

United States Court of Appeals for the Federal Circuit

04-1414

BIAGRO WESTERN SALES, INC. and
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,

Plaintiffs-Appellants,

v.

GROW MORE, INC.,

Defendant-Appellee.

Mark D. Miller, Kimble, MacMichael & Upton, of Fresno, California, argued for plaintiffs-appellants. With him on the brief were Robert W. Branch and Mary Ann Bluhm.

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Appealed from: United States District Court for the Eastern District of California

Senior Judge Robert E. Coyle

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DECIDED: September 13, 2005

Before GAJARSA, Circuit Judge, PLAGER, Senior Circuit Judge, and DYK, Circuit Judge.

PLAGER, Senior Circuit Judge.

In this patent infringement case, Biagro Western Sales, Inc. (“Biagro”) and The Regents of the University of California (“The Regents”) sued Grow More, Inc. (“Grow More”) in the United States District Court for the Eastern District of California. At issue is U.S. Patent No. 5,830,255 (“the ‘255 patent”), which is entitled “Formulation of Phosphorus Fertilizer for Plants.” The Regents are the assignee and Biagro is the exclusive licensee of the ‘255 patent.

On cross-motions for summary judgment, the trial court held that Grow More did not literally infringe the claims of the patent. The trial court further held that there was no infringement under the doctrine of equivalents. Judgment was awarded to Grow More. We affirm the judgment of the trial court.

BACKGROUND

The United States Patent and Trademark Office (“PTO”) issued the '255 patent on November 3, 1998. At the request of The Regents, to whom the patent had been assigned, the PTO undertook a reexamination and issued a reexamination certificate on July 11, 2000. As a result of the reexamination, all of the independent claims were amended by adding a limitation, originally in several dependent claims, relating to the amount of phosphorous-containing acid or salt thereof in the fertilizer formulation.

After reexamination, claim 1, representative of the independent claims of the '255 patent, read:

A concentrated phosphorus fertilizer comprising a buffered composition comprising at least one phosphorous-containing acid or salt thereof such that when said composition is diluted with water having a pH of about 6.5 at a ratio of about 1 part fertilizer to about 40 parts water, there is formed a substantially fully solubilized use-dilution fertilizer having a foliage-acceptable pH for phosphorus uptake *and wherein said phosphorous-containing acid or salt thereof is present in an amount of about 30 to about 40 weight percent.*

The emphasized language was added during reexamination to distinguish the claimed invention over prior art. That added limitation is the focus of the dispute in this case.

The term “phosphorous” is an adjectival modifier describing certain compounds containing the element phosphorus (P). In the patent, the term “phosphorous-containing acid” is used to refer to a group of acids that includes phosphorous acid (H_3PO_3), among other acids. '255 patent, col. 3, ll. 56-60. The patent also states that the formulations in the patent are expressed in terms of weight-to-volume, instead of weight-to-weight, and therefore the term “weight percent” as used in the claims refers to a weight-to-volume percentage. Id. at col. 6, l. 67.

Grow More's accused product is a phosphorus fertilizer named Phos-Pro. Phos-Pro is made by mixing phosphorous acid (H_3PO_3) with potassium hydroxide (KOH) and water. The reaction results in a solution containing two phosphorous acid salts—dipotassium monohydrogen phosphite (K_2HPO_3) and potassium dihydrogen phosphite (KH_2PO_3), referred to in abbreviated form as dipotassium phosphite and potassium phosphite. A third phosphite, tripotassium phosphite (K_3PO_3), is present in trace amounts. However, and importantly, the final Phos-Pro product does not contain any phosphorous acid as such.

