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Hughes Aircraft and the Warner-Jenkinson Presumption: The Certiorari That Should Have Been

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I. Introduction

The Supreme Court denied certiorari in the case of *Hughes Aircraft Co. v. United States*.ⁿ¹ The United States had petitioned the Court to use *Hughes* to clarify the interpretation and application of the Warner-Jenkinson presumption.ⁿ² Because there are many unanswered questions surrounding the Warner-Jenkinson presumption, this article proposes that the Court should have granted certiorari to resolve several issues discussed in this article. Part II of this article proposes that the Court should have recognized the imperfect nature of patent claims and should have established a necessary and pragmatic justification for the doctrine of equivalents. Part III refutes the claims of some judges and commentators and poses that the Supreme Court did not intend to curtail the doctrine of equivalents when deciding *Warner-Jenkinson Co. v. Hilton Davis Chemical Company*.ⁿ³ Part IV discusses how the Warner-Jenkinson presumption makes sense when the prosecution historyⁿ⁴ is unknown. Part V asks the Court to clarify the standard of review for the Warner-Jenkinson presumption: Is the presumption an equitable determination within the district court's discretion, or is the presumption a question of law? Part VI asks the Court to determine whether the Warner-Jenkinson presumption will be incorporated into related patents. Part VII summarizes these arguments.

II. Pragmatic Justification For Doctrine of Equivalents

Part II proposes pragmatic justifications for the doctrine of equivalents that are seldom mentioned in the usual policy debate that surrounds the doctrine. The doctrine of equivalents (or something akin to the doctrine of equivalents) must exist to protect patentees from the vagaries of language. The doctrine of equivalents is often the only hope of protecting an invention that our language cannot adequately describe. The government's request for an appeal from *Hughes Aircraft Company v. United States*ⁿ⁵ would have been an opportunity for the Supreme Court to reaffirm the overriding pragmatic justifications underlying the doctrine of equivalents: 1) claims are imperfect; and 2) the doctrine of equivalents protects the patentee's "invention."

The doctrine of equivalents is often said to breed tension between competing policy concerns. These policy concerns are often described as "clear notice" to the public and the polar "fairness" to the patentee. n6 The public deserves clear notice of the limits of a patentee's invention boundaries. n7 The public has a right to compete in the market without crossing the boundaries of the patentee's invention. n8 The patentee should, therefore, be held to the literal language of the patent claims to clearly demarcate the boundaries of permissible market competition. n9

The doctrine of equivalents is concerned, however, with fairness to the inventor. Diligent inventors must be rewarded for their contributions to the progress of science. n10 If the patentee is not protected against insubstantial improvements by competitors, the incentive to innovate is lost. n11 If innovation is stifled, society will suffer. The doctrine of equivalents evolved so that an inventor's contribution to society is protected against insubstantial changes falling outside the literal terms of the patent claim. n12

This notice-fairness duality minimizes, however, the pragmatic justifications for the doctrine of equivalents. Commentators and courts have subsumed the doctrine's justifications into this overarching "fairness" argument. n13 Fairness, as a general policy justification, subsumes historical and weighty justifications underlying the doctrine of equivalents. The Supreme Court could have used *Hughes* to reiterate the overriding pragmatic justifications underlying the doctrine of equivalents: 1) claims are imperfect; and 2) the doctrine of equivalents protects the patentee's "invention."

A. Patent Law is Territorial.

This subsection will show that the doctrine of equivalents has a practical and essential justification in patent litigation. The doctrine of equivalents (or something akin to the doctrine of equivalents) must exist to protect patentees from the vagaries of language. The patent drafter cannot describe and claim an invention when words are lacking. The doctrine of equivalents must exist because patent claims are imperfect expressions of a patentee's contribution to science.

