

United States Court of Appeals for the Federal Circuit

00-1121

WENGER MANUFACTURING, INC.,

Plaintiff-Appellant,

v.

COATING MACHINERY SYSTEMS, INC. and VECTOR CORPORATION,

Defendants-Appellees.

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Appealed from: United States District Court for the Southern District of Iowa

Judge Robert W. Pratt

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DECIDED: February 6, 2000

Before NEWMAN, LOURIE, and GAJARSA, Circuit Judges.

LOURIE, Circuit Judge.

Wenger Manufacturing, Inc. appeals from the decision of the United States District Court for the Southern District of Iowa granting the motion of Coating Machinery Systems, Inc. and Vector Corporation (collectively "CMS") for summary judgment of noninfringement of U.S. Patent 5,100,683, and denying Wenger's cross-motion for partial summary judgment of infringement. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., No. 4-98-CV-90083 (S.D. Iowa Nov. 16, 1999) (final judgment) ("Wenger III"). Because the district court erred in granting summary judgment that the accused CMS machines do not infringe claims 1 and 2 of the '683 patent, and abused its discretion in denying summary judgment of infringement, we reverse and remand.

BACKGROUND

Wenger is the assignee of the '683 patent, which relates to an apparatus for coating and drying food products such as breakfast cereals and snack foods with sugar, salt, or other flavored coatings. The food products generally require drying prior to packaging and storage in order to prevent spoilage. '683 patent, col. 1, ll. 18-24. In the prior art, flavored coatings were typically applied to the food product in a separate machine located downstream from the product dryer. Id. at col. 1, ll. 30-32. Because it was applied in slurry form, the flavored coating added moisture to the food product and adversely affected the product by sealing in the added

moisture after the surface of the coating dried. Id. at col. 1, ll. 39-43.

The '683 patent is directed to a method and apparatus for combined product coating and drying. The claimed apparatus includes "a combined dryer and spray unit which includes an axially rotatable reel provided with a perforate sidewall." Id. at col. 1, ll. 61-63. Inside the reel, at least one spray nozzle deposits the coating in slurry form onto the product. Id. at col. 1, ll. 63-66. The reel is surrounded by a housing that "includes a heat exchanger for heating the air and a circulating fan for forcing air through the perforations in the sidewall of the reel." Id. at col. 2, ll. 8-11. As the product passes through the rotating reel, air is circulated through the reel to dry the product. Id. at col. 1, l. 67 to col. 2, l. 1; Id. at col. 2, ll. 42-43. As a result, the product is coated and dried in a single operation and in an apparatus that occupies a minimum amount of floor space. Id. at col. 1, ll. 58-60.

The '683 patent contains eight claims, the first two of which are at issue. During prosecution, all of the original claims were rejected on various grounds. Paper No. 2 at 4. Claim 14, which later became claim 1, was initially rejected as anticipated by U.S. Patent 3,167,035 ("the Benson patent"), but was allowed by the examiner after an amendment. Paper No. 6 at 1. As amended, independent claim 1 reads as follows:

1. An apparatus for coating and drying a food product comprising:

a dryer housing;

an elongated reel presenting a longitudinal axis and having an inlet, an outlet, and a sidewall defining an interior and presenting a plurality of perforations, said sidewall being located substantially within said housing whereby said perforations are surrounded by said housing;

means for introducing the product into the interior of said reel through said inlet;

means for rotating said reel within said housing;

means for selectively inclining said reel with said inlet elevated relative to said outlet;

air circulating means associated with said dryer housing for circulating air through said reel, the air circulating means including means for drawing air from the interior of the reel into said housing in order to provide positive air flow through the apparatus; and

means defining a plurality of separate product coating zones longitudinally spaced along said reel, each of said zones including at least one spray nozzle directed toward said sidewall for pressurized spraying of a coating on the food product during passage of said food product from said inlet to said outlet.

