

# United States Court of Appeals for the Federal Circuit

05-1415

CROSS MEDICAL PRODUCTS, INC.,

Plaintiff-Appellee,

v.

MEDTRONIC SOFAMOR DANEK, INC.  
and MEDTRONIC SOFAMOR DANEK USA, INC.,

Defendants-Appellants.

Mark A. Finkelstein, Latham & Watkins, LLP, of Costa Mesa, California, argued for plaintiff-appellee. With him on the brief were Bruce D. Kuyper and Jordan B. Kushner, of Los Angeles, California.

Dirk D. Thomas, Robins, Kaplan, Miller & Ciresi L.L.P., of Washington, DC, argued for defendants-appellants. With him on the brief were Robert A. Auchter, André J. Bahou, Jan M. Conlin and Munir R. Meghjee.

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

Judge Gary L. Taylor

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DECIDED: March 20, 2007

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Before RADER, SCHALL, and PROST, Circuit Judges.

Opinion of the court filed PER CURIAM. Concurring opinion filed by RADER, Circuit Judge.

PER CURIAM.

This case is the second appeal to this court in a patent litigation between Cross Medical Products, Inc. (Cross Medical) and Medtronic Sofamor Danek, Inc. (Medtronic). Cross Medical accuses Medtronic's polyaxial screws of infringing U.S. Patent No. 5,474,555 (the '555 patent). In the prior appeal, this court set aside a permanent injunction issued by the United States District Court for the Central District of California and reversed the summary judgment of infringement and validity of claim 5 of the '555 patent in favor of Cross Medical. See Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293 (Fed. Cir. 2005) (First Appeal). In this appeal, the district court issued another permanent injunction after Medtronic redesigned its

polyaxial screws in an attempt to avoid the '555 patent. Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., SA CV 03-110-GLT, slip op. at 2 (C.D. Cal. April 8, 2005) (Trial Court Opinion). The court determined that claim 5 of the '555 patent was infringed under the doctrine of equivalents by Medtronic's redesigned screws, but that claim 7 of the '555 patent was not infringed by either the original or redesigned screws. Id., slip op. at 14, 20. Notably, the district court did not have the benefit of this court's opinion in the First Appeal before issuing the second permanent injunction.

Because Medtronic's redesigned polyaxial screws do not infringe the asserted claims literally or under the doctrine of equivalents, this court reverses the grant of summary judgment of infringement of claim 5. On the redesigned screws, the district court should grant Medtronic's motion for summary judgment of non-infringement. The remaining issues, which involve the validity of claim 7 and infringement of this claim by Medtronic's original polyaxial screws require reconsideration in light of this court's prior opinion in the First Appeal. Accordingly, this court reverses-in-part and vacates-in-part the district court's findings on the remaining issues and remands.

I

This litigation began on February 4, 2003, when Cross Medical sued Medtronic for infringement of the '555 patent. Medtronic denied infringement and counterclaimed seeking a declaration of non-infringement and invalidity. On September 28, 2004, the district court issued a permanent injunction after granting Cross Medical's motions for partial summary judgment on validity and infringement of claim 5. Medtronic immediately filed an appeal with this court despite ongoing proceedings at the district court. First Appeal, 424 F.3d at 1299.

While the first appeal was pending, Medtronic redesigned its polyaxial screws in an attempt to avoid infringement of claim 5. In response, Cross Medical asserted that the redesigned screws still infringe claim 5 and that Medtronic's original and redesigned screws infringe claim 7.

On the claim 5 issue, the district court found that Medtronic's redesigned screws infringe under the doctrine of equivalents. Trial Court Opinion, slip op. at 22. In reaching this finding, the district court determined that a narrowing amendment to claim 5 during prosecution was only "tangentially related" to the accused equivalent and thus not subject to an estoppel under Festo. Id., slip op. at 8-11; see Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359 (Fed. Cir. 2003) (en banc). The district court also found that none of the accused screws (original or redesigned) infringe claim 7, Trial Court Opinion, slip op. at 14-20, but upheld the validity of this claim in the face of similar challenges Medtronic had previously raised with respect to claim 5, Trial Court Opinion, slip op. at 20-22. Having concluded Medtronic's redesigned screws infringe claim 5, the district issued a second permanent injunction. Medtronic filed a second appeal with this court, which is the basis for the present appeal.

