

United States Court of Appeals for the Federal Circuit

02-1005, -1082

HONEYWELL INTERNATIONAL INC. (formerly known as AlliedSignal Inc.)
and HONEYWELL INTELLECTUAL PROPERTIES, INC.
(formerly known as AlliedSignal Technologies, Inc.),

Plaintiffs-Appellants,

v.

HAMILTON SUNDSTRAND CORPORATION
(formerly known as Sundstrand Corp.),

Defendant-Cross Appellant.

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Appealed from: United States District Court for the District of Delaware

Judge Gregory M. Sleet

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DECIDED: June 2, 2004

Before MAYER, Chief Judge, NEWMAN, MICHEL, LOURIE, CLEVINGER, RADER, SCHALL, BRYSON, GAJARSA, LINN, DYK, and PROST, Circuit Judges.

Opinion for the court filed by Circuit Judge DYK, in which Chief Judge MAYER and Circuit Judges MICHEL, LOURIE, CLEVINGER, RADER, SCHALL, BRYSON, GAJARSA, LINN, and PROST join. Opinion dissenting in part filed by Circuit Judge NEWMAN.

DYK, Circuit Judge.

Honeywell International Inc. and Honeywell Intellectual Properties, Inc. (collectively “Honeywell”), the assignees of the patents in suit, brought suit against Hamilton Sundstrand Corporation (“Sundstrand”) for infringement of claims 8, 10, 11, 19 and 23 of United States Patent No. 4,380,893 (the “893 patent”) and claim 4 of Patent No. 4,428,194 (the “194 patent”). All of the asserted independent claims were originally dependent claims that were rewritten into their present independent form during prosecution. The broader original independent claims were cancelled.

The jury found that the patents in suit were valid and, although not literally infringed, infringed under the doctrine of equivalents. The district court entered judgment against Sundstrand. Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., 166 F. Supp. 2d 1008 (D. Del. 2001).

Following our recent decisions in Deering Precision Instruments, L.L.C. v. Vector Distribution Systems, Inc., 347 F.3d 1314 (Fed. Cir. 2003), and Ranbaxy Pharmaceuticals, Inc. v. Apotex, Inc., 350 F.3d 1235 (Fed. Cir. 2003), we hold that the rewriting of dependent claims into independent form coupled with the cancellation of the original independent claims creates a presumption of prosecution history estoppel. Accordingly we vacate the judgment of infringement and remand for determination of whether Honeywell can rebut the presumption of surrender under Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2002), remanded to 344 F.3d 1359 (Fed. Cir. 2003) (en banc). We affirm the district court's judgment rejecting Sundstrand's counterclaims of invalidity.

BACKGROUND

I

The Honeywell patents are directed to an aircraft auxiliary power unit ("APU"), a small gas turbine engine usually located in the tail section of an airplane. The APU generates electricity and incorporates a load compressor to provide compressed air needed both to start the aircraft's main engines and to control the environment of the aircraft's cabin during flight. During flight, the amount of compressed air required for these purposes fluctuates substantially. A valve is used to control the amount of air exiting the compressor through the main air duct, which supplies compressed air to the aircraft's systems. Rapid changes in the demand for compressed air needed can produce "surge," a flow instability that occurs when pressure builds up in the main air duct. In a surge condition, the air attempting to exit the compressor's main air duct is unable to do so. Instead the airflow reverses direction, surging back into the compressor and potentially damaging the APU. The APU must therefore be designed in such a way as to control surge. Prior systems controlled surge by drawing in more air than was needed and venting (bleeding) the excess through a surge bleed valve in order to reduce pressure in the main air duct. Such systems maintained sufficient output airflow, effectively

controlling surge, but were inefficient in operation and wasteful of energy.

The Honeywell APU is designed to be more efficient by avoiding excess air bleeding in its control of surge. To do this it is necessary to determine when and how far to open the surge bleed valve in order to maintain a level of flow sufficient to avoid surge. To reach this end, Honeywell's invention establishes a "set point" that represents the minimum flow at which surge can safely be avoided. In the claimed invention, "[a]mbient air . . . is drawn through a set of adjustable inlet guide vanes." '893 patent, col. 3, ll.64-65. The value of the set point is selected "as a function of the position of said inlet guide vanes." *Id.*, col. 12, ll.11-12; see also '194 patent, col. 12, ll.15-16. The set point is compared to a "flow-related parameter" that represents airflow out of the compressor as determined by a sensor. '893 patent, col. 2, ll.47-48; '194 patent, col. 2, ll.48-49. Thus a comparison is made between the actual flow conditions (represented by the flow-related parameter) and the desired flow conditions (represented by the set point). If the system determines that airflow out of the main air duct is too low, the surge bleed valve will be opened to prevent the build up of excess pressure leading to surge.

II

The '893 and '194 patents resulted from a common application filed February 19, 1981. The specification of both patents is identical. Only claims 8, 10, 11, 19 and 23 of the '893 patent and claim 4 of the '194 patent are at issue in this case. Each of these claims requires the APU to include inlet guide vanes and requires the operation of the surge bleed valve to be a function of inlet guide vane position. Claim 8 is representative of the apparatus claimed in the '893 patent:

8. A gas turbine engine accessory power unit having a fluctuating compressed air supply demand, said accessory power unit comprising:
 - (a) a compressor having adjustable inlet guide vanes;
 - (b) duct means for receiving compressed air discharged from said compressor and supplying the received air to the pneumatically-powered apparatus;
 - (c) surge bleed means operable to exhaust from said duct means a selectively variable quantity of air to assure at least a predetermined minimum flow rate through said duct means and thereby prevent surge of said compressor;
 - (d) sensing means for sensing the value of a predetermined, flow-related parameter

within said duct means and generating an output signal indicative of said value, said value of said flow-related parameter being substantially independent of the temperature of the compressed air;

- (e) comparator means for receiving said sensing means output signal and generating an error signal representing the difference between the sensed value of said parameter and a desired value thereof, said comparator means having an adjustable control set point representing said desired value of said parameter;
- (f) means for transmitting to said comparator means a reset signal for varying said set point as a function of the position of said inlet guide vanes in accordance with a predetermined reset schedule; and
- (g) control means for receiving said error signal and transmitting to said surge bleed means a control signal to operate said surge bleed means, the magnitude of said control signal having, relative to the magnitude of said error signal, a proportional component and an integral component,

whereby said minimum flow rate through said duct means is essentially

constant regardless of the compressed air supply demand of the pneumatically-powered apparatus.

'893 patent, col. 11, 1.52 - col. 12, 1.23 (emphases added). Claim 4 of the '194 patent claims a method of controlling surge in an APU:

4. A method of utilizing a compressor of a gas turbine engine to power pneumatically-operated apparatus having a variable inlet air flow demand, the compressor having adjustable inlet guide vanes, said method comprising the steps of:

- (a) interconnecting a supply duct between the compressor and the pneumatically-operated apparatus;
- (b) flowing discharge air from the compressor through said supply duct to the pneumatically-operated apparatus;
- (c) maintaining an essentially constant minimum supply duct flow rate, despite fluctuations in the flow rate of air received by the pneumatically-operated apparatus, by exhausting air from said supply duct in response to variations therein of the value of a predetermined, flow-related parameter, the flow rate of air exhausted from said supply duct being related to the magnitude of said parameter value variations in both a proportional and time-integral manner,

said maintaining step including the steps of providing an outlet

passage from said supply duct, positioning in said outlet passage a surge bleed valve operable to selectively vary the flow of air outwardly through said outlet passage, generating an integral control signal in response to said variation in said flow-related parameter, generating a proportional control signal in response to said variations in said flow-related parameter, and simultaneously utilizing said

integral and proportional control signals to operate said surge bleed valve;

- (d) adjusting the relationship between the magnitudes of said integral and proportional control signals and the magnitudes of said parameter variations as a function of the position of the inlet guide vanes.

