

United States Court of Appeals for the Federal Circuit

05-1365

SRAM CORPORATION,

Plaintiff-Appellee,

v.

AD-II ENGINEERING, INC.,

Defendant-Appellant.

Richard B. Walsh, Jr., Lewis, Rice & Fingersh, L.C., of St. Louis, Missouri, argued for plaintiff-appellee. With him on the brief were Frank B. Janoski, Keith J. Grady, and Michael J. Hickey.

Michael T. Brady, Miller & Chevalier Chartered, of Washington, DC, argued for defendant-appellant.

Appealed from: United States District Court for the Northern District of Illinois

Judge Robert W. Gettleman

United States Court of Appeals for the Federal Circuit

05-1365

SRAM CORPORATION,

Plaintiff-Appellee,

v.

AD-II ENGINEERING, INC.,

Defendant- Appellant.

DECIDED: October 2, 2006

Before RADER, BRYSON, and LINN, Circuit Judges.

LINN, Circuit Judge.

AD-II Engineering, Inc. (“AD-II”) appeals from an order of the United States District Court for the Northern District of Illinois denying AD-II’s motion for partial summary judgment of invalidity of claim 16 of SRAM Corporation’s (“SRAM”) U.S. Patent No. 4,900,291 (the “291 patent”), granting SRAM’s cross-motion for partial summary judgment of no invalidity of claim 16 of the ’291 patent, and entering judgment of liability in favor of SRAM and an injunction against AD-II. See SRAM Corp. v. AD-II Eng’g, Inc., No. 00-CV-6675 and No. 01-CV-62 (N.D. Ill. Apr. 7, 2005) (Final Order). Because the district court erred in construing claim 16, we vacate the district court’s denial of partial summary judgment of invalidity, its grant of partial summary judgment of

no invalidity, its judgment of liability in favor of SRAM, and its grant of an injunction against AD-II, and remand for further proceedings consistent with this opinion.

I. BACKGROUND

A bicycle gear-shifting system typically includes a shifter (or “shift actuator”) at or near the handlebars, a derailleur to move the drive chain from one freewheel sprocket to another, and a control cable that connects the shifter to the derailleur. Like most mechanical systems, gear-shifting systems generally experience a certain amount of “play” due to looseness or yielding of components of the mechanism (*i.e.*, “cumulative lost motion”), which must be taken up before movement of the shifter causes a desired movement in the derailleur. This problem is particularly pronounced during down-shifting because of the need to move the drive train from a smaller to a larger sprocket. Bicycle gear-shifting systems commonly use “overshifting” to take up cumulative lost motion. Overshifting is movement of the shift actuator briefly beyond a destination position to take up all of the collective slack in the system and move the drive chain slightly beyond the destination sprocket before bringing the shift actuator back to its destination position and allowing the drive chain to move back into alignment with the destination sprocket.

Most gear-shifting systems of the prior art do not have any built-in mechanism to accomplish an overshift so as to provide a solution to the problem of cumulative lost motion. A rider using a prior art system must deliberately overshift by moving the shift actuator farther than necessary, that is, beyond the destination position, so as to take up cumulative lost motion and be assured of a shift.

The single claim at issue in this case, claim 16 of the '291 patent, relates to a method of shifting between bicycle gears and reads as follows:

In a bicycle derailleur gear shifting system having a rear derailleur shifting mechanism, a shift actuator *rotatably mounted on a bicycle handlebar generally coaxially of the handlebar, said shift actuator being mounted on and engaged over an outside of the handlebar inboard of a fixed handgrip on an end of the handlebar*, and control cable means operatively connecting said actuator to said shifting mechanism, a method of performing down-shifting events from a relatively smaller origin freewheel sprocket to a relatively larger destination freewheel sprocket, which comprises:

