

# United States Court of Appeals for the Federal Circuit

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**FOX FACTORY, INC.,**  
*Appellant*

v.

**SRAM, LLC,**  
*Appellee*

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2018-2024, 2018-2025

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2017-00118, IPR2017-00472.

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Decided: December 18, 2019

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ERIK R. PUKNYS, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Palo Alto, CA, argued for appellant. Also represented by ARPITA BHATTACHARYYA, ROBERT F. MCCAULEY; JOSHUA GOLDBERG, DANIEL FRANCIS KLODOWSKI, Washington, DC.

RICHARD BENNETT WALSH, JR., Lewis Rice LLC, St. Louis, MO, argued for appellee. Also represented by MICHAEL HENRY DURBIN, MICHAEL JOHN HICKEY.

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Before PROST, *Chief Judge*, WALLACH and HUGHES,  
*Circuit Judges*.

PROST, *Chief Judge*.

Appellant FOX Factory, Inc. (“FOX”) appeals the decisions of the Patent Trial and Appeal Board (“Board”) in two inter partes reviews (“IPRs”) of claims 1–6 and 13–19 (“the challenged claims”) of U.S. Patent No. 9,182,027 (“the ’027 patent”). The Board found that the prior art references asserted by FOX disclose all the limitations of the ’027 patent’s independent claims and that a skilled artisan would have been motivated to combine the asserted prior art. The Board nevertheless concluded, based on its analysis of secondary considerations, that FOX had not shown that the challenged claims would have been obvious. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (2012). For the reasons below, we vacate and remand for further proceedings.

## I

### A

Bicycle chainrings are the toothed disks to which the bicycle crankarms are attached, collectively forming the crankset. Pedaling the crankarms rotates the chainring, which engages with and rotates the chain. Chains can be susceptible to disengaging from the chainring. This problem is especially prevalent with geared bicycles, which can experience severe changes in chain tension and energy motion of the chain, particularly when riding over rough terrain. Bicycles have employed extraneous structures, such as chain guides, to improve chain retention.

SRAM, LLC (“SRAM”) owns the ’027 patent, which generally covers an improved chainring structure that better maintains the chain, obviating the need for extraneous structures. For instance, the ’027 patent discloses a chainring with alternating narrow and wide tooth tips, which allegedly improves chain retention because the narrow and

wide teeth better fit inside the inner and outer chain links, respectively. In addition, the '027 patent discloses teeth offset from the center of the chainring, which also purportedly improves chain retention by providing “better guiding of the chain to one side of the chainring.” Appellee’s Br. 8 (quoting '027 patent col. 6 ll. 8–13).

The independent claims of the '027 patent—claims 1, 7, 13, and 20—recite a chainring with alternating narrow and wide tooth tips and teeth offset from the center of the chainring. Claims 7–12 and 20–26 generally cover tooth tips offset toward the body of the bicycle (“inboard offsets”), and claims 1–6 and 13–19 require teeth offset away from the body of the bicycle (“outboard offsets”). Claim 1 is representative of the “outboard offset” independent claims:

1. A bicycle chainring for engagement with a drivetrain, comprising:

a plurality of teeth formed about a periphery of the chainring, the plurality of teeth including a first group of teeth and a second group of teeth, each of the first group of teeth wider than each of the second group of teeth and at least some of the second group of teeth arranged alternately and adjacently between the first group of teeth, wherein each of the plurality of teeth includes a tooth tip;

wherein a plane bisects the chainring into an outboard side and an inboard side opposite the outboard side; and

wherein at least the majority of the tooth tip of at least one of each of the first and second groups of teeth is offset from the plane in a direction toward the outboard side of the chainring.

'027 patent claim 1. Claim 7 is representative of the “inboard offset” independent claims:

7. A bicycle chainring for engagement with a drive chain, comprising:

a plurality of teeth formed about a periphery of the chainring, the plurality of teeth including a first group of teeth and a second group of teeth, each of the first group of teeth wider than each of the second group of teeth and at least some of the second group of teeth arranged alternately and adjacently between the first group of teeth, wherein each of the plurality of teeth includes a tooth tip;

wherein a plane bisects the chainring into an outboard side and an inboard side opposite the outboard side; and

wherein at least the majority of the tooth tip of at least one of each of the first and second groups of teeth is offset from the plane in a direction toward the inboard side of the chainring.