'194 patent, col. 10, l.64 - col. 12, l.16 (emphases added).

III

Sundstrand manufactures an APU device, the APS 3200, which also uses an active surge control system that compares a flow-related parameter to a set point and adjusts the surge bleed valve in response. Sundstrand's device establishes a set point that is dependent upon ambient air temperature, rather than a measurement of inlet guide vane position. This set point is compared to a flow-related parameter called DELPQP. Because of characteristics unique to DELPQP,[1] the APS 3200 blocks control signals used to operate the surge bleed valve during extreme high flow conditions. This prevents unnecessary bleeding of air during such conditions. The determination of whether to block these control signals is based in part on the position of the APS 3200's inlet guide vanes.

Only infringement under the doctrine of equivalents is at issue in this appeal. Honeywell concedes that the inlet guide vane limitation[2] is not literally met by the accused device. However, there is substantial disagreement as to the function of the inlet guide vanes required by the claims and whether inlet guide vane position performs an equivalent function in the accused device. Sundstrand contends that the claimed function is to use inlet guide vane position to establish the set point. It urges that the APS 3200 uses inlet guide vane position for a very different function, *i.e.*, to determine when to block control signals used to operate the surge bleed valve. Honeywell disagrees, arguing that the function of the inlet guide vane limitation "is to incorporate the position of the [inlet guide vanes] into the surge control system." (Reply Br. for Pls.-Appellants at 23 (claim 4); *see also id.* at 25 (claim 8).) It argues that this function is met because the APS 3200 uses inlet guide vane position, in addition to temperature, to efficiently control surge. Unfortunately, by agreement of the parties, the district court did not construe the claim language defining the function of inlet guide vane position in the '893 patent, and the court's construction of step (d) of claim 4 of the '194 patent and its jury instruction were somewhat cryptic.[3]

IV

Honeywell filed this suit on May 17, 1999, alleging that the APS 3200 infringed both the '893 and '194 patents. Sundstrand denied that its device infringed the patents.

Sundstrand further pointed out that all of the asserted claims were originally dependent on other claims in Honeywell's patent applications (application claims 16 and 32 of the '893 patent and application claims 48 and 49 of the '194 patent) that did not contain the inlet guide vane limitation. These claims were rejected as obvious in light of the prior art during the prosecution of Honeywell's patents. Application claims 17 and 35 of the '893 patent and application claim 51 of the '194 patent, which further included the inlet guide vane limitation,^[4] were not allowed only because they were dependent on the rejected independent application claims.^[5] The examiner indicated that application claims 17, 35 and 51 would be allowable if rewritten into independent form. In response, the rejected independent claims were cancelled and application claims 17, 35 and 51 were amended to expressly incorporate the limitations of the rejected independent claims. The amended application claims issued respectively as claims 8 and 19 of the '893 patent and claim 4 of the '194 patent, which are the only independent claims found to be infringed by the jury and at issue in this dispute. Claims 10, 11 and 23 of the '893 patent, also found to be infringed, are dependent on claims 8 and 19 and thus include the inlet guide vane limitation.

Before the district court, Sundstrand urged that claims 8 and 19 of the '893 patent and claim 4 of the '194 patent were narrowed by amendment and that prosecution history estoppel barred all equivalents for the inlet guide vane limitation under Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 (Fed. Cir. 2000) (en banc). In the alternative, Sundstrand argued that there was no infringement under the doctrine of equivalents because the APS 3200 used inlet guide vane position for a "completely different function" (i.e., to determine when to block the control signal operating the surge bleed valve, as opposed to using inlet guide vane position to determine when and how much to open that valve). Affirmative defenses and counterclaims urging that the '893 and '194 patents were invalid as anticipated, obvious in view of the prior art, and barred by the on-sale bar of 35 U.S.C. § 102(b) were also asserted. Finally, Sundstrand argued that damages, if any, were limited to those incurred after

February 3, 1999, the date it received actual notice of Honeywell's infringement allegations, because the patentee had failed to mark its products in accordance with 35 U.S.C. § 287. Sundstrand moved for summary judgment on each of these arguments.

On January 8, 2001, the district court, while acknowledging that Sundstrand's argument had "superficial appeal," rejected its motion for summary judgment on prosecution history estoppel. Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., No. 99-309 GMS, slip op. at 10 (D. Del. Jan. 8, 2001). The court held that because the claims were merely rewritten into independent form, the "elements at issue were not amended" and "Honeywell did not give up an embodiment of the invention with the inlet guide vane" limitation. Id. at 10-11. Sundstrand's other summary judgment motions for invalidity and infringement were denied because genuine issues of material fact remained. However, the district court granted Sundstrand's summary judgment motion on the marking issue and limited damages to those incurred after February 3, 1999. Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., No. 99-309 GMS (D. Del. Jan. 4, 2001). Subsequently, the district court clarified its decision to limit damages, holding that Honeywell could not recover damages on sales pursuant to contracts made prior to February 3, 1999, even if delivery occurred after that date. Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., No. 99-309 GMS (D. Del. Feb. 8, 2001).

In February 2001 the case was tried before a jury. The jury found that all of the asserted claims of the '893 and '194 patents were not invalid. It rejected Honeywell's contention that Sundstrand had literally infringed the '194 patent, but found claims 8, 10, 11, 19 and 23 of the '893 patent and claim 4 of the '194 patent infringed under the doctrine of equivalents. The jury further found willfulness, and awarded \$1,578,065 in reasonable royalty compensation and \$45,000,000 in price erosion damages. Judgment in accordance with the jury verdict was entered on February 20, 2001. On September 27, 2001, the court denied Sundstrand's motions for judgment as a matter of law ("JMOL") and a new trial. The court also denied Honeywell's motion for JMOL on literal infringement and its motion for enhanced damages, attorneys' fees and costs, including expert witness costs.

Honeywell timely appealed the district court's decisions limiting its actual damages. Honeywell

did not appeal the judgment of no literal infringement. Sundstrand cross-appealed, challenging the district court's determinations of infringement under the doctrine of equivalents and the decision rejecting its claims of invalidity. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).^[6] This case was originally heard by a panel of this court on August 7, 2002. The court sua sponte ordered en banc review on February 5, 2004.