Claims sometimes reflect our imperfect language. The drafter of a patent claim is often faced with an inadequate selection of words to describe an invention. The drafter also strives to be as concise as possible, so the inadequate selection of suitable claim terms becomes an acute problem. Because patent applicants can "be their own lexicographers," n14 patent claim drafters have often resorted to concocted wording to describe an invention. "Slidably mounted" n15 is often used, for example, to describe an invention component that is confined, or mounted, in some ways but permitted to move, or "slide," in other ways. "Diametrically opposed" n16 has been used to describe invention features that are opposed across some type of circumference. If the terms "slidably" or "diametrically" are not carefully explained within the patent specification, courts may have to turn to extrinsic evidence to interpret the terms. Neither "slidably" or "diametrically" will be found in most dictionaries, so a court interpreting the term must often rely upon testimony. Furthermore, even if the patent specification includes an explanation for either term, the concocted nature of each term is very susceptible to alternative interpretations by competitors and litigants. Complicated inventions having many claimed details present significantly greater possible permutations of claim language. The doctrine of

equivalents is, then, often the only hope of protecting an invention that our language cannot adequately describe.

Claims certainly reflect our own imperfect choice of words. No two patent drafters will describe an invention in the same way using the same terms. No two drafters will write the same claim for the same invention. "Diametrally opposed" is still a good example. "Diametrally" is not found in most dictionaries, yet the term "diametrically" may be found. n17 Is there a semantic difference? Could competitors and litigants argue that there is a meaningful difference to one skilled in the art? A difference that takes the competitor's device beyond the bounds of the claim? Language is, in short, the harsh reality of patent practice. No claim is perfect.

B. Courts Protect Patentee's "Invention"

The doctrine of equivalents protects inventors from the harsh realities of language and patent practice. Because patent specifications and the early attempts at claiming were imperfect, the earliest justifications for the doctrine of equivalents strove to protect the patentee's "invention." Justice Story stated the general principle in 1814, and subsequent cases echoed Justice Story's desire to protect the rights of patentees to their inventions despite any statutory claiming requirement. This subsection will review and discuss some of the earliest attempts to protect the rights of inventors and elevate "fairness" over "notice."

1. Justice Story's *Odiorne v. Winkley*

Justice Story, in *Odiorne v. Winkley*, n18 recognized the inventor's right to his invention. *Odiorne* involved a patented machine for making nails. n19 The plaintiff's patented machine cut the nail to length and produced the nail's head in a single operation. n20 Although the defendant used two machines, the plaintiff alleged the defendant's machines used the same single operation. n21 The plaintiff also alleged the defendant's two machines operated on the same principles and on the same mode of operation as the plaintiff's machine. n22 Justice Story charged the jury to determine whether the defendant's machines were substantially similar in principle and mode of operation. n23 If they were substantially similar, the plaintiff's patent was infringed. n24

Yet Justice Story recognized the difficulty in determining same mode and same operation.

It is often a point of intrinsic difficulty sic to decide, whether one machine operates upon the same principles as another. . . . The material question, therefore, is not whether the same elements of motion, or the same component parts are used, but whether the given effect is produced substantially by the same mode of operation, and the same combination of powers, in both machines. Mere colorable differences, or slight improvements, cannot shake the right of the original inventor. n25

The inventor's right was to be protected, despite any literal discrepancies, and despite any difficulties in analysis.

Justice Story elevated, therefore, the right of the inventor above an element-by-element comparison. The patent encompassed a machine satisfying a "same mode, same

operation, same effect" analysis. While Justice Story admitted the analysis is difficult to apply, the inventor had a right to these "slight improvements." n26 Justice Story's analysis, and the rights of patentees to their inventions, became precedent for the more commonly-known "doctrine of equivalents" cases. n27

2. Evans v. Eaton

Justice Story's desire to protect a patentee's invention is echoed in *Evans v. Eaton*. n28 This case involves the peculiar efforts of Oliver Evans to enforce his milling patents. n29 Evans' patent was for a hopper used in the milling of flour. n30 The defendant answered that Evans was not the original inventor and, even if Evans was the original inventor, his patent specification did not adequately describe the improvement. n31

The defendant presented evidence that another person, Stouffer, invented the hopper before Evans. The defendant's witnesses could establish that Stouffer had a hopper in use prior to Evans' patented hopper. n32 The question, according to Justice Washington, was whether Stouffer's hopper was the same as Evans'. n33 Although the two hopper designs had element-by-element differences, the question was whether the "two machines be substantially the same, and operate in the same manner, to produce the same result" n34 If Evans' hopper design matched Stouffer's design in each inquiry, then Stouffer was truly the first inventor, and Evans would not have a valid patent. n35

