

United States Court of Appeals for the Federal Circuit

05-1414, -1420

YOON JA KIM,

Plaintiff-Appellant,

v.

CONAGRA FOODS, INC.,

Defendant-Cross Appellant.

Dean A. Pelletier, McAndrews, Held & Malloy, Ltd., of Chicago, Illinois, argued for plaintiff-appellant. With him on the brief were James P. Murphy and Jonathan M. Rushman.

Robert A. Schroeder, Bingham McCutchen LLP, of Los Angeles, California, argued for defendant-cross appellant. With him on the brief was Kevin K. Leung. Of counsel were Robert C. Horton, and John P. Passarelli, McGrath North Mullin & Kratz, PC LLO, of Omaha, Nebraska.

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

Senior Judge William T. Hart

United States Court of Appeals for the Federal Circuit

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CONAGRA FOODS, INC.,

Defendant-Cross Appellant.

DECIDED: September 20, 2006

Before SCHALL, Circuit Judge, ARCHER, Senior Circuit Judge, and DYK, Circuit Judge.

Opinion for the court filed by Circuit Judge DYK. Opinion concurring-in-part and dissenting-in-part filed by Circuit Judge SCHALL.

DYK, Circuit Judge.

Yoon Ja Kim, the holder of U.S. Patent No. Re. 36,355 (“the ’355 patent”), appeals from the district court’s judgment of noninfringement of claim 5 and its dependent claims and claim 10 in favor of ConAgra Foods, Inc. (“ConAgra”). ConAgra cross-appeals from the district court’s judgment that the patent claims are not invalid. We affirm in all respects.

BACKGROUND

The patent in this case relates to breadmaking. Oxidizing agents are used during the breadmaking process to strengthen dough, increase loaf volume, contribute to fine

crumb grain, and increase shelf life. Since the early 1900's, potassium bromate was widely used as a slow-acting oxidant to improve the quality of bread. However, by the 1990's, there was growing concern about the carcinogenic effects of potassium bromate, and the Food and Drug Administration encouraged the baking industry to seek suitable alternatives. Kim, a food chemist, believed that a combination of ascorbic acid and food acid would serve as a suitable alternative to potassium bromate in the breadmaking process, and applied for a patent on that composition. On April 23, 1996, Kim obtained U.S. Patent No. 5,510,129 for a potassium bromate replacer composition. However, a few weeks later, Kim surrendered that patent to the Patent and Trademark Office ("PTO") and filed a reissue application, alleging that an error had arisen during prosecution. After prosecution of her reissue application, Kim obtained the '355 reissue patent on October 26, 1999.

On April 9, 2001, Kim filed suit against ConAgra alleging that ConAgra induced the infringement of independent claims 5 and 10 of the reissued '355 patent.¹ Claims 5 and 10 were newly added during prosecution of the reissue application. The accused conduct was that ConAgra required licensees of its "Healthy Choice[®]" brand name to use recipes provided by ConAgra. Kim alleged that the Healthy Choice[®] Natural Wheat product infringed claim 5 and that the Healthy Choice[®] 7-Grain and Whole Grain products infringed claim 10.² ConAgra stipulated that the bread recipes used in the

¹ For simplicity, we refer to claims 5 and 10 as the asserted claims. However, Kim also asserted claims dependent from claim 5. Since we conclude that claim 5 is not infringed, it necessarily follows in this case that the dependent claims are also not infringed.

² Claim 5 recites:

accused products included ascorbic acid and food acid in the ranges specified in claims 5 and 10 of the '355 patent. Claim 10 differs from claim 5 in that it contains the additional limitation of yeast.

On June 30, 2003, ConAgra filed a counterclaim for a declaratory judgment of invalidity and noninfringement of the '355 patent.³ On November 10, 2003, ConAgra moved for summary judgment of invalidity based on the recapture rule. On March 26,

A potassium bromate replacer composition consisting essentially of, by weight:

- (a) about 0.001 to 0.03 parts ascorbic acid as an oxidant per 100 parts flour,
- (b) about 0.015 to 0.2 parts food acid per 100 parts flour, said food acid selected from the group consisting of acetic acid, citric acid, fumaric acid, lactic acid, malic acid, oxalic acid, phosphoric acid, succinic acid, tartaric acid, fruit juice, fruit juice concentrate, vinegar, wine, and mixtures thereof, and
- (c) flour.

'355 patent, col. 8, ll. 47-57. Claim 10 recites:

A potassium bromate replacer composition consisting essentially of, by weight:

- (a) about 0.001 to 0.03 parts ascorbic acid as an oxidant per 100 parts flour,
- (b) about 0.015 to 0.2 parts food acid per 100 parts flour, said food acid selected from the group consisting of acetic acid, citric acid, fumaric acid, lactic acid, malic acid, oxalic acid, phosphoric acid, succinic acid, tartaric acid, fruit juice, fruit juice concentrate, vinegar, wine, and mixtures thereof,
- (c) about 0.5 parts yeast food per 100 parts flour, and
- (d) flour.

Id., col. 10, ll. 1-14.