*Id.* at claim 7.

The '027 patent specification discloses additional chainring features that are not recited by the independent claims. Like the features claimed, each of the disclosed but non-claimed features contribute to improving chain retention. For example, the specification discloses forwardly protruding tip portions that “function[] to engage a chain link earlier than a chain lacking the tip portion and provide[] better guiding of the chain.” '027 patent col. 5 ll. 47–51; *see also id.* at fig.5. The specification also discloses a “hook feature 78 . . . that may be formed on the rear flank 70 of each” tooth and “may cooperate with the tip portion 76 to provide better guiding of the chain.” *Id.* at col. 5 ll. 52–55; *see also id.* at fig.5. The specification further discloses “inner link-receiving recesses.” *Id.* at col. 5 ll. 26–44; *see also id.* at figs.5, 7. Furthermore, the '027 patent explains that the narrow and wide teeth preferably fill at

least 80% of the axial distance of the corresponding space in the chain link (“>80% gap filling”). *Id.* at col. 4 ll. 19–41.

SRAM also owns U.S. Patent 9,291,250 (“the ’250 patent”), which is a continuation of the ’027 patent and includes claims reciting a chainring with alternating narrow and wide teeth and wide teeth with >80% gap filling. ’250 patent claim 1; *see also* J.A. 5270, 5282. In separate IPR proceedings, SRAM stated that this “combination of features” claimed in the ’250 patent, “amongst several others disclosed in the ’250 patent, leads to a chainring that will retain a chain in even the worst conditions.” J.A. 5282–83. SRAM also explained that the >80% gap filling feature “allows the inventive chainring to better retain the chain under many conditions and amounts to the ‘heart’ of the challenged ’250 patent claims combined with the narrow and wide tooth configuration.” J.A. 5284. SRAM further described the >80% gap filling limitation as “critical.” J.A. 5289.

SRAM sells thirteen different versions of its “X-Sync” chainrings. It is undisputed that twelve of the thirteen versions embody the inboard offset claims and the thirteenth version embodies the outboard offset claims.

## B

FOX filed two petitions collectively requesting inter partes review of claims 1–26 of the ’027 patent. One petition requested inter partes review of the outboard offset claims, and the other requested review of the inboard offset claims. Here, we discuss the Board’s findings in IPR 2017-00472, which relate to the outboard offset claims. We note, however, that the Board made similar findings in IPR 2017-00118 with respect to the inboard offset claims, including with respect to secondary considerations. *See FOX Factory, Inc. v. SRAM, LLC*, IPR2017-00118, 2018 WL 1633537, at \*3–18 (P.T.A.B. Apr. 2, 2018).

The Board found that Japanese Utility Model No. S56-42489 (“JP-Shimano”) and U.S. Patent No. 5,285,701 (“Parachinni”) together disclose every limitation of the outboard offset independent claims and that a skilled artisan would have been motivated to combine the references. *FOX Factory, Inc. v. SRAM, LLC*, IPR2017-00472, 2018 WL 1889561, at \*3–7 (P.T.A.B. Apr. 18, 2018) (J.A. 1–70) (“*Board Decision 472*”). The Board determined that JP-Shimano discloses the claimed narrow and wide teeth, and Parachinni discloses the claimed outboard offset. *Id.* at \*3–5. The Board also found that a skilled artisan would have been motivated to combine the references because the skilled artisan would have recognized that the combination of the two features would improve chain retention better than either feature alone. *Id.* at \*5–7.

Nevertheless, the Board determined, based on its analysis of secondary considerations, that FOX had not shown that the challenged claims would have been obvious. *Id.* at \*21. SRAM submitted secondary considerations evidence pertaining to its X-Sync products. The Board determined that SRAM was entitled to a presumption of nexus between the challenged outboard offset claims and secondary considerations evidence pertaining to SRAM’s X-Sync products, subject to two limitations. *Id.* at \*7–10.

