

# FEDERAL CIRCUIT REVIEW

## DOCTRINE OF EQUIVALENTS

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### IN THIS ISSUE:

- Construing Claims To Literally Cover Equivalents
- The Rebuttable Presumption Of Prosecution History Estoppel
- Amendment-Based Prosecution History Estoppel Expanded

This issue will focus on the doctrine of equivalents. Over the last fourteen months, the Federal Circuit has barred patentees from asserting the doctrine of equivalents in more than sixty percent of the cases in which it considered the applicability of the doctrine. The increased importance of claim construction and prosecution history estoppel have both contributed to the doctrine's decline. In this issue, we will explore recent decisions in which the Federal Circuit analyzed (1) whether claim terms literally encompass the range of equivalents, (2) the standard for rebutting the presumption of prosecution history estoppel, and (3) amendment-based prosecution history in the context of unsuccessful amendments.

### BACKGROUND

In the previous issue (Vol. 1, Issue 6), we discussed different types of infringement, including direct infringement under 35 U.S.C. § 271(a) (“[w]hoever without authority makes, uses, offers to sell, or sells *any patented invention*, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”). To prove infringement, a patentee must first establish the scope of the patented invention through claim construction. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373-74 (1996); see also Vol. 1, Issue 5. Next, the patentee must show that the accused product meets all of the claim’s limitations, either literally or under the doctrine of equivalents. See, e.g., *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1273 (Fed. Cir. 2004). Under the doctrine of equivalents, “a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is equivalence between the elements of the accused product or process and the claimed elements of the patented invention.” *Warner-Jenkins Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997) (internal citation omitted). The doctrine allows the patentee “to claim those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 733 (2002).

Equivalence is determined by either (1) the “function-way-result” test or (2) the “insubstantial differences” test. *Warner-Jenkins*, 520 U.S. at 39. Under the former, the accused product infringes if, on a limitation-by-limitation basis, it “performs substantially the same function [as the claimed invention] in substantially the same way with substantially the same result.” *Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, Nos. 2008-1284, 2008-1340, 2009 U.S. App. LEXIS 5570, at \*7 (Fed. Cir. Mar. 17, 2009). The second test prescribes that “[a]n element in the accused device is equivalent to a claim limitation if the only differences between the two are insubstantial.” *Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1139 (Fed. Cir. 2004). Like the determination of literal infringement, infringement under the doctrine of equivalents is a question of fact. *Crown Packaging Tech.*, 2009 U.S. App. LEXIS 5570, at \*7.

Juries, however, are not free to consider all possible equivalents. Through such seminal cases as *Markman* and *Festo*, patent law has struggled to “ensure that the claims continue to define patent scope in all foreseeable circumstances, while protecting patent owners against insubstantial variations from a claimed element in unforeseeable circumstances.” *Honeywell Int’l, Inc. v. Hamilton Sundstrand Corp.*, 523 F.3d 1304, 1313 (Fed. Cir. 2008). Patentees accordingly cannot use the doctrine of equivalents to:

- capture prior art, see *Johnson & Johnston Assocs. Inc. v. R.E. Serv. Co.*, 285 F.3d 1046, 1053-54 (Fed. Cir. 2002);
- secure equivalents that were disclosed, but left unclaimed in the patent, *id.*;
- vitiate claim limitations, *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1129 (Fed. Cir. 2008);
- reach equivalents that the patentee reasonably could have claimed because such equivalents were foreseeable, *Johnson & Johnston*, 285 F.3d at 1056 (Rader, J., concurring); or
- recapture equivalents surrendered during prosecution, *Festo*, 535 U.S. at 741.