³ Prior to this, the district court had entered judgment in favor of ConAgra, because the '355 patent had been found invalid by the district court in Kim v. The Earthgrains Co., No. 01-CV-3895, 2002 WL 1949235 (N.D. Ill. Aug. 22, 2002). However, after we reversed that invalidity determination in Kim v. The Earthgrains Co., No. 03-1047, 2003 WL 731737 (Fed. Cir. March 4, 2003), the district court here reinstated Kim's action against ConAgra.

2004, the district court (Judge William T. Hart) denied ConAgra's motion. The case then proceeded to trial. After each party's case-in-chief, the opposing party moved for judgment as a matter of law ("JMOL") under Rule 50 of the Federal Rules of Civil Procedure, and the district court reserved ruling on both motions. On October 13, 2004, a jury found that the asserted claims of the '355 patent were not invalid; that ConAgra had induced infringement of claim 10 with the licensing of its Healthy Choice® 7-Grain and Whole Grain products, but that the inducement was not willful; and that claim 5 and the dependent claims were not infringed. ConAgra renewed its motion for JMOL, arguing invalidity and noninfringement. On April 28, 2005, the district court partially granted ConAgra's motion for JMOL, finding that the '355 patent was not invalid but that claim 10 was not infringed. The district court entered final judgment on April 28, 2005, finding the '355 patent not infringed and not invalid.

Kim timely appealed the judgment of noninfringement, and ConAgra cross-appealed the judgment that the claims were not invalid. We have jurisdiction under 28 U.S.C. § 1295(a)(1) (2000).

DISCUSSION

I

Kim urges that we (1) reverse the district court's grant of JMOL of noninfringement of claim 10, (2) overturn the jury's verdict of noninfringement of claim 5, and (3) find both claims 5 and 10 willfully infringed by ConAgra.

Kim contends that the jury charge rested on an incorrect construction of the phrase "[a] potassium bromate replacer composition" in both claims 5 and 10 of the '355

patent.⁴ Alternatively, Kim argues that even under the district court's claim construction, the accused products infringed.

A Claim construction

As part of its claim construction, the district court instructed the jury that “[t]o infringe one of the claims of the '355 Patent, a bread must (a) contain ingredients in the proportions in claim 5, 6, 7, 8, or 10 and, (b) in that particular bread, the ingredients must act as a potassium bromate replacer, that is, the ingredients must perform essentially the same function in the production of that bread as would potassium bromate.” J.A. at 113 (emphasis added). The court also provided the jury with the following definition: “Potassium Bromate is a slow acting oxidant once commonly used in the breadmaking process. Its function in the breadmaking process is to strengthen the dough, increase loaf volume, and contribute to fine crumb grain.” J.A. at 147 (emphasis added). Kim objected to these jury instructions. On appeal, Kim concedes that “potassium bromate replacer” is a claim limitation, but argues that a “potassium bromate replacer” is simply a “potassium bromate substitute,” which she in turns describes as a composition that is present when potassium bromate is not.

Upon review of the specification, we agree with the district court's claim construction. “[C]laims must be read in view of the specification, of which they are a part.” Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). The specification “is the single best guide to the meaning of a

⁴ We may consider legal error in the jury instruction on claim 5 even though Kim did not file a post-verdict JMOL motion on the issue. See, e.g., Flex-Rest, LLC v. Steelcase, Inc., 455 F.3d 1351, 1356-1357 (Fed. Cir. 2006) (“Notwithstanding the absence of a motion for JMOL, a party may still challenge a jury verdict by establishing that the judge committed legal error in instructing the jury.”) (internal citations and

disputed term.” Id. (internal quotation marks omitted). Here, while the specification does not explicitly define the term “potassium bromate replacer,” it does make clear that the claimed potassium bromate replacer is an oxidizing agent. In fact, the specification explicitly states that “the potassium bromate replacer provided in the present invention is a more effective oxidant than potassium bromate.” ’355 patent, col. 3, ll. 1-2. The specification also describes oxidants, or oxidizing agents, as follows:

Oxidizing agents provide strengthening of dough during the manufacturing process of yeast-leavening products. As a result, oxidizing agents are used to provide greater loaf volume, improve internal characteristics such as grain and texture, and enhance symmetry and keeping quality of yeast-leavening products.

’355 patent, col. 1, ll. 22-27.

Thus, the specification reveals that the claimed potassium bromate replacer functions as an oxidant and that oxidants strengthen dough, increase loaf volume, and contribute to fine crumb grain. The specification also states that, “the present invention is particularly useful [in] that it provides natural ascorbic acid as the only oxidizing agent in dough that is effective and functional throughout the entire manufacturing process.” ’355 patent, col. 1, ll. 57-60 (emphasis added). When the claim limitation is read against this backdrop, it is clear that the potassium bromate replacer must be functional. The district court’s construction of “potassium bromate replacer” as a composition that performs essentially the same function in the production of bread as would potassium bromate (by strengthening the dough, increasing loaf volume, and contributing to fine

quotation marks omitted).

crumb grain) is, therefore, supported by the specification. We thus find no error in the district court's construction of "potassium bromate replacer composition."⁵

We also agree with the district court's determination that "there is no indication that the three [potassium bromate replacer ingredients] must first be combined together to form a stand-alone replacer composition and then be added as a whole to the bread mix or dough." J.A. at 206. We see nothing in the '355 patent which supports ConAgra's argument for a contrary claim construction.