Biagro, as the exclusive licensee of the '255 patent, filed this patent infringement suit against Grow More in July 2000, shortly after the PTO completed reexamination of the patent. Grow More filed counterclaims for declaratory judgments of non-infringement and invalidity and for unfair competition under California state law. The Regents were eventually joined as a plaintiff.¹

The parties filed cross-motions for summary judgment on the question of infringement. At issue was the meaning of the added limitation specifying that in the claimed fertilizer composition there was a "phosphorous-containing acid or salt thereof . . . present in an amount of about 30 to about 40 weight percent." Biagro argued that the limitation can be met in an accused product by calculating a 'chemical equivalent' amount of phosphorous-containing acid, based on the chemical composition of the fertilizer. In the case of the accused Grow More fertilizer, that would be the same as the amount of phosphorous-containing acid used in the initial manufacture of the product. Grow More argued to the contrary that the limitation referred to the amount of

¹ Plaintiffs Biagro and The Regents will be referred to collectively as "Biagro" throughout the remainder of this opinion.

phosphorous-containing acid or salt actually present in the *final* fertilizer product. The trial court construed the limitation as Grow More proposed and, since the Grow More final product contained no phosphorous-containing acid, held for Grow More on that issue.

The trial court concluded further that, with regard to the content of acid salts in the fertilizer, a fertilizer containing two or more phosphorous-containing salts comes within the literal scope of the claim only if the *aggregate* amount of such salts is between about 30 and about 40 weight percent. Based on tests and calculations made by Biagro's expert, the concentration of potassium phosphite in Phos-Pro is 40.3%, and the concentration of dipotassium phosphite is 19.0%. Grow More's calculations indicated the phosphite content to be slightly higher based on a different specific gravity used to convert weight-to-weight percentages to weight-to-volume percentages. According to Grow More's calculations, the weight-to-volume percentages are 42.2% for potassium phosphite and 19.9% for dipotassium phosphite. Thus the total phosphite concentration in the accused product is between 59.3% and 62.1%, depending on which party's calculations are used.

Since the aggregate concentration of the two phosphites in the accused product is at least 59.3% weight percent, well outside the claimed range and thus not literally infringing, the question was whether the amount of salts could be considered infringing under the doctrine of equivalents, that is, whether 60(+/-)% could be considered the equivalent of about 30 to about 40%. The trial court chose not to address that question, but instead held for Grow More on the ground that, in light of the amended claims, prosecution history estoppel acted as a complete bar to a claim of infringement under

the doctrine of equivalents according to this court's *en banc* decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 (Fed. Cir. 2000) (*en banc*) ("Festo I"), the law in effect at the time. The trial court granted judgment for Grow More. Biagro W. Sales, Inc. v. Grow More, Inc., No. CV-F-00-6105 (E.D. Cal. Oct. 18, 2001).

Biagro filed two motions for reconsideration directed to the issue of whether a proper claim construction should permit use of the chemical equivalent analysis. The trial court denied both of these motions for reconsideration. Biagro W. Sales, Inc. v. Grow More, Inc., No. CV-F-00-6105 (E.D. Cal. Aug. 15, 2002); Biagro W. Sales, Inc. v. Grow More, Inc., No. CV-F-00-6105 (E.D. Cal. Apr. 9, 2003).

Meanwhile, the Supreme Court vacated and remanded our decision in Festo I. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2002) ("Festo II"). Since final judgment had not yet been entered, the trial judge allowed the parties to file briefs addressing whether Biagro could rebut the new 'Festo presumption' that the patentee had surrendered all subject matter between the original claim limitation and the amended claim limitation. While the trial court was considering the matter, we rendered our second *en banc* decision in the Festo case, this time on remand from the Supreme Court. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359 (Fed. Cir. 2003) (*en banc*) ("Festo III").

Biagro argued before the trial court that it could overcome the Festo presumption in two of the ways set forth by the Supreme Court in Festo II and further explained in Festo III. The trial court rejected both arguments. Biagro W. Sales, Inc. v. Grow More, Inc., No. CV-F-00-6105 (E.D. Cal. Mar. 30, 2004). The trial court therefore denied Biagro's motion for reconsideration based on rebuttal of the Festo presumption.

The parties stipulated to dismissal without prejudice of Grow More's counterclaim for unfair competition. The trial court had previously deemed Grow More's counterclaim for invalidity withdrawn without prejudice. Thus there were no pending, unresolved claims, and the trial court entered final judgment for Grow More.