First, the Board stated that evidence of secondary considerations “specifically directed” to either an inboard or outboard offset X-Sync product is only entitled to a presumption of nexus with the claims reciting the same type of offset. *Id.* Second, the Board explained that the presumption of nexus only applies when a product is “coextensive” with a patent claim. *Id.* at \*7. The Board interpreted the coextensiveness requirement to mean only that the claims must broadly cover the product that is the subject of the secondary considerations evidence. *Id.* at \*9–10. Through that lens, the Board explained that SRAM’s secondary considerations evidence pertaining to a specific X-Sync product or component (chainring, crankset, or

drivetrain) is only coextensive with the claims broadly covering that particular component. *Id.* at \*10–11. For instance, in the Board’s view, SRAM’s independent claims, which cover a *chainring*, are only coextensive with sales or industry praise of X-Sync *chainrings*, not sales or industry praise of X-Sync cranksets or drivetrains. *Id.* at \*11.

FOX argued that SRAM’s products are not coextensive with the challenged claims because the products include numerous unclaimed features. *Id.* at \*9. The Board rejected this argument, reasoning that “[u]nclaimed features do not prevent the presumption of nexus, but they may be the basis for rebutting the presumption.” *Id.*

FOX also argued that, under this court’s decision in *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1289 (Fed. Cir. 2010), *vacated on other grounds*, 374 F. App’x 35 (2010), SRAM’s products are not coextensive with the independent claims because the X-Sync products also embody the claims of additional patents that cover a different invention than the claims of the ’027 patent. *Board Decision 472*, at \*9. The Board also rejected this argument. The Board reasoned that, under *Therasense*, presuming nexus is only inappropriate if the products also embody one or more claims of a prior art patent. *Id.* However, the Board observed that FOX relied only on continuations of the ’027 patent.

Weighing the evidence, the Board determined that FOX could not rebut the nexus presumption, and due to SRAM’s “extremely strong overall showing of objective indicia of non-obviousness,” FOX had not shown by a preponderance of the evidence that the challenged claims would have been obvious. *Id.* at \*21. FOX appealed the Board’s obviousness determinations.

## II

“We review the PTAB’s factual findings for substantial evidence and its legal conclusions de novo.” *Redline*

*Detection, LLC v. Star Envirotech, Inc.*, 811 F.3d 435, 449 (Fed. Cir. 2015) (citation omitted). “Substantial evidence is something less than the weight of the evidence but more than a mere scintilla of evidence,” meaning that “[i]t is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *In re NuVasive, Inc.*, 842 F.3d 1376, 1379–80 (Fed. Cir. 2016) (internal quotation marks and citations omitted). “If two inconsistent conclusions may reasonably be drawn from the evidence in record, the PTAB’s decision to favor one conclusion over the other is the epitome of a decision that must be sustained upon review for substantial evidence.” *Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1356 (Fed. Cir. 2018) (internal quotation marks, brackets, and citation omitted). Obviousness is a legal question based on underlying fact findings. *In re DBC*, 545 F.3d 1373, 1377 (Fed. Cir. 2008).

## A

On appeal, FOX contends that the Board applied the wrong standard for determining whether SRAM was entitled to a presumption of nexus between the challenged claims and SRAM’s evidence of secondary considerations. We agree.

## 1

A patent claim is invalid “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103 (2012).<sup>1</sup> Obviousness

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<sup>1</sup> Congress amended § 103 when it enacted the Leahy-Smith America Invents Act (“AIA”). Pub. L. No. 112-29, § 3(c), 125 Stat. 284, 287 (2011). Because the ’027

“is a question of law based on underlying findings of fact.” *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). Those underlying findings of fact include: (1) “the scope and content of the prior art,” (2) “differences between the prior art and the claims at issue,” (3) “the level of ordinary skill in the pertinent art,” and (4) the presence of evidence of secondary considerations, such “as commercial success, long felt but unsolved needs, failure of others,” and unexpected results. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17 (1966); see *United States v. Adams*, 383 U.S. 39, 50–52 (1966). In assessing the prior art, the PTAB also “consider[s] whether a [skilled artisan] would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so.” *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (internal quotation marks, brackets, and citation omitted).

In order to accord substantial weight to secondary considerations in an obviousness analysis, “the evidence of secondary considerations must have a ‘nexus’ to the claims, *i.e.*, there must be ‘a legally and factually sufficient connection’ between the evidence and the patented invention.” *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019) (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)). “The patentee bears the burden of showing that a nexus exists.” *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999). “To determine whether the patentee has met that burden, we consider the correspondence between the objective evidence and the claim scope.” *Henny Penny*, 938 F.3d at 1332.