Relying on various references in the specification and prosecution history which describe Kim's potassium bromate replacer as functioning as a slow acting oxidant, the dissent urges that "potassium bromate replacer" should be construed as "a slow acting oxidant that is functional throughout the entire manufacturing process." Diss. Op. at 2. Neither party urged this construction in the district court or in this court. While we may have the authority to adopt claim constructions which have not been proposed by either party, see Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1556 (Fed. Cir. 1995), we should be hesitant to do so. Considering the dissent's proposed construction on the merits, we find it to be incorrect. The mere fact that one object of the invention is to produce a slow acting oxidant which is functional throughout the entire manufacturing

⁵ Kim also argues that because dependent claims 7 and 8 add specific functionality limitations, independent claim 5 must not require functional attributes. Claim 7 requires that the ascorbic acid act as a "slow acting oxidant" and claim 8 requires that the ascorbic acid in the composition be a "more effective oxidant" than when used alone during the manufacturing process. However, under the district court's claim construction, claim 5 requires the potassium bromate replacer to have essentially the same function in the production of bread as would potassium bromate. As noted in the text below, this construction does not require the potassium bromate replacer to be a slow acting oxidant, nor does it require that the ascorbic acid be more effective in this composition than when used alone. The fact that the dependent claims may require additional functional attributes does not undermine the district court's claim construction.

process does not mean that this particular feature was adopted as a limitation in each claim of the patent. The specification does not require that the potassium bromate replacer must necessarily be a slow acting oxidant, only that particular potassium bromate replacers perform that function. '355 patent, col. 2. ll. 25-33. Thus the fact that the patent here discloses the advantages of a slow acting oxidant does not mean that all the claims are directed to such an oxidant. See E-Pass Tech., Inc. v. 3Com Corp., 343 F.3d 1364, 1368-69 (Fed. Cir. 2003). Indeed, Kim chose to claim a “slow acting” oxidant in dependent claim 7, while her independent claims were directed to a more general potassium bromate replacer. The doctrine of claim differentiation suggests that the independent claims here should not include explicit limitations of a dependent claim. See Phillips, 415 F.3d at 1315 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). The prosecution history does not compel a different construction.

B Infringement

Kim argues in the alternative that, even under the district court’s claim construction, ConAgra induced infringement and therefore the district court erroneously granted JMOL of noninfringement of claim 10. “A finding of inducement requires both an underlying instance of direct infringement and a requisite showing of intent.” Fuji Photo Film Co. v. Jazz Photo Corp., 394 F.3d 1368, 1377 (Fed. Cir. 2005).

It was undisputed that the accused products included the amount of ascorbic acid, food acid, and yeast in the proportions listed in claim 10. The question was whether the claimed ingredients in the accused products satisfied the functionality

limitations. Kim's evidence of infringement on the question of functionality was by analogy. She testified that her patented composition strengthened dough, increased loaf volume, and contributed to fine crumb grain. Since the accused products included the same ingredients as the patented composition, Kim simply assumed that they had the same effects on dough as did the patented composition.

However, with respect to a "consisting essentially of" claim, there is no infringement where the accused product contains additional, unclaimed ingredients that materially affect the basic and novel properties of the invention. See PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1354 (Fed. Cir. 1998). Here, ConAgra's 7-Grain and Whole Wheat products contained additional ingredients beyond ascorbic and food acids, such as vital wheat gluten, ferrous sulfate, and dough strengthening enzymes. Based on testimony of its expert witness, ConAgra argued that the additional ingredients materially affected functionality. While Kim, who was qualified as an expert,⁶ offered conclusory testimony that the additional ingredients would not have materially affected the pertinent characteristics of the bread, Kim did not support this determination with any examinations or tests of the actual accused products. Under the circumstances of this case, we agree with the district court that Kim did not prove infringement because she presented no testimony based on the accused products themselves that supported a finding of infringement. We thus agree that the district court properly granted JMOL to ConAgra on claim 10.

⁶ We see no abuse of discretion in the district court's refusal to exclude Kim's testimony on Daubert grounds. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 143 (1997) (holding that the "abuse of discretion" standard of review applies to the district court's evidentiary rulings).

Regarding claim 5, Kim argues that the jury erroneously found noninfringement. Kim again relied on the fact that the accused Natural Wheat product contained the ingredients in the proportions specified under claim 5, and that her patented potassium bromate replacer, as set forth in claim 5, strengthened dough. However, Kim again did not conduct any test based on the accused product to determine whether those ingredients had the required effect. The jury's verdict of noninfringement of claim 5 was therefore supported by substantial evidence.⁷

Having concluded that ConAgra did not induce infringement of claim 5 or claim 10, there is no need to address Kim's argument on willfulness.⁸

II

In its cross-appeal, ConAgra argues that the asserted claims of the '355 patent are invalid because they improperly recapture material that Kim surrendered during prosecution of her original patent, and that the '355 patent is invalid as anticipated by, and obvious over, the prior art.⁹

A Recapture of Surrendered Subject Matter

⁷ In light of our disposition, we need not decide whether Kim's objection was properly preserved. See Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc., 126 S. Ct. 980 (2006).