### Cases Referenced

*Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115 (Fed. Cir. 2008)  
*Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, Nos. 2008-1284, 2008-1340, 2009 U.S. App. LEXIS 5570 (Fed. Cir. Mar. 17, 2009)  
*Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263 (Fed. Cir. 2004)  
*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002)  
*Honeywell Int’l., Inc. v. Hamilton Sundstrand Corp.*, 523 F.3d 1304 (Fed. Cir. 2008)  
*Honeywell Int’l., Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131 (Fed. Cir. 2004)  
*Johnson & Johnston Assocs. Inc. v. R.E. Serv. Co.*, 285 F.3d 1046 (Fed. Cir. 2002)  
*Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996)  
*Warner-Jenkins Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997)

## CONSTRUING CLAIMS TO LITERALLY COVER EQUIVALENTS

In *Cohesive Technologies, Inc. v. Waters Corp.*, the Federal Circuit concluded that the doctrine of equivalents cannot be used to further broaden the scope of a claim when the claim terms literally encompass equivalents. 543 F.3d 1351, 1372 (Fed. Cir. 2008). The asserted patent claimed a particle that was “greater than *about* 30 microns.” *Id.* at 1368 (emphasis added). The district court, as a matter of law, construed this limitation to exclude the accused particles of 29.01 microns under literal infringement. The court then held that the doctrine of equivalents was not available to the patentee because the claim language created a bright line that excluded particles with a diameter of less than 30 microns.

While the Federal Circuit agreed with the district court’s ultimate conclusion regarding the inapplicability of the doctrine of equivalents, it disagreed with the district court’s reasoning. First, the Federal Circuit found fault with the district court’s claim construction, which read the word “about” out of the claim. Second, the court addressed the district court’s conclusion that the wide breadth of the claim automatically prevented the patentee from asserting the doctrine of equivalents, explaining that “[w]e have never held that the doctrine of equivalents is inapplicable to broad claims; to the contrary, we have emphasized that pioneering inventions often, by their very nature, result in broader application of the doctrine of equivalents.” *Id.* at 1371 (citing *Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1301-02 (Fed. Cir. 1999)). The court was also quick to reiterate that the use of a numerical range does not automatically render the doctrine of equivalents unavailable. *Id.* To illustrate its point, the court cited its own opinion in *U.S. Philips Corp. v. Iwasaki Electric Co.*, which held that the doctrine of equivalents was available to broaden the scope of a claim reciting concentrations “between  $10^{-6}$  and  $10^{-4}$  mol/mm<sup>3</sup>.” 505 F.3d 1371, 1373, 1378 (Fed. Cir. 2007). On a related note, the *Philips* court noted that claim terms like “approximately” function to expand the breadth of the claims for literal infringement, not to facilitate the doctrine of equivalents. *Id.* at 1379.

Similarly, in this case, the patentee’s inclusion of the word “about” in both the specification and the claim language led the Federal Circuit to construe the claim term, for the purposes of literal infringement, to include particles with diameters that “perform the same function, in the same way, with the same result as the 30 micron particles.” *Cohesive Techs.*, 543 F.3d at 1372. In doing so, the court imported the factual inquiry of the doctrine of equivalents under the function-way-result test into its legal determination of claim construction. The court therefore held that “[w]here, as here, a patentee has brought what would otherwise be equivalents of a limitation into the literal scope of the claim, the doctrine of equivalents is *unavailable to further broaden the scope of the claim.*” *Id.* (emphasis added).

## Cases Referenced

*Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291 (Fed. Cir. 1999)

*Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351 (Fed. Cir. 2008)

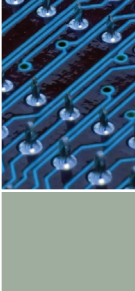
*U.S. Philips Corp. v. Iwasaki Elec. Co. Ltd.*, 505 F.3d 1371 (Fed. Cir. 2007)

## THE REBUTTABLE PRESUMPTION OF PROSECUTION HISTORY ESTOPPEL

In *Honeywell*, the Federal Circuit addressed the rebuttable presumption of prosecution history estoppel as a bar to the doctrine of equivalents in the context of unamended dependent claims rewritten as independent claims. 523 F.3d at 1306-07. Honeywell's patents related to technology for controlling airflow surges in auxiliary power units (commonly known as APUs) often found in the tail-end of airplanes. APUs include load compressors, which are susceptible to damage from surges caused by low airflow. The patents claim the use of a "set point" to represent the minimum level of airflow through the compressor necessary to prevent surges. The set point is a function of the position of the adjustable inlet guide vanes ("IGVs"). The IGVs operate like Venetian blinds, opening and closing to control the amount of ambient airflow that enters the compressor. A signal is generated to adjust a surge bleed valve, which controls airflow out of the compressor, when the comparison between the set point value and the out airflow value is not acceptable. The claims at issue were originally submitted as dependent claims, but Honeywell rewrote them as independent claims when the original independent claims were rejected as obvious over the prior art. Importantly, the original independent claims did not reference IGVs.

