

United States Court of Appeals for the Federal Circuit

00-1503

DAYCO PRODUCTS, INC.,

Plaintiff-Appellant,

v.

TOTAL CONTAINMENT, INC.,

Defendant-Appellee.

Constance S. Huttner, Skadden, Arps, Slate, Meagher & Flom LLP, of New York, New York, argued for plaintiff-appellant. With him on the brief was Daniel A. DeVito. Of counsel was Joel K. Goldman, Husch & Eppenberger, of Kansas City, Missouri.

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Appealed from: U.S. District Court for the Western District of Missouri

Senior Judge Scott O. Wright

United States Court of Appeals for the Federal Circuit

00-1503

DAYCO PRODUCTS, INC.

Plaintiff-Appellant,

v.

TOTAL CONTAINMENT, INC.,

Defendant-Appellee,

DECIDED: July 20, 2001

Before MAYER, Chief Judge, LINN, and DYK, Circuit Judges.

DYK, Circuit Judge.

Dayco Products, Inc. (“Dayco”) appeals from the decision of the United States District Court for the Western District of Missouri granting the motion of Total Containment, Inc. (“TCI”) for summary judgment of non-infringement of U.S. Patent Nos. 5,129,686 (the “’686 patent”), 5,199,752 (the “’752 patent”), 5,297,822 (the “’822 patent”), 5,380,050 (the “’050 patent”), and 5,486,023 (the “’023 patent”). Dayco Prods., Inc. v. Total Containment, Inc., No. 99-3042-CV-S-SOW-ECF (W.D. Mo. July 7, 2000) (“Order”).

We affirm the district court’s grant of summary judgment of non-infringement of the ’686 patent. However, we find that under a proper claim construction, issues of material fact remain regarding infringement of the ’752, ’822, ’050, and ’023 patents. Therefore, we vacate the grant of summary judgment of non-infringement of these patents and remand for further proceedings.

BACKGROUND

Dayco is the assignee of the ’686, ’752, ’822, ’050, and ’023 patents, all of which relate to flexible hoses and coupling assemblies that may be sealingly connected to each other for use in underground gas containment systems. Each patent issued from a respective divisional application that claimed priority from the application that led to U.S. Patent No. 5,037,143. Therefore, the specifications of all the patents are nearly identical.

These patents describe a generally cylindrical polymeric hose having an inner hose with corrugations along its length into which a ferrule (or “insert means” in the language of the patent) is received. Figure 9 of the patent specifications (reproduced below) depicts the hose (31), which includes an inner hose (34) having an inner surface (81) defined by inward projections (35’) and recesses (36’). The complementary insert means (61) has an exterior peripheral surface (77)

defined by outward projections (78) and recesses (79).

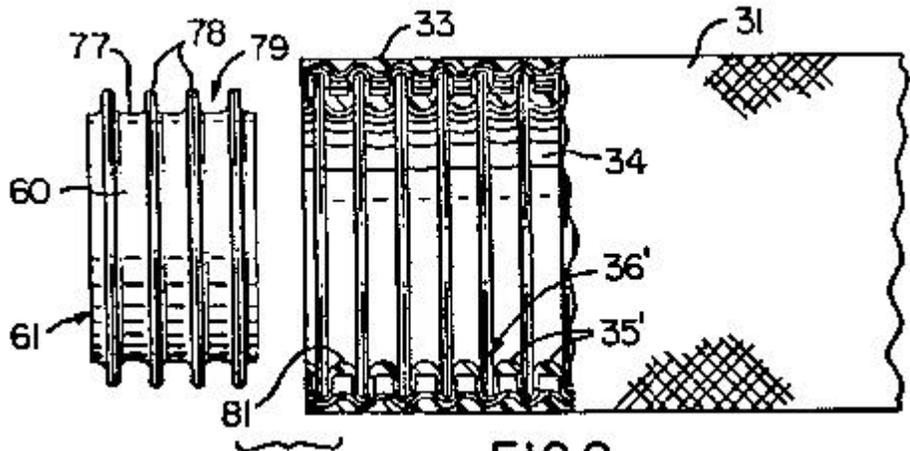


FIG. 9

sections of hose may be placed within the bore by recesses of the inner inserted into the bore of the