DISCUSSION

We review the district court's denial of a motion for JMOL without deference, applying the same standard employed by the district court. Ericsson, Inc. v. Harris Corp., 352 F.3d 1369, 1373 (Fed. Cir. 2003). That standard requires us to "determine whether viewing the evidence in the light most favorable to the non-moving party, and giving the non-movant the benefit of all reasonable inferences, there is sufficient evidence of record to support a jury verdict in favor of the non-movant." Id. (internal quotation marks omitted). "We review the denial of a motion for a new trial for an abuse of discretion." Hewlett-Packard Co. v. Mustek Sys., Inc., 340 F.3d 1314, 1318 (Fed. Cir. 2003). Whether a patentee is presumptively estopped from asserting equivalents for an amended claim element is a question of law that we review without deference. Ranbaxy, 350 F.3d at 1240.

I. Prosecution History Estoppel

A

At the outset, this case requires us to determine first whether a narrowing amendment to a patent claim that adds an additional claim limitation creates a presumptive surrender of equivalents under the Supreme Court's decisions in Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17 (1997), and Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2002) ("Festo"), and under our recent decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359 (Fed. Cir. 2003) (en banc) ("Festo II"), following the Supreme Court's remand. We hold that it does.

"The doctrine of equivalents 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, 535 U.S. at 733. An element in the accused device is equivalent to a claim limitation if the only differences between the two are insubstantial. Eagle Comtronics, Inc. v. Arrow Communication Labs., Inc., 305 F.3d 1303, 1315 (Fed. Cir. 2002) (citing Warner-Jenkinson, 520 U.S. at 40). However, prosecution history estoppel may bar the patentee from asserting equivalents if the scope of the claims has been narrowed by amendment during prosecution. Festo, 535 U.S. at 733-34. “Estoppel arises when an amendment is made to secure the patent and the amendment narrows the patent’s scope.” Id. at 736. The basic theory is that:

[w]hen . . . the patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent. . . . [H]is decision to . . . submit an amended claim is taken as a concession that the invention as patented does not reach as far as the original claim.

Id. at 733-34. However, as we recently explained en banc following the Supreme Court’s remand in Festo, the presumption of surrender may be rebutted if the patentee can demonstrate that: (1) “the alleged equivalent would have been unforeseeable at the time . . . the narrowing amendment” was made; (2) “the rationale underlying the narrowing amendment bore no more than a tangential relation to the equivalent” at issue; or (3) “there was ‘some other reason’ suggesting that the patentee could not reasonably have been expected to have described the alleged equivalent.” Festo II, 344 F.3d at 1368 (quoting Festo, 535 U.S. at 741).

The Supreme Court addressed the effect of a narrowing amendment on the scope of equivalents in Warner-Jenkinson and Festo. These decisions make clear that a narrowing amendment may occur when either (1) a preexisting claim limitation is narrowed by amendment or (2) a new claim limitation is added by amendment. These decisions make no distinction between the narrowing of a preexisting limitation and the addition of a new limitation. Either amendment will give rise to a presumptive estoppel if made for a reason related to patentability.

That the addition of a claim limitation constitutes a narrowing amendment is manifest in the

language of both Warner-Jenkinson and Festo. In both of these decisions the Supreme Court indicated that amending to “introduce a new element,” Warner-Jenkinson, 520 U.S. at 33, or “add[] a new limitation,” Festo, 535 U.S. at 728, may give rise to a presumption of surrender. This language is not dictum. Both Warner-Jenkinson and Festo directly held that amendments that added new limitations could give rise to an estoppel. For example, in Warner-Jenkinson, the patentee claimed an “ultrafiltration” process for purifying dye. 520 U.S. at 22. Originally the claims at issue required “ultrafiltration through a membrane having nominal pore diameter of 5-15 Angstroms under a hydrostatic pressure of approximately 200 to 400 p.s.i.g. . . . to thereby cause separation of said impurities from said dye.” Id. During prosecution, the inventors added a new limitation, which narrowed the scope of the claimed invention from processes conducted at any pH to those occurring “at a pH from approximately 6.0 to 9.0.” Id. The Supreme Court expressly treated this amendment as “introduc[ing] a new element” to the claims at issue, further holding that “application of the doctrine of equivalents as to that [added] element” would be barred unless the patentee could show a reason for the amendment sufficient to avoid estoppel. Id. at 33-34.

Festo too involved amendments that added new limitations to the claims. There two patents were at issue, the Stoll and Carroll patents. During prosecution an additional limitation was added to the Stoll patent requiring that the claimed invention include “a cylindrical sleeve made of a magnetizable material.” Festo II, 344 F.3d at 1371 (emphasis omitted). An additional limitation requiring “a pair of resilient sealing rings” was also added during reexamination to claim 1 of the Carroll patent, which previously “made no reference to sealing rings.” Id. at 1372. The Supreme Court referred to both of these amendments as “add[ing] a new limitation,” 535 U.S. at 728, and held that they gave rise to a presumptive surrender of equivalents. Id. at 741; see also, e.g., I.T.S. Rubber Co. v. Essex Rubber Co., 272 U.S. 429, 443 (1926); Shepard v. Carrigan, 116 U.S. 593, 597 (1886) (“Where an applicant for a patent . . . is compelled by the rejection of his application . . . to narrow his claim by the introduction of a new element, he cannot after the issue of the patent broaden his claim by dropping the element which he was compelled to include in order to secure his patent.” (emphasis added)).

It is therefore clear that the addition of a new claim limitation can give rise to a presumption of

prosecution history estoppel, just like an amendment that narrows a preexisting claim limitation. In either case, the narrowing amendment, if made for a reason related to patentability, will give rise to a presumption of surrender. If only narrowing amendments to preexisting claim limitations could give rise to the presumption, the purpose of preventing patentees from recapturing subject matter conceded during prosecution would be undermined. Astute practitioners could, through clever claim drafting, elect to treat most, if not all, amendments as merely adding new claim limitations rather than narrowing preexisting ones. For these reasons, we hold that an amendment adding a new claim limitation constitutes a narrowing amendment that may give rise to an estoppel.

B

We must next address whether rewriting a dependent claim into independent form, coupled with the cancellation of the original independent claim, constitutes a narrowing amendment when the dependent claim includes an additional claim limitation not found in the cancelled independent claim or circumscribes a limitation found in the cancelled independent claim.

In this case there is no question that the original independent claims (application claims 16 and 32 of '893 patent and application claims 48 and 49 of the '194 patent) were rejected for reasons related to patentability. All of the original independent claims were rejected as obvious in view of the prior art. The original independent claim upon which application claim 35 depended was also rejected as indefinite under 35 U.S.C. § 112, paragraph two. These rejected independent claims were cancelled and the dependent claims (application claims 17 and 35 of the '893 patent and claim 51 of the '194 patent) were rewritten into independent form in order to secure their allowance.

A presumption of surrender therefore arises if rewriting the dependent claims into independent form, along with canceling the original independent claims, constitutes a narrowing amendment. Honeywell argues that prosecution history estoppel cannot occur where a dependent claim is merely rewritten into independent form. Honeywell contends that, although it surrendered its broader independent claims, there is no presumption of surrender because the scope of the rewritten claims themselves has not been narrowed. We disagree.