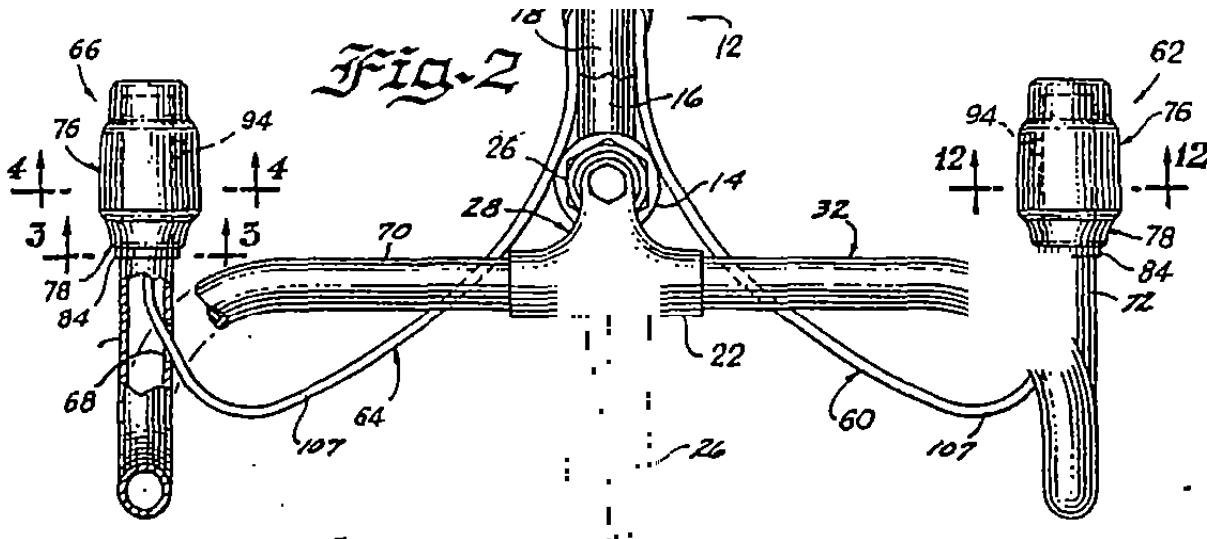
first [moving] *rotating* said shift actuator a sufficient amount to take up substantially all of the cumulative lost motion in said derailleur mechanism and said cable means; and
then [moving] *rotating* said shift actuator a further amount [to] so as to move the bicycle chain at least substantially the distance between the centers of said origin and destination sprockets.

'291 Reexamination Certificate, col. 4, l. 66-col. 5, l. 17 (brackets indicate text deleted through amendment; italics indicate text added through amendment).

SRAM's patent discloses shift actuators having a mechanism that assures "precise" downshifting. No overshifting movement of the shift actuator is required because the cumulative lost motion inherent in the system is always taken up by an internal mechanism, which provides for a built-in overshift. According to the '291 patent, "[b]uilt-in overshift is programmed on applicant's hand-grip shift actuator cams so as to provide optimum overshift for each down-shift event. Such overshift does not require separate manual input for the timing of the overshift; the natural rotational movement of the handlebar shift actuator automatically times the overshift." '291 patent, col. 6, ll. 14-19. The '291 patent discloses that "[a]n important aspect of the present invention" is to provide a shifting device configured to account for lost motion so that "each shift from

one freewheel sprocket to another is an early, positive, and accurately aligned index shift." Id., col. 5, l. 54-col. 6, l. 5. SRAM's innovation thus permits the use of a detent-based (or "indexed") shift actuator that a rider need only move from one index position to the next to effect a positive shift independent of the cumulative lost motion present in the system. Because of this built-in overshift capability, SRAM's shift actuators are referred to by the parties and the district court as providing "precision indexed downshifting," an expression we also adopt herein.

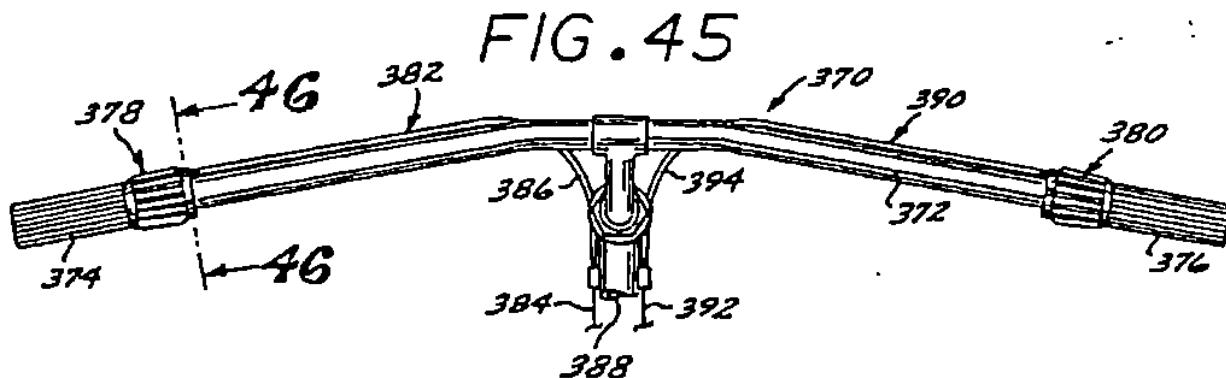
The '291 patent describes and depicts several embodiments of shift actuators, mounted on a handlebar inboard of a "fixed handgrip." In one embodiment, the shift actuator is described as being "conveniently mounted over an end of the handlebar, as for example over an end of a traditional drop bar-type handlebar." '291 patent, col. 4, ll. 63-65; col. 9, ll. 31-33. Figure 2 depicts this embodiment:



