NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

FOX FACTORY, INC.,
Appellant

v.

SRAM, LLC,
Appellee

2019-1544

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2017-01440.

Decided: May 18, 2020

ERIK R. PUKNYS, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Palo Alto, CA, 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, for appellee. Also represented by MICHAEL HENRY DURBIN, MICHAEL JOHN HICKEY.

Before LOURIE, MAYER, and WALLACH, *Circuit Judges*.

LOURIE, *Circuit Judge*.

Fox Factory, Inc., appeals from a final written decision of the Patent Trial and Appeal Board (the "Board"), holding claims 1–26 of U.S. Patent 9,291,250 (the "'250 patent") not unpatentable as obvious. *Fox Factory, Inc. v. SRAM, LLC*, No. IPR2017-01440, (P.T.A.B. Dec. 6, 2018), Paper 62 ("*Decision*"). Because the Board's fact findings are supported by substantial evidence and its conclusion of nonobviousness is correct, we *affirm*.

BACKGROUND

The parties to this appeal, Fox Factory and SRAM, LLC, are competitors in the bicycle market. Over the past decade, SRAM has introduced several improvements in bicycle design that have enabled it to market bicycles with a solitary chainring (the "X-Sync chainring"), a set-up previously thought to be too arduous for all but a few bicyclists. The solitary chainring set-up does not require the roller chain to switch between chainrings when the rider shifts gears, so the chainring can be optimized to fit snugly into the roller chain. In particular, a conventional roller chain has chain links that are alternatingly narrow and wide, so SRAM designed a chainring to have a standard set of teeth and a widened set to fit into the link spaces. SRAM's X-Sync chainring has been extensively praised for its chain retention even in trying conditions. J.A. 5682–83.

SRAM has received numerous patents for its inventions relating to bicycles. The '250 patent discloses that the standard bicycle chain has alternating inner and outer links, and the outer links have a much wider space in the center. Yet conventional chainrings have teeth that are the same size; thus, the teeth fit too loosely into the outer link spaces. The '250 patent proposes a single chainring with alternating teeth, one conventional set that fits the inner

chain links and one widened set that fits the outer chain links—specifically disclosing that the widened set should fill 75% or more of the width of the outer chain links. Claim 1 is illustrative:

> 1. A bicycle chainring of a bicycle crankset for engagement with a drive chain, comprising:
>
> a plurality of teeth extending from a periphery of the chainring wherein roots of the plurality of teeth are disposed adjacent the 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 alternatingly and adjacently between the first group of teeth,
> wherein the drive chain is a roller drive chain including alternating outer and inner chain links defining outer and inner link spaces, respectively;
> wherein each of the first group of teeth is sized and shaped to fit within one of the outer link spaces and each of the second group of teeth is sized and shaped to fit within one of the inner link spaces; and
> *wherein a maximum axial width about halfway between a root circle and a top land of the first group of teeth fills at least 80 percent of an axial distance defined by the outer link spaces.*

'250 patent col. 6 l. 50–col. 7 l. 4.

SRAM asserted the '250 patent, along with its parent, U.S. Patent 9,182,027 (the "'027 patent"), against Fox Factory and its subsidiary, Race Face Performance Products, in the United States District Court for the Northern District of Illinois. *See SRAM, LLC v. Race Face Performance*

Prods., No. 1-15-cv-11362 (N.D. Ill. Dec. 17, 2015), ECF No. 1; *SRAM, LLC v. Race Face Performance Prods.*, No. 1-16-cv-05262 (N.D. Ill. Dec. 17, 2015), ECF No. 1. The '027 patent also claims a bicycle chainring where every other tooth is widened, but the claims do not specify the degree to which these teeth are widened, and they also require the teeth to be offset.

Fox Factory petitioned for *inter partes* review of the '250 and '027 patents on the ground of obviousness. In the '250 patent IPR, Fox Factory cited a Japanese patent publication, JP S56-42489 ("Shimano"), and U.S. Patent 3,375,022 ("Hattan"). Shimano was laid open in 1981 and teaches a bicycle chainring with widened teeth to fit into the outer chain links of a conventional roller chain. J.A. 951–52. Hattan describes an elliptical chainring and discloses that the chainring's teeth should fill between 74.6% and 96% of the inner chain link space. *Id.* col. 7 ll. 52–65. Fox Factory contended that the '250 patent claims would have been obvious because a skilled artisan would have seen the utility in designing a chainring with widened teeth to improve chain retention, as taught by Shimano, and he would have looked to Hattan's teaching that the chainring teeth should fill between 74.6% and 96% of the chain link space.

In the '027 patent IPR, the Board held the challenged claims not unpatentable as obvious. *Fox Factory, Inc. v. SRAM, LLC*, 2018 WL 1889561, at *21 (P.T.A.B. Apr. 18, 2018). We vacated the Board's decision because it applied the wrong legal standard for evaluating the relevance of secondary considerations to obviousness. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373–78 (Fed. Cir. 2019). We noted the inconsistency of SRAM's arguing, in the '027 and '250 patent IPRs, for the nonobviousness of each patent based upon the same secondary considerations evidence. *See id.* at 1378 ("The same evidence of secondary considerations cannot be presumed to be attributable to two different combinations of features." (citing *Therasense,*

Inc. v. Becton, Dickinson & Co., 593 F.3d 1289, 1299 (Fed. Cir. 2010))).

Meanwhile, in the '250 patent IPR, the Board rejected Fox Factory's obviousness challenge, finding the claimed invention's "axial fill limitation"—that the widened teeth "fill[] at least 80 percent of [the width of] the outer link spaces" *at the midpoint of the tooth*—unmet by any of Fox Factory's evidence. The Board found instead that Hattan only taught filling between 74.6% and 96% of the width at the bottom of the tooth. *Decision*, slip op. at 34. The Board then found, after a thorough review of SRAM's evidence of secondary considerations, that SRAM's showing rebutted Fox Factory's argument that a skilled artisan nevertheless would have found it obvious to modify the chainring's teeth to meet the axial fill limitation. *Id.*, slip op. at 68–71.

Fox Factory timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

We review the Board's legal determinations *de novo*, *In re Elsner*, 381 F.3d 1125, 1127 (Fed. Cir. 2004), but we review the Board's factual findings underlying those determinations for substantial evidence, *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). A finding is supported by substantial evidence if a reasonable mind might accept the evidence as adequate to support the finding. *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

The sole issue presented in this appeal is obviousness. Obviousness is a question of law that "lends itself to several basic factual inquiries," *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (citing *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 155 (1950)), including the scope and content of the prior art, the level of ordinary skill in the art, differences between the prior art and the claimed invention, and any relevant secondary considerations. *Id.* The Supreme Court has held that "a

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