Although Evans did not prevail, the Court invoked in its decision Justice Story's principle that a patentee's invention deserves protection. While the two hoppers had structural differences, the Court sought to protect the principle underlying Evans' design. n36 This rule was well settled in the Supreme Court and other courts. n37

3. Winans v. Denmead

The Court, in *Winans v. Denmead*, n38 relied upon this same inclination to protect the patentee's "invention" despite Justice Story's departure from the bench. n39 The plaintiff's patent described cylindrical and conical railroad cars. n40 This shape allowed the railroad car to carry more coal in proportion to the weight of the car itself. n41 The plaintiff alleged that the defendants' draftsman entered the plaintiff's shop, examined and measured one of the plaintiff's patented railroad cars, and then made an octagonally-shaped pyramidal coal car. n42 This octagonal shape, according to the plaintiff, was "substantially the same in principle and mode of operation" to the patented design. n43 The defendants contended their railroad cars were octagonal in shape and thus fell outside the single geometric form specified in the patent. n44

The trial judge found no literal infringement and ruled that the patent was only enforceable for what was described therein. n45 The patent described a conical body and any principle "due alone to conical vehicles." n46 Because the defendants' body was entirely rectilinear, there was no infringement of the plaintiff's patent. n47 The district court judge did not stray from the literal terms of the patent.

On appeal, Justice Curtis, writing for the majority, began, "as in most patent cases," by determining what was the patented invention. n48 Justice Curtis turned to the same analysis used by Justice Story to resolve the question of infringement. n49 The Court sought to determine the structure of the patented device, its mode of operation, the result attained, and whether the "specification of claim" covered the mode of operation. n50

The patented coal car's structure had an upper cylindrical section and a lower conical section. n51 The mode of operation, a uniform pressure along the coal car, was never before employed. n52 The result was a car that could carry double the load of coal of previous designs. n53 The central issue of the case revolved around the last determination, that is, whether the specification covered this mode and this result. n54

Justice Curtis relied upon a presumption that the patentee claims all he is entitled to claim. n55 The Constitution and the patent laws are to promote the progress of the useful arts and to allow inventors the use of what they have created. n56 A patentee is understood to describe and to claim all "other forms which embody his invention" n57 It is "this new mode of operation that is, in view of the patent law, the thing entitled to protection." n58 A copy of the principle or a copy of the mode of operation, is an infringement, even though that copy is completely unlike the original. n59 The defendants' rectilinear coal cars substantially employ the plaintiff's mode of operation and attain substantially the same result. n60

The four dissenting justices, in an opinion joined by Chief Justice Taney, argued infringement was limited to the precise wording of the claims. The patentee's "precise and definite specification and claim were designed to ascertain exactly the limits of his invention." n61 The patentee's specification lacks the breadth necessary to encompass a form "widely variant sic from his own." n62 The patentee brings this suit, quite simply, to cure that defect. n63 Yet "the patentee is obliged, by law, to described his invention in . . . full, clear, and exact terms" n64 The dissent argued that the patentee's specification and claims to a conical car body did not embrace the defendant's rectilinear design. n65

Nevertheless, the Winans Court followed the same inclination as Justice Story and sought to protect a patentee's invention. The majority embraced an inventor's right to his creation and to any other form which embodies that invention. n66 Although the specification lacked support for all possible variations of the patented material, the law presumed the inventor meant to claim all that the inventor had a right to claim. n67 Unless the patentee clearly chose not to claim all that he was entitled to claim, each claim should be fairly construed to embody all forms of the invention. n68 The Winans Court, like Justice Story, saw the patentee's right to his invention as paramount to the recently instituted notice requirement of the claims.