After Medtronic submitted its initial brief in this appeal, this court issued its opinion overturning the first permanent injunction. See First Appeal, 424 F.3d 1293. In the First Appeal, which involved claim 5 and Medtronic's original polyaxial bone screws, this court (1) affirmed the district court's construction of three limitations; (2) modified its construction of two limitations; (3) reversed its grant of summary judgment on infringement; (4) affirmed its grant of summary judgment on validity for indefiniteness

and anticipation; and (5) reversed its grant of summary judgment on validity for obviousness due to factual issues on the motivation to combine various references. Id. at 1297.

This appeal overlaps considerably with the issues in the First Appeal. Because the First Appeal remanded several issues common to both injunctions, the parties agree that the second permanent injunction cannot stand. However, the parties dispute what issues, if any, remain for decision in this second appeal. Cross Medical asserts that the only issues remaining are: (1) whether the redesigned Medtronic screw meets the "thread-depth" limitation of claim 5 literally or under the doctrine of equivalents; and (2) whether the district court's grant of summary judgment of non-infringement of claim 7 conflicts with this court's findings with respect to claim 5 in the First Appeal. Br. of Pl.-Appellee, 3, Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., No. 05-1415 (Fed. Cir. 2006) (Appellee Brief). Of these two issues, Medtronic argues that only the claim 5 issue is properly before the court. According to Medtronic, this court lacks jurisdiction to entertain the claim 7 issue because Cross Medical did not file a cross-appeal to challenge the district court's adverse holdings with respect to this claim. Reply Br. of Defs.-Appellants, 16-24, Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., No. 05-1415 (Fed. Cir. 2006) (Reply Brief).

## II

With that backdrop, this court turns first to the claim 5 issue. The district court granted Cross Medical a summary judgment that Medtronic's redesigned screws infringe. "This court reviews the district court's grant or denial of summary judgment under the law of the regional circuit." MicroStrategy, Inc. v. Bus. Objects, S.A., 429 F.3d 1344, 1349 (Fed. Cir. 2005) (citation omitted). The United States Court of Appeals for the Ninth Circuit reviews a grant of summary judgment without deference. Leonel v. Am. Airlines, Inc., 400 F.3d 702, 708 (9th Cir. 2005). Thus, "[i]n the context of summary judgment, this court reviews de novo the district court's determination that there is no genuine issue as to any material fact regarding infringement." Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 422 F.3d 1322, 1326 (Fed. Cir. 2006) (citing MEMC Elec. Materials v. Mitsubishi Materials Silicon Corp., 420 F.3d 1369, 1373 (Fed. Cir. 2005)).

Having already concluded that Medtronic's original screws infringe claim 5, the district court examined the redesigned screws for appropriation of the "thread depth" limitation as well as the rest of the claimed features. See Trial Court Opinion, slip op. at

6. Specifically, claim 5 reads:

5. A fixation device for the posterior stabilization of one or more bone segments of the spine, comprising:

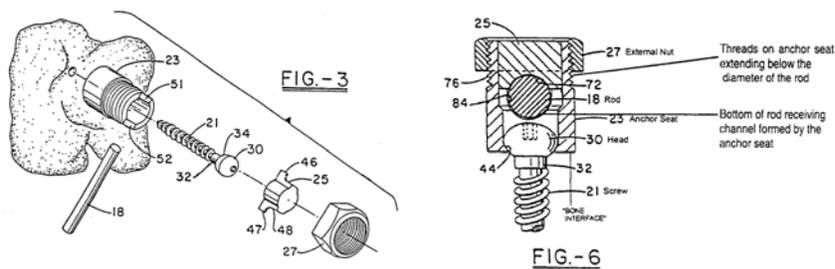
at least two anchors and an elongated stabilizer comprising a rod having a diameter and a longitudinal axis, said anchors each comprising anchoring means which secure said anchors to said bone segment and an anchor seat means which has a lower bone interface operatively joined to said bone segment and an anchor seat portion spaced apart from said bone interface including a channel to receive said rod; and

securing means which cooperate with each of said anchor seat portions spaced apart from said bone interface and exterior to the bone relative to

said elongated rod, said seat means including a vertical axis and first threads which extend in the direction of said vertical axis toward said lower bone interface to a depth below the diameter of the rod when it is in the rod receiving channel, and said securing means including second threads which cooperate with the first threads of the seat means to cause said rod to bear against said channel through the application of substantially equal compressive forces by said securing means in the direction of the vertical axis and applied on either side along said longitudinal axis of said channel.