'683 patent, col. 7, l. 23 to col. 8, l. 2 (emphasis added). Claim 2, which depends from claim 1, reads as follows:

2. An apparatus for coating and drying a food product as set forth in claim 1 including structure associated with said housing defining a plenum therein for

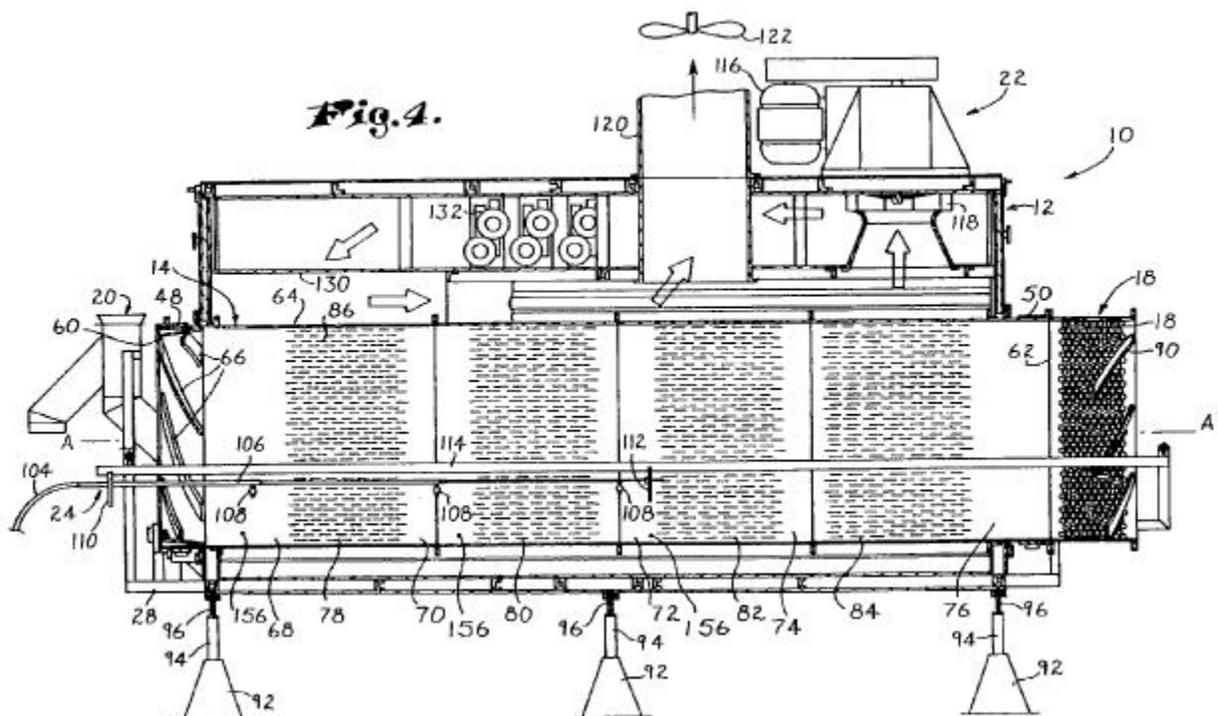
receiving said air passing through said perforations from the interior of said reel.

Id. at col. 8, ll. 3-7. In addition, claim 3, which depends from claim 2, reads as follows:

3. An apparatus for coating and drying a food product as set forth in claim 2 including means for exhausting a first portion of said air received in said plenum and recirculating a second portion of said air back into the interior of said reel.

Id. at col. 8, ll. 8-12 (emphasis added).

Figure 4 of the patent illustrates an embodiment of the claimed apparatus as follows:



As illustrated in Figure 4, the combined product coating and drying apparatus 10 has a rotatable reel 14 that is enclosed within a housing 12. Id. at col. 3, ll. 20-22. The housing 12 includes a spray unit 24 for depositing coating material such as sugar or salt slurry onto the food product as it passes through the reel 14. Id. at col. 4, ll. 33-35. The spray unit 24 includes individual nozzles 108 that maintain proper and equal pressure during spraying. Id. at col. 4, ll. 38-43. Above the housing 12, there is an air circulation unit 22 that "provides for the circulation of drying air across the reel 14 and through the product passing therethrough." Id. at col. 4, ll. 48-51. An exhaust flue 120 allows "moisture-laden" air to be removed from the apparatus 10, and an exhaust fan 122 ensures "positive airflow" through the apparatus 10. Id. at col. 4, ll. 55-58. As a result, "the drying air is channeled through apparatus 10 along routes defined by the housing 12 and the reel 14." Id. at col. 4, ll. 59-60.