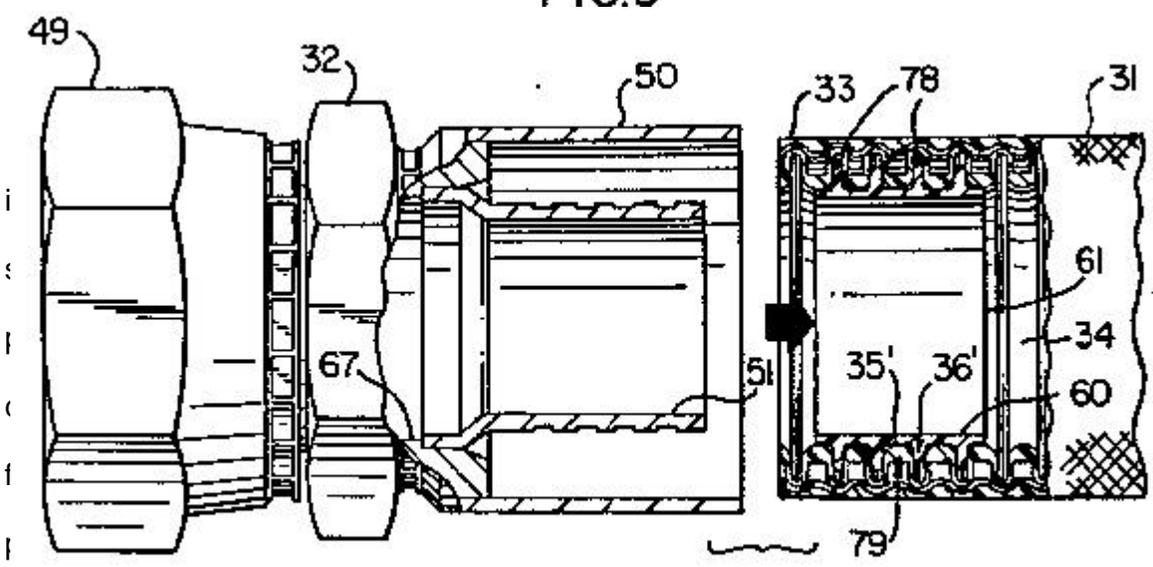


FIG. 10

rounding (and below), recesses and means is prevents fluid the hose

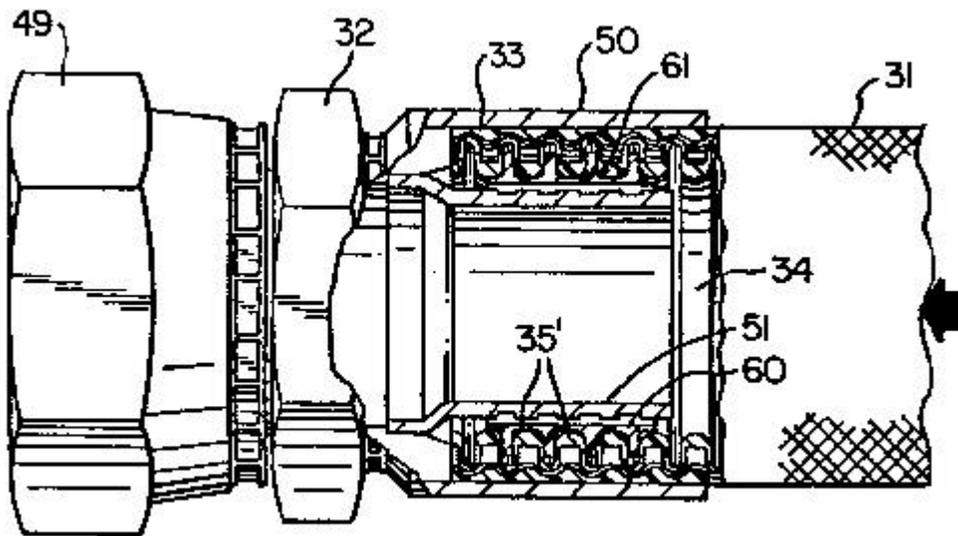


FIG. 11

hose and being radially outwardly expanded into sealing relation with said inner corrugated hose, said insert means having an outer peripheral surface means defined by a plurality of outwardly directed projections with recesses therebetween, said projections of said insert means being respectively received in said recesses of said inner hose and said projections of said inner hose being respectively received in said recesses of said insert means whereby the interior of said tubular hose is substantially sealed to the interior of said coupling, said projections of said insert means each having a transverse cross-sectional configuration of a certain length that is different from the transverse cross-sectional length of each of said recesses of said inner hose.

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'050 patent, col. 10, lines 21-45 (emphases added).

Each claim 1 of the other patents in suit is similar to claim 1 of the '050 patent but with the following differences in the highlighted portions. Instead of referring to "outwardly directed projections," the '686 patent claims a hose construction with "outwardly convex projections." '686 patent, col. 10, lines 22-23 (emphasis added). Instead of referring to "projections of the insert means each having a transverse cross-sectional configuration of a certain length that is different from the . . . length of [the] recesses of [the] inner hose," the '686 patent claims a hose construction with "projections of said insert means each having a transverse cross-sectional configuration defined by a radius of a certain length and said recesses of said insert means each having a transverse cross-sectional configuration defined by a radius of a predetermined length that is longer than said certain length." '686 patent, col. 10, lines 29-36 (emphases added).

The '822 patent is different in that instead of claiming a “hose construction,” it claims “a coupling for a hose construction” with “projections of said insert means being adapted to be respectively received in said recesses of said inner hose and said projections of said inner hose being adapted to be respectively received in said recesses of said insert means.” '822 patent, col. 10, lines 31-36 (emphases added).