Sundstrand's accused APU evaluates DELPQP, a flow-related parameter that (1) measures pressure, as opposed to airflow, discrepancies to a set point based on air inlet temperature and (2) sends a signal to change the surge bleed valve accordingly. At high airflow, the DELPQP system can encounter a problem (the "double solution problem") whereby false readings cause the surge bleed valve to open unnecessarily. To solve the double solution problem, the Sundstrand APU uses the position of the IGVs to determine whether airflow is truly low or if airflow is high, and the signal to the surge bleed valve should be overridden.

In 2004, the Federal Circuit vacated the jury verdict finding infringement under the doctrine of equivalents because "rewriting [] dependent claims into independent form coupled with the cancellation of the original independent claims creates a presumption of prosecution history estoppel." *Honeywell*, 370 F.3d at 1134. Judge Newman dissented, noting that the majority was misguided because it did not focus on "whether the technological equivalent is embraced by the subject matter that was relinquished during prosecution of the patent." *Honeywell*, 523 F.3d at 1319. Instead, the majority held that all equivalents of the elements contained in the original dependent claim were surrendered. Nevertheless, the case was remanded to



the district court to determine if Honeywell could overcome the presumption and assert the doctrine of equivalents.

Where prosecution history estoppel is presumed because of a narrowing amendment, it may be rebutted by showing: (1) “an alleged equivalent would have been unforeseen at the time of the amendment,” (2) “the rationale underlying the narrowing amendment bore no more than a tangential relation to the equivalent in question,” or (3) “there was some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359, 1369-70 (Fed. Cir. 2003) (*en banc*) (internal quotations omitted). On remand, the district court ruled that Honeywell failed to prove that the equivalent was foreseeable or the narrowing amendment was no more than tangential to the equivalent. Honeywell did not argue the third point. On appeal, the Federal Circuit reviewed the district court’s decision on both the foreseeability and tangentiality issues.

Under Federal Circuit precedent, “[f]oreseeability does not require that the accused infringing product or process be foreseeable, nor that any equivalent exist at the time; rather foreseeability only requires that one of ordinary skill in the art would have reasonably foreseen the proposed equivalent at the [the time of the amendment].” *Id.* at 1314 (*citing Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 493 F.3d 1368, 1382 (Fed. Cir. 2007)). The majority accordingly disregarded that the Sundstrand equivalent was developed more than ten years after the amendments in question. Judge Rader, writing for the majority, instead focused on the prior art, which revealed that IGVs, which were known to affect airflow, were used in surge control systems at that time and those skilled in the art knew that surge control was important. Further, the court found no clear error in the district court’s conclusion that Sundstrand presented more credible expert testimony on foreseeability than Honeywell. Thus, the Federal Circuit concluded that “Honeywell could have foreseen and included the alleged equivalent in the claims when they were amended.” *Id.*

“To rebut the estoppel presumption with tangentiality, a patentee must demonstrate that the rationale underlying the amendment bore no more than a tangential relation to the equivalent in question, or in other words, that the narrowing amendment was peripheral, or not directly relevant, to the alleged equivalent.” *Id.* at 1315 (internal citations omitted). The presumption cannot be rebutted if the prosecution history fails to reveal a reason for the amendment. *Id.* Here, Honeywell amended its claims because the underlying independent claims were rejected as obvious over the prior art. *Id.* at 1316. The majority therefore focused on the narrower content of the dependent claims, which claimed the structure and function of the IGVs. *Id.* The majority accordingly concluded that the amendment bore a direct relationship to the IGV-related equivalent, not merely a tangential relationship. *Id.*