Biagro filed a timely appeal. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

A. Standard of Review

We review a grant of summary judgment without deference to the trial court. Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575 (Fed. Cir. 1994). Summary judgment is appropriate if there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c).

An infringement analysis proceeds first to claim construction to determine the scope and meaning of the asserted claims, and second to a comparison of the properly construed claims with the allegedly infringing product to determine whether the product embodies every limitation of the claims. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc). Claim construction is a matter of law over which we exercise independent review. Id. at 1456. Whether an accused device or method infringes a claim, either literally or under the doctrine of equivalents, is a question of fact. Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998).

Prosecution history estoppel is a legal limitation on the doctrine of equivalents. Festo III, 344 F.3d at 1368. Issues relating to the application and scope of prosecution history estoppel, including whether the presumption of surrender of subject matter has

arisen and whether it has been rebutted, are questions of law to be decided by the court. Id. Rebuttal of the presumption may be subject to underlying factual issues, which may properly be decided by the court. Id. at 1368 n.3.

B. Claim Construction

On appeal, Biagro challenges the trial court's construction of the claim limitation "wherein said phosphorous-containing acid or salt thereof is present in an amount of about 30 to about 40 weight percent." As it did before the trial court, Biagro makes two separate arguments, each one corresponding to a different theory. We address each theory in turn, and we affirm the trial court's claim construction under both.

1.

Biagro first argues that the amount of phosphorous-containing acid in the claim limitation refers to a chemical equivalent amount rather than, as the trial court held, the amount of phosphorous-containing acid actually present in the final fertilizer product. According to Biagro, the 'chemical equivalent' is a calculated amount of phosphorous-containing acid regardless of whether phosphorous-containing acid is actually present in the fertilizer, that is, the amount of phosphorous-containing acid that would react to make the final fertilizer. If the amount of phosphorous-containing acid that was used to create the product is unknown, the chemical equivalent amount can be derived by testing the final product and performing a calculation on the results.

It is elementary that claim construction begins with, and remains focused on, the language of the claims. Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004). As our recent en banc decision in Phillips v. AWH Corp. reaffirmed, the words of a claim are generally given their ordinary and customary

meaning, which is the meaning the term would have to a person of ordinary skill in the art at the time of the invention. 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (citing Innova, 381 F.3d at 1116). Such a person is deemed to read the claim term in the context of the entire patent, including the other claims and the written description. Id. at 1313. Patent claims should also be construed in light of the prosecution history, which, like the patent itself, has been designated as part of the “intrinsic evidence.” Id. at 1317. Extrinsic evidence, such as expert testimony, may be useful in claim construction, but it should be considered in the context of the intrinsic evidence. Id. at 1318-19.

In this case, the plain language of the claims gives no indication that the amount of phosphorous-containing acid in the claimed invention is a chemical equivalent amount. The claim language clearly refers to the “amount” of phosphorous-containing acid that is “present” in the “concentrated phosphorus fertilizer.”² Furthermore, the written description contains no discussion at all of ‘chemical equivalents’ or any hint that the amount of phosphorous-containing acid recited in the claims is expressed as a chemical equivalent amount instead of the amount actually present in the fertilizer.

As for the prosecution history of the '255 patent, Biagro relies on only one passage—a statement made by the examiner during reexamination that the phosphite solution of a prior art reference was an example of a phosphorous acid solution. At most this shows that a person skilled in the art might refer to a phosphite solution as a

² As often happens in claims having an absence of useful punctuation, the addition of new language creates ambiguities. In this case, it is unclear whether the “wherein” phrase modifies “[a] concentrated phosphorous fertilizer,” or “a buffered composition,” or “a fully solubilized use-dilution fertilizer.” For purposes of the result, it does not matter.

phosphorous acid solution when the phosphite solution, like the accused product in this case, was formed from phosphorous acid. But we do not conclude from this one statement that one skilled in the art would interpret claim language concerning the amount of phosphorous acid required to be “present” in the fertilizer to mean the amount of phosphorous acid that was used to make the fertilizer, i.e., the chemical equivalent amount. The prosecution history, like the patent itself, is devoid of the term chemical equivalent or any reference to the use of representative amounts to describe the composition of the fertilizers claimed in the patent.