⁸ Kim also asks for attorneys' fees and costs both at trial and on appeal. We see no basis for an award of fees.

⁹ Although we affirm the noninfringement findings of the jury and the district court, we reach ConAgra's invalidity arguments because ConAgra filed a separate declaratory judgment counterclaim seeking a declaration of invalidity. ConAgra's counterclaim included anticipation, invalidity, and recapture arguments. "A party seeking a declaratory judgment of invalidity presents a claim independent of the patentee's charge of infringement." Cardinal Chem. Co. v. Morton Int'l Inc., 508 U.S. 83, 96 (1993).

Understanding ConAgra's recapture argument requires that we first review the prosecution history of the '355 patent. On November 5, 1993, Kim filed her original patent application for a composition and process for controlling the oxidation rate of ascorbic acid in breadmaking. In pertinent part, claims 1-5 of this application were directed to a composition including an unspecified amount of ascorbic acid and 0.03-0.2 parts organic acid by weight of flour in the dough. The remaining claims included an additional phosphate salt limitation. After some initial correspondence between Kim and the PTO, the examiner rejected claims 1-3, 5-9, 13-17, and 19 as obvious in light of the Tanaka reference (U.S. Patent No. 4,296,1333 (filed Aug. 24, 1979)) and two other references. With respect to claim 1, the examiner noted that the prior art references disclosed "bread doughs containing the combination of ascorbic acid with organic acids" and that "[a]s far as the claim is understood, the reference shows the same combination claimed." J.A. at 2735. The examiner also noted that "[t]he limitation of the phosphate salt recited in some of the claims is not considered patentably significant. [Other references] disclose the use of the claimed phosphate salts in bread doughs." Id.

On September 19, 1994, Kim abandoned her original application and filed a continuation-in-part application. The sole independent claim, claim 1, included an ascorbic acid limitation (15-250 ppm), a food acid limitation (0.02-0.15 parts per 100 parts of flour), and a phosphate limitation (0.15-0.40 parts per 100 parts of flour). In filing her continuation-in-part application, Kim noted that the invention uses a "composition comprising ascorbic acid, food acid, and phosphate as oxidizing agent replacers." J.A. at 2776. The examiner initially rejected all the claims as obvious in light of the Tanaka and other references. After a telephone conference with Kim, the

examiner amended the application by changing the method claims into composition claims and by changing the transition phrase from “comprising” to “consisting essentially of.” The examiner allowed the claims as amended, noting that “[n]one of the prior art of record teaches or suggests either an ascorbic composition consisting essentially of the specific components, ascorbic acid, a food acid and a phosphate in a specific amount or that such ascorbic acid composition would be effective as a slow-acting oxidizing agent so that it would effectively replace a slow-acting oxidizing agent such as potassium bromate.” J.A. at 2827. U.S. Patent No. 5,510,129 for a “potassium bromate replacer composition” issued to Kim on April 23, 1996.

Less than three weeks later, on May 14, 1996, Kim surrendered her patent and filed a “reissue application,” alleging that an error arose during the prosecution of the original patent. In applying for a reissued patent, Kim essentially sought to amend her original patent in two ways: (1) by adding claims 5-10, covering a composition comprising of ascorbic acid and food acid (but not requiring phosphate); and (2) by changing the original claims’ ascorbic acid range from 15-250 ppm to 10-300 ppm and changing the food acid range from 0.02-0.15 parts per 100 parts of flour to 0.015-0.2 parts per 100 parts of flour. In other words, Kim tried to broaden the original claims by adding new claims that did not include the phosphate limitation and by broadening all the claims’ ascorbic and food acid ranges.

The examiner initially rejected the reissue application as violating the rule against recapturing material that was surrendered or withdrawn during prosecution of the original patent. In so doing, the examiner did not state which of Kim’s changes would violate the rule against recapture. After additional amendments not relevant to this

case, the examiner allowed the reissued patent on October 26, 1999, as the '355 patent.

The reissue procedure allows a patentee to broaden the scope of an existing patent to include subject matter that had been erroneously excluded from that patent. 35 U.S.C. § 251 (2000). This procedure, however, is not without its limitations. For example, the “recapture rule prevents a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims.” Pannu v. Storz Instruments, Inc., 258 F.3d 1366, 1370-71 (Fed. Cir. 2001) (internal quotation marks omitted). We have articulated a three-step process for applying the recapture rule:

The first step is to determine whether and in what aspect the reissue claims are broader than the patent claims. The second step is to determine whether the broader aspects of the reissued claim related to surrendered subject matter. Finally, the court must determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule.

Id. at 1371 (internal quotation marks omitted).

Here, the first and third steps are not at issue; that is, Kim concedes that reissued claims 5 and 10 are in fact broader than the original patented claims because they cover a non-phosphate potassium bromate replacer composition and a broader food acid range. Further, Kim concedes that neither reissued claim is narrower in any other material aspect. Thus, the only issue is whether the broader aspects of the reissued claims relate to “surrendered” subject matter. In this respect, we reject Kim’s position that she should be treated differently from other patentees because she was pro se during some parts of the prosecution, and her argument that she was not responsible for the original amendment made with her acquiescence by the examiner.