In the end, the majority held that Honeywell had not rebutted the presumption of prosecution history estoppel, and thus could not prove infringement under the doctrine of equivalents. *Id.*

However, Judge Newman, in her dissent, concluded that the majority's opinion has now created a "*irrebuttable*" presumption of prosecution history estoppel. *Id.* at 1322. Judge Newman found it troubling that the majority concluded that the Honeywell inventors could have foreseen the Sundstrand equivalent and claimed it even though the patent office would have rejected any such claims under 35 U.S.C. § 112. With respect to the tangential relation analysis, Judge Newman criticized the majority's lack of attention to "why" the amendment was made. She concluded that the court has now dispensed with the tangentiality option under this factual scenario:

In a situation where an originally dependent claim is asserted against an infringer under the doctrine of equivalents, and the asserted limitation was first introduced in a dependent claim, ... there is always more than a tangential relationship between the reason for the amendment and the accused equivalent, even when there is no finding as to the reason for the amendment.

*Id.* (emphasis added).

Ultimately, Judge Newman turned her attention to the practical implications of the opinion, and suggested that the majority has wrongfully taken the factual issue of the infringement under the doctrine of equivalents away from the jury and simultaneously created unclear precedent for the district courts to follow. *Id.* at 1323.

### Cases Referenced

*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 493 F.3d 1368 (Fed Cir. 2007)

*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 344 F.3d 1359 (Fed. Cir. 2003)  
(*en banc*)

*Honeywell Int'l., Inc. v. Hamilton Sundstrand Corp.*, 523 F.3d 1304 (Fed. Cir. 2008)

*Honeywell Int'l., Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131 (Fed. Cir. 2004)

## AMENDMENT-BASED PROSECUTION HISTORY ESTOPPEL EXPANDED

As discussed above, the Federal Circuit has held that the presumption of amendment-based prosecution history estoppel attaches when a patentee chooses to rewrite dependent claims as independent ones when canceling the original independent claims for reasons related to patentability. *Honeywell*, 370 F.3d at 1134. In *Felix v. American Honda Motor Co.*, the Federal Circuit reaffirmed this rule and held that “even if the amendment alone does not succeed in placing the claim in condition for allowance,” prosecution history estoppel applies. No. 2008-1367, slip op. at 22 (Fed. Cir. April 10, 2009).

The asserted patent claimed a trunk-like storage area for a pickup truck bed. Original dependent claim 7 included a limitation directed to a weather-tight gasket mounted on a flange, while original dependent claim 8 included a limitation for rain holes in a channel. During prosecution, the examiner rejected claim 1 as obvious over the prior art, and the patentee then rewrote dependent claim 7 (with the gasket limitation) in independent form after canceling independent claim 1. After the newly-amended independent claim was rejected, the patentee incorporated the limitations present in claim 8 (with the channel limitation) to achieve allowance. The final claim issued as claim 6 and included the limitations of original claims 1, 7 and 8.

Honda’s accused product included a gasket affixed to the lid of the storage compartment rather than attached to the flange of the channel. Both the district court and the Federal Circuit found that Honda did not literally infringe because the accused product did not meet the gasket limitation. *Felix*, slip op. at 18.

Both courts also found that Felix was presumptively barred from asserting the doctrine of equivalents for the subject matter added in the amendments, including the gasket. *Id.* at 23. Importantly, the Federal Circuit held that the “presumption of surrender [was] applicable to all limitations, found in any of the claims of the [] patent, that correspond to the limitations of claim 7.” *Id.* at 22. Thus, amendment-based prosecution history estoppel attaches with respect to particular subject matter even if the *asserted claim* was not narrowed to include that subject matter. *Id.* at 21-22. Once a patentee disclaims subject matter in the course of amending any claim, the disclaimer applies for all claims in the patent containing that subject matter. *Id.* at 21-22.

### Cases Referenced

*Felix v. Am. Honda Motor Co.*, No. 2008-1367 (Fed. Cir. April 10, 2009)

*Honeywell Int’l., Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131 (Fed. Cir. 2004)

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