In Festo the Supreme Court held that the proper focus is whether the amendment narrows the overall scope of the claimed subject matter. See 535 U.S. at 736-37. There the United States in its amicus curiae brief cited the district court's opinion in this very case. Honeywell itself notes that the government in Festo urged the Court to adopt the position that rewriting a dependent claim into independent form cannot give rise to a presumption of surrender. [7] (Reply Br. for Pls.-Appellants at 16-17.) The Supreme Court, while approvingly citing the government's positions with respect to other issues, see, e.g., Festo, 535 U.S. at 740, rejected the position of the government in this respect, stating that rewriting a dependent claim in independent form creates a presumptive surrender if the amendment is "made to secure the patent," id. at 736. The Court held that:

The PTO might require the applicant to clarify an ambiguous term, to improve the translation of a foreign word, or to rewrite a dependent claim as an independent one. In these cases, petitioner argues, the applicant has no intention of surrendering subject matter and should not be estopped from challenging equivalent devices. While this may be true in some cases, petitioner's argument conflates the patentee's reason for making the amendment with the impact the amendment has on the subject matter.

Estoppel arises when an amendment is made to secure the patent and the amendment narrows the patent's scope. If a § 112 amendment is truly cosmetic, then it would not narrow the patent's scope or raise an estoppel. On the other hand, if 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. We must regard the patentee as having conceded an inability to claim the broader subject matter or at least as having abandoned his right to appeal a rejection. In either case estoppel may apply.

Id. at 736-37 (emphases added). Thus, the fact that the scope of the rewritten claim has remained unchanged will not preclude the application of prosecution history estoppel if, by canceling the original independent claim and rewriting the dependent claims into independent form, the scope of subject matter claimed in the independent claim has been narrowed to secure the patent.[8]

This is the rule we have consistently applied in our post-Festo decisions. First, in Deering we held that canceling a broader independent claim and replacing it with a dependent claim rewritten into independent form was a "clear surrender of the broader subject matter" that presumptively barred application of the doctrine of equivalents. 347 F.3d at 1325. There the patentee's original claim 1

defined a portable scale including a sliding weight that moved along a beam to indicate the weight of a load placed on the opposite end. Id. at 1317. Dependent claim 3 added a “Zero Position Limitation” requiring that the zero position of the sliding weight be “in an imaginary plane containing the fulcrum of the beam.” Id. at 1318-19 (emphasis omitted). Claim 1 was rejected as obvious during prosecution. Id. at 1319. The patentees canceled claim 1 and rewrote claim 3 (new application claim 11) in independent form. Id. Following the rule announced by the Supreme Court in Festo, we rejected the argument that the amendment was merely “cosmetic.” Id. at 1326. We held that this was a narrowing amendment because “the patentees clearly disclaimed the territory between the original claim 1 and new claim 1 as issued [application claim 11].” Id. at 1325. Consequently, the “addition of independent claim 11, coupled with the clear surrender of the broader subject matter of the deleted original independent claim presumptively” barred the patentee from arguing equivalents related to the zero position of the sliding weight. Id.

So too, in Ranbaxy the patentee’s original independent claim was for a chemical process that involved dissolving starting material into “a highly polar organic solvent.” 350 F.3d at 1237. Dependent claims 3, 5 and 7 further limited the highly polar organic solvent limitation of claim 1 to narrower categories of solvents, *i.e.*, sulfoxides, amides and formic acid respectively. Id. The examiner rejected claim 1 as obvious and indefinite in the first office action, but indicated that claims 3, 5 and 7 would be allowable if rewritten into independent form. Id. at 1238. The patentee responded by canceling claims 1, 3, 5 and 7 and adding new claim 11, which was identical to claim 1 except that it limited the highly polar organic solvent limitation to “the group consisting of a sulfoxide, an amide and formic acid,” *i.e.*, the patentee rewrote the dependent claims into a single, new independent claim. Id. While noting that the question of whether there was a presumption of estoppel “is best dealt with on a case-by-case basis,” id. at 1240, we held that if the amendment “surrendered subject matter that was originally claimed for reasons related to patentability,” there is a presumption of estoppel, id. (quoting Deering, 347 F.3d at 1325). Relying on Festo and Deering, we held that there was a clear surrender of subject matter because the narrower rewritten claim had been substituted for the broader original independent claim. Id. As a result, the patentee was presumed to have “surrendered the equivalents that

may have been encompassed by ‘highly polar solvent’” as originally claimed. Id. at 1241.

The approach of these cases is consistent not only with the language of Festo, but also with its theory. In Festo the Supreme Court explained that “[a] patentee’s decision to narrow his claims through amendment may be presumed to be a general disclaimer of the territory between the original claim and the amended claim.” 535 U.S. at 740. When the scope of the patent claim is narrowed to secure the patent, the court “must regard the patentee as having conceded an inability to claim the broader subject matter.” Id. at 737. The scope of the patentee’s concession is determined on a limitation-by-limitation basis. See Festo II, 344 F.3d at 1367. It necessarily follows that the presumption of surrender applies only to the amended or newly added limitation; there is no surrender of territory as to unamended limitations that were present in the original claim. Thus, when a claim is rewritten from dependent into independent form and the original independent claim is cancelled, “the correct focus is on whether [the] amendment surrendered subject matter.” Ranbaxy, 350 F.3d at 1240 (quoting Deering, 347 F.3d at 1325) (alteration in original). Under such circumstances, the surrendered subject matter is defined by the cancellation of independent claims that do not include a particular limitation and the rewriting into independent form of dependent claims that do include that limitation. Equivalents are presumptively not available with respect to that added limitation.

In this case there is a presumptive surrender of all equivalents to the inlet guide vane limitation. The only independent claims asserted in this case, claims 4, 8 and 19, were originally dependent on independent application claims 16, 32, 48 and 49, which did not include the inlet guide vane limitation. Claims 4, 8 and 19 included the inlet guide vane limitation. Claims 4, 8 and 19 were rewritten into independent form, and the original independent claims were cancelled, effectively adding the inlet guide vane limitation to the claimed invention. Honeywell is presumptively estopped from recapturing equivalents to the inlet guide vane limitation.

C

This however is not the end of the matter. In our first en banc decision in Festo, 234 F.3d 558, we held that narrowing a claim element results in a complete surrender of equivalents with respect to

that element. Id. at 574. The Supreme Court disagreed. While holding that under such circumstances there was a presumptive surrender as to the entire limitation, the Court held that this presumption could be rebutted in one of three ways. See Festo, 535 U.S. at 740-41. As made clear in Festo II, the patentee can rebut the presumption of surrender by showing either:

that the alleged equivalent would have been unforeseeable at the time of the narrowing amendment, that the rationale underlying the narrowing amendment bore no more than a tangential relation to the equivalent in question, or that there was ‘some other reason’ suggesting that the patentee could not reasonably have been expected to have described the alleged equivalent.

344 F.3d at 1368 (quoting Festo, 535 U.S. at 741). As was the case in Festo II, we think the issue of whether the patentee can overcome the presumption is best addressed, in the first instance, by the district court, and we remand for that purpose.

We do not address Sundstrand’s other challenge to the verdict of infringement since it is conceded that the jury verdict cannot stand if Honeywell is not entitled to equivalents with respect to the inlet guide vane limitation. In view of our disposition vacating the judgment of infringement, we also need not address Honeywell’s challenges to the district court’s rulings limiting damages.