Biagro also cites the prosecution history of U.S. Patent No. 6,113,665 (“the ‘665 patent”), which is a continuation of the ‘255 patent and was prosecuted during the same timeframe as the reexamination of the ‘255 patent. In remarks accompanying two amendments that added limitations on the amount of phosphorous-containing acid or salt present in the claimed fertilizer, the applicant’s attorney referred to the amount of phosphorous acid “in” examples 1 and 9 of the written description. According to Biagro, these amounts were chemical equivalent amounts because the fertilizers produced in those examples do not actually contain phosphorous acid. As the trial court noted, however, there is nothing in the prosecution history of the ‘665 patent to explain how the figures were obtained or to indicate that the examiner understood the applicant was referring to chemical equivalent amounts. Whatever the attorney’s statements were intended to mean, they do not alter the ordinary meaning of the claim language, i.e., that the amount of phosphorous-containing acid is the amount actually present in the fertilizer.

In making its arguments, Biagro relies heavily on extrinsic evidence in the form of expert declarations explaining fertilizer labeling guidelines and standards. This evidence, according to Biagro, shows that those skilled in the art understand that the amounts of plant nutrients in fertilizer products are frequently expressed as ‘chemical equivalents.’ The primary example is a fertilizer labeling convention, known as the ‘guaranteed analysis,’ which indicates the guaranteed amount of nitrogen, phosphorus, and potassium in the fertilizer product. The phosphorus content is expressed not in its elemental form (P), but as phosphorus pentoxide (P_2O_5), regardless of whether the fertilizer actually contains any phosphorus pentoxide. Thus the amount of phosphorus pentoxide listed on the label is a chemical equivalent amount derived from the actual chemical composition of the fertilizer. Biagro also cites California fertilizer labeling guidelines that refer to fertilizer products as “containing” phosphorous acid when in fact they were only derived from phosphorous acid. In Biagro’s view, this evidence shows that a person skilled in the art would understand the claims to refer to a chemical equivalent amount of phosphorous-containing acid, and therefore we should accept this interpretation as the ordinary and customary meaning of the claim language.

However, even if we agree that the labeling convention and guidelines demonstrate that those skilled in the art are familiar with the use of ‘chemical equivalents,’ the problem is that Biagro cannot tie its extrinsic evidence to the patent or the claim language. Nothing in the patent or prosecution history indicates that labeling standards are relevant to the claimed fertilizer, and nothing in Biagro’s extrinsic evidence suggests that a person skilled in the art of *fertilizer formulation* would

necessarily use a chemical equivalent to express the amount of phosphorous acid in a fertilizer that does not actually contain phosphorous acid.

We are also unpersuaded by Biagro's argument that Grow More's expert took an inconsistent position on behalf of a different defendant in another patent infringement suit brought by Biagro. In that case, the expert described a prior art fertilizer as containing 13% phosphorous acid, which was ultimately shown to be a chemical equivalent amount. We agree with the trial court that it appears the expert was simply relying on product materials shown to him and was not aware that the 13% had been arrived at through a 'chemical equivalent' analysis.

2.

Biagro's second theory is that the trial court erred in construing the amount of "phosphorous-containing acid or salt" in the claim language as an aggregate amount. The claim language calls for "at least one phosphorous-containing acid or salt thereof . . . wherein said phosphorous-containing acid or salt thereof is present in an amount of about 30 to about 40 weight percent." Biagro argues that the limitation is met so long as one acid or salt is present in the claimed amount, even if the fertilizer contains other acids or salts. Under the trial court's claim construction, as advocated by Grow More, a fertilizer containing more than one acid or salt would satisfy the limitation only if the aggregate amount of acids or salts falls within the claimed range.