The '752 patent and the '822 patent are different in that instead of comparing the lengths of the insert means projections to the lengths of the inner hose recesses they claim “projections of said insert means each having a transverse cross-sectional configuration of a certain length and said recesses of said insert means each having a transverse cross-sectional configuration of a predetermined length that is different than said certain length.” '752 patent, col. 10, lines 38-43; '822 patent, col. 10, lines 38-43 (emphasis added).

The '752 and '686 patents are also different in that instead of claiming an inner hose with “inwardly directed projections,” they claim an inner hose with “inwardly convex projections.” '752 patent, col. 10, line 24; '686 patent, col. 10, line 15 (emphasis added).

Dayco initiated an action against TCI in the Western District of Missouri on February 10, 1999, inter alia, for infringement of the '686, '752, '822, '050, and '023 patents.^[1] On June 30, 1999, TCI answered and counterclaimed by denying infringement, alleging that all the patents asserted by Dayco were invalid and/or unenforceable, and alleging that TCI had licensed the patents. TCI subsequently amended its counterclaims to specifically allege that Dayco had committed inequitable conduct during the prosecution of the applications that led to the patents in suit.

Dayco and TCI both moved for summary judgment with respect to claim construction and infringement issues, and on June 26, 2000, the district court conducted a Markman hearing limited to claim construction issues. On July 7, 2000, the district court construed the disputed claim language, including the phrase “said projections of said insert means being respectively received

in said recesses of said inner hose,” which it determined to mean “three or more projections that extend outward from the peripheral surface of the insert means with two or more recesses located between the projections. . . . resulting in an alignment of the projections with the recesses where the projections are completely received within the recesses of the inner hose.” Order, slip op. at 4 (emphases added). With respect to the '050 and '023 patents, the district court construed the limitation that the length of the insert means projections be “different from” the length of each of the inner hose recesses to simply mean that the length of the insert means projections must be “different from” the length of the inner hose recesses. Id. at 4-5. With respect to the '752 and '822 patents, the district court construed the limitation that the length of the insert projections be “different than” the length insert means recesses to mean that the length of the insert means recesses must be “greater than” the length of the inner hose projections. Id. at 5 (emphasis added).