II. Invalidity

We turn now to the issue of Sundstrand’s counterclaims for invalidity. Sundstrand argues that the asserted claims of the ’893 and ’194 patents are invalid under the on-sale bar, anticipated and obvious. Since the ultimate issue of validity was submitted to the jury, we assume that all underlying factual issues were resolved in favor of the verdict winner. Hewlett-Packard, 340 F.3d at 1325. We review the jury’s factual determinations for substantial evidence. Id.; Minn. Mining & Mfg. Co. v. Chemque, Inc., 303 F.3d 1294, 1305 (Fed. Cir. 2002).

Substantial evidence supports the jury’s conclusion that the claims at issue were not invalid under the on-sale bar. Under Pfaff v. Wells Electronics, Inc., 525 U.S. 55 (1998), the on-sale bar cannot arise unless the invention was (1) the subject of a commercial offer for sale and (2) “ready for patenting” prior to the critical date. Id. at 67. An invention is ready for patenting if it was “reduc[ed] to practice

before the critical date; or [if] prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention.” *Id.* at 67-68. Here Sundstrand urges that certain drawings, substantially identical to those in the ’893 and ’194 patents, prove that Honeywell’s invention was ready for patenting prior to the critical date. Honeywell disagrees. Its expert, Mr. Muller, testified that the drawings relied upon by Sundstrand would not allow “any engineer that [he] kn[ew] of with any amount of experience, to simply take [those drawings] and go off and design a surge control system” because “the details and the operation of the figures themselves are of little or no use in being able to discern how the system operates.” (J.A. at 16613-14.) The jury was entitled to resolve the conflicting evidence in favor of Honeywell, Bio-Tech. Gen. Corp. v. Genentech, Inc., 267 F.3d 1325, 1330-31 (Fed. Cir. 2001), particularly given the heavy burden to establish invalidity by clear and convincing evidence. Thus, we agree with the district court that substantial evidence supports the jury’s verdict that the claimed invention was not ready for patenting prior to the critical date and not invalid under the on-sale bar.^[9]

The jury’s findings that the ’893 and ’194 patents are not anticipated or obvious are also supported by substantial evidence. On the issue of anticipation, Sundstrand argues that one reference in particular, the Warnock article, anticipates all of the asserted claims. Not surprisingly, the expert testimony presented at trial took opposing views on whether the Warnock article disclosed a system capable of maintaining an essentially constant minimum flow rate, as the claims require. In view of this evidence, we agree with the district court that there was substantial evidence to support the jury’s finding of no anticipation. Sundstrand contends that, even if not anticipating, the prior art renders claims 8, 10, and 11 of the ’893 patent obvious. However Honeywell’s expert, Mr. Muller, testified that the patented invention differs in both function and structure from that described by the prior art. He testified that the prior art did not “have a proportional and integral controller, but only . . . a proportional controller” and that as a result the prior art “var[ied] the flow in order to get away from surge” whereas the patented invention was able to “maintain a constant flow.” (J.A. at 16,612.) Evidence of commercial success and copying was also introduced. In light of this evidence, we again agree with the district court that there is substantial evidence to support the jury’s finding of nonobviousness. We

further conclude that the district court did not abuse its discretion in denying Sundstrand's motion for a new trial on any of the asserted grounds for invalidity.

CONCLUSION

For the foregoing reasons, we conclude that the amendments made during prosecution give rise to a presumptive surrender of equivalents for the inlet guide vane limitation. Consequently, we vacate the judgment of infringement under the doctrine of equivalents and remand to the district court to consider whether Honeywell can rebut that presumption under the Festo criteria. We affirm the district court's judgment that the asserted claims of the '893 and '194 patents are not invalid. Because the judgment on liability has been vacated, we do not reach Sundstrand's argument regarding the sufficiency of evidence supporting the verdict of infringement, nor do we reach Honeywell's arguments on damages.

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

COSTS

Each party shall bear its own costs.

United States Court of Appeals for the Federal Circuit

02-1005, -1082

HONEYWELL INTERNATIONAL, INC. (formerly known as AlliedSignal, Inc.)
and HONEYWELL INTELLECTUAL PROPERTIES, INC.
(formerly known as AlliedSignal Technologies, Inc.),

Plaintiffs-Appellants,

v.

HAMILTON SUNDSTRAND CORPORATION

Defendant-Cross Appellant.

NEWMAN, Circuit Judge, dissenting in part.

Today the court changes the law in two new ways. The first way is directly contrary to statute. The second is simply another restriction on equivalency, far exceeding the holdings of the Supreme Court in Festo and Warner-Jenkinson.

Contrary to 35 U.S.C. §112 ¶4, the court now holds that the act of restating a dependent claim in independent form is a "narrowing amendment" in terms of Festo, although the claim had never been rejected or amended or narrowed. From this premise the court holds that all elements of the restated claim are subject to the presumption of surrender of all equivalents, whenever the antecedent independent claim is cancelled. Thus a limitation that has never been narrowed is subject to the presumption of surrender when a broader claim is cancelled, even when the broader claim did not mention that limitation. That is not in accordance with the Court's holding in Festo.

This new rule will simply drive patent applicants away from dependent claims and away from the accepted protocol of presenting successively narrowed dependent claims for examination. This new

rule will simply raise the cost and increase the difficulty of patent examination. By adding presumptive estoppels to elements and limitations that were never a basis of rejection and never narrowed during examination, the court further erodes the ability of inventors to protect their inventions. Although the majority attributes its ruling to the Supreme Court, this new leap for inventors is not the Court's work but that of my colleagues. I respectfully dissent.

Restating a Dependent Claim in Independent Form is Not a Change in Scope

The court holds that the placing of a dependent claim in independent form, when required only because the antecedent independent claim was cancelled, is a narrowing amendment as to all elements and limitations of the restated claim. That ruling is contrary to statute. When a dependent claim is placed in independent form, it simply states explicitly what was previously incorporated by reference:

35 U.S.C. §112 ¶4. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

Restating a dependent claim in independent form does not change its content or scope; the claim is of identical content and scope before and after it is rewritten. See, e.g., Bloom Eng'g Co. v. N. Am. Mfg. Co., 129 F.3d 1247, 1250 (Fed. Cir. 1997) ("Bloom did no more than restate original claims 7 and 18 in independent form. . . . Thus this change, standing alone, did not change the scope of original claims 7 and 18."); Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 (Fed. Cir. 1989) ("The jury was properly instructed that a dependent claim includes all the limitations of the claim from which it depends . . ."); Hartness Int'l Inc. v. Simplimatic Eng'g Co., 819 F.2d 1100, 1108 (Fed. Cir. 1987) ("[D]ependent claim 3 included all the limitations of claim 1, with the further limitation of tapered partitions").

35 U.S.C. §112 ¶4 assured that claim scope is unrelated to whether the claim is in independent or dependent form. The Court in Festo did not change that law. My colleagues not only impose the presumptive surrender of Festo, but also presume estoppel against the entire universe of technology. That is, instead of presuming surrender of the territory between the original scope of the claimed element and the scope of that element after a narrowing amendment -- the rule developed in Festo -- the

court now presumes unlimited surrender when an element was not originally claimed at all and therefore presents no outer limit of surrendered territory.