Wenger filed suit against CMS, alleging that several of CMS's coating and drying machines literally infringed claims 1 and 2 of the '683 patent. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., No. 4-98-CV-90083 (S.D. Iowa Mar. 31, 1999) ("Wenger I"). CMS moved for summary judgment of noninfringement, and Wenger cross-moved for partial summary judgment of literal infringement. Id. at 1. The district court denied CMS's motion and granted Wenger's

corresponding cross-motion after: (1) construing "air circulating means" as a means-plus-function limitation, requiring "structural features that allow air to be recirculated through the apparatus;" (2) concluding that the "means defining a plurality of separate product coating zones" is not a means-plus-function limitation, and includes "reels with alternating perforate and imperforate sections as well as fully perforate reels;" and (3) concluding that the accused machines literally met both of the disputed claim limitations. *Id.* at 7, 10-11, 15-16.

CMS subsequently filed a motion for reconsideration, which the district court granted after concluding that the accused device did not have the same or equivalent structure as the claimed "air circulating means" because it lacked the ability to recirculate air. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., No. 4-98-CV-90083 (S.D. Iowa Sept. 30, 1999) ("Wenger II"). As a result, the court amended its previous order and on reconsideration, granted CMS's motion for summary judgment. *Id.* at 11.

Wenger appeals from the district court's entry of judgment of noninfringement in favor of CMS. Wenger III at 1. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

DISCUSSION

A. Principles of Law

Summary judgment is appropriate "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). "The evidence of the nonmovant is to be believed, and all justifiable inferences are to be drawn in his favor." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255 (1986). We review a district court's grant of a motion for summary judgment *de novo*. Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 149 F.3d 1309, 1315, 47 USPQ2d 1272, 1275 (Fed. Cir. 1998). "In reviewing a denial of a motion for summary judgment, we give considerable deference to the trial court, and will not disturb the trial court's denial of summary judgment unless we find that the court has indeed abused its discretion." Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1306, 54 USPQ2d 1910, 1912 (Fed. Cir. 2000).

When both parties move for summary judgment, the court must evaluate each motion on its own merits, resolving all reasonable inferences against the party whose motion is under consideration. McKay v. United States, 199 F.3d 1376, 1380 (Fed. Cir. 1999). "If there are no material facts in dispute precluding summary judgment, our task is to determine whether the judgment granted is correct as a matter of law." Elekta, 214 F.3d at 1306, 54 USPQ2d at 1912.

A determination of infringement requires a two-step analysis. Gentry Gallery, Inc. v. Berklene Corp., 134 F.3d 1473, 1476, 45 USPQ2d 1498, 1500 (Fed. Cir. 1998). "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." *Id.* (quoting Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 1576, 27 USPQ2d 1836, 1839 (Fed. Cir. 1993)). "Literal infringement requires that every limitation of the patent claim be found in the accused device." Gen. Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 981, 41 USPQ2d 1440, 1445 (Fed. Cir. 1997).

Claim construction is an issue of law, Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71, 34 USPQ2d 1321, 1322 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996), that we review de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1172 (Fed. Cir. 1998) (en banc). "Whether certain claim language invokes 35 U.S.C. § 112, ¶ 6 is an exercise of claim construction and is therefore a question of law, reviewable de novo by this court." Personalized Media v. Int'l Trade Comm'n, 161 F.3d 696, 702, 48 USPQ2d 1880, 1886 (Fed. Cir. 1998). Determination of infringement, whether literal or under the doctrine of equivalents, is a question of fact. Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353, 48 USPQ2d 1674, 1676 (Fed. Cir. 1998).

B. Claim Construction

Wenger argues that the district court erred in interpreting the "air circulation means" limitation as requiring structure capable of recirculating air. Wenger contends that, as a means-plus-function limitation, the term "air circulation means" is limited to structure for performing the recited function of circulating air, not recirculating air. Wenger emphasizes the fact that the function of recirculation is found in dependent claim 3, which specifically includes the additional limitation of "means for exhausting . . . and recirculating." Wenger argues that recirculation is an additional feature of the preferred embodiment that should not be imported into the disputed claim limitation. Wenger further argues that, during prosecution, claim 1 was distinguished over the Benson patent based on the claimed housing structure, not on the ability to recirculate air.