The challenger of the reissued patent, here ConAgra, must establish surrender of recaptured subject matter by clear and convincing evidence. See Superior Fireplace Co. v. Majestic Prods. Co., 270 F.3d 1358, 1367 (Fed. Cir. 2001). A patentee can surrender subject matter either through arguments or amendments made during the prosecution of the original patent. Hester Indus., Inc. v. Stein, Inc., 142 F.3d 1472, 1480-81 (Fed. Cir. 1998). Whether surrender of recaptured subject matter has occurred is a question of law, which we review de novo. See N. American Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1349 (Fed. Cir. 2005).

The district court here suggested that the patentee's subjective intent should be evaluated in determining whether the patentee surrendered subject matter. Some of our recapture decisions explain that "[e]rror under the reissue statute does not include a deliberate decision to surrender specific subject matter in order to overcome prior art," Mentor Corp. v. Coloplast, Inc., 998 F.2d 992, 996 (Fed. Cir. 1993) (emphasis added), and that the prerequisite error for a reissue can exist if "there is no evidence that the [applicant] intentionally omitted or abandoned the claimed subject matter." Ball Corp., 729 F.2d at 1435-36 (emphasis added). But these cases do not suggest that the patentee's subjective intent is pertinent to the question of surrender. These decisions simply distinguish between a patentee's inadvertent "error" (for which the reissue statute provides a remedy), and a patentee's "surrender" (for which the recapture rule prevents a reissue).¹⁰

¹⁰ "If a patentee tries to recapture what he or she previously surrendered in order to obtain allowance of original patent claims, that deliberate withdrawal or amendment . . . cannot be said to involve the inadvertence or mistake contemplated by 35 U.S.C. § 251, and is not an error of the kind which will justify the granting of a

It is clear that in determining whether “surrender” of subject matter has occurred, the proper inquiry is whether an objective observer viewing the prosecution history would conclude that the purpose of the patentee’s amendment or argument was to overcome prior art and secure the patent. This is because the recapture rule is aimed at ensuring that the public can rely on a patentee’s admission during prosecution of an original patent. “It is precisely because the patentee amended his claims to overcome prior art that a member of the public is entitled to occupy the space abandoned by the patent applicant. . . . [T]he reissue statute cannot be construed in such a way that competitors, properly relying on prosecution history, become patent infringers when they do so.” Mentor Corp., 998 F.2d at 996; see also Vectra Fitness, Inc. v. TNWK Corp., 162 F.3d 1379, 1384 (Fed. Cir. 1998) (“[T]he ‘recapture rule’ prevents a patentee from regaining through reissue subject matter surrendered during prosecution, thus ensuring the ability of the public to rely on a patent's public record.”) (emphasis added).¹¹ Thus, if the objective public observer can discern a surrender of subject matter during the prosecution of an original patent in order to overcome prior art and obtain the patent, then the recapture rule should prevent the reissuing of that patent to claim the surrendered subject matter.

With this in mind, we turn to ConAgra’s allegations of surrender. ConAgra contends that during the prosecution of the original patent, Kim surrendered (1) a non-

reissue patent which includes the matter withdrawn.” Mentor Corp., 998 F.2d at 995 (internal quotation marks omitted).

¹¹ “Deliberately canceling or amending a claim in an effort to overcome a reference strongly suggests that the applicant admits that the scope of the claim before the cancellation or amendment is unpatentable, but it is not dispositive because other

phosphate potassium bromate replacer composition, and (2) a potassium bromate replacer composition with a food acid range broader than 0.02-0.15 parts per 100 parts flour.

First, with respect to the non-phosphate potassium bromate replacer composition, ConAgra contends that Kim added phosphate to all of the claims in her continuation-in-part application in order to overcome the initial rejection of her original application as obvious over Tanaka and other prior art references. ConAgra argues that the addition of phosphate was a surrender of non-phosphate potassium bromate replacer claims, which Kim later recaptured in the reissued patent. To support its view that the addition of phosphate constitutes a “surrender,” ConAgra points to the examiner’s “Reasons for Allowance” of Kim’s continuation-in-part application, which stated that the prior art does not “teach[] or suggest[] . . . an ascorbic composition consisting essentially of the specific components, ascorbic acid, a food acid and a phosphate in a specific amount.” J.A. at 2827. Like the district court, we are not persuaded by ConAgra’s arguments. Kim overcame the obviousness rejection by changing the transition phrase from “comprising” to “consisting essentially of” and by changing her method claims to composition claims. While the phosphate limitation was added at the same time, the prosecution history does not indicate that Kim added that limitation in particular in order to overcome the obviousness rejection. Significantly, the examiner had previously rejected claims of the original application that included phosphate and noted that the phosphate salt limitation there was not “patentably

evidence in the prosecution history may indicate the contrary.” In re Clement, 131 F.3d 1464, 1469 (Fed. Cir. 1997).

significant.” J.A. at 2735. Thus, the prosecution history refutes the argument that phosphate was added by Kim to overcome a rejection.