4. McCormick v. Talcott

The Court's desire to protect the patentee's invention continued in the case of McCormick v. Talcott. n69 McCormick's patent involved improvements to a grain reaping machine. n70 McCormick alleged that the defendant's machine used the same arrangement of components as the patented machine and thus infringed. n71 The defendant, Talcott, denied his machine infringed McCormick's patent. Talcott argued that his reaping machine had a different construction, had a different mode of operation, and was independently invented. n72

The Court began by first describing the scope of protection available to the inventor. n73 If McCormick was the original inventor of the claimed reaper components, he would have the right of invention against all who used the same components, operated on the same principle, and performed the same functions. n74 If McCormick's invention was,

however, merely an improvement of a known reaper machine, McCormick, the inventor of the improvement, could not "invoke the doctrine of equivalents to suppress all other improvements which are not mere colorable invasions of" his improvement. n75 The doctrine of equivalents does not encompass another's improvement of the known reaper machine. n76

The Court then determined that McCormick was not the first to invent his claimed components. n77 One claimed component, "a divider," had more or less the same function as all other dividers, so McCormick's patent was simply an improvement to known reapers and was limited in breadth to the specifications of his divider. n78 The defendant's divider did not use the same specifications and, therefore, did not infringe. n79

The defendant also did not use the same reel structure as McCormick. n80 The defendant used a design that was invented many years before McCormick's patent. n81 The defendant's reaper design did not suffer any of the "evils" that McCormick's patent sought to remedy. n82 Because the defendant's design was better than the reaper design McCormick had improved upon, the doctrine of equivalents could not be used to find infringement of McCormick's patent. n83

McCormick's last allegedly infringed claim was narrowly interpreted. n84 McCormick's claim to all reaper machines having a reel and raker's seat could not have been patentable as several other inventors publicly used such a combination. n85 McCormick's patent was therefore, limited to the combination specifically shown and described in the specification. n86 The defendant used a raker's seat at a different location on the reaper, and the defendant's seat differed in principle and in form. n87 As such, the defendant's seat was not an infringement. n88

Justice Daniel argued, in dissent, that McCormick's patent was to be broadly construed. n89 Because the defendant Talcott conceded that McCormick's patent was valid, the Court should not have compared McCormick's patent to the prior art. n90 Instead, the inventor must be entitled to the full benefit of his invention. n91 The defendant's reaper, in Justice Daniel's view, was "formally identical" to McCormick's machine in principle, in structure, in mode of operation, and in results. n92 Thus, according to Justice Daniel, any inquiry into the comparative superiority or inferiority of inventions or improvements, prior to McCormick's patent, was irrelevant and improper. n93

The debate in McCormick, as described by the majority and dissent, centers upon the patentee's "invention." The majority saw McCormick's "invention" as merely an "improvement," while the dissent felt McCormick was procedurally entitled to a broad interpretation of his contribution. The majority looked to the prior art and evaluated the contribution of the patentee. n94 Because McCormick could not rightfully claim all that he disclosed, the Court determined what was rightfully his, was an "improvement" of an existing machine. n95 The doctrine of equivalents would not broadly encompass all other divider components. n96 The doctrine of equivalents would only encompass other "improvements" having the same structure, function, and result as McCormick's "improvement." n97 The dissent, in contrast, felt that the defendant's concession of validity forced the Court to apply the doctrine of equivalents to the claim at issue. n98

The majority and the dissent both concurred in applying the doctrine of equivalents to the patentee's invention. The doctrine of equivalents works to protect the patentee's invention from any other same structure, same function, same result applications. The McCormick Court disagreed only as to the permissible breadth of the patentee's "invention." "Fairness" to the patentee was accepted, by both the majority and dissent, as more important than the early claiming requirements. The McCormick Court, however, struggled (as the court does today) to determine just what it is that the patentee invented.

5. Royal Typewriter

Judge Learned Hand reiterated, in *Royal Typewriter Co. v. Remington Rand, Inc.*,ⁿ⁹⁹ the doctrine's underlying principle of protecting a patentee's "invention." When the claim interpretation is exhausted, and the scope of the claims enlarged as far as possible, the doctrine of equivalents will "prevent an infringer from stealing the benefit of the invention."ⁿ¹⁰⁰ The courts have accepted this proposition "almost from the beginning. All patents are entitled to this benefit to an extent, measured . . . by their contribution to the art, and . . . by the degree to which it is necessary . . . to reach a just result."ⁿ¹⁰¹ An infringing equivalent "must 'attain substantially the same result in substantially the same way.'"ⁿ¹⁰²