CMS responds that the claimed "air circulation means" requires a structure that recirculates air through the reel. CMS asserts that the ordinary meaning of the term "circulate" includes or implies recirculation. CMS further asserts that the doctrine of claim differentiation is not a rigid rule, and that the "air circulation means" limitation in claim 1 must be interpreted in accordance with § 112, ¶ 6, without regard to the other claims, including dependent claim 3. CMS notes that the specification explains that the housing allows "recirculating air" to enter the reel, and that the air circulating unit creates a "positive air flow," which causes air to flow in a "substantially closed circuit" through the housing. CMS contends that Wenger used the terms "circulating" and "recirculating" synonymously during prosecution, and distinguished the Benson patent based on its inability to recirculate air, not on its lack of a housing. CMS also contends that the district court erred in concluding that the claimed "means defining a plurality of separate product coating zones" includes fully perforate reels.

In interpreting claims, a court "should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronc, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1577 (Fed. Cir. 1996). Absent an express intent to impart a novel meaning, "terms in a claim are to be given their ordinary and accustomed meaning." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 USPQ2d 1117, 1121 (Fed. Cir. 1998); Carroll Touch, 15 F.3d at 1577, 27 USPQ2d at 1840 ("[T]he words of a claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor.").

1. Air Circulating Means

As an initial matter, we agree with the parties that the "air circulation means" limitation should be construed as a means-plus-function limitation under § 112, ¶ 6. In determining whether a

claim limitation is a means-plus-function limitation, "the use of the word 'means' creates a presumption that § 112, ¶ 6 applies." Personalized Media, 161 F.3d at 703, 48 USPQ2d at 1886. However, a limitation that uses the word "means" but does not recite a function that corresponds to the means does not invoke § 112, ¶ 6. Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302, 50 USPQ2d 1429, 1434 (Fed. Cir. 1999). Likewise, even when a limitation does recite a function, if it also recites sufficiently definite structure for performing that function, then § 112, ¶ 6 does not apply. Id. In this case, the "air circulation means" limitation uses the word "means" and therefore is presumed to invoke § 112, ¶ 6. Moreover, the claim language recites the corresponding function of "circulating air through said reel," without reciting any structure for performing that function. Accordingly, the district court correctly concluded that the "air circulation means" falls under § 112, ¶ 6.

However, we agree with Wenger that the district court erred in interpreting the "air circulation means" limitation as requiring structure capable of recirculating air. In construing a means-plus-function limitation, a court must identify both the claimed function and the corresponding structure in the written description for performing that function. Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1258, 52 USPQ2d 1258, 1263 (Fed. Cir. 1999). Under § 112, ¶ 6, a court may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function. Id. In this case, the district court correctly identified "circulating air" as the recited function. Wenger II at 4 ("The function recited in the claim and clearly associated with the means language in the claim is the function of circulating air through the apparatus, not the recirculation of air through the apparatus."). However, the court then concluded that "[t]he structure corresponding to the function of circulating air through the apparatus requires the ability to recirculate air." Id. By doing so, the court improperly restricted the "air circulation means" limitation to structure that was disclosed in the preferred embodiment, but was not necessary to perform the recited function of circulating air.

Given its ordinary meaning, the term "circulate" denotes that the "air circulating means" is capable of moving air in a circuit through the reel and dryer housing. See, e.g., Webster's New World Dictionary 254 (3d ed. 1988) (defining "circulate" as "to move in a circle, circuit, or course and return to the same point"). However, the term "circulate" neither connotes nor requires that the "air circulation means" have structure capable of "recirculating," i.e., circulating the air again after it has circulated once before. See id. at 1116 (defining the prefix "re-" as "again, anew, over again" and listing "recirculate" as a word). For example, in common parlance, it is customary to speak of "circulating" something once (e.g., an inter-office memorandum), without "recirculating" it a second time. We therefore do not agree with CMS that the ordinary meaning of the term "circulate" necessarily includes or implies recirculation.