As first recognized in *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, a patentee is entitled to a rebuttable

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patent has an effective filing date after March 16, 2013, the AIA applies. See *id.* § 3(n)(1), 125 Stat. at 293.

presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product “*is* the invention disclosed and claimed.” 851 F.2d at 1392 (emphasis added). That is, presuming nexus is appropriate “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000)). Conversely, “[w]hen the thing that is commercially successful is not coextensive with the patented invention—for example, if the patented invention is only a component of a commercially successful machine or process,” the patentee is not entitled to a presumption of nexus. *Demaco*, 851 F.2d at 1392.

We have reaffirmed the importance of the “coextensiveness” requirement in subsequent opinions. *See, e.g., SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1319 (Fed. Cir. 2015) (“If a product both embodies the claimed features and is coextensive with the claims at issue, a nexus is presumed. In other words, a nexus exists if the commercial success of a product is limited to the features of the claimed invention.” (citation and quotation marks omitted)); *Therasense*, 593 F.3d at 1299.<sup>2</sup> Whether a product is coextensive with the patented invention, and therefore whether a presumption of nexus is appropriate in a given case, is a question of fact.

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<sup>2</sup> Although the panel opinion in *Therasense* was vacated by an order granting appellants’ petition for rehearing en banc on the issue of inequitable conduct, 374 F. App’x 35, the portions of *Therasense* addressing obviousness—which are the portions we rely on in this case—were reinstated. 649 F.3d 1276, 1276 (Fed. Cir. 2011) (en banc).

A finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations. *See In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996). To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the “direct result of the unique characteristics of the claimed invention.” *Id.*

## 2

The parties dispute whether the X-Sync chainrings are coextensive with the independent claims.<sup>3</sup> In finding that the independent claims would not have been obvious, the Board did not address the dependent claims in its obviousness analysis. *Board Decision 472*, at \*20. Accordingly, we only address the Board’s application of the presumption of nexus to the independent claims. Because no reasonable fact finder could find otherwise, we conclude that SRAM’s X-Sync chainrings are not coextensive with the independent claims.

The independent claims cover a chainring that includes wide and narrow teeth and either inboard or outboard offset teeth. It is undisputed that the X-Sync chainrings include unclaimed features. *See generally* Appellant’s Br.; Appellee’s Br. 24–25. For example, SRAM does not dispute that its X-Sync chainrings embody the independent claim

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<sup>3</sup> Because neither party disputes the Board’s finding that the X-Sync cranksets and drivetrains are not coextensive with the independent claims, the only issue before us is whether the X-Sync chainrings are coextensive with the independent claims. *See* Appellee’s Br. 24. In any event, because the X-Sync cranksets and drivetrains each include an X-Sync chainring, our conclusions as to whether nexus can be presumed between the independent claims and the X-Sync chainrings also extend to the X-Sync cranksets and drivetrains.

of a different patent—the '250 patent—which, as explained previously, covers a chainring with both wide and narrow teeth and wide teeth with >80% gap filling. *See* J.A. 5282–85 (Preliminary Patent Owner Response). As discussed in more detail below, because the independent claims of the '027 patent do not recite this >80% gap filling feature, the independent claims are not coextensive with the X-Sync chainrings.

To be sure, we have never held that the existence of one or more unclaimed features, standing alone, means nexus may not be presumed. Indeed, there is rarely a *perfect correspondence* between the claimed invention and the product. As we explained, the purpose of the coextensiveness requirement is to ensure that nexus is only presumed when the product tied to the evidence of secondary considerations “*is the invention disclosed and claimed.*” *Demaco*, 851 F.2d at 1392 (emphasis added). Thus, if the unclaimed features amount to nothing more than additional insignificant features, presuming nexus may nevertheless be appropriate.