Second, with respect to the food acid range, ConAgra argues that Kim surrendered a lower limit for her food acid range when she changed the range from 0.03-0.2 parts by weight of flour in the dough in her original application to 0.02-0.15 parts per 100 parts of flour in her continuation-in-part application. ConAgra contends that Kim later recaptured the surrendered lower limit when she broadened the food acid range to 0.015-0.2 parts per 100 parts of flour in her reissued patent. ConAgra suggests that Kim narrowed her food acid range in order to distinguish her claim from the Tanaka reference. However, this assertion is belied by the prosecution history. As the district court explained, “the range for the food acids used in the pertinent prior art (Tanaka) had been [0].0005 to [0].006. Plaintiff’s lower end choice of [0].015 [in the reissue application] or 0.02 [in the original application] are both a significant difference from [0].006. It can not be inferred that plaintiff’s choice of [0].020 instead of [0].015 was because plaintiff was surrendering the difference between the two out of fear [0].015 would be found to be obvious while [0].020 would not.” J.A. at 5196. Further, “[t]he Patent Examiner did not indicate that [the original application’s] range [of 0.03-0.2] was obvious in light of the prior art. Instead, the Patent Examiner indicated that the use of food acid and ascorbic acid in general was disclosed by the prior art and that the particular range . . . was indefinite in that it was unclear if it was measured solely in ratio to flour.” J.A. at 5194-95. We agree with the district court. We therefore affirm the district court’s denial of ConAgra’s motion for JMOL of invalidity based on the recapture rule.

B Anticipation and Obviousness

The next question is whether the district court correctly determined that the jury verdict of no invalidity was supported by substantial evidence. In this connection, the burden was on ConAgra to establish invalidity by clear and convincing evidence. Honeywell Int'l v. Hamilton Sundstrand Corp., 370 F.3d 1131, 1145 (Fed. Cir. 2004).

The same claim construction governs for validity determinations as for infringement determinations. See Door-Master Corp. v. Yorktowne, Inc., 256 F.3d 1308, 1312 (Fed. Cir. 2001). Having affirmed the district court's claim construction, which requires Kim's potassium bromate replacer to have essentially the same functions as potassium bromate, any anticipatory prior art reference must necessarily exhibit those same functions. ConAgra makes virtually no effort to show that the asserted prior art references disclose such functions. However, even if we assumed that these prior art references disclosed compositions with the claimed functionality, there was substantial evidence that the references did not contain the claimed proportions of ascorbic and food acids.

First, ConAgra argues that claim 5 was invalid as anticipated by, and obvious over, the Jorgensen patent (U.S. Patent No. 2,149,682 (issued March 7, 1939)), because Jorgensen disclosed replacing potassium bromate with lemon juice, which naturally contains both ascorbic acid and food acid (in the form of citric acid) in the ranges disclosed in claim 5.

ConAgra's expert at trial, Dr. Hosenev, testified that concentrations of ascorbic and citric acid included in a bread mix made with Jorgensen's formula would fall within Kim's claimed ascorbic and food acid ranges. On cross-examination, Hosenev was

questioned about how he determined the ascorbic and citric acid concentrations in lemon juice, and he explained that he used averages from a food chemistry book. He also acknowledged that the acid level in individual lemons vary and that he did not himself “press any lemons in the manner mentioned in the Jorgensen patent” or “do any tests on lemon juice” in order to come to his conclusion. J.A. at 767, 775.

“What a prior art reference discloses in an anticipation analysis is a factual determination.” Novo Nordisk Pharm., Inc. v. Bio-Tech. Gen. Corp., 424 F.3d 1347, 1355 (Fed. Cir. 2005) (internal citations omitted). Here, the jury was free to disregard Hosenev’s testimony because Hosenev did not conduct any tests to determine the acid concentrations in the product produced by the Jorgensen formula. See, e.g., Liquid Dynamics Corp. v. Vaughan Corp., 449 F.3d 1209, 1218 (Fed. Cir. 2006) (“It is not our duty . . . to reevaluate the weight or credibility of the evidence.”). Having found that claim 5 is not shown obvious by the Jorgensen reference, the jury likewise could have found that claim 10, which adds the additional limitation of yeast, was not obvious over Jorgensen.

ConAgra further argued that claims 5 and 10 are obvious over the DeStefanis patent application (U.K. App. No. 2,264,429), because that reference includes ascorbic and food acids within the ranges of those claimed by Kim.¹²

¹² This is in fact an anticipation argument rather than an obviousness argument. However, as the district court noted, “at trial [ConAgra] raised DeStefanis as a basis for obviousness, not anticipation.” J.A. at 14 n. 6. In arguing that ConAgra presented DeStefanis as an anticipatory reference to the jury, ConAgra’s brief selectively and inappropriately quotes one paragraph of the jury instructions which sets forth the legal standard for anticipation, and then quotes a separate paragraph which identified prior art for both anticipation and obviousness, and which identifies the DeStefanis reference. Cross-Appellant’s Reply Br. at 22. Based on this, ConAgra urges that the issue was preserved. The jury instructions specific to the “Anticipation