The Court in Festo established a presumption of surrender of the territory between the original scope of the claim and its amended scope. My colleagues now hold that all equivalents, without limit, are presumptively surrendered when the element was not initially claimed, whenever a dependent claim is required to be restated because the antecedent claim was cancelled.

The Honeywell dependent claims added the inlet guide vanes element and what the parties call the deltaP limitation.^[10] Although these additions were never narrowed by amendment (or argument), the court holds that they are subject to a presumption of surrender of all equivalents, simply because the antecedent claim was rejected and dropped. However, the antecedent claim did not mention any sort of inlet guide vane or any version of deltaP; these aspects were not previously claimed, and were not amended or narrowed at any time during prosecution.

Thus the court achieves the far-reaching new rule that an element or limitation contained in a dependent claim, although never narrowed and never subject to any ground of rejection, has presumptively surrendered all equivalents. These limitations are now barred from access to routine function/way/result equivalency (the formula of Graver Tank), and can reach equivalents only on the Festo grounds that apply to elements that have had narrowing amendments, *viz.*, unforeseeability and tangentialness.

In so holding, the court ignores its own en banc pronouncement on the applicability of prosecution history estoppel. This court held, upon remand of the Festo case from the Supreme Court, that "[t]he first question in a prosecution history estoppel inquiry is whether an amendment filed in the Patent and Trademark Office has narrowed the literal scope of a claim. If the amendment was not narrowing, then prosecution history estoppel does not apply." Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359, 1366-67 (Fed. Cir. 2003). Because restating a claim in independent form does not narrow the literal scope of the claim, every claim at issue in this case is of precisely the scope it had when originally filed. There was no narrowing of the scope of any claim at issue, or of any element

or limitation of any claim at issue. Therefore, the claim does not pass the "first question" announced by this court, and "prosecution history estoppel does not apply."

Dependent Claims are an Examination Convenience

The use of dependent claims is encouraged by the patent examining authority as an aid in examination. Its value during examination is reflected in the significantly lower fees charged for examination of dependent claims.

In earlier practice, the Patent Office required that "each claim should be drawn complete in itself." In re Sexton, 1873 C.D. 66 (Comm'r Pat. 1873). By the early twentieth century the Office recognized that for clarity, brevity, and convenience the use of dependent claims "would reduce the number of claims and make division between independent inventions clear and easy" because "such a claim would be self-analyzing and self-classifying, and therefore make the examination of the claim easier." Ex parte Brown, 1917 C.D. 22 (Comm'r Pat. 1917). Statutory recognition of dependent claims occurred in 1965, amending §112 to recognize dependent claims, amending §282 to state the presumptive validity of dependent claims, and §41 to reduce the fee for dependent claims. Act of July 24, 1965, Pub. L. 89-83, 79 Stat. 259. The legislative Report stated that the purpose was "to make clear that dependent claims are to be considered individually on their merits." S. Rep. No. 89-301 at 4 (1965), reprinted in 1965 U.S.C.C.A.N. 2315, 2319. In 1975 Title 35 was further amended in connection with the Patent Cooperation Treaty "to take account of a more liberal claim drafting practice in permitting multiple dependent claims as provided by the Treaty." H.R. Rep. No. 94-592, at 4 (1975), reprinted in 1975 U.S.C.C.A.N. 1220, 1224 (referencing Act of Nov. 14, 1975, Pub. L. 94-131 §§3, 7, 10, 89 Stat. 685, 690-92).

Each claim defines a separate invention, whether or not written in independent form; and its validity stands or falls separately:

35 U.S.C. §282 Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of the other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim.

A dependent claim is independently valid, and is not narrowed by the cancellation of its antecedent claim. See Altoona Publix Theaters, Inc. v. American Tri-Ergon Corp., 294 U.S. 477, 487 (1935) ("Under the statute it is the claims of the patent which define the invention. And each claim must stand or fall, as itself sufficiently defining invention, independently of the others.") (citations omitted). "[E]ach claim must be considered as defining a separate invention." Jones v. Hardy, 727 F.2d 1524, 1528 (Fed. Cir. 1984). See Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1220 (Fed. Cir. 1993) ("[E]ach claim is a separate statement of the patented invention").

A Claim is Not Narrowed by Cancelling its Antecedent Claim

By statute it is irrelevant whether a claim is in dependent or independent form; it is not a narrowing amendment to go from dependent form to independent form. The majority opinion searches for and finds a narrowing amendment in the cancellation of the broader antecedent claim. However, for the claims here at issue, there was no narrowing amendment of any of the elements or limitations at issue, in any claim.

The majority opinion changes the basic premise of presentation of claims of varying scope and divergent content, in holding that by dropping a broader claim, the claims subordinate to that claim became subject to presumptive estoppel, whether or not the subject matter at issue was included in the broader claim. That is far removed from the Court's holding in Festo. Although the majority quotes the Court's statement that "a narrowing amendment made to satisfy any requirement of the Patent Act may give rise to an estoppel," 535 U.S. at 736, restating a dependent claim into an independent claim of identical scope is not a narrowing amendment; and cancelling a broader claim (especially one that does not mention the element at issue for equivalency) is not a narrowing amendment.

In Festo the Court recognized that some §112 amendments are substantive but that other §112 amendments are formal:

Petitioner contends that amendments made to comply with §112 concern the form of the application and not the subject matter of the invention. The PTO might require the applicant to clarify an ambiguous term, to improve the translation of a foreign word, or to rewrite a dependent claim as an independent one. In these cases, petitioner argues, the

applicant has no intention of surrendering subject matter and should not be estopped from challenging equivalent devices. While this may be true in some cases, petitioner's argument conflates the patentee's reason for making the amendment with the impact the amendment has on the subject matter.

Estoppel arises when an amendment is made to secure the patent and the amendment narrows the patent's scope. If a §112 amendment is truly cosmetic, then it would not narrow the patent's scope or raise an estoppel. On the other hand, if a §112 amendment is necessary and narrows the patent's scope -- even if only for the purpose of better description -- estoppel may apply.

Festo, 535 U.S. at 736-37. The majority states that in this passage the Court "rejected the position of the government [that rewriting a dependent claim into independent form does not give rise to a presumption of surrender], stating that rewriting a dependent claim in independent form creates a presumptive surrender if the amendment is 'made to secure the patent.'" Maj. op. at 16-17. Neither this passage, nor any other, so holds. Indeed, the Court explained that the criterion is whether the §112 amendment was a narrowing amendment, stating that "it may be true in some cases" that an amendment under §112 does not trigger prosecution history estoppel. Festo, 535 U.S. at 736.

Rewriting of a claim in accordance with 35 U.S.C. §112 ¶4 can never be a narrowing amendment, because, by statute, rewriting a dependent claim in independent form does not narrow the claim's scope. The Court did not purport to overturn that well-respected law. Although it is well established that the prosecution of an element in other claims may affect the scope of that element in all claims, as discussed post, the court today rules that the mere presentation of a new element in a dependent claim raises the presumption of surrender of all equivalents of that element whenever the antecedent claim is cancelled. That is simply incorrect.