Put differently, the degree of correspondence between a product and a patent claim falls along a spectrum. At one end of the spectrum lies perfect or near perfect correspondence. At the other end lies no or very little correspondence, such as where “the patented invention is only a component of a commercially successful machine or process.” *Id.* Although we do not require the patentee to prove perfect correspondence to meet the coextensiveness requirement, what we do require is that the patentee demonstrate that the product is essentially the claimed invention. *See id.* While coextensiveness is an issue of fact that should ordinarily be decided by the fact finder in the first instance, no reasonable fact finder could conclude, under the proper standard, that the X-Sync chainrings are coextensive with the patent claims.

It is undisputed that the X-Sync chainrings include unclaimed features that the patentee describes as “critical” to

the product's ability to "better retain the chain under many conditions" and that go to the "heart" of another one of SRMA's patents. *See* J.A. 5284, 5289. In light of the patentee's own assertions about the significance of the unclaimed features, no reasonable fact finder could conclude that these features are insignificant. As an initial matter, the fact that SRAM obtained the '250 patent covering the combination of wide and narrow teeth and >80% gap filling leads us to conclude that this combination of features amounts to more than an insignificant feature not claimed by the '027 patent. *See Therasense*, 593 F.3d at 1299 (finding that the patentee was not entitled to a presumption of nexus because the product embodied at least two patented inventions, and the burden thus remained on the patentee to show that the product's success was due to the invention claimed in the patent asserted in the case). Moreover, in a separate IPR proceeding pertaining to the '250 patent, SRAM touted this "combination of features" as, "amongst several others disclosed in the '250 patent," one that "leads to a chainring that will retain a chain in even the worst conditions." J.A. 5282–83. SRAM further described this gap filling feature as "critical" and one that "allows the inventive chainring to better retain the chain under many conditions and amounts to the 'heart' of the challenged '250 patent claims combined with the narrow and wide tooth configuration." J.A. 5284, 5289. A patent claim is not co-extensive with a product that includes a "critical" unclaimed feature that is claimed by a different patent and that materially impacts the product's functionality by "lead[ing] to a chainring that will retain a chain in even the worst conditions." *See* J.A. 5282–84, 5289.

In short, because the independent claims do not include the >80% gap filling feature, we cannot say that the X-Sync chainrings *are* the invention claimed by the independent claims. Accordingly, the Board erred in presuming nexus between the independent claims of the '027 patent and

secondary considerations evidence pertaining to SRAM's X-Sync chainrings.

The lack of coextensiveness between the independent claims of the '027 patent and SRAM's X-Sync chainrings appears to extend far beyond the gap filling feature to additional unclaimed features. More specifically, FOX contends, and SRAM does not contest, that the X-Sync chainrings further include the following unclaimed features: (1) forwardly protruding tooth tips, Appellant's Br. 22–26; *see also* '027 patent col. 5 ll. 45–51, fig.5; (2) hook features on the teeth, Appellant's Br. 22–26; *see also* '027 patent col. 5 ll. 52–55, fig.5; and (3) mud-clearing recesses, Appellant's Br. 22–26. As to the first, the '027 patent specification explains that forwardly protruding tooth tips “function[] to engage a chain link earlier than a chain lacking the tip portion and provide[] better guiding of the chain.” '027 patent col. 5 ll. 45–51; *see also id.* at fig.5. As to the second, the '027 patent specification explains that such hook features “cooperate with the [forwardly protruding tips] 76 to provide better guiding of the chain.” *Id.* at col. 5 ll. 52–55; *see also id.* at fig.5. As to the third, SRAM's marketing materials explain that these recesses “get rid of mud so the chain remains in place no matter what conditions you're up against.” J.A. 5316.<sup>4</sup> In sum, the '027 patent and SRAM's marketing materials confirm that the forwardly protruding tooth tips, hook features, and mud clearing recesses each materially impacts the functioning

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<sup>4</sup> FOX further contends that these recesses appear to be the same as the inner link-receiving recesses discussed in the '027 patent. It is unclear on this record whether FOX's contention is correct. If these features are different, SRAM's chain links further appear to include inner link-receiving recesses. Appellant's Br. 22–26; *see also* J.A. 219 ('027 patent col. 5, ll. 26–44). *Compare* J.A. 5344 *with* J.A. 211–12 ('027 patent figs.5, 7).

of a chainring. For each of these features that the Board confirms is included in the X-Sync chainrings, nexus can only be presumed between the X-Sync chainrings and a patent claim if the claim includes limitations relating to these features.