Moreover, while claim 1 recites the function of "circulating" air through the reel, dependent claim 3 expressly recites the additional limitation of "means for exhausting a first portion of said air received in said plenum and recirculating a second portion of said air back into the interior of said reel." '683 patent, col. 8, ll. 9-12 (emphasis added). Under the doctrine of claim differentiation, each claim in a patent is presumptively different in scope. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998). However, claim differentiation is not a "hard and fast rule of construction," and cannot be relied upon to "broaden claims beyond their correct scope." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368, 53 USPQ2d 1814, 1818 (Fed. Cir. 2000) (citations and quotation marks omitted). Although the judicially created doctrine of claim differentiation cannot override the statutory requirements of § 112, ¶ 6, Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538,

19 USPQ2d 1367, 1371 (Fed. Cir. 1991), it does not necessarily follow that means-plus-function limitations must be interpreted without regard to other claims. Claim differentiation, while often argued to be controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims.

Citing Laitram, CMS argues that independent claim 1 must be interpreted in accordance with § 112, ¶ 6, without regard to dependent claim 3. In Laitram, the disputed claim limitation was a "means for joining" a plurality of link ends for a conveyor belt. Id. at 1535 n.3, 19 USPQ2d at 1369 n.3. The corresponding structure in the specification consisted of link elements and cross members. Id. at 1536, 19 USPQ2d at 1370. This court rejected the argument that the "means for joining" limitation could not include a cross member because that limitation was explicitly recited in a dependent claim. We explained that "[a] means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure." Id. at 1538, 19 USPQ2d at 1371. We then held that "one cannot escape [the] mandate [of § 112, ¶ 6] by merely adding a claim or claims specifically reciting structure or structures." Id. Thus, Laitram held that the stringencies of a means-plus-function limitation are not to be avoided by the mere addition of a dependent claim that recites the corresponding structure disclosed in the specification. However, Laitram does not stand for the broader proposition suggested by CMS, *viz.*, that a means-plus-function limitation must be interpreted without regard to other claims.

We agree with Wenger that the examination of other claims in a patent may provide guidance and context for interpreting a disputed means-plus-function limitation, especially if they recite additional functions. Because claim 3 recites a separate and distinct function (*i.e.*, "recirculating"), one that is not recited in claim 1, the doctrine of claim differentiation indicates that these claims are presumptively different in scope. Comark, 156 F.3d at 1187, 48 USPQ2d at 1005. The dependency of claim 3 on claim 1 strengthens this presumption. Compare Dow Chem. Co. v. United States, 226 F.3d 1334, 11341-42, 56 USPQ2d 1014, 1019-20 (Fed. Cir. 2000) (applying the doctrine of claim differentiation and concluding that an independent claim should be given broader scope than a dependent claim to avoid rendering the dependent claim redundant), and Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72, 50 USPQ2d 1465, 1468 (Fed. Cir. 1999) (explaining that the doctrine of claim differentiation "normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend"), with Kraft, 203 F.3d at 1368, 53 USPQ2d at 1818 (holding that the presumption arising from the doctrine of claim differentiation was overcome in a case involving two separate independent claims). Accordingly, the doctrine of claim differentiation supports the conclusion that the "air circulation means" limitation in claim 1 should be limited to structure for performing the recited function of circulating air, and should not be interpreted as requiring structure capable of performing the additional function of recirculation, which is expressly recited in dependent claim 3 and not found in claim 1.

Our conclusion is consistent with the specification, which discloses the function of "circulating" in the context of drawing air through the reel in order to dry the food product, and discloses "recirculation" as a separate function involving the return of a portion of the drying air back into the reel. In the summary of the invention, for example, the specification states that "[t]he reel is rotatable and permits the circulation of drying air therethrough." '683 patent, col. 1, ll. 56-58 (emphasis added). The specification further states that "[t]he product is presented as a tumbling bed which is agitated as it passes through the reel with drying air circulated

therearound." Id. at col. 1, l. 67 to col. 2, l. 1 (emphasis added). In the next paragraph, however, the specification then explains that "[i]n preferred forms," the housing is configured "to draw additional air through the openings at each end of the reel whereby both fresh and recirculating air is introduced into the reel." Id. at col. 2, ll. 4, 11-14 (emphasis added). Later, in describing the preferred embodiment, the specification states that the circulating component 22 and exhaust fan 122 create "positive air flow," which causes the air to flow "in a substantially closed circuit through the housing." Id. at col. 5, ll. 30-33. Thus, in the preferred embodiment, after the air is drawn from the interior of the reel into the housing, it may either be exhausted from the housing or returned back to the reel for recirculation. By disclosing recirculation as an additional feature of the preferred embodiment, the specification thus further supports the conclusion that the "air circulation means" should not be limited to structure capable of performing the unrecited function of recirculation.