'555 patent, col. 8 ll. 33-57 (emphasis added). On literal infringement, the district court determined that Medtronic's redesign, which "replaces the threads below the top of the rod with a groove or 'undercut[.]" lacks thread forms and thus "does not literally meet the limitation requiring 'threads' extending below the top of the rod." Trial Court Opinion, slip op. at 6-7.

As described in the specification, the thread depth limitation corresponds to the anchor seat 23 shown in Figures 3 and 6 of the '555 patent and the threading thereon:



The embodiments of Figures 3 and 6 show that the threads on the anchor seat 23 extend to a depth below the top surface of the rod 18 as claimed. Notably, this thread depth requirement was not in the '555 patent's original application. Rather, the originally filed claim simply called for a "seat means including a vertical axis and first threads" without any particular limitation about the extent of the threading. The Examiner rejected this original claim, however, for lack of antecedent basis and lack of support in the specification (35 U.S.C. § 112, ¶¶ 1-2), for obviousness type double patenting over

U.S. Patent No. 5,360,431, and for anticipation (35 U.S.C. § 102(b)) over U.S. Patent No. 4,805,602 (the '602 patent). In response, the Applicant amended the claim (originally numbered as claim 15) to recite:

15. (Amended) A fixation device for the posterior stabilization of one or more bone segments of the spine, comprising:

.....

securing means which cooperate with each of said anchor seat portions spaced apart from said bone interface and exterior to the bone relative to said elongated rod, said seat means including a vertical axis and first threads which extend in the direction of said vertical axis toward said lower bone interface to a depth below the diameter of the rod when it is in the rod receiving channel, and said securing means including second threads which cooperate with the first threads of the seat means to cause said rod to bear against said channel through the application of substantially equal compressive forces by said securing means in the direction of the vertical axis and applied on either side along said longitudinal axis of said channel.

In the same filing, the Applicant also amended the specification to address the 35 U.S.C. § 112, ¶ 1 rejection and submitted a terminal disclaimer to address the double patenting rejection. Thereafter, the Patent Office allowed the claim.

Medtronic apparently focused on this prosecution history in attempting to design around claim 5. Specifically, as noted by the district court, Medtronic altered its original screw design to terminate the corresponding threads at a position above the rod diameter. The district court agreed with Medtronic that the redesign took their screws outside the literal scope of claim 5. Trial Court Opinion, slip op. at 7 ("The new design does not literally meet the limitation requiring 'threads' extending below the top of the rod."). However, the district court still found the screws infringe claim 5 under the doctrine of equivalents' function-way-result test. Id., slip op. at 11. In so holding, the district court rejected Medtronic's argument that a Festo presumption barred application of the doctrine of equivalents:

[T]he rationale behind the amendment [to claim 5] was to adequately describe and enable a device, under § 112, in which the securing means could secure the rod without the use of a cap. The applicant was not attempting to overcome prior art using an undercut, and the amendment did not relate to an undercut. Therefore, the rationale was no more than tangentially related to Medtronic's new screw design, in which threads extend part of the way toward the rod and an undercut extends to a depth below the top of the rod. Medtronic's new screw design is "beyond a fair interpretation of what was surrendered." Festo, 535 U.S. at 738.

Trial Court Opinion, slip op. at 10. Medtronic challenges this reasoning and seeks summary judgment of non-infringement both under literal infringement and equivalents.

#### A. Literal Infringement

Turning first to literal infringement, Medtronic replaced the threading that extends below the diameter of the rod in its original screws with an undercut that does not engage any surface on the corresponding set screw. Cross Medical characterizes this undercut as effectively a thread because it constitutes the root of an incomplete thread. The district court considered this argument by Cross Medical and properly rejected it as stretching the meaning of "thread" too far. Id., slip op. at 7 (rejecting Cross Medical's argument that "the undercut is an 'effective thread,' which the parties agree is a complete thread, plus portions of an incomplete thread that are fully formed at the root but not at the crest"). As explained by the district court, the undercut in Medtronic's screws is not a thread because no thread forms in the undercut to join the flanks of adjacent thread forms above the diameter of the rod. Id. Simply because the undercut appears adjacent to a thread form does not convert that independent structure into a thread. Thus, the district court properly found that this limitation only can be satisfied, if at all, under the doctrine of equivalents.