Although the patentee in *Royal Typewriter* made only a humble contribution to the art, the invention was protected from appropriation.ⁿ¹⁰³ The defendant's design had only one "trip bar," but this single trip bar attained substantially the same result in substantially the same way as the patentee's contribution.ⁿ¹⁰⁴ Although the patentee's improvement "did not demand a high flight of inventive genius," the doctrine of equivalents protected his small contribution.ⁿ¹⁰⁵ The doctrine of equivalents is available to all patents both broad and narrow.ⁿ¹⁰⁶

Judge Learned Hand demonstrated in *Royal Typewriter* that the doctrine of equivalents evolved in recognition of the difficulties of claim drafting.ⁿ¹⁰⁷ The patentee is required to "particularly point out and distinctly claim"ⁿ¹⁰⁸ his invention, yet, not unduly restrict the patent of all practical value.ⁿ¹⁰⁹ It is, however, almost always possible to change the form of the claimed elements and still maintain the full advantages of the patentee's invention.ⁿ¹¹⁰ While claims must meet the statutory requirements, they must also provide meaningful patent protection lest progress in the art be stifled.ⁿ¹¹¹

The doctrine of equivalents is a compromise reflecting the harsh realities of patent claim drafting.ⁿ¹¹² Courts differ, and will always differ, when determining the latitude of equivalents.ⁿ¹¹³ Learned Hand was not, however, satisfied that the doctrine of equivalents should disappear.ⁿ¹¹⁴

Learned Hand thus frankly admitted the difficulties of drafting patent claims. The patentee deserves the broadest protection possible, as is the patentee's right, yet, not too broad as to render the patent invalid. The claim drafter's task is further complicated by a host of alternatives. There is always an alternative way of claiming the invention. There is always alternative claim language. There is almost always an alternative form for the invention. Judge Learned Hand recognized that patent claims are imperfect and that the doctrine of equivalents operates to protect the patentee's contribution to the arts. The doctrine of equivalents protects the patentee's "invention."

6. Graver Tank

On the heels of *Royal Typewriter* came *Graver Tank & Manufacturing Co. v. Linde Air Products Co.* n115 Justice Jackson, writing for the six-member majority, n116 outlined the justifications for the doctrine of equivalents. The doctrine evolved in recognition of the difficulties of patent practice. n117 Strict literal infringement of the patentee's invention would render the patent hollow and useless. n118 Any insubstantial change would lie outside the literal terms of the claim and outside the reach of the law. n119 Literal infringement is dull, is rare, and puts the inventor at the mercy of verbalism. n120 Strict literal infringement deprives an inventor of the benefit of their invention and impedes the progress of the arts. n121

The principles of *Winans v. Denmead* n122 have been consistently applied to protect the patentee's invention. n123 The doctrine of equivalents is available to all patentees, regardless of their contributions, and equivalence will vary with the circumstances of each case. n124 Persons reasonably skilled in the art are an important evidentiary source of an element's known interchangeability. n125 Equivalence is a question of fact determined by issues of credibility. n126 Equivalence is to be decided by the trial court and reviewed under a clearly erroneous standard. n127

The trial judge found the defendant infringed under the doctrine of equivalents. n128 The accused welding composition was identical in operation and result. n129 Chemists skilled in the art testified to known interchangeability. n130 Scholarly treatises further confirmed this known interchangeability. n131 The record showed no indication of the defendant's independent development. n132 The trial judge's conclusion was adequately supported in the record and was not clearly erroneous. n133

The *Graver Tank* dissent argued, as did the dissent in *Winans*, that infringement was limited to the precise wording of the claims. n134 A patentee is required to precisely define the limits of his invention. n135 All that "is not specifically claimed is dedicated to the public." n136 Congress has provided a fair method of broadening claims after the patent issues. n137 The public is, therefore, deprived when the doctrine of equivalents gives the patentee a benefit not claimed. n138

The *Graver Tank* majority plainly endorsed the principles stated in *Winans*. The weld composition was, in the trial court's view, the heart of the invention. n139 Terminology will not defeat the patentee's contribution to the arts. n140 Strict literal infringement impedes the constitutional mandate to promote the sciences and subordinates the substance of the invention to form. n141 A patentee is, therefore, understood to claim all that embodies his invention. n142