Based on that claim construction, the district court granted TCI's motion for summary judgment of non-infringement, both literally and under the doctrine of equivalents. Id. at 7-10. The district court compared the construed claims to TCI's hose products, which include an insert means having corrugations on its outer surface defined by alternating angled sawtooth shaped protrusions and partially circular depressions. The district court held that TCI's products did not literally infringe any of the patents in suit because they “have no more than two ‘projections’ which are substantially aligned and received in order into the recesses of the inner hose.” Id. at 7. The district court additionally found that the corrugations on TCI's insert means consist of recesses spaced apart by straight “line segments” (apparently viewing the angled saw-tooth shaped protrusions as line segments connecting the recesses) and therefore held that TCI's products did not infringe the '050 or '023 patents because TCI's products “do not have outwardly directed projections with ‘a transverse cross-sectional configuration of a certain length.’” Id. at 8. Similarly, the district court held that TCI's products did not infringe the '752 or '822 patents because TCI's insert means “have spaces between the recesses which are line segments, not outwardly directed

projections . . . [and because] the length of the recesses on the insert means must be greater than the certain length of the projections . . . [but TCI's] 2½-inch coupling does not satisfy this requirement.” Id. The district court held that TCI's products did not infringe the '686 patent because the products “do not have ‘outwardly convex projections.’” Id. at 8. The district court additionally held that TCI's products did not infringe any of the patents in suit under the doctrine of equivalents. Id. at 9-10. Finally, the district court denied Dayco's motion for summary judgment of literal infringement of the '822, '050, and '023 patents and dismissed as moot TCI's motion for summary judgment that Dayco had committed inequitable conduct. Id. at 10-11.

On August 7, 2000, the district court entered another order dismissing without prejudice TCI's counterclaims for declaratory judgment that the patents in suit are invalid or unenforceable, or, alternatively, that TCI had a license to Dayco's patents. This timely appeal followed.

DISCUSSION

I. Jurisdiction and Standard of Review

We have jurisdiction over this appeal pursuant to 28 U.S.C. § 1295(a)(1) (1994). We review a district court's grant of a motion for summary judgment without deference. Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 149 F.3d 1309, 1315, 47 USPQ2d 1272, 1275 (Fed. Cir. 1998).

Patent infringement analysis requires two steps. 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)). Claim construction is a matter of law that is reviewed without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (en banc). 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). “Thus, summary judgment of non-infringement can only be granted if, after viewing the alleged facts in the light most favorable to the non-movant, there is no genuine issue whether the accused device is encompassed by the claims.” Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1304, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999). Consequently, we review the district court's grant of summary judgment of non-infringement without deference, with all justifiable factual inferences being drawn in favor of the non-moving party. Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190, 1194, 49 USPQ2d 1671, 1674 (Fed. Cir. 1999).

II. Claim Construction Issues

Unfortunately, the district court's decision is conclusory and gives little indication of the reasoning that led the district court to adopt the particular claim construction that it did. In an effort to support the district court's claim construction and decision, the appellee invites us to embark on a speculative and convoluted reading of the claim language, the specification, and the prosecution history. In approaching claim construction, we must always be conscious that our objective is to interpret the claims from the perspective of one of ordinary skill in the art, Haynes International, Inc. v. Jessop Steel Co., 8 F.3d 1573, 1578 n.4, 28 USPQ2d 1652, 1656 n.4 (Fed. Cir. 1993), not from the viewpoint of counsel or expert witnesses retained to offer creative arguments in infringement litigation. One important consideration in claim construction is whether the patent has given adequate notice to the public of the proposed claim construction. Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576, 1583, 39 USPQ2d 1573, 1577 (Fed. Cir. 1996); see also Cybor Corp., 138 F.3d at 1463, 46 USPQ2d at 1180 (Plager, J. concurring). If an argument offered in support of a particular claim construction is so convoluted and artificial that it would not be apparent to a skilled artisan reading the patent and the prosecution history, the argument is simply unhelpful to the performance of our task. With this standard in mind we approach the

correct claim construction here.

