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Doctrine of Equivalents: Where Are We Now?

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Introduction

Patent attorneys routinely consider questions of infringement. When they do, they typically focus on literal infringement, namely, whether each element of a patent claim is found in a particular product or process. The outcome of that analysis often turns on interpretation of the patent's claim terms, otherwise known as claim construction. A court's construction of claims in U.S. patent litigation frequently decides the infringement issue for one side or the other. Indeed, claim construction is an important reason why so few infringement cases in the United States actually reach trial.

The heavy focus on claim construction makes it easy to forget that resolution of literal infringement does not end the infringement inquiry. A patent claim may still be infringed even if an accused product does not literally contain every element of the claim. If the product

contains an equivalent to a missing claim element, it may still be found to infringe the patent. Decisions by the U.S. Court of Appeals for the Federal Circuit over the past several years serve as a reminder that the doctrine of equivalents is very much alive and can be an important part of the infringement analysis.

The doctrine of equivalents has been a part of U.S. patent law since 1853 when the Supreme Court issued its opinion in *Winans v. Denmead*.¹ Since then, the relevance of the judicially created doctrine in patent litigation has ebbed and flowed, reflecting the tension between two policy considerations: notice to the public and fairness to the patent owner.

With respect to notice to the public, “[t]he patent laws promote the Progress of Science and useful Arts by rewarding innovation with a temporary monopoly.”² “The monopoly is a property right; and like any property right, its boundaries should be clear,” so that the public may know where they may operate with a fair degree of certainty.³ A clear delineation of where one inventor's rights begin and another's ends encourages innovation and allows third parties to pursue creations and new ideas beyond what has already been conceived.⁴

However, the other consideration of fairness to the patent owner takes into account that the boundaries of an inventor's property rights are not always clear. The patent laws require inventors to particularly point out and distinctly claim the subject matter which they regard as the invention.⁵ But courts have recognized that the nature of language makes it all but impossible to truly capture the complete essence of the claimed invention.⁶ “The conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled.”⁷ Courts have thus observed that if patents were always interpreted by their literal terms, inventors may be left with less than they had bargained for, and the value of a patent would be greatly diminished.⁸

For over a century application of the doctrine of equivalents has operated between these two policy considerations, but starting in the mid-1990s and continuing through the mid-2000s the doctrine faced considerable pushback from the courts, focusing heavily on the uncertainty the doctrine created for the public. The pushback became so strong that many scholars feared the doctrine

was all but dead.⁹ While the doctrine has certainly been restricted in recent decades, it has experienced somewhat of a resurgence in recent years. Recent case law at both the appellate and district court levels suggest successful infringement arguments based on the doctrine of equivalents, while difficult, are not impossible. This article briefly discusses the history of the doctrine of equivalents before turning to more recent cases involving certain aspects of the doctrine: the ensnarement defense and the tangential relation exception to prosecution history estoppel.

A Brief History of the Doctrine of Equivalents

As mentioned briefly above, the doctrine of equivalents was first introduced into U.S. patent law in 1853 with the Supreme Court's decision in *Winans v. Denmead*.¹⁰ At issue in *Winans* was a patent directed to a railroad car for transporting coal with the body of the car being cone shaped. The unique cone shape allowed the car to carry "more coal in proportion to its own weight than any car previously in use" and excess loads did not distort the shape of the car because the load "presses equally in all directions."¹¹

The accused infringer inspected a *Winans*' car and built its own, but shaped the car in an octagonal shape, arguing that this difference entitled it to a finding of non-infringement. In rejecting the accused infringer's argument for non-infringement the Court noted that "[t]he exclusive right to the thing patented is not secured, if the public are at liberty to make substantial copies of it, varying its form or proportions. And, therefore, the patentee, having described his invention, and shown its principles, and claimed it in that form which most perfectly embodies it, is, in contemplation of law, deemed to claim every form in which his invention may be copied, unless he manifests an intention to disclaim some of those forms."¹² Accordingly, *Winans* was interpreted as standing for the proposition that "[t]he scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described."¹³