## 3

SRAM's counterarguments are unpersuasive. First, SRAM argues that the existence of unclaimed features in a commercial product is irrelevant to the question of whether nexus can be presumed between that product and a patent claim.<sup>5</sup> Rather, according to both SRAM and the Board, unclaimed features are only relevant on rebuttal,<sup>6</sup> and the coextensiveness requirement is met if the patent claim

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<sup>5</sup> For this position, both the Board and SRAM rely on our decision in *PPC Broadband, Inc. v. Corning Optical Communications RF, LLC*, 815 F.3d 734, 747 (Fed. Cir. 2016).

<sup>6</sup> In addition to challenging whether the Board erred by presuming nexus in this case, FOX also contends that the Board imposed too high a burden on FOX to rebut the presumption of nexus by requiring FOX to show that the claimed invention had absolutely no relevance to SRAM's evidence of secondary considerations. Appellant's Br. 51–53; see, e.g., *Board Decision 472*, at \*14 (“Petitioner fails to direct us to where the industry praise is directed only to the inboard-offset feature.”); *id.* at \*15 (“Moreover, none of the articles that include the references to the ‘tall,’ ‘hooked,’ and ‘asymmetric’ teeth purport to attribute all of the benefits of the X-Sync chainring to those attributes.”); *id.* (“As for the fact that some of the articles only mention wide narrow teeth, we do not agree with Petitioner that this establishes that the praise was only directed to the features found in the prior art.”). Because we determine that the Board erroneously presumed nexus, we do not reach this issue.

broadly covers the product that is the subject of the evidence of secondary considerations. *See, e.g.*, Appellee’s Br. 50–56. As previously explained, we agree with both the Board and SRAM that the mere existence of one or more unclaimed features does not necessarily mean presuming nexus is inappropriate. In this case, however, because there are one or more features not claimed by the ’027 patent that materially impact the functionality of the X-Sync products, including the >80% gap filling feature claimed in the ’250 patent, nexus may not be presumed.

On a broader note, if we were to agree with the positions taken by both SRAM and the Board—i.e., that the coextensiveness requirement is met so long as the patent claim broadly covers the product that is the subject of the secondary considerations evidence, irrespective of the nature of any unclaimed features—then the coextensiveness requirement would rest entirely on minor variations in claim drafting. For instance, suppose a patent includes some claims specifically covering novel “brake pads” and others directed to an “automobile” in which the body of the claim recites little more than the novel brake pads. It is beyond dispute that the “brake pad” claims would not be entitled to a nexus presumption with any secondary considerations evidence tied to commercially sold automobiles containing those brake pads (e.g., commercial success or praise of the automobiles). In SRAM and the Board’s view, the “automobile” claims would be entitled to a nexus presumption with such secondary considerations evidence. They reach this view even though the automobiles sold contain hundreds if not thousands of different components beyond just the novel aspect of the claimed brake pads, and even though only minor variations in patent claim language (i.e., whether the word “automobile” is included in the claims) differentiate the “brake pad” claims and the “automobile” claims. Resting the coextensiveness inquiry on nothing more than minor variations in patent claim

language would turn the inquiry into one of form over substance.

We reject SRAM's attempt to reduce the coextensiveness requirement to an inquiry into whether the patent claims broadly cover the product that is the subject of the evidence of secondary considerations. Such an interpretation is inconsistent with *Demaco's* requirement that nexus can only be presumed where the evidence of secondary considerations is tied to a specific product that "is the invention disclosed and claimed." *Demaco*, 851 F.2d at 1392 (emphasis added). Nor is such an interpretation consistent with *Demaco's* explanation that nexus cannot be presumed where, for example, "the patented invention is only a component of a commercially successful machine or process." *Id.* We are bound by *Demaco* and decline to depart from it.