We find that in granting summary judgment of non-infringement, the district court utilized an incorrect claim construction in four respects. The court construed the claims of all the patents to require that the projections of the insert means are “completely received” within the recesses of the inner hose, resulting in an “alignment” of the projections with the recesses; the claims of the '752 and '822 patents to require that the length of the insert means’s recesses be “greater than” the length of the insert means’s projections; and the limitation “outwardly directed projections,” in the '752, '822, '050, and '023 patents to require that the projections extend outward from the recesses. In each of these claim constructions, the district court erroneously read an additional limitation into the claim language. Finally, the district court construed the limitation in all the patents that the insert means have a “plurality of . . . projections” to require three or more projections, rather than two or more projections, contrary to the plain meaning of the limitation.

A. “Completely Received”

The claims of all the patents require that the projections of the insert means be “respectively received in said recesses of said inner hose . . . whereby the interior of said tubular hose is substantially sealed to the interior of said coupling.” [2] '752 patent, col. 10, lines 34-38. The district court construed the claim language “respectively received in” to require that the projections be “completely received” in the recesses of the inner hose, “resulting in an alignment of the projections with the recesses.” Order at 4. As TCI conceded at oral argument, the claim language does not explicitly require that the projections be completely received in the recesses. TCI nevertheless argues that the specification of the patents teaches that the invention requires complete reception. We disagree. We find the teaching of the specification at most ambiguous regarding the degree of reception required to form a seal. The specification states only that the projections of the insert means are initially “partially received” in the recesses of the inner hose, '752 patent, col. 7, lines 37-38, and then, when the inner sleeve is radially expanded, that the

projections “more firmly move into the recesses” to create the seal. Id. at col. 7, line 66. We cannot conclude from the foregoing that the patentees unambiguously limited the scope of the claimed invention to require complete reception. For us to do so here would be to impermissibly read an unclaimed (and arguably undisclosed) limitation into the claims. As we said in Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998), “while . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims,” quoting Sjolund v. Musland, 847 F.2d 1573, 1581, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988). Here, the claims only require that the insert means projections be received in the hose recesses such that a substantial fluid seal is formed between the interior of the hose and the interior of the coupling. Complete reception is neither explicitly nor implicitly required.

Similarly, alignment of the projections and recesses is not required by the claim language. Nor does the specification limit the claim coverage to projections aligned with recesses. Indeed, the specification describes an embodiment of the invention in which the spacing between adjacent insert means projections differs from the spacing between adjacent inner hose recesses, see '752 patent, col. 8, lines 54-57 and col. 5, lines 40-42, such that only one projection may be exactly aligned with a recess. Thus, alignment is not required by the claims.

B. “Greater Than”

The '050 and '023 patent claims require that the insert means projections have a length that is “different from” the length of the inner hose recesses, and the '752 and '822 patents claim require that the insert means projections have a length that is “different than” the length of the insert means recesses. While the district court properly construed the claims of '050 and '023 patents to require that the length of the insert means projections be “different from” the length of the inner hose recesses,^[3] the court inexplicably construed the claims of the '752 and '822 patents to require that the length of the insert means recesses be “greater than” the length of the insert

means projections. We believe the '752 and '822 patent claims should have been construed similarly to the '050 and '023 patent claims to require that the length of the insert means recesses be different from or “not equal to,” rather than “greater than,” the length of the insert means projections. Since the structure and wording of the '752 and '822 patent claims is similar to the structure and wording of the '050 and '023 patent claims, we see no reason to construe the claims of the former two patents more narrowly than those of the latter two patents. Moreover, the structure and wording of the claims in these four patents is distinctly different from the language of the '686 patent claims, which requires that the recesses of the insert means be defined by a radius that is “longer than” a radius defining the length of the insert means projections. Thus, we construe the claims of the '752 and '822 patents to require that the insert means have projections and recesses, where the length of the projections is not equal to the length of the recesses.