7. The Final Lesson

The doctrine of equivalents has always protected a patentee's invention. Justice Story stated the equitable principles in our early patent history, and the courts have continually echoed the rights of inventors to their contributions. Judge Learned Hand recognized that patent claims are imperfect and that the doctrine of equivalents operates to protect the patentee's contribution to the arts. This judicial desire to protect the patentee's "invention," despite the claiming requirements, was again endorsed by the Supreme Court in *Graver Tank*. Because the patent statute speaks of "infringement of the

invention," n143 and not "infringement of the invention as defined by the claims," the doctrine of equivalents is a necessary component of our patent system to protect an inventor's contributions.

The Supreme Court should have granted certiorari in *Hughes* to recognize the historical and pragmatic justifications for the doctrine of equivalents. An overarching "fairness" justification loses sight of the most weighty underpinnings of the doctrine of equivalents. The doctrine of equivalents is often the only hope of protecting an invention that our language cannot adequately describe. Hearing the appeal from *Hughes Aircraft Co. v. United States* n144 would have been a vehicle to reaffirm the overriding pragmatic justifications underlying the doctrine of equivalents: 1) claims are imperfect, and 2) the doctrine of equivalents protects the patentee's "invention."

III. Warner-Jenkinson Was Not Meant To Curtail The Doctrine Of Equivalents

Part III investigates whether the Supreme Court's Warner-Jenkinson opinion truly sought to curtail the doctrine of equivalents. Some have argued that the Supreme Court, in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, n145 sought to rein in the doctrine of equivalents. n146 Because the doctrine "has taken on a life of its own" n147 and, "when applied broadly, conflicts" n148 with the notice function of patent claims, some argue that the Supreme Court intended to severely curtail the doctrine of equivalents. This section will review and compare the Federal Circuit's en banc Warner-Jenkinson opinions and the Supreme Court's corresponding decision. This section will posit the Supreme Court did not intend to curtail the doctrine of equivalents. The doctrine of equivalents, with its emphasis on "fairness" and its history of protecting a patentee's "invention," furthers more important pragmatic concerns than the "notice" function of claims. Had the Supreme Court granted the petition for certiorari in the appeal from *Hughes Aircraft Co. v. United States*, n149 the Court could have reiterated and clarified their intention to not limit the doctrine of equivalents.

A. The Federal Circuit's Hilton Davis I en banc Opinion

The "fairness-notice" duality is clearly reflected in the Federal Circuit's 1995 *Hilton Davis Chemical Co. v. WarnerJenkinson Co.* n150 opinions. The majority upheld the jury's finding of infringement under the doctrine of equivalents. n151 Substantial evidence supported the jury's finding that Warner-Jenkinson's process incorporated an insubstantial change from the Hilton Davis claimed process. n152 The majority sided, more importantly, on the overarching "fairness" side of the duality. n153 The majority noted the language of Justice Story, n154 "the leading intellectual property scholar of that era," n155 and said the Supreme Court has consistently recognized the doctrine of equivalents as protection for patent owners. n156

The Federal Circuit majority began by discussing several factors which will protect patent owners. If the patent owner is to be protected as technology becomes more sophisticated, the doctrine of equivalents must consider other factors beyond the function/way/result of *Graver Tank*. n157 Because equivalence can never be reduced to a rigid formula, all evidence of the substantiality of the differences is relevant on a case-by-case basis. n158 The known interchangeability of an element is an important factor in determining equivalence. n159 Evidence of copying may suggest that the differences between the patented and the accused are insubstantial. n160 The accused's intent to

infringe is not a factor; one may infringe without having any knowledge of the patent. n161 Designing around a patent is, however, a factor of great benefit to the consumer and weighs against a finding of equivalence. n162 Independent development is not a defense to infringement, but independent development may rebut an inference of copying. n163

The doctrine of equivalents is a factual analysis available to every patentee, n164 but it is limited by prosecution history estoppel. n165 When equivalence is tried to the court, the appellate court reviews for clear error. n166 If tried to a jury, the standard of review is substantial evidence to support the jury verdict. n167