As depicted above in Figure 2, the shift actuators are mounted over the ends of a traditional drop bar-type handlebar 32. Id., col. 9, ll. 31-33. The handlebar 32 has "generally straight rearwardly directed end portions 72 over which handgrip shift actuators 62 and 66 of the invention are mounted." Id., col. 9, ll. 41-46. During cycling,

"a cyclist will normally grip the lower, end portions 72 of handlebar 32, forward of the shift actuators 62 and 66." Id., col. 9, ll. 55-58.

Another embodiment, depicted below in Figure 45, discloses "conventional handgrips" that are "particularly suitable for 'mountain bikes' since riders of mountain bikes like the fixed handgrips at the ends of the handlebar for best control." Id., col. 30, ll. 16-22. "Conventional left and right handgrips 374 and 376, respectively, are located on the ends of handlebar 372." Id., col. 30, ll. 25-28. The handgrip shift actuators 378 and 380 are engaged over handlebar 372 immediately inboard of grips 374 and 376. Id., col. 30, ll. 28-31.



AD-II manufactures and sells bicycle gear shifters. SRAM initiated a number of lawsuits in the United States against various customers of AD-II—bicycle distributors selling bicycles equipped with AD-II's gear shifters. On August 24, 2000, AD-II sought a declaratory judgment that the '291 patent was not infringed and was invalid and unenforceable. In that suit, AD-II also asserted claims of unfair competition and patent misuse. On October 26, 2000, SRAM filed suit against AD-II for infringement of claim 16 of the '291 patent. The cases were consolidated. While the consolidated cases were pending, this court decided an appeal from a companion case of SunRace Roots,

Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1308 (Fed. Cir. 2003), familiarity with which is presumed. In that case, we held that the ordinary meaning of the term “shift actuator” in claim 16 of the ’291 patent is “a mechanism that controls the changing of the gears.” Id. at 1302. We further held that the ordinary meaning controls and is not limited to a device containing a cam. Id. at 1307-08. On July 20, 2004, based in part on the claim construction set forth in SunRace, the district court in this case granted partial summary judgment to SRAM, holding that AD-II infringed claim 16 of the ’291 patent. See SRAM Corp. v. AD-II Eng’g Inc., No. 00-CV-6675 and 01-DV-62, slip op. at 3 (N.D. Ill. Jul. 20, 2004) (Infringement Order).

In September 2004, AD-II filed a motion for partial summary judgment of invalidity of the ’291 patent. AD-II submitted two pieces of prior art—U.S. Patent No. 4,260,171 issued to Foster (the “Foster reference”) and Japanese unexamined patent publication no. 58-191682 (the “Japanese reference”)—arguing that each was independently anticipatory of claim 16 of the ’291 patent. On January 26, 2005, the district court denied the motion on the ground that there were facts in dispute.

On February 18, 2005, with AD-II’s invalidity claims still pending, the parties agreed to enter into a joint stipulation to facilitate the district court’s disposition of the invalidity challenge on summary judgment. In relevant part, the parties stipulated that, if the district court agreed to rule on certain claim construction issues raised by AD-II, the court could treat SRAM’s response to AD-II’s motion for partial summary judgment of invalidity as a cross-motion for partial summary judgment of no invalidity based on AD-II’s asserted defenses. On March 14, 2005, the district court held oral argument, addressed the claim construction issues raised by AD-II and, based on the parties’

stipulation, found that there were no facts in dispute. The court ruled that “AD-II as a matter of law has not proven invalidity” by clear and convincing evidence and that summary judgment of liability would be appropriate. See Transcript of Oral Argument at 7, SRAM Corp. v. AD-II Eng’g, Inc., No. 00-CV-6675 and 01-CV-62 (N.D. Ill. Mar. 14, 2005). On March 15, 2005, in accordance with its ruling at the oral argument, the district court issued an order, construing claim 16 as follows:

- (a) The term “fixed hand grip on the end of the handlebar” means a separate, fixed (non-rotating) hand grip situated over a handlebar, and not the handlebar itself.
- (b) Claim 16 of the ’291 patent describes a method of precision indexed downshifting.