TCI argues that the district court’s claim construction was correct in light of the patent specification’s description of insert means recesses with a greater length than the insert means projections. We disagree, because although we construe claims in light of the teaching of the specification, we do not treat characteristics of a preferred embodiment as claim limitations.

Comark Communications, 156 F.3d at 1186, 48 USPQ2d at 1005.

C. Orientation of the Projections

The '686 patent requires “outwardly convex projections.” The '050, '023, '752, and '022 patents require “outwardly directed projections.” The district court granted summary judgment for TCI because it found that TCI’s products do not contain these elements. Order at 8.

The district court correctly held that the '686 patent requires that “the projections of the insert means have a width or diameter defined by a radius, meaning that [they] must be convex.” Id. at 5.

With respect to the '050 and '023 patents, the district court held that TCI did not infringe because

its products “have a space between the recesses which consists of a line segment. They do not have outwardly directed projections with a transverse cross-sectional configuration of a certain length.” *Id.* at 8 (internal quotations omitted). Similarly, with respect to the ’752 and ’822 patents, the district court held that TCI did not infringe because its products “have spaces between the recesses which are line segments, not outwardly directed projections having a transverse cross-sectional configuration of a certain length.” *Id.* (internal quotations omitted). In an attempt to address these portions of the district court’s decision, the parties engage in extensive, and rather arcane, debate about the shape of the projections required by the patent claims. As the parties argue their positions, they hotly contest such details as the meaning of “transition points” and “radius end points,” [4] the definition of which is said to require that the length of the projections be measured in a particular way, whether or not the length of the projections and recesses must be measured with reference to a radius or a parameter equivalent to a radius, and what such an equivalent parameter might be. While the details of this debate may be interesting to the parties, we find the debate difficult to follow and irrelevant to settling the dispute before us. Indeed, at oral argument, counsel for the parties agreed that the issue of how to measure the length of the projections is not involved in this appeal. We believe the issue on appeal is what constitutes an “outwardly directed projection” and that this question should be addressed directly, rather than obliquely by referring to various measurement techniques for determining a length of the projections. At oral argument, counsel for TCI urged that the limitation “outwardly directed projections” implies that the peaks of the projections extend above the recesses and that the recesses should have been defined as extending above the lowest point of the depressions. We do not agree.

The claim language states that the surface of the insert means is “defined by a plurality of outwardly directed projections with recesses therebetween.” ’752 patent, col. 10, lines 31-33. Thus, the existence of “outwardly directed projections” necessarily requires the existence of “recesses” – the voids between the projections – and vice versa. Recesses and outwardly

directed projections are complements of each other, and one cannot exist without the other. There is no requirement that these projections extend for any particular distance above the recesses. “Outwardly directed” is used to modify “projections” to distinguish the projections on the insert means from the “inwardly directed projections” on the surface of the inner hose, see '822 patent, claim 1, col. 10, lines 16-43, but does not have a special meaning or require that the projections have a particular shape. It simply clarifies that the insert means projections point towards the outside of the hose construction, so that they may engage with the recesses of the inner hose, while the projections of the inner hose point toward the inside of the hose construction, so that they may engage with the recesses of the insert means. In other words, “outwardly directed projections” means simply that bumps exist on the outer surface.