DeStefanis disclosed three formulations of bread improver compositions including varying amounts of ascorbic acid, food acid and several other ingredients. Kim concedes that DeStefanis disclosed ascorbic acid ranges within her claimed ascorbic acid ranges. However, ConAgra and Kim dispute whether DeStefanis disclosed food acid ranges within Kim's claimed ranges. While the DeStefanis reference contains numeric values assigned to food acid, it is not entirely clear what scale of measurement DeStefanis assigned to these numeric values. On the one hand, the ascorbic acid and food acid values are listed in columns under the heading "Formulation (ppm)," suggesting that the food acid values are being given in ppm. On the other hand, the reference also includes another list of ascorbic acid in ppm which does not correspond to the first set of ascorbic acid values, suggesting that the food acid values listed under the "ppm" column might actually be percentages. ConAgra adopts this latter view, suggesting that the "ppm" header in the DeStefanis patent is a typographical error and that when the food acid values are read as percentages, they are within Kim's claimed ranges. During trial, Kim testified about the DeStefanis reference and suggested that it was improper to read the reference as ConAgra does. The determination of what a prior art reference discloses is a question of fact. The jury

Affirmative Defense" explicitly list the defendant's anticipation allegations, and these allegations were limited to the Jorgensen patent and a Sara Lee product. J.A. at 163.

It is impermissible to sustain a jury verdict on instructions as to obviousness and not anticipation, simply because different instructions that requested the jury to address anticipation might have led to a supportable verdict. This is different from considering anticipation and obviousness in the context of a JMOL motion, where we have held that a JMOL motion as to obviousness is sufficient to preserve an anticipation challenge. See MercExchange, L.L.C. v. eBay, Inc., 401 F.3d 1323, 1334 (Fed. Cir. 2005). Under the circumstances in this case, the anticipation argument was not preserved. Even if the anticipation argument had been preserved, it is without merit, as discussed in the text.

was entitled to believe Kim and find that this reference does not disclose food acid ranges within Kim's ranges. See Novo Nordisk Pharm., Inc., 424 F.3d at 1355.

We thus conclude that the jury verdict that the claims were not invalid was supported by substantial evidence.

CONCLUSION

For the foregoing reasons, the decision below is affirmed.

COSTS

No costs.

AFFIRMED.

United States Court of Appeals for the Federal Circuit

05-1414, -1420

YOON JA KIM,

Plaintiff-Appellant,

v.

CONAGRA FOODS, INC.,

Defendant-Cross Appellant.

SCHALL, Circuit Judge, concurring-in-part, dissenting-in-part.

I fully agree with the majority opinion's well-reasoned analysis of the recapture and invalidity issues. However, I am unable to agree with the majority's construction of the term "potassium bromate replacer" in claims 5-8 and 10 of the '355 patent. For that reason, I would remand the case to the district court for an infringement analysis under what I believe to be the correct claim construction. Accordingly, I respectfully dissent-in-part.

I.

"[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Upon review of the specification and

prosecution history, I conclude that Kim acted as her own lexicographer in defining the term “potassium bromate replacer” as “a slow acting oxidant that is functional throughout the entire manufacturing process.” Thus, I would construe the term in that manner.

II.

Throughout the specification of the '355 patent, Kim consistently defines the term “potassium bromate replacer” as “a slow acting oxidant that is functional throughout the entire manufacturing process.” The first instance occurs in the Abstract, which states in relevant part, “The potassium bromate replacer essentially comprises ascorbic acid, food acid, and/or phosphate. It is a slow acting oxidant that is functional throughout the entire manufacturing process. It is also an effective oxidant that produces properly oxidized dough needed in the production of high quality, yeast-leavened products.” '355 patent, abstract (emphasis added). The next instance occurs in the Background section, which provides, “It is a further object of the present invention to provide the ascorbic acid composition that acts as a slow acting oxidant that is functional throughout the entire manufacturing process.” '355 patent, col. 2, ll. 45-49 (emphasis added). In describing how the claimed invention overcomes disadvantages of prior potassium bromate replacers, the Background section further provides:

The advantages of the potassium bromate replacer provided in the present invention are:

- (a) It comprises all natural ingredients.
- (b) It is a slow acting oxidant that is functional throughout the entire manufacturing process.
- (c) It is an effective oxidant that produces properly oxidized dough needed in the production of high quality, yeast-leavened products.
- (d) It is specifically adapted for various methods of the breadmaking process.

Furthermore, the potassium bromate replacer provided in the present invention is a more effective oxidant than potassium bromate because potassium bromate has little effect on oxidation of dough during mixing and the early stages of proofing.

'355 patent, col. 2, l. 57 to col. 3, l. 5 (emphasis added).

The Summary of the Invention is also insightful. It states in part:

The present invention relates to potassium bromate replacer comprising an ascorbic acid composition that replaces an oxidizing agent of potassium bromate. The potassium bromate replacer essentially comprises ascorbic acid, food acid, and/or phosphate.

In methods for preparing the ascorbic acid composition, it has been discovered that a food acid added in an effective amount slows down oxidation of ascorbic acid to dehydroascorbic acid in a dough and thus, ascorbic acid is changed to a slow acting oxidant that is functional throughout the entire manufacturing process.

'355 patent, col. 3, ll. 8-18 (emphasis added). These passages evince that Kim defined "potassium bromate replacer" to mean "a slow acting oxidant that is functional throughout the entire manufacturing process."

