers have commonalities. For example, beam and conventional wipers can use the same wiper strip, and can be attached to an actuating arm.¹⁴

Patent Owner contends that conventional blades have several disadvantages, and that beam blades solved these problems by among other things, eliminating the yoke. PO Resp. 4–5 (citing Ex. 2003 ¶¶ 21–23, 58, 65, 73). In support, Dr. Dubowski opines that because beam blades avoid the high superstructure of a conventional wiper, beam blades “were hoped to perform better in extreme weather conditions” such as ice and snow. Ex. 2003 ¶ 23. Dr. Dubowski opines that beam blades are greatly affected by small changes in beam shape and by attaching additional components. Ex. 2003 ¶ 58. According to Dr. Dubowski, this is caused by the difference in pressure distribution in each wiper type, namely, that conventional wipers have a series of yokes to distribute pressure, while beam wipers distribute pressure through a spring-elastic support element that runs the entire length of the wiper strip. *Id.* Dr. Dubowski concludes that conventional thinking at

¹⁴ Regarding the wiper strip, *see, e.g.*, Ex. 1003, Fig. 1 (conventional strip); Ex. 1006, Fig. 1 (beam strip). Regarding the arm *see, e.g.*, Ex. 1006, 33 (referring to wiper arm 18 for a beam blade); Ex. 2008, 3:6–8 (referring to conventional wiper arm 1).

the time of '588 patent was to avoid additional components on a beam blade.¹⁵ *Id.* (citing three patents filed in these proceedings).¹⁶

An assertion that conventional wipers were “hoped” to perform better in ice and snow falls short of establishing that beam wipers performed better in ice and snow. *See* Ex. 2003 ¶ 23. More importantly, Patent Owner has not explained cogently how the superior ice and snow performance of a beam wiper relates to the modification proposed by Petitioner.

Although the three patents cited by Dr. Dubowski do not have additional components attached, Patent Owner does not identify, nor do we discern, any disclosure in these patents that is critical of increasing wiper profile or adding additional components. At most, these patents illustrate one approach and are silent regarding other approaches. Consequently, to the extent that Patent Owner’s argument suggests that these patents teach away from the proposed modification, such is not the case. Further, both Katlarski and Merkel are beam patents that include spoilers. This evidence directly contradicts Patent Owner’s contention that conventional thinking was to avoid such additions, yet, Dr. Dubowski’s opinion does not address

¹⁵ Paragraph 65 of Ex. 2003 deals with the '974 patent and is not relevant here. Paragraph 73 simply presents the conclusion that the challenged claims are not obvious over the asserted art, and adds nothing to Patent Owner’s assertion here.

¹⁶ Appel '551 (Ex. 1005 of IPR2016-00038); Appel '770 (Ex. 1006 of IPR2016-00034); Swanepoel '564 (Ex. 1010 of IPR2016-00034).

that evidence. Patent Owner's choice of addressing other approaches and not addressing the strongest evidence is unpersuasive.¹⁷

In sum, we are not persuaded by Patent Owner's contention that conventional thinking at the time of '588 patent was to avoid additional components on a beam blade. As detailed above, and as acknowledged in the '588 patent, use of a spoiler (additional component) to counter lift off in both conventional and beam wipers was known. *See* Pet. Reply 4–6; Ex. 1001, 1:41–46.

(2) Reason to Modify

Patent Owner makes two contentions in support of the argument that a person of ordinary skill in the art would not have reason to modify either Kotlarski or Merkel: one, because each discloses a complete beam solution, and two because none of the prior art teaches the required changes to the wiper strip, support element, and spoiler attachment mechanism. PO Resp. 5–6; (citing *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App'x 755, 759 (Fed. Cir. 2015)). In support, Dr. Dubowski echoes the Response, stating that Kotlarski and Merkel disclose a complete beam blade solution, and that the modification would necessitate changes that the references do not teach.

Patent Owner's contention that a person of ordinary skill would not have made the proposed modification because Kotlarski and Merkel each disclose a complete solution is unpersuasive. This argument is overbroad

¹⁷ Patent Owner's reference to the "failure" of the Trico wiper is similarly flawed. *See* PO Resp. 5. This assertion is addressed in greater detail in the secondary considerations analysis that follows.

and not tied to the facts of this case. As Petitioner observes, this argument would largely render § 103 superfluous. Pet. Reply. 9.