See SRAM Corp. v. AD-II Eng’g, Inc., No. 00-CV-6675 and 01-CV-62, slip op. at 1-2 (N.D. Ill. Mar. 15, 2005) (Invalidity Order) (citing SunRace, 336 F.3d at 1299-1300 as support for part (b)). Based on this claim construction, the district court held that, as a matter of law, the prior art submitted by AD-II does not anticipate the ’291 patent because:

- (a) the Foster ’171 patent does not describe a separate fixed handgrip;
- (b) the ‘Japanese ’682 reference’ does not disclose a solution for the taking up of substantially all of the cumulative lost motion in the derailleur mechanism and cable system, and thus does not perform the method of precision indexed downshifting described in claim 16.

Id., slip op. at 2-3. In light of this holding, and in light of its July 20, 2004 Infringement Order, the district court concluded that SRAM was entitled to partial summary judgment of liability against AD-II, but stayed entry of the judgment in order for the parties to brief, and for the court to determine, whether such a judgment would be appealable to this court. Id., slip op. at 3.

On April 7, 2005, the district court held a hearing on the issue of whether a partial summary judgment in favor of SRAM on the issues of infringement and validity would be appealable to this court. At the hearing, AD-II argued that an appeal would not be appropriate at this stage in the proceeding because the March 15 Invalidity Order, which issued after the Infringement Order, added a new limitation, namely that of “precision indexed downshifting.” AD-II argued that, because the “precision indexed downshifting” limitation was a newly added limitation, not addressed in the district court’s July 20, 2004 Infringement Order, there was no determination whether AD-II infringes that new limitation. See Transcript of Oral Argument at 5-6, SRAM Corp. v. AD-II Eng’g, Inc., No. 00-CV-6675 and 01-CV-62 (N.D. Ill. Apr. 7, 2005). The district court disagreed, holding that “it is beyond question that the AD-II shifters perform precision index downshifting” and also noting that, in the February 18, 2005 stipulation, AD-II stipulated that the March 15, 2005 Invalidity Order resolved all issues except damages. Id. at 7-8. Accordingly, on April 7, 2005, the district court issued a Final Order, entering partial summary judgment of no invalidity, of liability in favor of SRAM and issuing a permanent injunction against AD-II. See Final Order, slip op. at 3. AD-II timely appealed.

We have jurisdiction pursuant to 28 U.S.C. §§ 1292(a)(1) and (c)(1).

II. DISCUSSION

A. Standard of Review

We review a district court’s grant of summary judgment without deference. SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1337 (Fed. Cir. 2005). Summary judgment is appropriate when, based on the record, no genuine issue exists as to any material fact, and the moving party is entitled to judgment as a matter of law.

See Fed. R. Civ. P. 56(c). A genuine issue exists if the evidence is such that a reasonable jury could find for the nonmoving party. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). A disputed fact is material if it might affect the outcome of the suit such that a finding of that fact is necessary and relevant to the proceeding. Id. at 248. In determining whether a genuine issue of material fact exists, the court views the evidence in the light most favorable to the nonmoving party and resolves all doubts in its favor. Id. at 255. If this court determines that no material facts remain in dispute, it may proceed to determine entitlement to judgment under the law. SmithKline, 403 F.3d 1337 (citing Eli Lilly & Co. v. Barr Labs., Inc., 251 F.3d 955, 962 (Fed. Cir. 2001) for the proposition that “reversal is required if the district court engaged in a faulty legal analysis in applying the law to the facts and a correct application of the law to those facts might bring a different result” (internal quotation omitted)); see also Anderson, 477 U.S. at 248.

When evaluating a motion for summary judgment, the court views the record evidence through the prism of the evidentiary standard of proof that would pertain at a trial on the merits. Anderson, 477 U.S. at 252-53. Under the patent statutes, a patent enjoys a presumption of validity, see 35 U.S.C. § 282, which can be overcome only through facts supported by clear and convincing evidence, see U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1563, (Fed. Cir. 1997). Thus, a moving party seeking to invalidate a patent at summary judgment must submit such clear and convincing evidence of facts underlying invalidity that no reasonable jury could find otherwise. See Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984).

Claim construction is a question of law that this court reviews de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). Anticipation is a question of fact. Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1220 (Fed. Cir. 2003).