The phrase "at least one" in patent claims typically is construed to mean "one or more." Therefore, Biagro contends, the claim language allows for aggregation of acids or salts but does not require it. The trial court, however, concluded that both the written description and prosecution history require the aggregate amount of acids or salts to be

within the claimed range, and we agree. First, it is apparent from the written description that all phosphorous-containing acids or salts in the fertilizer serve the same purpose such that the total amount of such acids or salts is important. More significantly, during reexamination the patentee distinguished the invention over prior art by emphasizing that the claimed fertilizer “must be concentrated” and that the “concentration has now been specified as an amount of about 30 to about 40 weight percent.” If a fertilizer contains more than one phosphorous-containing acid or salt, the concentration is based on the total amount of such acids or salts, not just one acid or salt. In view of the patentee’s emphasis on the concentration of phosphorous-containing acids or salts, the trial court correctly construed the claim to require an aggregate amount of such acids or salts to be between about 30 and about 40 weight percent.

C. Infringement

1. Literal Infringement

Having affirmed the trial court’s claim construction, we also affirm the trial court’s grant of summary judgment of no literal infringement with respect to both of the theories presented by Biagro. First, because we have rejected Biagro’s chemical equivalent claim construction argument, there can be no literal infringement based on the amount of phosphorous acid, an ingredient used to make the accused fertilizer but not actually present in the final product.

Biagro’s second literal infringement theory is that potassium phosphite is present in the accused product in an amount of 40.3%, which Biagro alleges is within the claimed range of “about 30 to about 40 weight percent.” The correct claim construction, however, requires the aggregate amount of phosphites to be within the claimed range.

Because the accused product contains two phosphites, resulting in an aggregate phosphite content of at least 59.3%, clearly outside the claimed range, no reasonable jury could find literal infringement based on the presence of phosphites.

2. Infringement Under the Doctrine of Equivalents

Biagro also asserts that Grow More's fertilizer infringes the claims of the '255 patent under the doctrine of equivalents because the aggregate phosphite concentration of between 59% and 62% is equivalent to the claimed concentration of about 30 to about 40 weight percent. The trial court did not reach the issue in those terms in its initial summary judgment order because it held that, under Festo I, prosecution history estoppel acted as a complete bar to a claim of infringement by equivalents. Later, after the Supreme Court's Festo II decision and this court's Festo III decision on remand, the trial court reconsidered its summary judgment ruling, but still held that Biagro was barred from asserting the doctrine of equivalents because it failed to rebut the Festo presumption.

A narrowing amendment made for a substantial reason relating to patentability gives rise to a presumption that the patentee has surrendered all subject matter between the original claim limitation and the amended claim limitation. Festo III, 344 F.3d at 1367. If the narrowing amendment was the addition of a new claim limitation, as in the case before us, equivalents are presumptively not available with respect to that limitation. Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., 370 F.3d 1131, 1141 (Fed. Cir. 2004).

A patentee may rebut the presumption of surrender by showing that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted

a claim that would have literally encompassed the alleged equivalent. Festo II, 535 U.S. at 741. The Supreme Court identified three ways in which the patentee may overcome the presumption. The patentee may show that the alleged equivalent would have been unforeseeable at the time of the amendment, that the rationale underlying the amendment bore no more than a tangential relation to the equivalent in question, or that there was “some other reason” that the patentee could not reasonably have been expected to have described the alleged equivalent. Id. at 740-41.

As an initial matter, we reject Biagro’s argument that at the summary judgment stage the burden is on Grow More to present undisputed facts showing that Biagro cannot rebut the Festo presumption. The Supreme Court made clear that the patentee bears the burden of rebutting the presumption of surrender. Id. at 740. Furthermore, the determination of whether the presumption has been rebutted is a question of law. Festo III, 344 F.3d at 1368. Although in some situations there may be underlying factual issues, id. at 1368 n.3, neither of Biagro’s rebuttal arguments involves disputed facts, as will be explained below.