Further, the non-precedential case cited by Patent Owner is distinguishable from the case at hand. See PO Resp. 5–6. In *Plas-Pak* the proposed modification would either fundamentally alter a prior art reference’s principle of operation or would render it inoperable for its intended purpose. *Plas-Pak*, 600 F. App’x at 759–60. We agree with Petitioner’s characterization that the proposed modification here would not fundamentally alter the principle of operation of Katlarski or Merkel, nor render them inoperable for their intended purpose. Pet. Reply 11. Rather, the modified wipers would weigh less and require less material to manufacture, but would otherwise clean windshields and counter wind-lift in the same way as when unmodified. *Id.*

Patent Owner’s contention that the references do not teach the needed changes is also unpersuasive. We agree with Petitioner that Patent Owner has not gone so far as to assert that the proposed change is beyond the level of skill in the art. Pet. Reply 12. As Petitioner explained and Patent Owner did not contest, a person of ordinary skill includes a degree of ingenuity or problem solving skill. See Pet. Reply 1–2; PO Resp. 1–2. Further, given what was known in the art as detailed above, to include modification of conventional wipers to include a hollow spoiler and modification of beam wipers to include a solid spoiler, the proposed modification was within the level of skill in the art to make the proposed modification.

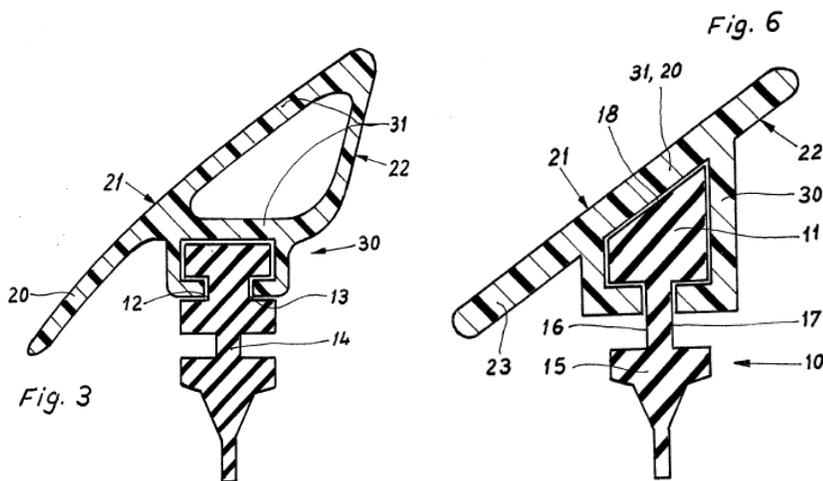
(3) Prohaska’s alleged disadvantages

Patent Owner contends that Prohaska “taught away from using the Figure 3 hollow spoiler at all” because, as a person of ordinary skill would

have understood, that spoiler “would lead to aerodynamically excited, degrading vibrations—which would disturb wiping ability and lead to premature failure.” PO Resp. 6–7 (citing Ex. 1003, 3:7–22). According to Patent Owner, Dr. Davis agrees. *Id.* at 7–9 (citing Ex. 2002, 113:15–115:14).

We are not persuaded by Dr. Dubowski’s opinion that adding Prohaska’s spoiler shown in Figure 3 would “lead to aerodynamically excited, degrading vibrations.” *See* Ex. 2003 ¶¶ 66, 73. Dr. Dubowski does not explain the feature or features that cause vibrations. Nor does Dr. Dubowski cite any underlying facts or data. The only portion of Prohaska cited by Dr. Dubowski is the portion describing that Figure 3 has a possible disadvantage.

We consider the cited portion of Prohaska in context. Prohaska discloses several embodiments of a windshield wiper blade assembly. Ex. 1003 [57], 2:56–57. Figures 3 and 6 of Prohaska follow:



Figures 3 and 6 are wiper assemblies that each include a flexible strip having a back formed as a spoiler. Ex. 1003, 2:33–34, 49–40. Prohaska describes that the embodiment shown in Figure 3 includes a spoiler in the form of a

hollow resilient strip that “possibly might be disadvantageous.” *Id.* at 3:2–6. Prohaska describes that this disadvantage is avoided in the embodiment shown in Figure 6 in that head 11 includes inclined surface 18 which closely rests against back 31 of flexible strip 30. *Id.* at 3:7–10.