Second, SRAM also argues that because the '250 patent is a continuation of the '027 patent, failing to presume nexus in this case "would result in the absurd situation that multiple continuations on a patent would prohibit a presumption of nexus." Appellee's Br. 50. SRAM continues that "[t]his Court has recognized time and again that related patents can share a presumption of nexus." *Id.* at 53. Where a product embodies claims from two patents, a presumption of nexus can be appropriate only if the claims of both patents generally cover the same invention. In each of the cases SRAM cites for the proposition that the claims of multiple patents can share a presumption of nexus with the same product, the claims of each of the patents covered essentially the same invention. *See, e.g., WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1324–25 (Fed. Cir. 2016) (presuming nexus between a product and the asserted claims of two related patents where the patents covered essentially the same invention, and the court identified a single claim as representative of both patents); *PPC Broadband*, 815 F.3d at 737–39 (presuming nexus between a product and the asserted claims of three patents where the asserted claims of all three patents recited the same essential

features); *Gator Tail, LLC v. Mud Buddy LLC*, 618 F. App'x 992, 995, 999–1000 (Fed. Cir. 2015) (presuming nexus between a product and all of the asserted claims where “the [related] patents essentially claim the same invention”); *Media Techs. Licensing, LLC v. Upper Deck Co.*, 596 F.3d 1334, 1336–39 (Fed. Cir. 2010) (unclear as to whether nexus was presumed, and in any event the related patents were drawn to the same invention).<sup>7</sup> Conversely, here, the independent claims of the '250 patent and '027 patent do not cover the same invention. In particular, these patents cover different combinations of chainring features.

In addition, although the fact that SRAM separately sought patent protection for the combination of wide and narrow teeth with this >80% gap filling feature is alone probative of whether this combination of features adds up to more than an insignificant additional feature, *see Therasense*, 593 F.3d at 1299, a presumption of nexus might well be inappropriate in this case even if SRAM never sought such patent protection. In particular, the X-Sync products are not coextensive with the independent claims of the '027 patent because the products include a “critical” unclaimed feature not covered by the independent claims of the '027 patent that materially impacts the product’s functionality by “lead[ing] to a chainring that will retain a chain in even the worst conditions.” *See* J.A. 5282–84, 5289. This is true regardless of whether SRAM included these unclaimed features in other patents.

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<sup>7</sup> The additional cases on which SRAM relies do not address the presumption of nexus at all. *See Acorda Therapeutics, Inc. v. Roxane Labs., Inc.*, 903 F.3d 1310 (Fed. Cir. 2018); *Merck Sharp & Dohme Corp. v. Hospira, Inc.*, 874 F.3d 724, 730–31 (Fed. Cir. 2017); *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1354–55 (Fed. Cir. 2012); *Star Sci., Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1368 (Fed. Cir. 2011).

We note that the Board’s determinations in these IPR proceedings on the ’027 patent and the IPR proceedings on the ’250 patent highlight one reason why nexus may not be presumed under these circumstances. Between these two proceedings, the Board presumed nexus between the independent claims of both patents and the secondary considerations evidence submitted by SRAM, *see* J.A. 6458–62, even though (a) SRAM relies on essentially the same evidence of secondary considerations in both proceedings; J.A. 5455–76, 6363–88; *see also* J.A. 5282–84, 5289; and (b) the ’027 and ’250 patent claims cover different inventions. The same evidence of secondary considerations cannot be presumed to be attributable to two different combinations of features. *See Therasense*, 593 F.3d at 1299. In such situations, the patentee retains the burden of proving the degree to which evidence of secondary considerations tied to a product is attributable to a particular claimed invention. *See, e.g., WMS Gaming*, 184 F.3d at 1359.

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Because the Board erroneously presumed nexus between the evidence of secondary considerations and the independent claims, we vacate the Board’s obviousness determination and remand for further proceedings. On remand, SRAM will have the opportunity to prove nexus between the challenged independent claims and the evidence of secondary considerations. More specifically, SRAM will bear the burden of proving that the evidence of secondary considerations is attributable to the claimed *combination* of wide and narrow teeth with inboard or outboard offset teeth, as opposed to, for example, prior art features in isolation or unclaimed features. *See, e.g., Ethicon Endo-Surgery, Inc. v. Covidien LP*, 812 F.3d 1023, 1034 (Fed. Cir. 2016) (for patent claims covering a combination of prior art features, to establish nexus, patentee must show that the evidence of secondary considerations is attributable to “the *combination* of the two prior art features . . . that is the purportedly inventive aspect of the [challenged] patent” as

opposed to unclaimed features or either prior art feature in isolation).