Nearly a century later, the Supreme Court revisited *Winans* and the doctrine of equivalents more generally in *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*¹⁴ At issue in *Graver Tank* was a patent that covered an electric welding composition with claims that included two alkaline earth metal silicates and calcium fluoride.¹⁵ The accused product used a similar composition, but substituted silicates of calcium and magnesium with silicates of calcium and manganese, the latter not being an alkaline earth metal.¹⁶ The Court reaffirmed the doctrine of equivalents

within U.S. patent law, stating that "[t]he essence of the doctrine is that one may not practice a fraud on a patent."¹⁷ In upholding the doctrine, the Court explained that a patentee may invoke the doctrine where an accused infringer's product "performs substantially the same function in substantially the same way to obtain the same result."¹⁸

With the existence of the doctrine of equivalence reaffirmed and solidified, reliance on the doctrine by parties in infringement actions increased. By the mid-1990s, the Supreme Court became concerned with reigning in application of the doctrine. In *Warner-Jenkinson v. Hilton Davis*¹⁹, the Supreme Court took the first step. At issue in *Warner-Jenkinson* was whether the doctrine of equivalents survived the 1952 revision of the Patent Act, which added in means-plus-function claiming under 35 U.S.C. § 112 ¶6.²⁰ The accused infringer argued that by adopting means-plus-function claiming, Congress had implicitly rejected use of the doctrine of equivalents outside the scope of § 112 ¶6.²¹ The Court rejected this argument and again reaffirmed the doctrine of equivalents, noting that "[a]bsent something more compelling than the dubious negative inference offered by petitioner, the lengthy history of the doctrine of equivalents strongly supports adherence to our refusal in *Graver Tank* to find that the Patent Act conflicts with that doctrine."²² However, in addition to reaffirming its existence, the Court placed an important constraint on the doctrine, holding that "the doctrine of equivalents must be applied to individual elements of the claim, not the invention as whole."²³

Today, when asserting infringement based on the doctrine of equivalents the "essential inquiry" is whether "the accused product or process contain[s] elements identical or equivalent to each claimed element of the patented invention."²⁴ Equivalence is determined by use of one of two tests: the "function-way-result" test, or the "insubstantial differences" test. While both tests seek to answer the same question, they ask different questions. Under the "function-way-result" inquiry, the accused product infringes if, on a limitation by limitation basis, it (1) performs substantially the same function as the original; (2) performs that function in substantially the same way; and (3) achieves the same result as the original.²⁵ The insubstantial differences inquiry is more abstract, and simply states that "[a]n element in the accused device is equivalent to a claim limitation if the only differences between the two are insubstantial."²⁶ Like literal infringement, infringement under the doctrine of equivalents is a question of fact and is therefore decided by a jury.²⁷

Accused infringers may assert a number of defenses to a claim of infringement under the doctrine of equivalents thereby limiting or even eliminating a patentee's ability to assert the doctrine. The four primary defenses are prosecution history estoppel, ensnarement, vitiation,

and dedication to the public. Prosecution history estoppel prevents a patentee from recapturing scope under the doctrine of equivalence that was surrendered during prosecution. Ensnarement prevents a patentee from claiming an equivalent that would not have been patentable in the first instance because the broader application of the claims would have also covered the prior art. Vitiating prevents a patentee from claiming as equivalent a feature that would eliminate an actual claimed element. Finally, dedication to the public prevents a patentee from claiming equivalents that were disclosed in the specification but left unclaimed. The ensnarement and prosecution history estoppel defenses have played significant roles in the application of the doctrine of equivalents in recent years.

The Ensnarement Defense

As discussed above, the ensnarement defense to a claim of infringement under the doctrine of equivalents prevents a patentee from claiming an equivalent which would cause the claims to also cover the prior art. Simply put, “a doctrine of equivalents theory cannot be asserted if it will encompass or ‘ensnare’ the prior art.”²⁸ While the defense itself is relatively easy to understand, it is not always easy for the patent owner to apply and rebut. Recent case law discussing this defense focuses heavily on the method used to evaluate the defense. The most popular method for determining ensnarement involves a hypothetical claim analysis.²⁹ The analysis is a two-step process, with the first step requiring the patentee “to construct a hypothetical claim that literally covers the accused device,” and the second step requiring the accused infringer to introduce prior art to assess “whether the patentee has carried its burden of persuading the court that the hypothetical claim is patentable over the prior art.”³⁰ Simply put, the court is asking “if a hypothetical claim can be crafted, which contains both the literal claim scope and the accused device, without ensnaring the prior art.”³¹