B. Analysis

AD-II argues that the district court erred in adjudging AD-II to be liable to SRAM and in issuing a permanent injunction against AD-II because the district court's underlying decisions were based on an incorrect claim construction. Specifically, AD-II argues that the district court erred in construing claim 16 as reciting "precision index downshifting," which, as discussed above, provides for an index shift actuator with built-in, automatic overshift capabilities to compensate for cumulative lost motion. See Invalidity Order, slip op. at 2. AD-II also argues that the district court erred in construing the term "fixed handgrip" to require a separate, fixed (non-rotating) hand grip situated over a handlebar, and not the handlebar itself.¹ Id. We address each disputed claim limitation in turn.

1. "Precision Index Downshifting"

As concerns the "precision index downshifting" limitation, AD-II first urges that we limit claim 16 to the cam apparatus disclosed in the specification. AD-II gives no persuasive reason why we should revisit our holding in SunRace, which rejected this argument, and we decline to do so. AD-II next points out that the claim language does

¹ Although the "fixed handgrip" limitation is a structural term appearing in the preamble of a two-step method claim, the parties do not dispute that it is a limitation. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999) (holding that if, "when read in the context of the entire claim," the preamble "recites limitations of the claim . . . or . . . is 'necessary to give life, meaning, and vitality' to" the claim, the preamble language is properly treated as limiting).

not recite the term “precision indexed downshifting,” and argues that the district court’s construction erroneously alters the scope of claim 16 in that it adds a built-in overshift limitation. AD-II alleges that, without this added limitation, the Japanese reference anticipates claim 16 and the district court erroneously added the limitation so as to avoid invalidity. AD-II also argues that the doctrine of claim differentiation precludes the district court’s interpretation because “precision index downshifting” is recited in claim 27, which expressly recites “indexed shifting.”

SRAM asserts that the district court properly applied this court’s analysis in SunRace and correctly construed claim 16 as reciting a method of “precision indexed downshifting.” SRAM also argues that AD-II’s claim differentiation argument lacks merit because claim 27, which depends from claim 16, recites a series of shifts whereas claim 16 recites one down-shifting event.

We agree with SRAM that AD-II’s claim differentiation argument lacks merit because claim 27 recites a series of down-shifts and would not be rendered superfluous by the district court’s claim construction. See Tandon Corp. v. U.S. Int’l Trade Comm’n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). Nevertheless, we find that the district court erred because claim 16 does not recite a method of “precision indexed downshifting.”

Although the district court cited SunRace, 336 F.3d at 1299-1300, as support for its claim construction, SunRace does not permit reading into claim 16 the extraneous limitation of “precision indexed downshifting” from the specification. In SunRace, this court construed the term “shift actuator” as used in the ’291 patent and noted that the ’291 patent describes a shift actuator that is designed to effect precise control over the movement of the derailleur through the use of indexed shifting, whereby movement of

the shift actuator causes the derailleur to move the bicycle chain the precise distance necessary to effect a gear shift. Id. While SunRace observes that the written description of the '291 patent describes a gear-shifting system that enables “precise index shifting,” id., nothing in the SunRace decision requires that claim 16 be construed to include that described method of “precision indexed downshifting.”

Moreover, the district court erred in reading the extraneous “precision indexed downshifting” limitation from the specification into claim 16. Neither step in the two-step method claim recites “precision indexed downshifting.” Indeed, claim 16 does not recite indexing at all. Claim 16 only recites a method of shifting wherein first, all of the cumulative lost motion is taken up and second, the bicycle chain moves between destination freewheel sprockets. All claim 16 requires is a method that takes up lost motion in a bicycle shifting mechanism and then moves the derailleur of that mechanism from one sprocket to another. Claim 16 does not recite that lost motion is taken up by a manual overshift and backshift motion or by an index shift actuator causing a built-in overshift and precise downshift between defined index positions (e.g., by “precision indexed downshifting”).

As noted above, the advantage of SRAM’s disclosed method is that the need to move a shift actuator beyond an index position, i.e., the need to overshift, is obviated by the internal mechanism that automatically takes up the cumulative lost motion inherent in the system and, thus, provides for a built-in overshift. As stated in the patent, “[b]uilt-in overshift is programmed on applicant’s hand-grip shift actuator cams so as to provide optimum overshift for each down-shift event. Such overshift does not require separate manual input for the timing of the overshift; the natural rotational movement of the