#### B. Infringement by Equivalents

Prosecution history estoppel prevents a patentee from recapturing under the doctrine of equivalents subject matter surrendered during prosecution to obtain a patent. See Festo, 344 F.3d at 1365 (citing Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 741 (2002) (Festo VIII)). Indeed, by surrendering subject matter, a narrowing amendment classically invokes the doctrine. In this case, the patentee narrowed claim 5 to address a § 112 rejection. An amendment made to comply with § 112 may give rise to estoppel. Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., 370 F.3d 1131, 1142 (Fed. Cir. 2004) (en banc) ("[I]f a § 112 amendment is necessary and narrows the patent's scope—even if only for the purpose of better description—estoppel may apply. A patentee who narrows a claim as a condition for obtaining a patent disavows his claim to the broader subject matter, whether the amendment was made to avoid the prior art or to comply with § 112."). Although these circumstances create a presumption of estoppel under Festo, the patentee may still rebut that presumption. Rhodia Chimie v. PPG Indus. Inc., 402 F.3d 1371, 1382 (Fed. Cir. 2005) ("The patentee may rebut that presumption by showing that the alleged equivalent was unforeseeable at the time the amendment was made, that the alleged equivalent was tangential to the purpose of the amendment, or that there was some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question."). In this case, the district court determined that Cross Medical successfully overcame the Festo presumption by demonstrating that the amendment bore no more than a tangential relationship to the equivalent.

On appeal, Cross Medical argues that the amendment to claim 5 was tangential or, in the alternative, that it was unforeseeable. This court reaffirms the principle that the tangential relation criterion for overcoming the Festo presumption is very narrow and finds that neither the narrow tangential rebuttal principle nor the foreseeability principle applies to this case.

As discussed in the Festo opinion, the tangentially related

criterion requires a patentee to demonstrate that "the rationale underlying the narrowing amendment [bore] no more than a tangential relation to the equivalent in question." Festo VIII, 535 U.S. at 740, 122 S. Ct. 1831. In other words, this criterion asks whether the reason for the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.

Festo, 344 F.3d at 1369 (quoting Festo VIII, 535 U.S. at 740). The Festo court further stated: "Although we cannot anticipate the instances of mere tangentialness that may arise, we can say that an amendment made to avoid prior art that contains the equivalent in question is not tangential; it is central to allowance of the claim." Id. Finally, the court observed that the inquiry into whether a patentee can rebut the Festo presumption under the "tangential" criterion focuses on the patentee's objectively apparent reason for the narrowing amendment and that the reason "should be discernible from the prosecution history of record, if the public notice function of a patent and its prosecution history is to have significance." Id.

Cross Medical's reliance on Insituform Technology, Inc. v. CAT Contracting, Inc., 385 F.3d 1360 (Fed. Cir. 2004), is misplaced. In Insituform, the invention claimed a method of impregnating an inner layer of resin with a limitation that specified the number and location of vacuum cups used in the method. See Id., 385 F.3d at 1368-69 (citing U.S. Patent No. 4,366,012, claims 1-4). The applicant added the number and

location limitations to overcome prior art that disclosed a single vacuum source at the end of the tube opposite the resin source. Id. at 1369. In asserting a bar on the application of the doctrine of equivalents, the defendants argued that this narrowing amendment "necessarily gave up coverage of any process in which the vacuum was created at multiple vacuum sources," as in the accused processes. Id. at 1370. This court found instead that the prosecution history showed that "the reason for the amendment was to overcome the prior art teaching creation of a single source vacuum at the far end of the liner." Id. In other words, an amendment distinguishing prior art based on where the vacuum source was located was only tangentially related to an equivalent directed at the number of vacuum sources. See Biagro W. Sales, Inc. v. Grow More, Inc., 423 F.3d 1299, 1306 (Fed. Cir. 2005) (explaining that, in Insituform, "the reason for the amendment and the alleged equivalent involved different aspects of the invention—the location of the vacuum source relative to the resin versus the number of vacuum cups" (citing Insituform, 385 F.3d at 1370)).