In *Jang v. Boston Sci. Corp.*, the defendant raised the ensnarement defense in response to a claim of infringement under the doctrine of equivalents.³² The district court, opting to perform a hypothetical claim analysis, directed the patentee to produce a hypothetical claim. The patentee’s hypothetical claim amended the asserted claim in part as follows: “the first connecting strut intermediate section being non-parallel to the first connecting strut proximal and distal sections column configured to provide increased flexibility compared to the first and second expansion columns.”³³ The district court rejected the patentee’s hypothetical claim as flawed, declined to conduct a hypothetical claim analysis, reversed the jury’s verdict of infringement and entered judgement of

non-infringement for failure to demonstrate a proper hypothetical claim.³⁴ On appeal, the Federal Circuit affirmed the district court, finding that the patentee’s hypothetical claim impermissibly narrowed the scope of the original claim.³⁵ The Federal Circuit noted that “[a]lthough [the] hypothetical claim [] is broader... by deleting the non-parallel intermediate section limitation (thereby encompassing connecting struts with a parallel intermediate section), it is also narrower by adding the requirement that the connecting strut column must provide more flexibility as compared to the expansion columns.”³⁶

In support of its decision, the Federal Circuit stated that “[o]ur precedent has been clear, [] that a patentee’s hypothetical claim may not add any narrowing limitations.”³⁷

[A] district court [is] under no obligation to undertake a hypothetical claims analysis on [behalf of the patentee]. A patentee [] bears the burden of proving that it is entitled to the range of equivalents which it seeks. And, when utilizing the hypothetical claim tool, the burden starts with proposing a hypothetical claim that only broadens the issued asserted claims.³⁸

Accordingly, patentees faced with an ensnarement defense should take particular care in drafting their hypothetical claims if required to do so.

A patentee’s attempt to assert infringement under the doctrine of equivalents was similarly thwarted more recently in *Fluidigm Corp. v. Ionpath, Inc.*³⁹ In *Fluidigm*, the district court’s claim construction precluded a finding of literal infringement, so the patentee resorted to a theory of infringement under the doctrine of equivalents, and both parties moved for summary judgment on the issue of infringement.⁴⁰ The patent at issue involved a method of analyzing biological tissue samples via mass spectrometry involving labeling a sample, a cell or lump of cells, with metal tags attached to antibodies in a process called “staining.”⁴¹ Defendant’s accused product MIBIScope analyzed antibody-metal-tag stained biological samples with mass spectrometry, but rather than operate on cells, the MIBIScope operated on thinly sliced tissue samples (around 4 micrometers thick, much thinner than any intact cell might be) mounted onto a slide.⁴²

The district court granted defendant’s motion for summary judgement for non-infringement of the asserted patent under the doctrine of equivalents, because the patentee failed to articulate a hypothetical claim that literally covered the accused device.⁴³ The court criticized the patentee, stating:

Either misreading or mischaracterizing the case law, patent owner asserts that the accused infringer must

identify specific prior art before any ensnarement analysis occurs. Not so. The ensnarement analysis begins with the patent owner's articulation of a hypothetical claim that literally covers the accused device. Patent owner does not contend it is not on notice of defendant's ensnarement defense. So, it must articulate an adequate hypothetical claim. It has failed to do so.⁴⁴

Accordingly, patentees considering asserting infringement under the doctrine of equivalence should be aware of the ensnarement defense, and be prepared to present a proper hypothetical claim if required.

The Tangential Relation Exception to Prosecution History Estoppel

The doctrine of equivalents has also seen renewed interest recently under the tangential relation exception to prosecution history estoppel. As mentioned above, prosecution history estoppel prevents a patent owner from reclaiming through the doctrine of equivalents subject matter that was surrendered during prosecution. In *Festo v. Shoketsu Kinzoku Kogyo Kabushiki*, the Supreme Court established a presumption that any narrowing amendment, that is, any amendment that narrowed the scope of the claim to satisfy any requirement of the patent act, bars the application of the doctrine of equivalents as to that element.⁴⁵ Notably, the Court in *Festo* refused to find that the prosecution history estoppel created an absolute bar to infringement by equivalents. Instead, the Court left open the possibility that a patent owner could rebut the presumption of estoppel if it could show (1) that the equivalent was “unforeseeable at the time of the application;” (2) the rationale underlying the amendment bears “no more than a tangential relation to the equivalent in question;” or (3) there exists “some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.”⁴⁶ With respect to the tangential relation exception, courts have explained that there is no reason “to foreclose claims of equivalents for aspects of the invention that have only a peripheral relation to the reason the amendment was submitted.”⁴⁷ Similarly, “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.”⁴⁸