## B

Separate from the issue of nexus, in its response to FOX's statement of the case, SRAM briefly contends that we can enter judgment in favor of SRAM on an alternative ground: that substantial evidence does not support the Board's conclusions that a skilled artisan would have been motivated to combine the asserted prior art to arrive at the independent claims. Appellee's Br. 20–23. Notably, SRAM does not mention this argument in its summary of the argument or argument sections of the brief. *See generally* Appellant's Br. We have previously declined to address arguments that appear in the statement of facts but not the summary of the argument or argument sections of the brief. *See Kao Corp. v. Unilever U.S., Inc.*, 441 F.3d 963, 973 n.4 (Fed. Cir. 2006) (declining to consider appellee's argument that only “appear[ed] in the appellee's brief's sections ‘Statement of the Facts’ and ‘Standard of Review,’” but not the “statement of issues presented, nor the summary of argument, nor the argument section” of the brief); *see also SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319 (Fed. Cir. 2006) (“Our law is well established that arguments not raised in the opening brief are waived.”); *Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 800 (Fed. Cir. 1990) (holding we have discretion to consider arguments that are not properly raised in the opening brief).

Even if this argument is properly preserved, it is meritless. Substantial evidence—including the declarations submitted by FOX's expert—supports the Board's conclusion that a skilled artisan would have been motivated to combine the asserted prior art because the skilled artisan would have recognized that the combination of prior art features would better address chain drop than either feature in isolation. *See, e.g.*, J.A. 4492–4513, 5219–27, 5762–

89, 6099–6106. Therefore, we affirm the Board’s determination that a skilled artisan would have been motivated to combine the asserted prior art.

### III

FOX also raises a *SAS*-based remand request. In one of the underlying inter partes review proceedings, IPR 2017-00118, the Board instituted review of only two of the eight grounds of unpatentability raised by FOX. Three weeks after the Board’s final written decision, the Supreme Court issued its decision in *SAS Institute v. Iancu*, 138 S. Ct. 1348 (2018). Shortly after this appeal was docketed, and before any briefs were filed, FOX moved to terminate the appeal as to IPR2017-00118 on the ground that the Board failed to follow the requirements set forth in *SAS* by failing to institute review of all eight grounds FOX raised. Motion of Appellant FOX Factory, Inc., for Remand of Appeal No. 2018-2024 (IPR2017-00118) in View of Intervening Authority at 1–2 (Sept. 28, 2018), ECF No. 22 (“Motion”). Although we chose not to terminate the appeal as to IPR No. 2017-00118, we now remand to the Board to consider the non-instituted grounds.

SRAM contends that FOX waived its right to a remand (and to terminate the appeal) pursuant to *SAS* because FOX failed to raise its *SAS* objection before the Board. Appellee SRAM, LLC’s Opposition to Appellant’s Motion to Remand at 2 (Oct. 2, 2018), ECF No. 24. This argument, however, is unavailing because *SAS* issued after the Board’s final written decision, and we have not required filing a request for reconsideration to preserve a *SAS*-based remand. See *BioDelivery Scis. Int’l, Inc. v. Aquestive Therapeutics, Inc.*, 898 F.3d 1205, 1208 (Fed. Cir. 2018) (“We also declined to find that a party waived its right to seek *SAS*-based relief due to failure to argue against partial institution before the PTAB.”).

SRAM also argues that FOX waived its right to a remand because FOX failed to explicitly raise its *SAS*

objection in its Notice of Appeal. We have found that a patent challenger can properly preserve an *SAS* objection by requesting remand in its opening brief. *See Google LLC v. Ji-Soo Lee*, 759 F. App'x 998, 1002 n.2 (Fed. Cir. 2019). Here, FOX did more than that: it filed a motion to remand even before its opening brief was due. *See Motion*. Accordingly, we conclude that FOX did not waive its right to a remand.

#### IV

We vacate the Board's obviousness determinations in IPR 2017-00118 and IPR 2017-00472 and remand for it to reevaluate the import of the evidence of secondary considerations with the burden of proving nexus placed on the correct party. We also remand IPR 2017-00118 for the Board to consider the non-instituted grounds.

#### **VACATED AND REMANDED**

#### COSTS

The parties shall bear their own costs.