In each of the three claim constructions discussed above, the district court erroneously read a limitation into the claim language. Our cases make clear, however, that adding limitations to claims not required by the claim terms themselves, or unambiguously required by the specification or prosecution history, is impermissible. See Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1347, 49 USPQ2d 1199, 1203 (Fed. Cir. 1998) (“a court may not import limitations from the written description into the claims”); SRI Int’l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed Cir. 1985) (en banc). The more difficult question relates to the construction of the “plurality of . . . projections” limitation.

D. “Plurality”

In accordance with standard dictionary definitions, we have held that “plurality,” when used in a claim, refers to two or more items, absent some indication to the contrary. York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575, 40 USPQ2d 1619, 1625 (Fed. Cir. 1996) (“The term means, simply, ‘the state of being plural.’”).^[5] TCI does not address, or even cite, York Products in its brief, but argues that in the context of the specification and the claim

language of the patents that “plurality of . . . projections” must be defined as three or more projections. TCI points to the figures of the patents, which show a preferred embodiment of the insert means having four projections and three recesses. As we have already stated, however, it is not proper to treat characteristics of a preferred embodiment as claim limitations.

TCI also argues that use of the term “recesses” in the claim limitation “plurality of . . . projections with recesses therebetween” requires that the limitation be construed to cover only insert means with three or more projections. The theory is that because “recesses” is plural and because recesses are located between projections, three or more projections must exist if there are to be two or more recesses.

In the phrase “projections with recesses therebetween,” the use of “recesses” can be understood to mean a single recess where there are only two projections and more than one recess where there are three or more projections. Indeed, in the present context, if the patentees had wanted to require an insert means with more than one recess, it would have been natural to limit the claimed invention to an insert means with a “plurality of recesses.” The patentees, however, did not do so. Thus, we find no reason to give “plurality . . . of projections” any definition other than its ordinary definition of “two or more.”

III. Infringement Issues

The district court correctly held that the undisputed evidence on summary judgment shows that the insert means of TCI's hose constructions do not have outwardly convex projections and therefore do not literally infringe the '686 patent. We find, however, that the claim construction upon which the district court granted summary judgment of non-infringement as to the '050, '023, '752, and '822 patents was flawed. Therefore, we vacate the grant of summary judgment as to these patents and remand to the district court for further proceedings consistent with this opinion. We decline Dayco's suggestion to enter summary judgment of infringement in its favor

since this question is best addressed first by the district court using a proper claim construction. The district court may of course entertain further motions for summary judgment at an appropriate time. If it does so, the district court should permit the parties to submit new affidavits and other evidence addressing the issue of infringement under the proper claim construction.

We do not reach the issue of the infringement under the doctrine of equivalents, because that issue must be addressed first under a proper claim construction.

CONCLUSION

Thus, we affirm the district court's grant of summary judgment of non-infringement of the '686 patent, vacate the grant of summary judgment of non- infringement of the '752, '822, '050, and '023 patents, and remand to the district court for further proceedings consistent with this opinion.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED.

COSTS

No costs.

[1] Dayco included an allegation of infringement of U.S. Patent No. 5,430,929, but during litigation before the district court, Dayco indicated that it was no longer pursuing this infringement claim. Order, slip op. at 2 n.1.

[2] Because the '822 patent claims a "coupling for a hose construction," '822 patent, col. 10, line 16, rather than a "hose construction," its analogous claim language requires that the "interior of said tubular hose is adapted to be substantially sealed to the interior of said coupling." Id. at col. 10, lines 36-38 (emphasis added).

[3] The district court, however, mysteriously construed the term "predetermined length" in reference to the '050 and '023 patents, even though this term does not appear in any of the claims of those patents.

[4] See Order at 4-5.

[5] The York Products court cited the American Heritage Dictionary Second College Edition 955 (2d ed. 1982), which defines plurality as "the state of being plural." Other dictionary

definitions of plurality include “a number greater than one.” Random House Webster’s Unabridged Dictionary 1490 (2d ed. 1998).