In Insituform, this court stated that in an analysis to determine if an amendment is tangential, "[t]he question we must address is 'whether the reason for the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.'" 385 F.3d at 1370 (citing Festo, 344 F.3d at 1365). Accordingly, this court has addressed the relationship between the narrowing amendment and the equivalent in broad terms: "[A]n amendment made to avoid prior art that contains the equivalent in question is not tangential." Rhodia Chimie, 402 F.3d at 1383. This court also added, "[i]t does not follow, however, that equivalents not within the prior art must be tangential to the amendment." Id. Indeed, in Rhodia, this court ultimately determined that the applicant

"surrendered the range between its original claim and its amended claim and is therefore estopped from asserting . . . the doctrine of equivalents." Id.

In this case, the prosecution history of the '555 patent shows a narrowing amendment that also "contains the equivalent in question." Id. The '555 patent Applicant explained to the Examiner that:

the claims have . . . been amended to define the anchor seat means having a channel and threads which cooperate with the securing means (i.e., the nut) so as to capture the stabilizer between the channel and the securing means since the ancor [sic] seat threads extend toward the channel to a depth below the top of the stabilizer when it is in the channel.

In other words, the prosecution history explains that the thread depth limitation was added to capture the manner in which the stabilizer aspect of the invention operated and thereby overcome the 35 U.S.C. § 112 rejections. Thus, the accused equivalent, which does not include threads extending "to a depth below the top of the stabilizer" and correspondingly does not capture this aspect of the invention relates to the amendment as shown even by the applicant's own statements. For this reason, the district court erred in reliance on the tangential rebuttal principle to avoid the doctrine of equivalents.

As an alternative, Cross Medical argues that the alleged equivalent was unforeseeable at the time of the amendment and thus the Festo presumption could be overcome with this rebuttal criterion. See Festo, 344 F.3d at 1365 (commenting that the presumption can also be overcome "by demonstrating that 'the equivalent [would] have been unforeseeable at the time of the [amendment]'" (quoting Festo VIII, 535 U.S. at 740-41)). To the contrary, the evidence of record clearly demonstrates that the use of an undercut or recess, the alleged equivalent here, is an old and well known fundamental of basic machining that was entirely foreseeable at the time of the amendment to one of ordinary skill in the art. See, e.g., John R. Walker, Machining

Fundamentals, Fundamentals Basic to Industry, at 185-86 (1981); U.S. Patent No. 5,129,900; U.S. Patent No. 5,190,543.

Even Cross Medical implicitly recognized this fact in its literal infringement argument. Namely, Cross Medical suggests that an "undercut" was known in the art to serve effectively as a thread. Of course, this contention also means that the ordinary artisan would have considered an undercut as a foreseeable way to operate the invention—meaning that the patent drafter had an obligation therefore to include an undercut within the scope of the claim if it intended the invention to extend to that foreseeable means of using the invention. See Ranbaxy Pharm., Inc. v. Apotex, Inc., 350 F.3d 1235, 1241 (Fed. Cir. 2003) (holding that if an allegedly infringing product was readily known by those of skill in the art to be equivalent to the claim limitation, "it would have been foreseeable to literally include [it] in the claim"); see also Talbert Fuel Sys. Patents Co. v. Unocal Corp., 347 F.3d 1355, 1359-60 (Fed. Cir. 2003). Thus, the district court properly did not rely on unforeseeability as a rebuttal of the presumption of surrender in the narrowing amendment. See Freedman Seating Co. v. Am. Seating Co., 420 F.3d 1350, 1361 (Fed. Cir. 2005) (citing Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1425 (Fed. Cir. 1997)) ("[A]s between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for [a] foreseeable alteration of its claimed structure."); SmithKline Beecham Corp. v. Excel Pharm., Inc., 356 F.3d 1357, 1363 (Fed. Cir. 2004) ("Usually, if the alleged equivalent represents later-developed technology (e.g., transistors in relation to vacuum tubes, or Velcro® in relation to fasteners) or technology that was not known in the relevant art, then it would

not have been foreseeable. In contrast, old technology, while not always foreseeable, would more likely have been foreseeable."); Glaxo Wellcome, Inc. v. Impax Labs., Inc., 356 F.3d 1348, 1353 (Fed. Cir. 2004) (same).