handlebar shift actuator automatically times the overshift.” ’291 patent, col. 6, ll. 14-19. The ’291 patent discloses that “[a]n important aspect of the present invention” is to provide a shifting device configured to account for lost motion so that “each shift from one freewheel sprocket to another is an early, positive, and accurately aligned index shift.” Id., col. 5, l. 54-col. 6, l. 5. SRAM’s innovation thus permits the use of a detent-based (or “indexed”) shift actuator that a rider need only move from one index position to the next to effect a positive shift independent of the cumulative lost motion present in the system. By failing to recite any indexing, claim 16 fails to claim the positive indexing feature and recites nothing more than a broad method that applies both to indexed shifters and to non-index shifters alike. While SRAM strongly urges the court to interpret the claim to encompass the innovative precision indexing shifting feature it contends it has invented, we are powerless to rewrite the claims and must construe the language of the claim at issue based on the words used. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 (Fed. Cir. 1993). In this case, the words are clear and the claim covers no more than the recited method of taking up lost motion and effecting a shift.

SRAM also urges that we adopt the district court’s construction of claim 16 as providing for “precision indexed downshifting” on the ground that, after three reexamination proceedings, the Patent Examiner—like the district court—construed claim 16 as providing “precision indexed downshifting” as a means to take up lost motion, and confirmed its patentability over prior art gear-shifting devices that require a user to manually overshift. This argument is not persuasive. While the Patent and Trademark Office (the “PTO”) generally gives claims their broadest reasonable

interpretation consistent with the specification, see In re American Academy of Science Tech Center, 367 F.3d 1359, 1364 (Fed. Cir. 2004); In re Bond, 910 F.2d 831, 833 (Fed. Cir. 1990), paradoxically in this case, the PTO construed the claim narrowly, rather than broadly, by reading in the same limitation as did the district court. In doing so, the PTO erred for the same reasons as did the district court. The Patent Examiner's actions thus provide no support for SRAM's argument. Furthermore, this court is not bound by the PTO's claim interpretation because we review claim construction de novo. Cybor Corp., 138 F.3d at 1456.

Because the PTO's claim interpretation is flawed for the same reasons that the district court's construction fails, and because we are not bound to the PTO's claim interpretation, we decline to adopt the PTO's construction of claim 16.

2. "Fixed Handgrip"

Claim 16 recites that the shift actuators disclosed in the '291 patent are "mounted on and engaged over an outside of the handlebar inboard of a fixed handgrip on an end of the handlebar." '291 Reexamination Certificate, col. 5, ll. 2-4. AD-II asserts that the district court erred in limiting the term "fixed handgrip" to a separate handgrip situated over a handlebar, arguing that the term "fixed handgrip" should also include the normal grip space on the handlebar itself, as is disclosed by the embodiment depicted Figure 2. SRAM counters that, in reciting that the handgrip is "on an end of the handlebar," claim 16 distinguishes between the handgrip and the handlebar such that the handgrip cannot be construed to include the handlebar.

We conclude that the district court correctly construed the term "fixed handgrip on the end of the handlebar" to mean a separate handgrip situated over a handlebar,

and not a part of the handgrip space on the handlebar itself. Claim 16 recites a handgrip situated “on” the handlebar, rather than a handgrip that is part “of” the handlebar. Moreover, claim 16 recites a “fixed” handgrip, which, as disclosed in the specification, refers to “conventional handgrips” that are separate features “located on the ends of [the] handlebar” and are depicted in Figure 45. ’291 patent, col. 30, ll. 19-27, Fig. 45.

The prosecution history supports that the “fixed handgrip” limitation of claim 16, which was added during reexamination in light of the Foster reference, was meant to capture the embodiment depicted in Figure 45 rather than the embodiment depicted in Figure 2. The applicant explained that “[f]or the disclosure of these limitations in the patent [i.e., including the “fixed handgrip” limitation], the Examiner is referred to the descriptions of the ‘Inboard Handgrip Shift Actuators’ starting in line 15 of column 30 of the ’291 patent.” That portion of the ’291 patent specification is the portion addressing mountain bikes, and specifically refers to “conventional handgrips” or “fixed handgrips at the ends of the handlebar” as structures distinct from the handlebar itself. ’291 patent, col. 30, ll. 19-22, Figure 45.

3. Anticipation

AD-II argues that we should hold claim 16 invalid as anticipated by the Foster reference or the Japanese reference. Given the unclear record before us, the indeterminate stipulations of the parties, and the factual nature of the anticipation issue, we leave this determination to the district court for resolution on remand.

III. CONCLUSION

For the foregoing reasons we vacate the district court's judgment and remand to the district court for further proceedings consistent with this opinion.

VACATED AND REMANDED

IV. COSTS

No costs.