Prohaska does not expressly state that the embodiment shown in Figure 3 may induce aerodynamic vibrations, that it should not be used, or that it is ineffective. Rather, Prohaska states the embodiment “possibly might be disadvantageous.” This language indicates that the negative aspect may or may not be present. Further, the severity of that negative aspect is characterized as a disadvantage, not as a feature that would prohibit effective wiper operation. A person of ordinary skill would understand that the embodiment shown in Figure 3 may or may not have a disadvantage. In contradiction of Dr. Dubowski’s assertion, Prohaska indicates that the invention (meaning all embodiments including that of Figure 3) ensures reliable contact between the wiper element and windscreen. Ex. 1003, 1:38–42, 97–100.

As we stated in our Institution Decision, Prohaska is best characterized as disclosing that the disadvantage of Figure 3 is a tradeoff and not a teaching away. Dec. 15–16. We incorporate that analysis here. Further, we agree with Petitioner that Dr. Davis’s testimony is consistent with this interpretation rather than Patent Owner’s assertion. Pet. Reply 13 (quoting Dr. Davis’s testimony from Ex. 2002, 113:15–115:14) (“[I]t’s kind of one of the design trade offs that you would be making . . . and it would certainly be lighter, but there could be a bit of a tradeoff there.”)).

(4) *Hindsight Summary*

As detailed above, Petitioner reasons, with uncontested supporting evidence, that modifying Katlarski and Merkel so that the spoiler is hollow as taught by Prohaska, would reduce the weight of the wiper, providing the benefits of: reducing stress on wiper drive components, reducing the amount of power needed to drive the wiper, and reducing manufacturing costs through use of less material to produce the components. *See* Pet. 20–21, 35–36; Ex. 1016 ¶¶ 54–56; Pet. Reply 4–5. Thus, Petitioner’s reasoning has a rationale underpinning. Patent Owner’s arguments do not undermine effectively Petitioner’s well-supported contention that the proposed modification was the mere substitution of one known element for another with a predictable result. *Id.* at 20–21, 35–36; Ex. 1016 ¶¶ 54–56, 64, 66.

b) *Secondary Considerations*¹⁸

We consider Patent Owner’s contention that this case involves the secondary considerations of: long-felt but unresolved need, industry praise and awards, failure of others, commercial success, licensing, unexpected results, and copying. PO Resp. 10; *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1328 (Fed. Cir. 2016) (when present, secondary indicia of nonobviousness must be considered).

“For objective evidence of secondary considerations to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *In re Huai-Hung Kao*,

¹⁸ We do not consider Patent Owner’s citations to the excluded portion of Exhibit 2005 (pp. 210–264). If our determination to exclude that evidence is determined to be in error, we incorporate our analysis from IPR2016-00038 explaining why that evidence is worthy of little weight.

639 F.3d 1057, 1068 (Fed. Cir. 2011) (emphasis and internal quotation marks omitted) (cited with approval in *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214 (Fed. Cir. 2016)). There is a presumption of nexus for objective considerations when the Patent Owner demonstrates that the asserted objective evidence is tied to a specific product and that product is the invention disclosed and claimed in the patent. *WBIP*, 829 F.3d at 1329.

Before addressing the specifics of Patent Owner’s secondary considerations, we emphasize that, as discussed above, most of Patent Owner’s secondary considerations arguments are based upon mischaracterizations of the scope and content of the prior art.

(1) Lack of Connection between the Products and Challenged Claims

Patent Owner contends that the Aerotwin and Icon blades each “practice the challenged claims.” PO Resp. at 13–14 (citing Ex. 2014, 3; Ex. 2015, 33–57, 59–62; Ex. 2016, 30–43, 45–48; Ex. 2007 ¶ 6; Ex. 2006, 698:19–699:22). Patent Owner describes the Aerotwin and ICON wipers as having a flexible spoiler with diverging legs mounted on the top of the blade as well as plastic end caps.¹⁹ *Id.*; Ex. 2007 ¶ 6 (stating that the Aerotwin and Icon blades each include a flexible spoiler and diverging legs mounted on the top of the blade).