In the Honeywell claims the newly added element was never the subject of rejection or amendment during prosecution. It is irrelevant whether that element first appeared in a dependent or an independent claim. It is a new and unwarranted enlargement of Festo's law of presumptive surrender, to hold that this presumption arises automatically as to elements that were never rejected, never amended, and never at issue during prosecution, whenever a broader claim is cancelled.

The question is not whether a claim that contains more limitations -- for example, a claim that names more parts of a mechanical device -- is narrower than a claim that names fewer parts. Of course a

claim with more limitations is narrower than a claim with fewer limitations. The issue is whether a claimed element that has never been amended is always subject to the restricted access to equivalency that flows from presumptive surrender based on a narrowing amendment.

According to my colleagues, no element/limitation added by dependent claim, although never rejected, can achieve Graver Tank function/way/result equivalency, when the antecedent claim is cancelled for reasons of patentability. That is not what the Court in Festo held. The Court stated that there was no per se rule for the group of §112 amendments that are formalistic instead of substantive, and that the "impact on the subject matter" must always be considered. For example, if the dependent claim were itself rejected for reasons of patentability, it is irrelevant whether the claim is in dependent or independent form. However, when, as here, the dependent claim was never rejected, the act of rewriting the dependent claim does not raise a presumptive estoppel to equivalency, whether or not the antecedent claim is cancelled. The Court's Festo opinion does not state otherwise.

The Honeywell claims in suit were not rejected on any ground, although the independent claims were rejected on substantive grounds. The district court applied the Federal Circuit's 2002 opinion (before vacatur by the Supreme Court), and on those rigorous grounds of estoppel the district court ascertained which elements or limitations were asserted to be infringed by an equivalent, determined that they involve the inlet guide vanes and the deltaP parameter, and observed that these aspects were not amended during prosecution and were not a subject of rejection. The district court correctly held that these claims were amenable to Graver Tank equivalency, and instructed the jury accordingly.

Cancelling an independent claim in favor of a dependent claim restated in independent form, is not the same as making a narrowing amendment to a claim. It is not notice of a retrenchment in the scope of the dependent claim. See Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324 (Fed. Cir. 2002) ("Although prosecution history can be a useful tool for interpreting claim terms, it cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject matter."). Merely cancelling a broad claim is not a signal to competitors that the patentee disavowed all

equivalents of the elements and limitations of remaining claims that were never rejected during prosecution.

The "Objection" to the Honeywell Claims During Examination

The claims at issue were never rejected during patent examination, on prior art or any other ground. They were held to recite allowable subject matter in the first action by the examiner, but because they depended from claims that had been rejected, the examiner "objected" to them.

When the form of a claim is improper, the examiner issues an "objection" rather than a "rejection." MPEP §706.01 (8th Ed. 2001) discusses this distinction:

The refusal to grant claims because the subject matter as claimed is considered unpatentable is called a "rejection." . . . If the form of the claim (as distinguished from its substance) is improper, an "objection" is made. An example of a matter of form as to which objection is made is dependency of a claim on a rejected claim, if the dependent claim is otherwise allowable. See MPEP §608.01(n).

MPEP §608.01(m) lists various grounds of objection to the form of claims, and in Ex parte Porter the Board explained that the question of dependent form is formal, not substantive:

[MPEP §608.01(n)] properly treats a claim considered to be an improper dependent claim an administrative function or formal matter wherein the examiner's ruling can be challenged by way of petition under 37 C.F.R. §1.181 rather than by appeal under 37 C.F.R. §1.191.

Ex parte Porter, 25 USPQ2d 1144, 1147 (Bd. Pat. App. & Interf. 1992).

The examiner stated that the Honeywell claims in suit were allowable, and would be allowed if placed in independent form. Honeywell then simply cancelled all of the rejected claims, without amendment or argument concerning the rejection, and placed the "objected to" claims in independent form. These claims were then issued. Their scope was never changed. No change was made in any element or limitation, while in either dependent or independent form. The inlet guide vanes and deltaP were not mentioned in any cancelled independent claim, had not been claimed more broadly in any rejected claim, and were not the subject of amendment or argument. These limitations appeared only in

the original dependent claims, and were unchanged when the claims were restated in independent form. There was no narrowing amendment. This is a conspicuous distinction from the precedent relied on by the majority.

The district court correctly analyzed this precedent. In Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 681 (Fed. Cir. 1988) the patentee had presented arguments that expressly surrendered the scope being claimed as an equivalent; this court properly held that these arguments applied to all claims, whether or not the claims had themselves been amended. Similarly in Builders Concrete, Inc. v. Bremerton Concrete Prods. Co., 757 F.2d 255, 260 (Fed. Cir. 1985), this court held that although the claim in suit had not been amended, "the precise subject matter that was relinquished in order to obtain allowance" of a different claim, could not be recaptured under the doctrine of equivalency. In these cases the asserted equivalent had been expressly disclaimed or relinquished during prosecution.

This law is well-established, as reflected in the recent Deering and Ranbaxy cases, on which the majority places heavy reliance. As stated in Deering Precision Instruments, L.L.C. v. Vector Distribution Sys., Inc., 347 F.3d 1314, 1325 (Fed. Cir. 2003), "the correct focus is on whether the amendment surrendered subject matter that was originally claimed for reasons related to patentability." In Deering the original independent claim was directed to a scale that comprised "a sliding weight movably carried by said beam for movement along said scale," and a dependent claim limited the sliding weight element of the independent claim by further requiring that it contain a "zero position." This court held that the territory between the zero position of the sliding weight in the dependent claim and the unlimited position of the sliding weight in the cancelled claim was subject to Festo estoppel. That holding is in accord with conventional estoppel and element-by-element analysis.

Similarly in Ranbaxy Pharms. Inc. v. Apotex, Inc., 350 F.3d 1235, 1240 (Fed. Cir. 2003), the original independent claim contained the description "highly polar organic solvent," and dependent claims added solvent categories of sulfoxides, amides, and formic acid. The broad "highly polar organic solvent" was rejected on prior art and the applicant cancelled that claim, retaining the dependent claims' sulfoxides, amides, and formic acid. The dependent claims were then restated in independent form. The

court correctly applied Festo estoppel to Ranbaxy's assertion of equivalency of other polar solvents. The court correctly applied the rules of estoppel to these narrowed claim limitations; the form of the claims was irrelevant.

Applied to the Honeywell claims, the inlet guide vanes element and deltaP limitation were not narrowed by amendment. The dependent claims added these new features, not present in the original independent claim. In contrast, in Deering and Ranbaxy the dependent claim limited an element of the original independent claim, raising the presumption of surrender of "all territory between the original claim limitation and the amended claim limitation." Festo, 535 U.S. at 740. In contrast, in the Honeywell situation the inlet guide vanes and deltaP were not claimed in any scope, and there was no surrendered territory of inlet guide vanes and deltaP.

The court thus imposes an unbounded estoppel, for there is no measure of the yielded territory. However, the proper focus is the prosecution-induced change to the element at issue. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997) (equivalency is determined element by element). It is necessary, to implement Festo and Warner-Jenkinson, to determine whether the dependent claim added a new element or simply limited an existing element. The decisionmaker can then determine the scope of the intervening territory, imposing the Festo restrictions on equivalency when there is a presumption of surrender, or the equivalency principles of Graver Tank when there is no presumption of surrender.