In *Festo*, the claim at issue was directed to a linear motor having a piston, a driven assembly, and a magnet arrangement. During prosecution, the claim was narrowed so that the driven member included “a cylindrical

sleeve made of magnetizable material.”⁴⁹ The accused product included an aluminum non-magnetizable sleeve, and did not literally infringe. The patent owner thus relied on the doctrine of equivalents, arguing that the “magnetizable” amendment fell under the tangential relation exception to prosecution history estoppel.⁵⁰ The Federal Circuit rejected *Festo*'s argument, noting that “[b]ecause the prosecution history reveals no reason for the ‘magnetizable’ amendment... *Festo* has not shown that the rationale for the ‘magnetizable’ amendment was only tangential to the accused equivalent. We therefore conclude that *Festo* cannot satisfy the ‘tangential’ criterion.”⁵¹

After the *Festo* opinion by the Supreme Court in 2002 and the Federal Circuit's opinion on remand in 2003, few decisions addressed the tangential relation exception and even fewer cases found the exception applicable. But in 2019, that suddenly changed. In *Ajinomoto v. ITC*,⁵² the Federal Circuit found the tangential relation exception applied and affirmed an International Trade Commission finding infringement under the doctrine of equivalents. The patent at issue in *Ajinomoto* related to *E. coli* bacteria with increased L-amino acid production. During prosecution the asserted claim was amended in part as follows:

a protein as defined in the following (A) or (B) in a cell of said bacterium:

- (A) a protein which comprises the amino acid sequence shown in SEQ ID NO: 2 in Sequence listing;
- (B) ~~a protein which comprises an amino acid sequence including deletion, substitution, insertion or addition of one or several amino acids in the amino acid sequence shown in SEQ ID NO:2 in Sequence listing~~ a protein which comprises an amino acid sequence that is encoded by a nucleotide sequence that hybridized with the nucleotide sequence of SEQ ID NO: 1 under stringent conditions.⁵³

The amendment was made to the (B) alternative to exclude an *E. coli* YfiK protein disclosed in the prior art. No amendment was made to the (A) alternative. The accused product related to a YddG protein encoded by codon-randomized non *E. coli*, *YddG* strain—a different *E. coli* strain not literally covered by the (A) alternative and one that had been literally covered by the (B) alternative prior to the amendment. The patentee argued that the accused product was equivalent to alternative (A).

After the accused infringer argued that prosecution history barred infringement by equivalents, the patentee initially argued that because element (A) was not amended during prosecution, prosecution history estoppel did not apply.⁵⁴ The ITC rejected this argument and the Federal Circuit stated that it did not need to reach this issue.⁵⁵

Instead, the Federal Circuit first determined that “[t]he objectively evident rationale for the amendment was to limit the set of proteins within the claim’s scope so that it no longer included the prior-art *E. coli* YfiK protein, and more generally, no longer allowed as wide a range of *amino acid* alterations.”⁵⁶ The Court then concluded, “the reason for the narrowing amendment ... is unrelated to differences among the several DNA sequences that encode a given protein,” and prosecution history estoppel does not preclude a finding of infringement under the doctrine of equivalents.⁵⁷ Thus, the reason for the amendment was again critical in deciding whether equivalents were still available under the tangential relation exception.

It is also worth noting that the *Ajinomoto* decision was not unanimous. A dissenting opinion disagreed that the reason for the amendment was sufficiently unrelated to the accused product for the tangential relation question to apply. When this decision issued it at first appeared that it might simply be an outlier with unusual facts and a split decision by the Federal Circuit.