¹⁹ As mentioned above, at times the same paper is submitted in each of these proceedings without tailoring that paper to the particular case involved. This is perhaps most significant here. Further, we agree with Petitioner, that submitting the same evidence of secondary considerations in each of these proceedings undermines the evidence because the patents involved are directed to different inventions. *See* Pet. Reply 14–15.

Patent Owner's proffered evidence may apply to IPR2016-00036 because the features enumerated by Patent Owner are found in claim 13 of the '905 patent. None of the challenged claims of this proceeding include diverging legs mounted on the top of the blade or plastic end caps. Further, the challenged claims do not recite that the spoiler ("component") is flexible. This information has little or no relevance to our inquiry here.

Additionally, most of the cited evidence deals with patents other than the '588 patent, and does not evidence any connection between the challenged claims and the Aerotwin and ICON wipers. *See* Ex. 2015, 33–57 (relating to the '905 patent), 59–62 (relating to the '698 patent); Ex. 2016, 30–43 (relating to the '905 patent), 45–48 (relating to the '698 patent); Ex. 2005, 234:25–235:4 (relating to the '434 patent), 249:25–250:5 (discussing attachment of the spoiler, relevance unclear), 252:17–254:21 (discussing the meaning of "secured," relevance unclear), 359:12–360:4²⁰ (relating to the '905 patent); Ex. 2006, 698:19–699:22 (relating to the '905 patent).

One citation relates to the '588 patent. In response to interrogatories in the related litigation, Patent Owner asserted that the Aerotwin, ICON Generation 1, and ICON Generation 2 practice at least one claim of a list of patents that includes the '588 patent. Ex. 2014, 3. This assertion is conclusory and not supported by a cogent explanation. Further, Patent Owner does not explain effectively how the ICON Generation 1 and 2 correspond to an ICON wiper. *See* Pet. Reply 14.

²⁰ Here Patent Owner sometimes refers to the native page numbers rather than the Exhibit page numbers.

Patent Owner's proffered evidence may apply to IPR2016-00036 because the features enumerated by Patent Owner are found in claim 13 of the '905 patent. None of the challenged claims of this proceeding include diverging legs mounted on the top of the blade or plastic end caps. Further, the challenged claims do not recite that the spoiler ("wind deflection strip") is flexible. This information has little or no relevance to our inquiry here.

Consequently, Patent Owner is not entitled to a presumption of nexus, because Patent Owner has not demonstrated that the products (the Aerotwin and ICON wipers) are the invention disclosed and claimed in the patent. Indeed, Patent Owner has not demonstrated effectively any connection between these products and the claims of the '588 patent.

(2) Commercial Success and Industry Praise

Patent Owner contends that the Aerotwin wiper won the Pace, Automechankia, and Frost & Sullivan awards. PO Resp. 12–13, 16 (citing Ex. 2007 ¶¶ 3, 8). In support, Mr. Kashnowski states that the Pace award mentioned the use of a flexible spoiler on the Aerotwin blade and that Frost & Sullivan was "one of the more prominent automotive research organizations." Ex. 2007 ¶¶ 3, 8.

Patent Owner does not provide a copy of any award or an explanation of the award criteria. Regarding the Pace award in particular, it appears this evidence may apply to IPR2016-00036 because the spoiler (wind deflection strip 42) of the '905 patent is flexible (made of an elastic material), while none of the challenged claims recite that the component (spoiler) is flexible. *See* Ex. 1001, 4:16–32, 36–38, 53–55; IPR2016-00036, Ex. 1001, 7:60–8:21. The observation that Frost & Sullivan was a prominent research

organization does little to put the award in context. Without context, these awards have little meaning.

As mentioned above, Patent Owner contends that although beam blades were known, Patent Owner's Aerotwin wiper blade was the first commercially successful beam blade in the United States aftermarket. *Id.* 12 (citing Ex. 2007 ¶ 3). In particular, Patent Owner contends that the ICON blade had commercial success and praise as evidenced by: (1) the demand from Bosch customers for the Icon blade was considerably high, even though it was more expensive than conventional blades; and (2) customers expressed a great deal of excitement for the Icon blade. *Id.* at 13 (citing Ex. 2007 at ¶ 5; Ex. 2005, 270:14–271:3²¹).