CMS argues that the prosecution history supports the conclusion that the "air circulation means" in claim 1 should be limited to structure capable of recirculating air. We disagree. Original claim 14, which later became claim 1, was initially rejected as anticipated by the Benson patent. Paper No. 2 at 4. In response to the examiner's rejection, the applicant amended the claim as follows, with additions indicated by underlining:

14. (Amended) An apparatus for coating and drying a food product comprising:

.....

air circulating means associated with said dryer housing for circulating air through said reel, the air circulating means including means for drawing air from the interior of the reel into said housing in order to provide positive air flow through the apparatus;

Paper No. 5 at 2. The applicant also added the following new claim, which later became dependent claim 3:

25. An apparatus for coating and drying a food product as set forth in claim 24 including a means for exhausting a first portion of said air received in said plenum and recirculating a second portion of said air back into the interior of said reel.

Id. at 3 (emphasis added). In the "remarks" section, the applicant stated that the claimed apparatus resulted in numerous advantages, including the ability to "ensure that air is drawn into the housing from the interior of the reel in order that the air drawn from the reel may be recirculated through the reel or exhausted from the housing." Id. at 6 (emphasis added).

It is evident from the prosecution history that claim 14 was amended to specify that the "air circulating means" draws air from the interior of the reel into the housing. As emphasized by Wenger, the applicant did not add a "recirculation" limitation to that claim. Instead, the applicant added a new claim, claim 25, which expressly recited the function of recirculation. In view of these amendments, the applicant's statement that the claimed apparatus is capable of recirculating air through the reel or exhausting it from the housing indicates that the function of recirculation is an optional feature that is made possible by the housing, but is not required by claim 14.

While CMS argues that Wenger distinguished the prior art based on its inability to recirculate

air, we agree with Wenger that the Benson patent was distinguished based on its lack of a housing. According to the applicant, because the Benson patent disclosed a machine that was "essentially open" and mostly "exposed to atmosphere," nothing in the Benson patent taught or suggested the use of an elongated reel "located substantially within a housing such that the perforations provided in the side wall of the reel are surrounded by the housing." Id. at 7. The applicant explained that:

[B]ecause air is drawn from the interior of the reel into the housing, there is less of a likelihood that warm, dust-laden air within the reel will be exhausted from the ends of the reel or will be released through the perforations provided in the sidewall of the reel to atmosphere without first being directed through a housing and any other suitable exhaust treating devices deemed to be appropriate.

Id. at 6. Moreover, the applicant expressly stated that "there is nothing taught by the Benson patent which would have suggested a construction as claimed, wherein it is possible to circulate air through the reel and draw air from the interior of the reel into a housing surrounding the reel." Id. Thus, according to the applicant, the Benson patent did not disclose the claimed housing structure, which enabled the air to be circulated through the reel and exhausted in an appropriate manner.

1. Product Coating Zones

We next turn to CMS's contention that the district court erred in concluding that the claimed "means defining a plurality of separate product coating zones" includes fully perforate reels. CMS raises this issue as another ground for affirming the district court's judgment of noninfringement. CMS argues that § 112, ¶ 6 applies to the "product coating zones" limitation because there is no structure recited for performing the claimed function of "defining." CMS also argues that the only embodiment disclosed in the specification has a reel with alternating perforate and imperforate sections, and that the claimed "product coating zones" are limited to imperforate sections. Wenger responds that § 112, ¶ 6 does not apply to the "product coating zones" limitation because there is no function that corresponds to the word "means." Wenger alternatively argues that there is sufficiently definite structure recited for performing the function of "defining." Wenger also asserts that the specification discloses fully perforate reels, and that the "product coating zones" limitation should not be limited to the preferred embodiment.