### C. Summary

For the foregoing reasons, this court concludes that Cross Medical cannot satisfy its burden of overcoming the Festo presumption on either the tangentially related criterion or the foreseeability criterion. Because Medtronic's redesigned screws do not literally infringe claim 5 and Festo bars capturing these screws under the doctrine of equivalents, the district court should have granted summary judgment of non-infringement in favor of Medtronic under both literal infringement and infringement by equivalents regarding this claim.

## III

Turning next to the claim 7 infringement issue, the district court found that "Medtronic's old and new screw designs do not infringe the limitation of claim 7 requiring an 'anchor seat including external threads.'" Trial Court Opinion, slip op. at 17. As discussed below, the district court properly granted summary judgment of non-infringement of claim 7 on Medtronic's redesigned screws. However, because the district court's grant of summary judgment of non-infringement of claim 7 on Medtronic's original screws is called into question by this court's treatment of similar limitations in claim 5 in the First Appeal, this court vacates this aspect of the district court's summary judgment grant and remands for further proceedings consistent with the First Appeal.

### A. Redesigned Screws

While not identical to claim 5, claim 7 contains similar limitations beyond the scope of Medtronic's redesigned screws. Specifically, claim 7 reads:

7. A device for the stabilization of one or more bone segments, comprising:

at least two anchors and a rod having a diameter, said anchors each comprising screw means, an anchor seat, and a nut, said anchor seat including external threads and a channel to receive said rod and having a rod contacting surface in the bottom of the channel and said threads extending toward the rod contacting surface to a thread run-out, the distance between the rod contacting surface and the thread run-out being less than the diameter of the rod; and said nut including top and bottom surfaces and a relatively constant diameter through bore having threads which mate with the threads of the anchor seat and said nut being exterior to said rod and tightening down toward the rod whereby said bottom surface applies to compressive force to said rod.

'555 patent, col.8 l.62-col.10 l.4 (emphasis added).

Notably, the district court concluded Medtronic's redesigned screws do not meet the limitation "said threads extending toward the rod contacting surface to a thread run-out, the distance between the rod contacting surface and the thread run-out being less than the diameter of the rod" for reasons similar to the literal infringement analysis of claim 5. Trial Court Opinion, slip op. at 19. Cross Medical argues that this finding was in error because, as argued with respect to claim 5, the undercut in Medtronic's product purportedly constitutes an "effective thread." Having already rejected this argument, this court affirms this aspect of the district court's grant of summary judgment in favor of Medtronic.

#### B. Original Screws

Turning next to the original screws, the parties dispute whether this court has jurisdiction to entertain this issue at all. Medtronic argues that a cross-appeal is a necessary predicate to considering this issue and, in its absence, this court lacks

jurisdiction. Cross Medical argues that this court may consider the issue as an "alternative" basis upon which the district court could have issued its second permanent injunction. As outlined below, this court agrees with Medtronic that it should not address the merits of the issue but also agrees with Cross Medical that the district court should have the opportunity to reconsider this question in light of the First Appeal.

On the jurisdictional inquiry, this court need not consider whether the district court could have issued the second permanent injunction on some other grounds. Rather, this court reviews the district court's judgment with an eye to whether an alternative basis might support that decision. See Laitram Corp. v. NEC Corp., 115 F.3d 947, 954 (Fed. Cir. 1997) (commenting that a cross-appeal is unnecessary for a party to present alternative arguments for affirmance of a trial court's decision). In this case, the First Appeal determined that material issues of fact remain for adjudication (on both infringement and validity) for claim 5. Those same issues apply as well to claim 7. Thus, even if this court detected flaws in the district court's reasoning on some of the disputed limitations, it could not uphold the district court's grant of summary judgment at this point in the proceedings. Therefore, this court will not address the merits of Cross Medical's theory with respect to infringement of claim 7 by Medtronic's original screws.

While this court does not address the merits of this issue, the First Appeal certainly calls into question some of these claim 7 issues. Thus, this court agrees with Cross Medical that this aspect of the district court's summary judgment grant must be vacated and remanded for reconsideration in light of the First Appeal. After reconsideration by the district court, the parties may then seek further appellate review of these issues, if necessary.