However, only three days after issuing its opinion in *Ajinomoto*, the Federal Circuit applied the tangential relation exception again in *Eli Lilly & Co. v. Hospira, Inc.*⁵⁸ and affirmed another finding of infringement under the doctrine of equivalents. The claim at issue was directed to:

An improved method for administering pemetrexed disodium to a patient in need of chemo-therapeutic treatment, wherein the improvement comprises:

- a) administration of ... folic acid prior to the first administration of pemetrexed disodium;
- b) administration of ... vitamin B12, prior to the first administration of pemetrexed disodium; and
- c) administration of pemetrexed disodium.⁵⁹

Critically, the claims originally recited an “antifolate” instead of “pemetrexed disodium.”⁶⁰ The accused product utilized a different salt—pemetrexed ditromethamine, forcing the patentee to rely on the doctrine of equivalents in alleging infringement. In assessing whether the tangential relation exception to prosecution history applied, the Federal Circuit observed that “[f]ew propositions of patent law have been so consistently sustained by the Supreme Court as the doctrine of equivalents.”⁶¹ On the other hand, the Court cautioned that “[w]e have emphasized ... that the doctrine of equivalents is the *exception*, however, *not the rule*, and not merely the second prong of every infringement charge, regularly available to extend protection beyond the scope of the claims.”⁶² The Court first confirmed that the amendment was clearly narrowing and related to patentability, thus invoking a presumption

that prosecution history estoppel applied.⁶³ However, because the reason for the amendment was to give up antifolates, not other pemetrexed salts, the amendment was found to be tangential to the accused product and the presumption of prosecution history estoppel overcome.⁶⁴

More recently, in *Bio-Rad Labs., Inc. v. 10X Genomics Inc.*⁶⁵, the Federal Circuit applied the tangential relation exception to prosecution history estoppel to again affirm a finding of infringement under the doctrine of equivalents. The claim at issue in *Bio-Rad* was directed to “[a] microfluidic system [e.g., for forming microscopic droplets] comprising: a *non-fluorinated microchannel*; a carrier fluid comprising a *fluorinated oil* and a *fluorinated surfactant*...”⁶⁶ The accused product contained microchannels with 0.02% Kynar, a fluorine-containing coating resin and thus did not literally satisfy the non-fluorinated microchannel limitation. That said, the Court considered the Kynar coating resin in the accused product a *de minimis* amount because the microchannels and carrier fluid did not react with each other.⁶⁷

The Federal Circuit began its discussion of equivalents by noting that “equivalents remain a *firmly entrenched part of the settled rights protected by the patent*.”⁶⁸ The Court then turned its attention directly to the tangential relation exception, stating that “[t]he crux of the tangentiality inquiry remains the patentee’s objectively apparent reason for the narrowing amendment.”⁶⁹ The prior art cited during prosecution disclosed fluorinated microchannel wall coatings that would react with the carrier fluid.⁷⁰ “The inventors therefore amended the claims to make clear that the carrier fluid and the microchannel wall should be chemically distinct.”⁷¹ The Court found that the objectively apparent reason for the narrowing amendment “was to distinguish microchannels that reacted with carrier fluids.”⁷² “[The prior art] disclosed fluorinated microchannels generally. It did not expressly disclose microchannels with non-reacting, negligible levels of fluorine, like the accused equivalent.”⁷³ Accordingly, the Court found that the amendment reciting “a non-fluorinated microchannel” was tangential, and that prosecution history estoppel did not apply.⁷⁴

However, not every recent opinion by the Federal Circuit has found the tangential relation exception to prosecution history estoppel applicable. In *Pharma Tech Sols., Inc. v. LifeScan, Inc.*, the Court refused to apply the tangential relation exception.⁷⁵ The claim at issue was directed to an apparatus for measuring compounds in a sample fluid, comprising ... a microprocessor for converting multiple Cottrell current readings into analyte concentrations and comparing the measurements.⁷⁶ The originally presented claim was broad enough to literally cover the accused product, but during prosecution the patentee significantly amended the claims in light of prior art to require the measurement, conversion

and comparison analysis of Cottrell current readings.⁷⁷ The accused product fell outside the literal terms of the claim at issue, as it only measured and compared current readings, and did not covert Cottrell current readings into analyte readings.⁷⁸ Nevertheless, the patentee argued that the doctrine of equivalents applied because the “converting” and “comparing” claim limitations were already disclosed in the prior art, the limitations must have been added for reasons not related to patentability and were thus tangential.⁷⁹ In rejecting these arguments, the Federal Circuit found that “[t]he objectively apparent reason for the [] amendment was to distinguish the invention over prior art systems that measured and displayed a diffusion limiting current reading.”⁸⁰ “[L]ike the prior art – LifeScan’s meter does not convert diffusion limiting current readings to analyte concentration measurements and then compare analyte concentration measurements to one another to detect errors...”⁸¹ Accordingly, the Court held that prosecution history estoppel barred the patentee from asserting its claims of infringement under the doctrine of equivalents and the tangential relation exception did not apply.