We conclude that the district court did not err in construing the "product coating zones" limitation. The court concluded that the "product coating zones" limitation was not subject to § 112, ¶ 6 because there is no function recited that corresponds to the word "means." The court further concluded that, even if there was a corresponding function, the claim recited sufficiently definite structure to fall outside of § 112, ¶ 6. Wenger I at 8-9.

Claim 1 reads in relevant part as follows:

1. An apparatus for coating and drying a food product comprising:

....

means defining a plurality of separate product coating zones longitudinally spaced along said reel, each of said zones including at least one spray nozzle directed

toward said sidewall for pressurized spraying of a coating on the food product during passage of said food product from said inlet to said outlet.

'683 patent, col. 7, ll. 24-25; col. 7, l. 45 to col. 8, l. 2 (emphasis added). Because the "product coating zones" limitation uses the word "means," there is a presumption that § 112, ¶ 6 applies. Personalized Media, 161 F.3d at 703, 48 USPQ2d at 1886. However, it is unclear whether there is any function recited that corresponds to the word "means." See York Prods., Inc. v. Cent. Tractor Farm & Family, 99 F.3d 1568, 1574, 40 USPQ2d 1619, 1624 (Fed. Cir. 1996) ("Without an identified function, the term 'means' in this claim cannot invoke 35 U.S.C. § 112, ¶ 6.").

CMS asserts that the function of "defining" is the function that corresponds to the word "means." Even assuming that is correct, we agree with Wenger that § 112, ¶ 6 does not apply because the claim recites sufficiently definite structure for performing the function of "defining." See Rodime, 174 F.3d at 1302, 50 USPQ2d at 1434 ("[E]ven if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, ¶ 6 does not apply."). The claim specifically recites structure including spray nozzles that are directed toward the sidewall of the reel, which "define" (i.e., establish the boundaries of) the separate product coating zones that are longitudinally spaced along the reel. We therefore conclude that the district court did not err in concluding that the "product coating zones" limitation was not subject to § 112, ¶ 6.

CMS further argues that, even if § 112, ¶ 6 does not apply, the claimed "product coating zones" do not include fully perforated reels, and should be limited to imperforate reel sections. According to CMS, the only embodiment disclosed in the specification is a reel with imperforate sections separated by perforate sections, with spray nozzles for coating the food product located in each of the imperforate sections. Based on this embodiment, CMS argues that the claimed "product coating zones" requires a reel with "spaced apart" imperforate sections wherein product coating takes place. We disagree. Although claims must be read in light of the specification of which they are a part, it is improper to read limitations from the written description into a claim. Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 958, 966, 55 USPQ2d 1513, 1518 (Fed. Cir. 2000). While claim 1 expressly recites that the reel has "a plurality of perforations," it does not require that the reel have imperforate sections, nor does it limit the claimed "product coating zones" to such reel sections. See '683 patent, col. 7, l. 24 to col. 8, l. 2 (emphasis added). Likewise, the specification states that the claimed apparatus includes "an axially rotatable reel provided with a perforate sidewall"; it does not state that the reel must have imperforate sections, or that the "product coating zones" must be limited to such sections. Id. at col. 1, ll. 61-63 (emphasis added). Moreover, as the district court correctly noted, the references in the specification to imperforate sections and spraying zones that correspond to those sections are not limiting, as they merely describe the preferred embodiment. See Tate Access, 222 F.3d at 966, 55 USPQ2d at 1518 ("[A]lthough the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments."). We therefore agree with Wenger that the district court did not err in concluding that the "product coating zones" limitation may be satisfied by fully perforate reels as well as reels with alternating perforate and imperforate sections.

C. Infringement

Wenger argues that the district court erred in granting CMS's motion for summary judgment of noninfringement and abused its discretion in denying Wenger's corresponding cross-motion for partial summary judgment of infringement. Wenger contends that there is no genuine issue of material fact that the accused machines perform the function of circulating air using the same structural components disclosed in the '683 patent. Wenger further contends that the district court correctly found that there is no genuine issue of material fact that the accused machines literally meet all of the other limitations of claims 1 and 2.