#### IV

The district court also determined that claim 7, like claim 5, is not anticipated, obvious, or indefinite. In the First Appeal, this court affirmed the district court's holdings on anticipation and indefiniteness with respect to claim 5, but held that issues of material fact remained for adjudication with respect to obviousness. See First Appeal, 424 F.3d at 1297. Thus, for similar reasons as discussed in the First Appeal, this court affirms the district court's grant of summary judgment of validity on anticipation and indefiniteness with respect to claim 7, reverses its grant of summary judgment of validity on obviousness with respect to claim 7, and remands for further proceedings.

#### V

In conclusion, summary judgment of non-infringement on all asserted claims should have been entered for Medtronic with respect to the redesigned screws. The remaining issues involving validity and infringement of claim 7 by Medtronic's original screws requires reconsideration in light of the First Appeal. Thus this court affirms-in-part, reverses-in-part, vacates-in-part, and remands for further proceedings consistent with this opinion and the First Appeal.

#### COSTS

Each party shall bear its own costs.

AFFIRMED-IN-PART, REVERSED-IN-PART, VACATED-IN-PART, and REMANDED

# United States Court of Appeals for the Federal Circuit

05-1415

CROSS MEDICAL PRODUCTS, INC.,

Plaintiff-Appellee,

v.

MEDTRONIC SOFAMOR DANEL, INC.  
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Defendants-Appellants.

RADER, Circuit Judge, concurring.

I concur with the result in this case. I write separately to address further the issue of prosecution history estoppel of claim 5 of U.S. Patent No. 5,474,555 (the '555 patent).

The district court found that Cross Medical successfully rebutted the presumption of prosecution history estoppel for claim 5 of the '555 patent based on tangentiality. Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., SA CV 03-311-GLT, slip op. at 10 (C.D. Cal. 2005) (Trial Court Opinion). With that finding, the district court proceeded to determine that Medtronic's redesigned screws (with internal threads that stopped above the top of the rod) infringe under the doctrine of equivalents. Trial Court Opinion, slip op. at 22. As noted in the majority opinion, the '555 patent applicant specifically amended its claims in response to an examiner's rejection. The amendment specified that the first threads extend deeper than the top of the rod received in the channel of the seat. Majority Opinion, pp. 6-7. The examiner allowed the application based on this amendment. Id. at 7.

This prosecution history became very important when Medtronic attempted to design around claim 5. As this court has noted, Medtronic altered its original screw design to terminate the corresponding threads at a position above the rod diameter. Id. at 7. Medtronic chose this new design with an eye to the applicant's narrowing amendment. Nonetheless, the district court determined that this narrowing amendment to claim 5 during prosecution was only "tangentially related" to the accused equivalent and thus not subject to an estoppel. Trial Court Opinion, slip op. at 8-11; see Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359 (Fed. Cir. 2003) (en banc). Thus, the district court found the screws infringe claim 5 under the doctrine of equivalents. Trial Court Opinion., slip op. at 11.

This court made the tangential relation criterion for overcoming the Festo presumption very narrow. Festo, 344 F.3d at 1369. Festo itself recognized that rebuttals under the tangential principle will be rare. Id. ("[W]e cannot anticipate the instances of mere tangentialness that may arise . . ."). Cases in the interim have confirmed Festo's insight; only two cases have successfully invoked the tangential rebuttal principle in this court. See Insituform Tech. Inc. v. CAT Contracting, Inc., 385 F.3d 1360, 1368 (Fed. Cir. 2004) (holding that an amendment adding a single cup bore no more than a tangential relation to the alleged equivalent containing multiple cups); Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 849 (Fed. Cir. 2006) (finding that the "territory surrendered" by a claim amendment requiring a plate to be "differentially spaced" did not bar equivalence to a dome-shaped structure). The facts of Insituform and Primos arguably related to situations where the prosecution history clearly demonstrated that the alleged equivalent and the narrowing amendment

implicate entirely different aspects of the invention. Yet in reading those cases, frankly, this court might well have justifiably reached a different result in both. For example, in Insituform, this court seems to assume that the number of sources bears no relation to the location of those multiple sources. A contrary conclusion might have noted that anytime a technology adds another source it must also add another location for that new source. Multiple sources and locations for those sources would seem logically related.