Is the Doctrine of Equivalents Exceptional?

As touched on in the above discussion, the Federal Circuit has at times added a degree of color commentary when characterizing the role of the doctrine of equivalents in the infringement analysis. It has on the one hand described the doctrine as “firmly entrenched”⁸² and its existence “consistently sustained”⁸³ while in other cases referring to it as “the exception ... not the rule.”⁸⁴ In one particularly unusual turn of events in 2019, the Federal

Circuit in *Amgen Inc. v. Sandoz Inc.*⁸⁵ issued an opinion refusing to find infringement by equivalents. Its discussion of the law, citing to a 1991 Federal Circuit opinion, stated that “the doctrine of equivalents applies *only in exceptional cases*.”⁸⁶ However, several months later, the Federal Circuit issued a *per curiam* supplemental opinion and with little fanfare deleted the phrase “applies only in exceptional cases” from the original *Amgen* opinion.⁸⁷ The Court thus seemed to back away from the suggestion that the doctrine of equivalents is exceptional.

While the Federal Circuit’s recent opinions are not entirely consistent in framing the doctrine’s place in the law, the 2019 retraction in *Amgen* was striking and further suggested that the doctrine of equivalents is not as far out of favor as it may have appeared at times over the past two decades.

Conclusion

The availability of the doctrine of equivalents to patent owners as an alternative to literal infringement has fluctuated over time. While the doctrine was thought by many to be nearly dead after the Supreme Court’s decision in *Festo*, it has seen a considerable turnaround in recent years. In particular, Federal Circuit’s case law has breathed life into the tangential relation exception to prosecution history estoppel, a trend helpful to patent owners. At the same time, the Federal Circuit has also supported the ensnarement defense in a manner helpful for accused infringers. While literal infringement is always the preferred approach when asserting infringement, successful claims of infringement by equivalence are possible, and both patentees and potential infringers should keep them in mind.

- 56 U.S. 330 (1853).
- Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730 (2002).
- See id.*
- See Amgen, Inc. v. Sandoz, Inc.*, 923 F.3d 1023 (Fed. Cir. 2019) (noting that because the “public has a right to rely on the language of patent claims” “equivalents applied only in exceptional cases”); *but see Amgen, Inc. v. Sandoz, Inc.*, No. 18-1551 (Fed. Cir. Sept. 3, 2019) (non-precedential) (*per curiam*) (supplemental opinion in response to a rehearing request deleting the language: equivalent “applied only in exceptional cases”).
- 35 U.S.C. § 112(b).
- Festo*, 535 U.S. at 731.
- Id.*
- Id.*
- See* Lee Petherbridge, *On the Decline of the Doctrine of Equivalents*, 31 CARDOZO L. REV. 1371, 1378–79 (2010); Lee Petherbridge, *The Claim Construction Effect*, 15 MICH. TELECOMM. & TECH. L. REV. 215, 233 (2008); John R. Allison & Mark A. Lemly, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955, 958 (2007).
- 56 U.S. 330 (1853).
- Id.*
- Id.* at 343.
- Festo*, 535 U.S. at 732.
- 339 U.S. 605 (1950).

- Id.* at 610.
- Id.*
- Id.* at 608.
- Id.*
- 520 U.S. 17 (1997).
- Id.* at 25.
- Id.*
- Id.* at 28.
- Id.* at 29.
- Id.* at 39–40.
- See Crown Packaging Tech. Inc. v. Reexam Beverage Can Co.*, 559 F.3d 1308, 1312 (Fed. Cir. 2009).
- Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1139 (Fed. Cir. 2004).
- Crown Packaging Tech. Inc.*, 559 F.3d at 1312. While juries typically decide issues of fact, in a bench trial (a trial with no jury) a judge decides issues of fact.
- Jang v. Boston Sci. Corp.*, 872 F.3d 1275, 1285 (Fed. Cir. 2017).
- Id.* While the hypothetical claim analysis is the most popular method to evaluate an ensnarement defense, the Federal Circuit has noted that the method is “optional” and permitted district courts to directly compare prior art with the alleged equivalent element of the accused device to determine the extent to which the prior art limits the application of the doctrine of equivalents.