The evidence cited by Patent Owner has numerous shortcomings.

Although Patent Owner contends that the Aerotwin was the first commercially successful beam wiper in the United States, the sales figures and awards cited are for the ICON wiper.

Mr. Kashnowski, Director of Product Management for Wiping systems for Patent Owner has more than 20 years of working with wipers. Ex. 2007 ¶ 1. Mr. Kashnowski testified in the Pylon litigation that Patent Owner's wipers having spoilers and end caps had the most success, growth, and value to customers of any product line he could recall. Ex. 2005, 270:14–271:3. Given that this evidence relates to claims having end caps, a feature not present in the challenged claims, this evidence is not relevant.

Mr. Kashnowski states that demand for the ICON blade was “considerably high” despite being more expensive than conventional blades.

²¹ This portion of Exhibit 2005 was not excluded.

Ex. 2007 at ¶ 5. *Id.* Here we seek objective indicia of nonobviousness, yet, that demand was “considerably high” is a subjective opinion.

Mr. Kashnowski does not provide gross sales figures in dollars or units sold, market share, growth in market share, or any objective indication of commercial success.

Similarly, Mr. Kashnowski states that customers were “more excited” for the ICON product than any other automotive product he has been involved with. Ex. 2007 ¶ 5. Presumably, with 20 years of experience in the field, Mr. Kashnowski has been involved with numerous automotive products; however, customer excitement is a subjective observation and not an objective indication of industry praise or commercial success. Even if customer excitement to some extent indicates industry praise or commercial success, Mr. Kashnowski does not provide any explanation that ties customer excitement to claimed features. The excitement could be due to an unclaimed feature or a feature known in the art.

Patent Owner presents three years of “sales of the ICON product” (2006 - \$17,000,000; 2007 - \$24,000,000; 2008 - \$28,000,000).²² PO Resp. 13; Ex. 2007 ¶ 8. This testimony is not relevant because it relates to a wiper with end caps, not the claims of the ’588 patent. Even if the ICON wiper corresponds to the challenged claims, this evidence has little persuasive value. Patent Owner provides no argument or evidence that attributes this success to claimed features. Patent Owner presents no evidence regarding market share. This information, without market share information, is only weak evidence, if any, of commercial success. *See In re Applied Materials,*

²² Presumably, these figures represent annual gross sales revenue.

692 F.3d 1289, 1299 (Fed. Cir. 2012). Although we note that sales grew in the period presented, Patent Owner does not address that growth, nor does Patent Owner explain how such growth is tied to claimed features.

Patent Owner argues that products having a flexible spoiler, plastic end caps, and diverging legs mounted on the top of the blade were tested extensively to reduce noise, and this reduced noise was part of the reason for great customer demand. PO Resp. 14–15. This description may apply to the '905 patent at issue in IPR2016-00036, but it is not relevant to our inquiry here.

(3) Skepticism

Although Patent Owner does not list skepticism as one of the objective indicia raised, Patent Owner makes such an argument. PO Resp. 11 (not mentioning skepticism), 14, n. 7 (mentioning skepticism). Specifically, Patent Owner argues that a top mounted spoiler ran against the grain of conventional wiper understanding. *Id.* at 11 (citing Ex. 2003 at ¶¶ 22–25, 58–60, 65, 73, 77, 79²³). This argument is unpersuasive because, as detailed above, a top mount spoiler for a beam blade was known prior to the '588 patent.

²³ We note that paragraphs 65, 73, 77, and 79 do not relate to the patent at issue in this case. The other paragraphs are addressed in previous analysis.

(4) Long-felt but unresolved need and Unexpected Results

Patent Owner contrasts the success of ICON wipers to the failure of a competitor's beam-blade product, the Trico Innovision wiper blade that was introduced in 2004 and "failed." PO Resp. 15–16 (Ex. 2007 ¶ 7); *see also* PO Resp. 5 (suggesting that Trico's wiper failed due to lack of a flexible spoiler).

To the extent that Patent Owner contends that Trico's failure is evidence of satisfying a long-felt, but unmet need, such argument and evidence is unpersuasive. The Trico product's introduction in 2004 was after the critical date of the '588 patent. *See* Pet. Reply 17; *see also Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1332 (Fed. Cir. 2009) (the unmet need must exist on the patent's filing date).