In my view, the tangential rebuttal principle exacerbates the policy deficiencies of the doctrine of equivalents. Upon invoking tangentiality, the patentee has already admitted that the equivalent falls within the scope of surrendered subject matter. Further, if the case permitted, any patentee would invoke the primary "foreseeability" rebuttal factor. Thus, an invocation of "tangentiality" often admits that the equivalent was both within the scope of the surrender and foreseeable at the time of prosecution. In other words, the patent drafter could have claimed the surrendered and foreseeable technology, but declined to do so.

Furthermore, the tangentiality rebuttal principle, by its nature, undermines principles of public notice. This rebuttal principle operates because the patentee has expounded very different purposes for its narrowing amendment than those applicable to the tangential equivalent. The prosecution record thus does not address this "tangential" equivalent (which nonetheless was surrendered and was known and claimable during prosecution). In other words, the patentee gets a reward—coverage under the doctrine of equivalents—precisely because its explanations did not give the public any notice of the unclaimed and surrendered subject matter. The public might

have believed it could practice technology that the patentee surrendered in prosecution. Moreover, the public might have reasonably undertaken to practice that foreseeable technology because the patentee could have claimed it but declined to do so. Even beyond these principles, the public might have consulted the prosecution history and learned that the patentee gave no explanation for its surrender of this foreseeable technology. Thus, a diligent study of the patent and its prosecution history would give the public every reason to believe that the "tangential" subject matter would fall outside the scope of the invention and within the public domain. The basic principles of public notice would suggest these unclaimed and surrendered "tangential" technologies have no conceivable basis to expect patent protection.

This case is a classic example of the tangentiality principle running counter to principles of public notice. Medtronic had suffered an injunction. It deliberately sought to design around the patented technology—a response that patent law encourages. State Indus. Inc. v. A.O. Smith Corp., 751 F.2d 1226, 1236 (Fed. Cir. 1985) ("One of the benefits of a patent system is its so-called 'negative incentive' to 'design around' a competitor's products, even when they are patented, thus bringing a steady flow of innovations to the marketplace."). It undoubtedly consulted the patent and adjusted its technology with reference to the claim language and prosecution history of the patent. Then, after it adopted unclaimed technology that the patentee had deliberately surrendered to the public, it finds itself again subject to an injunction. Tangentiality thus, as in this case, can defeat principles of notice and proper procedures for designing around patented technology. Medtronic's situation illustrates the difficulties of a broad application of tangentiality.

This "tangential" rebuttal principle becomes even more difficult in practice. What neutral standard makes some surrendered and unclaimed technologies infringing equivalents while others enjoy no protection? This tangential concept has no analogue in patent law. How tangential does it have to be?

In any event, this case reaffirms that the tangential rebuttal principle remains very narrow. See Biagro W. Sales, Inc. v. Grow More, Inc., 423 F.3d 1296, 1306 (Fed. Cir. 2005) (distinguishing Insituform as limited to situations in which the prosecution history clearly demonstrates that "the amendment and alleged equivalent involve different aspects of the invention"). Biagro thus explains that the factual circumstances that could give rise to the tangential rebuttal principle will very rarely occur (even less often successfully). Biagro emphasizes that the evidence of tangentiality must appear in the prosecution history in order to prevent litigation-driven or hindsight reconstruction of the reasons for an amendment. The applicant is not likely to have made a prosecution record that makes some subject matter (the equivalent) tangential to the purpose for the rest of the amendment. See Kenneth D. Bassinger, Unsettled Expectations in Patent Law: Festo & The Moving Target of Claim Equivalence, 48 How. L.J. 685, 720 (2005) ("Unfortunately, if the reason for an amendment is truly tangential in nature, it is not likely to be found in the prosecution history."); Martha M. Rumore, Ranbaxy Pharms. v. Apotex: Redefining Claim Drafting and Patent Prosecution Under Festo, 22 No. 4 Intell. Prop. L. Newsl. (ABA), Summer 2004, at 12, 13 (questioning whether there is, in practice, a separate tangential relation criterion or whether the three criteria established in Festo really boil down to simply an all encompassing foreseeability test). In any event, I would reemphasize that the application of the tangentiality factor in this case

preserves the Biagro narrowness principle and stress that tangentiality always threatens the public notice that enables designing around.