We begin by examining the amendment that was made to the claims of the ’255 patent. During reexamination, the patentee made a narrowing amendment to all of the independent claims by adding the claim limitation “wherein said phosphorous-containing acid or salt thereof is present in an amount of about 30 to about 40 weight percent.” The amendment was made to overcome a prior art obviousness rejection based on a reference describing a fertilizer that was buffered only when diluted. To distinguish the claims over the prior art reference, the patentee explained to the examiner that the fertilizer must be concentrated and that the amendment specified a range for the

concentration. Therefore the narrowing amendment was made for a reason substantially related to patentability, and Biagro has presumptively surrendered any equivalents with respect to the amount of phosphorous-containing acid or salt present in the fertilizer.

Biagro first attempts to rebut the presumption of surrender by arguing that the rationale underlying the amendment was no more than tangentially related to the asserted equivalent. As we explained in Festo III, whether the patentee has overcome the presumption on this ground is determined by the court on the basis of the public record. Id. at 1369-70. In this case, it is clear from the prosecution history that the reason for adding the range limitation was to overcome a prior art fertilizer that was not concentrated.

Here the alleged equivalent is a fertilizer with a phosphite concentration of nearly 60%. Because both the reason for the amendment and the asserted equivalent relate to the concentration of the fertilizer, we affirm the trial court's conclusion that Biagro has not shown that the rationale underlying the amendment was merely tangential to the accused equivalent.

We disagree with Biagro that this case is analogous to Insituform Technologies, Inc. v. Cat Contracting, Inc., 385 F.3d 1360 (Fed. Cir. 2004). That case involved a method for impregnating a tube liner with a resin by moving a single vacuum cup to multiple points along the tube liner. The accused process used multiple vacuum cups, and the patentee asserted that the multiple-cup process was equivalent to the single-cup process. The original claim did not specify the number or location of vacuum cups. During prosecution, the patentee incorporated several limitations from dependent claims

into independent claim 1. The prosecution history showed that the reason for the amendment was to overcome a prior art process that used a single vacuum source at the end of the tube liner distant from the resin source. Thus the reason for the amendment and the alleged equivalent involved different aspects of the invention—the location of the vacuum source relative to the resin versus the number of vacuum cups. Id. at 1370. Accordingly, we concluded that the rationale underlying the amendment was tangential to the allegedly equivalent process. In contrast, the reason for the amendment and the accused equivalent in the case before us both relate to the concentration of the fertilizer.

Biagro also argues that because only the lower limit of the claimed range was necessary to distinguish over prior art, the reason for the amendment is merely tangential to an accused equivalent at the upper end of the range. In effect, Biagro is arguing that there was no reason for adding an upper limit of 40%. Viewed from that perspective, the situation is analogous to the amendment in Festo that added the “magnetizable” limitation. The prosecution history revealed no reason for the amendment, and therefore Festo could not show that the rationale underlying the amendment was only tangential to the accused nonmagnetizable equivalent. Festo III, 344 F.3d at 1371-72. Similarly, in this case, since the prosecution history shows no reason for adding an upper limit to the concentration range, Biagro cannot claim that the rationale for the amendment is merely tangential.

Biagro further argues that it can rebut the Festo presumption of surrender with “some other reason” that the patentee could not reasonably have been expected to have described the alleged equivalent when it narrowed the claim. That “other” reason

is that the patentee allegedly understood the claim language to refer to a chemical equivalent amount of phosphorous acid. We agree with the trial court that Biagro's contention should be rejected as merely an attempt to reargue the claim construction issue. Moreover, we fail to see how the patentee's supposed inability to draft claims to cover chemical equivalent amounts relates to Biagro's equivalence argument, which is that the approximately 60% concentration of phosphite actually present in the accused product is equivalent to the claimed 30-40% concentration.

For the reasons discussed, we affirm the trial court's holding that Biagro has not rebutted the presumption of surrender and that prosecution history estoppel bars Biagro from asserting infringement under the doctrine of equivalents.

CONCLUSION

The judgment of the trial court is in all respects

AFFIRMED.