CMS responds that the district court did not err in granting its motion for summary judgment of noninfringement because prosecution history estoppel precludes a finding of infringement by a machine that does not recirculate air, and it is undisputed that the accused machines do not recirculate air. CMS also contends that the district court did not abuse its discretion in denying Wenger's corresponding cross-motion because there is a genuine issue of material fact as to whether the accused machines have alternating perforate and imperforate sections.

Literal infringement of a means-plus-function claim requires that the accused device have structure for performing the identical function recited in the claim. Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1267, 51 USPQ2d 1225, 1229 (Fed. Cir. 1999). In addition, the structure in the accused device must be either identical or equivalent to the corresponding structure in the specification. Id.

In light of our construction of the disputed claim limitations, we conclude that the district court erred in granting CMS's motion for summary judgment of noninfringement based on its construction of the "air circulating means" limitation and the undisputed fact that the accused machines do not recirculate air. Properly construed, the "air circulating means" limitation encompasses all structure in the specification corresponding to the function of circulating air, and any equivalents thereof. See '683 patent, col. 4, ll. 51-52 (disclosing an "air circulation unit" that includes an electric motor for driving a fan impeller, and that may be selected from "SQA plug fans manufactured by Chicago Airfoil"). CMS does not challenge the district court's finding that: "[t]he CMS machines clearly circulate air, i.e. perform the identical function as that identified in the 'air circulation means' clause." Wenger II at 6. Nor does CMS dispute that the accused machines circulate air using the same structure disclosed in the '683 patent. In fact, CMS explicitly agrees with Wenger's description of the structure of the accused machines. See Appellee's Br. at 5 ("The construction of the CMS machines as set forth in the Wenger principal brief at pages 16-20 is substantially accurate."). CMS instead relies on the fact that the accused machines do not have any structure that permits air to be recirculated. However, having previously determined that the "air circulating means" does not require structure capable of recirculating air, we conclude that this claim limitation is satisfied by the accused machine.

CMS further argues that prosecution history estoppel precludes a finding of infringement by a machine that does not recirculate air. We disagree. This court has previously stated that the doctrine of prosecution history estoppel is "irrelevant" to the determination of literal claim scope. Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 862, 20 USPQ2d 1252, 1262 (Fed. Cir. 1991). In Biodex we recognized a "clear line of distinction" between using prosecution history to construe disputed claim language, and applying the doctrine of prosecution history estoppel to prevent a patentee from obtaining under the doctrine of equivalents coverage of subject matter that was relinquished during prosecution. Id. However, we subsequently explained that:

[J]ust as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction under § 112, ¶ 6. Clear assertions made in support of patentability thus may affect the range of equivalents under § 112, ¶ 6.

Cybor, 138 F.3d at 1457, 46 USPQ2d at 1169 (citations omitted). We further stated that "the relevant inquiry is whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter." Id.

We agree with Wenger that no reasonable competitor skilled in the art could conclude that the applicant surrendered coverage of machines that do not recirculate air. As we stated earlier, the applicant distinguished the Benson patent based on its lack of a housing, not on its inability to recirculate air. Moreover, while CMS argues that means-plus-function limitations should not be construed to cover structure that is identical to the structure of prior art that was explicitly distinguished during prosecution, it is undisputed that the accused machines have a housing, and thus do not have structure that is identical to the structure disclosed in the Benson patent. Accordingly, Wenger is not barred from arguing that the "air circulating means" limitation is met by machines that do not recirculate air.

CMS additionally argues that there is a genuine issue of material fact as to whether the accused machines have alternating perforate and imperforate sections. However, as properly construed by the district court, the "product coating zones" encompass "both a fully perforated reel and a reel with alternating perforate and imperforate sections." Wenger I at 14. Because the claimed "product coating zones" are not limited to alternating perforate and imperforate reel sections and CMS does not dispute that its machines have perforated reels, we conclude that the "product coating zones" limitation was satisfied by the accused machines.

CONCLUSION

Because there is no genuine issue of material fact that the "air circulating means" and "product coating zones" limitations are met by the accused machine, and because CMS's machines satisfy every other limitation in claims 1 and 2, we conclude that no reasonable jury could find that claims 1 and 2 are not infringed. We therefore reverse the judgment of noninfringement, order entry of judgment of infringement, and remand for appropriate further proceedings.

REVERSED and REMANDED.