The Detailed Description is consistent with the passages cited above. It states:

[A] food acid slows down oxidation of ascorbic acid to dehydroascorbic acid in dough by forming metal ion-food acid complex during the mixing stage of dough and gradually dissociating into free metal ion and food acid during the later stages of the manufacturing process. Thereby, ascorbic acid is changed from a fast acting oxidant to a slow acting oxidant. Thus, ascorbic acid combined with a food acid acts as a slow acting oxidant that is functional throughout the entire manufacturing process.

'355 patent, col. 5, ll. 26-34 (emphasis added). The Detailed Description continues:

As illustrated in the preparation of ascorbic acid composition, a food acid added in an effective amount allows ascorbic acid to oxidize at a slow rate in a dough. Thus, ascorbic acid acts as a slow acting oxidant that is functional throughout the

entire manufacturing process. Now ascorbic acid and food acid replace an oxidizing agent of potassium bromate.

'355 patent, col. 6, ll. 3-9 (emphasis added).¹ Thus, from the beginning of the patent in the Abstract through the Detailed Description, Kim consistently defined "potassium bromate replacer" as "a slow acting oxidant that is functional throughout the entire manufacturing process."

In my view, the prosecution history also is instructive. In a response to an office action, in which she amended her claims, Kim stated:

3 to 30 ppm ascorbic acid combined with 5 to 60 ppm dicarboxylic acids does not act as a slow acting oxidant due to insufficient amounts of ascorbic acid and dicarboxylic acids used; thus, it is not potassium bromate replacer. About 10-300 ppm ascorbic acid combined with about 150-2,000 ppm food acid acts as a slow acting oxidant; thus, it is potassium bromate replacer

Kim continued, "[T]he potassium bromate replacer composition developed is a new,

¹ Lastly, the Detailed Description concludes:

Summarizing, it has been discovered that a food acid added in an effective amount slows down oxidation of ascorbic acid to dehydroascorbic acid in a dough, thereby ascorbic acid is changed to a slow acting oxidant and a phosphate increases the amount of complex formation with food acid and metal ion. Thus, the ascorbic acid composition essentially comprises ascorbic acid, food acid, and phosphate and replaces an oxidizing agent of potassium bromate or other oxidizing agents. The potassium bromate replacer provided in the present invention is a more effective oxidant than [sic] potassium bromate because potassium bromate has little effect on oxidation of dough during mixing and the early stages of proofing.

'355 patent, col. 7, l. 62 to col. 8, l. 7.

slow acting oxidant that is effective during mixing, proofing, and baking.”² These statements are consistent with statements made almost four years earlier in response to an office action in a related application. There, Kim wrote: “It has been discovered that a food acid added in an effective amount slows down oxidation of ascorbic acid to dehydroascorbic [sic] acid in dough. Thus, ascorbic acid is changed to a slow acting oxidant that is functional throughout the entire manufacturing process. Now ascorbic acid and food acid replace potassium bromate.” It seems to me that these passages from the prosecution history, when combined with the statements in the specification, compel the conclusion that Kim was acting as her own lexicographer by defining a “potassium bromate replacer” as “a slow acting oxidant that is functional throughout the entire manufacturing process.”

The majority construes the term “potassium bromate replacer” as “a composition that performs essentially the same function in the production of bread as would potassium bromate (by strengthening the dough, increasing loaf volume, and contributing to fine crumb grain)” Majority Op. at 6. For me, the problem with the majority’s claim construction is that it focuses almost exclusively on the Background section of the ‘355 patent and fails to take into account the remainder of the

² Furthermore, in an earlier response, Kim wrote:

The applicant’s invention uses food acids to slow down oxidation of ascorbic acid to dehydroascorbic acid, resulting in the improvement in the role of ascorbic acid as an oxidant in the breadmaking process Phosphate is used to enhance the complexing power of food by increasing the pH value of the dough Accordingly, the ascorbic acid is changed from a fast acting oxidant to a slow acting oxidant that is effective and functional during mixing, proofing, and baking.

specification and the prosecution history. The majority quotes the Background as stating that “the potassium bromate replacer provided in the present invention is a more effective oxidant than potassium bromate” Majority op. at 6 (quoting ’355 patent, col. 3, ll. 1-2). The majority then relies on the statement that

[o]xidizing agents provide strengthening of dough during the manufacturing process of yeast-leavened products. As a result, oxidizing agents are used to provide greater loaf volume, improve internal characteristics such as grain and texture, and enhance symmetry and keeping quality of yeast-leavened products.

’355 patent, col. 1, ll. 20-27. This passage appears at the beginning of the Background section. It discusses oxidizing agents generally—not the present invention specifically.

In sum, in my view, the intrinsic record’s repeated defining of a “potassium bromate replacer” as “a slow acting oxidant that is functional throughout the entire manufacturing process” overwhelms the portion of the specification upon which the majority relies for its claim construction. Thus, I would conclude that Kim acted as her own lexicographer in defining a “potassium bromate replacer” as “a slow acting oxidant that is functional throughout the entire manufacturing process.” See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1370 (Fed. Cir. 2005) (“When a patentee acts as his own lexicographer in redefining the meaning of particular claim terms away from their ordinary meaning, he must clearly express that intent in the written description.”). Accordingly, I would vacate the judgment of the district court and remand the case for an infringement analysis under this claim construction.