To the extent that Patent Owner is suggesting Trico's lack of commercial success demonstrates the commercial success of the ICON wiper, such contention is also unpersuasive. As detailed above, Patent Owner has not demonstrated effectively a connection between the ICON wiper and the challenged claims. Further, Mr. Kashnowski simply presents the subjective conclusion that the Trico wiper "failed in the market place." Ex. 2007 ¶ 7. Mr. Kashnowski does not reveal any factual data underlying that opinion, nor does Patent Owner explain what constitutes failure. The value of that assertion is further reduced by Petitioner's evidence that the Trico wiper achieved enough sales that manufacturing capacity had to be increased. Pet. Reply 17, n. 12 (Ex. 1100 ¶ 15).

(5) Other Alleged Indicia

Patent Owner contends that within a year of introduction of the Aerotwin and Icon products, knockoff products appeared having spoilers

with diverging legs similar to those shown in the '905 patent, as well as end caps. PO Resp. 16–17 (Ex. 2007 ¶ 9). This evidence may relate to the '905 patent at issue in IPR2016-00036, but not to the patent at issue here. *See In re GPAC, Inc.* 57 F.3d 1573, 1580 (Fed. Cir. 1995) (evidence that does not detail what aspects of the invention were target by industry copies is entitled to little weight).

Patent Owner contends that the industry is now largely respectful of Patent Owner's beam blade patent rights, and that all of Patent Owner's major competitors have entered licensing agreements for those rights. PO Resp. 17–18 (citing Ex. 2007 ¶ 11). However, these agreements do not cover the '588 patent, and for that reason this licensing is not evidence of secondary indicia for the '588 patent.

3. *Conclusions*

Prior to the '588 patent, both conventional and beam wipers were known, and use of a spoiler to counter wind lift was also known. It was known that beam blades may include additional components that increase blade profile while still accounting for the desired pressure distribution. Petitioner has shown by a preponderance of the evidence that the elements of the challenged claims were known. Patent Owner does not challenge these assertions.

Petitioner reasons that it would have been obvious to substitute Prohaska's hollow wind deflection strip (spoiler) for either Kotlarski's or Merkel's because it would be lighter, and provide the benefits of: reducing stress on wiper drive components, reducing the amount of power needed to drive the wiper, and reducing manufacturing costs through use of less material to produce the components. These assertions are well supported by

the evidence of record. Patent Owner's arguments regarding rationale are unpersuasive, and do not address effectively Petitioner's rationale.

Patent Owner's evidence of secondary considerations may relate to the '905 patent at issue in IPR2016-00036, but it does not relate to the patent at issue here. Even if this evidence was tied to claimed features, it suffers from additional shortcomings. For example, Patent Owner's evidence of skepticism, unexpected results, and long-felt but unresolved need is contradicted by the evidence of record. The ICON wiper had some success in terms of three industry awards and gross revenue figures; however, Patent Owner did not provide sufficient information to put this success in perspective and the evidence does not relate to the '588 patent.

The '588 patent applied the known technique of adding a hollow spoiler to counter wind lift on a conventional wiper to a beam wiper, when it was known that wind lift could be countered in a beam wiper with a solid spoiler. The predictable result was that the spoiler performed as it was known to perform.

In light of this, Petitioner has demonstrated by a preponderance of the evidence that claims 1, 12, and 14 would have been obvious over Prohaska and either Kotlarski or Merkel.

V. ORDER

For the reasons given, it is:

ORDERED that claims 1, 12, and 14 have been shown by a preponderance of the evidence to be unpatentable as obvious over Prohaska and Kotlarski;

FURTHER ORDERED that claims 1, 12, and 14 have been shown by a preponderance of the evidence to be unpatentable as obvious over Prohaska and Merkel;

FURTHER ORDERED that Petitioner's Motion to Exclude is denied-in-part and granted-in-part as outlined herein; and

FURTHER ORDERED that Petitioner's Motion to Strike is denied; and

FURTHER ORDERED that Patent Owner's Motion to Exclude is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements.

IPR2016-00039
Patent 7,228,588 B2

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