- See *Visual Corp. v. Crown Metal Mfg Co.*, 991 F.2d 768, 772 (Fed. Cir. 1993); *Conroy v. Reebok Int'l, Ltd.*, 14 F.3d 1570, 1576 (Fed. Cir. 1994).
30. *Jang*, 872 F.3d at 1285.
 31. *Id.*
 32. *Id.* at 1278.
 33. *Id.* at 1286.
 34. *Id.* at 1278.
 35. *Id.* at 1279.
 36. *Jang*, 872 F.3d at 1286.
 37. *Id.*
 38. *Id.* at 1287.
 39. 2021 U.S. Dist. LEXIS 17751, Civ. No. 19-05639 [WHA], (N.D. Cal. Jan. 28, 2021).
 40. *Id.* at *1.
 41. *Id.* at *2.
 42. *Id.* at *3.
 43. *Id.*
 44. *Id.* at *23.
 45. *Festo Corp.*, 535 U.S. at 739–40.
 46. *Id.* at 740–41.
 47. *Id.* at 738.
 48. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 344 F.3d 1359, 1369 (Fed. Cir. 2003) (en banc).
 49. *Id.* at 1371.
 50. *Id.*
 51. *Id.* at 1371–72 (emphasis added).
 52. 932 F.3d 1342 (Fed. Cir. 2019).
 53. *Id.* at 1353.
 54. *Id.* at 1353.
 55. *Id.*
 56. *Id.* at 1355.
 57. *Id.* at 1355–56. Judge Dyk dissented, arguing that because the original claim would have covered the accused YddG protein at issue through the (B) alternative, the reason for the amendment was directly relevant to the accused equivalent. *Id.* at 1362. Judge Dyk further noted that the patentee could have rewritten the (B) alternative to cover the accused product, but chose a narrow amendment and therefore should be precluded from asserting a theory of infringement under the doctrine of equivalents. *Id.*
 58. 933 F.3d 1320 (Fed. Cir. 2019).
 59. *Id.* at 1325.
 60. *Id.* at 1326.
 61. *Id.* at 1329.
 62. *Id.* at 1330 (emphasis added).
 63. *Id.* at 1331.
 64. *Eli Lilly & Co.*, 933 F.3d at 1334. The same patent was again the focus of a prosecution history estoppel argument in *Eli Lilly & Co. v. Apotex, Inc.*, 837 Fed. App'x 780, No. 20-1328 (Fed. Cir. Dec. 21, 2020), where the accused infringer argued that the patentee was estopped from arguing infringement under the doctrine of equivalents because the original claim recited “ALIMTA,” the patentee’s brand name of pemetrexed disodium, but was later amended during prosecution to simply recite “pemetrexed disodium” in response to a rejection under 35 U.S.C. § 112 stating that use of “ALIMTA” was indefinite. The Federal Circuit rejected the accused infringer’s argument holding a narrowing amendment is required to invoke estoppel and here, the patentee’s amendment was simply a clarification.
 65. 967 F.3d 1353 (Fed. Cir. 2020).
 66. *Id.* at 1360.
 67. *Id.* at 1362.
 68. *Id.* at 1363 (citing *Festo*, 535 U.S. at 733) (emphasis added).
 69. 967 F.3d at 1365 (emphasis added).
 70. *Id.*
 71. *Id.*
 72. *Id.*
 73. *Id.* at 1365–66.
 74. *Id.* at 1366.
 75. 942 F.3d 1372 (Fed. Cir. 2019).
 76. *Id.* at 1375.
 77. *Id.* at 1976–77.
 78. *Id.* at 1376.
 79. *Id.*
 80. *Id.* at 1381.
 81. *Id.* at 1383.
 82. *Bio-Rad Labs.*, 967 F.3d at 1363.
 83. *Eli Lilly & Co.*, 933 F.3d at 1329.
 84. *Id.* at 1330 (citing *Wallace London & Clemco Prods. v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991)).
 85. 923 F.3d 1023 (Fed. Cir. 2019).
 86. *Id.* at 1029 (citing *Wallace London & Clemco Prods. v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991)).
 87. *Amgen Inc. v. Sandoz Inc.*, 776 Fed. App'x 707, No. 18-1551 (Fed. Cir. 2019) (per curiam) (non-precedential).