The Challenge to Patentees

My colleagues state that they are preventing subversion of the court's attempts to restrain access to equivalency, by preventing "astute practitioners, through clever claim drafting, from elect[ing] to treat most, if not all, amendments by merely adding new claim limitations rather than narrowing preexisting ones." Maj. op. at 15. Indeed, it has long been the practice to add new limitations in subordinate claims.

The court holds: "we hold that an amendment adding a new claim limitation constitutes a narrowing amendment that may give rise to an estoppel." That holding is seriously flawed, for it holds

that no subordinate claim can avoid presumptive surrender and estoppel whenever a broader claim is cancelled. Yet the writing of broader claims and their cancellation during prosecution is, or was, the common practice. Astute practitioners are indeed needed, for little is left of access to equivalency.

Today's new rule solves no problem, rights no wrong, addresses no unmet need. Future applicants may attempt to obtain access to the doctrine of equivalents through avoiding dependent claims. Patent applications will cost more, since independent claims carry a heavier fee than dependent ones. There will be more opportunities for mistakes, and insignificant changes in the wording of limitations that would have been incorporated by reference will be fodder for litigation. Examination will probably take longer, because the use of dependent form adds organization to the claims and makes them easier to understand. The losers are those patentees who had no reason to foresee today's new rule, and future patentees who will have to cope with it.

[1] The DELPQP value used in the accused device has an unusual characteristic. In most airflow conditions the value of DELPQP is directly proportional to the amount of airflow. At high levels of flow, however, DELPQP becomes inversely proportional to the amount of flow, *i.e.*, above a certain level of flow DELPQP decreases instead of increases as flow increases. Reliance upon DELPQP under these conditions might incorrectly characterize a safe high flow situation as an unsafe low flow situation, resulting in the surge bleed valve being opened to increase flow unnecessarily, causing excess APU fuel consumption.

[2] “Inlet guide vane limitation” here refers to both the claimed structure of the inlet guide vanes and their claimed function in the surge control system (*e.g.*, “varying said set point as a function of the position of said inlet guide vanes,” ’893 patent, claim 8, and “adjusting the relationship between the magnitudes of said . . . control signals and . . . said parameter variations as a function of the position of the inlet guide vanes,” ’194 patent, claim 4).

[3] The district court construed step (d) to mean “the relationship between the magnitudes of the control signals and the magnitudes of the parameter variations, and that relationship is adjusted as a function of the position of the inlet guide vanes.” Honeywell Int’l Inc. v. Hamilton Sundstrand Corp., No. 99-309 GMS, slip op. at 2 (D. Del. Feb. 12, 2001).

[4] Claims 17 and 35 of the ’893 patent application and claim 51 of the ’194 patent application provided:

17. The accessory power unit of Claim 16 wherein said compressor has adjustable inlet guide vanes, the value of said flow-related parameter is substantially independent of the temperature of the compressed air, said comparator means have an adjustable control set point representing said desired value of said parameter, and said accessory power unit further comprises means for transmitting to said comparator a reset signal for varying said set point as a function of the position of said inlet guide vanes in accordance with a predetermined reset schedule.

35. The control system of Claim 32 wherein the compressor has adjustable inlet guide vanes, and said control system further comprises a guide vane position sensor and a function generator coupled in series between the inlet guide vanes and said input portion of said comparator.

51. The method of Claim 49 wherein the compressor has adjustable inlet guide vanes, and said method further comprises the step of adjusting the relationship between the magnitudes of said integral and proportional control signals and the magnitudes of said parameter variations as a function of the position of the inlet guide vanes.

(App. at 18640, 18645, 18730.)

[5] Claim 35 was also rejected as indefinite under 35 U.S.C. § 112. This rejection was overcome by amendment to other claim limitations. Sundstrand does not argue that these other limitations are a basis for overruling the district court’s judgment.

[6] Although the district court’s judgment did not expressly dispose of Sundstrand’s counter-

claims, the special verdict referred to in the court's final judgment specifically rejects each of Sundstrand's invalidity arguments. Since the district court's intent was clear, we interpret the judgment to be a final rejection of the counterclaims for invalidity. See Pandrol USA, LP v. Airboss Ry. Prods., Inc., 320 F.3d 1354, 1362-63 (Fed. Cir. 2003); Enzo Biochem, Inc. v. Calgene, Inc., 188 F.3d 1362, 1378 (Fed. Cir. 1999).

[7] The government argued that:

Patent applicants may amend their patent claims for reasons of patentability--such as to clarify an ambiguous term—that do not result in narrowing the claims and surrendering subject matter. Rather, the amendments may state the same—or broader—patent claims in more precise terms. For example, an applicant may amend by rewriting a dependent claim as an independent claim. See Honeywell Int'l Inc. v. Hamilton Sundstrand Corp., No. Civ. A. 99-309 GMS, 2001 WL 66348, at *6 (D. Del. Jan. 8, 2001) . . . Such amendments do not give rise to prosecution history estoppel, which has as its core functions preserving the notice function of the claims and preventing patent holders from recapturing under the doctrine of equivalents subject matter that was surrendered before the Patent Office.

Br. for the United States as Amicus Curiae at 16-17, Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2002) (No. 00-1543) (emphases added and internal quotation marks omitted).

[8] See also Keith v. Charles E. Hires Co., 116 F.2d 46 (2d Cir. 1940). In Keith, Judge Learned Hand, writing for the court, stated:

We can see no difference between that situation [where the claim was amended to secure allowance] and one where as here the applicant files a limited and a broader claim at the same time and then cancels the broader one when it has been rejected. The theory of the "estoppel," as it is called is that, by assenting to the cancellation of the claim and by amending it, the applicant has abandoned it as it stood. Certainly it cannot be necessary to this conclusion that he shall amend the cancelled claim, when he has already filed a claim which contains the necessary differentia.

Id. at 48.

[9] Because we find that substantial evidence supports the jury's finding that the invention was not ready for patenting prior to the critical date, we do not decide whether the agreement and subsequent papers constituted an offer to sell.

[10] The claims at issue, in their original dependent form, were as follows:

17. The accessory power unit of Claim 16 wherein said compressor has adjustable inlet guide vanes, the value of said flow-related parameter is substantially independent of the temperature of the compressed air, said comparator means have an adjustable control set point representing said desired value of said parameter, and said accessory power unit further comprises means for transmitting to said comparator a reset signal for varying said set point as a function of the position of said inlet guide vanes in accordance with a predetermined reset schedule.

35. The control system of Claim 32 wherein the compressor has adjustable inlet guide vanes, and said control system further comprises a guide vane position sensor and a function generator coupled in series between the inlet guide vanes and said input portion of said comparator.

51. The method of Claim 49 wherein the compressor has adjustable inlet guide vanes, and said method further comprises the step of adjusting the relationship between the magnitudes of said integral and proportional control signals and the magnitudes of said parameter variations as a function of the position of the inlet guide vanes.

The claims were held allowable on the first examiner's action, but were "objected to" as to dependent form. (Claim 35 was also rejected as indefinite under 35 U.S.C. §112; this rejection was overcome by amendment to other elements, not here at issue.)