The dissenting opinions in the Federal Circuit's Hilton Davis decision argued more for the "notice" function of claims. The dissent argued that the legal rights of a patent owner are established by the patent claims. n168 Only in special cases where a competitor's product is literally different, but insubstantially different, may a court exercise their extraordinary equitable powers. n169 When a court exercises those powers, the doctrine of equivalents is limited to equivalents known at the time the patent issues. n170 The patentee's failure to claim the full extent of his rights is, therefore, a problem that lies with the drafter and not with the courts. n171 A failure to claim disclosed embodiments would, likewise, estop any application of the doctrine of equivalents. n172 The doctrine of equivalents is a unique remedy that lies not with a jury, but solely with the courts of equity. n173

We see, then, the full debate of the "fairness-notice" polarity. The majority sees the doctrine of equivalents as a "fairness" tool available to every patentee. The dissenters would limit infringement to the literal terms of the claim and view the doctrine of equivalents as an equitable tool available only in extraordinary situations. Because the Federal Circuit was "fractured," n174 the Supreme Court granted certiorari. n175

B. The Supreme Court's Hilton Davis II

The Supreme Court also sided with "fairness" to the patentee. The Court declined, at the outset, to "speak the death" of the doctrine of equivalents and limit infringement to the literal terms of a claim. n176 The doctrine has a long history, and the Graver Tank Court refused to find the doctrine conflicting with the 1952 Patent Act. n177 Congress can eliminate the doctrine of equivalents any time Congress chooses. n178

The Court stated, more importantly, that the "fairness-notice" duality is best resolved legislatively. "The various policy arguments now made by both sides are thus best addressed to Congress, not this Court." n179 This is an implicit endorsement of the doctrine's long history of overriding "fairness" to patentees. The Supreme Court is not the vehicle to detour this long history. The doctrine of equivalents, with its emphasis on "fairness" and its history of protecting a patentee's "invention," furthers more important pragmatic concerns than the "notice" function of claims.

Yet the Supreme Court understood the concerns of the "notice" camp. The Court agreed with the dissenting Federal Circuit judges who stated that the doctrine had "taken on a life of its own, unbounded by the patent claims." n180 The Court, echoing the 1853 opinion of the Winans dissent, stated that the doctrine of equivalents "conflicts with the definitional and public notice functions" of patent claims. n181 The Court attempted to temper the "fairness-notice" debate by endorsing Judge Nies's element-by-element

approach to the doctrine of equivalents. n182 As long as the doctrine of equivalents is not permitted to effectively eliminate a claimed element, the doctrine of equivalents will not spoil the function of claims. n183

Although the Court did not squarely decide the judge-jury question, the Court agreed with the Federal Circuit's en banc majority outcome. n184 Yet the Court did remind us all of the available procedural tools to rectify "black-box" jury verdicts. n185 Partial and complete summary judgement, judgement as a matter of law, prosecution history estoppel, element vitiation, special verdicts, and interrogatories are all available. n186

Thus nothing in the Supreme Court's opinion curtails the doctrine of equivalents. While the Court acknowledged the concerns of the "notice" function of claims, the Court endorsed most of the existing factors surrounding the doctrine of equivalents. The doctrine of equivalents, with its emphasis on "fairness" and its history of protecting a patentee's "invention," should further more important pragmatic concerns than the "notice" function of claims. Despite the Supreme Court's endorsement, some continue to argue that the Court meant to curtail the doctrine of equivalents. The Supreme Court, therefore, should have granted the petition for certiorari in the appeal from Hughes Aircraft Co. v. United States n187 to clarify their intention not to limit the doctrine of equivalents.

IV. Clarifying The Prosecution History "Bar" To The Doctrine Of Equivalents

Part IV discusses the controversy surrounding the application of the Warner-Jenkinson presumption. The discussion focuses on the Supreme Court's applicable Warner-Jenkinson presumption language and the interpretation of that language by various judges and commentators. This section proposes a simple explanation for the Warner-Jenkinson presumption and supports the proposition with an early Federal Circuit case which applied the presumption. Although this simple explanation exists, the debate as to the correct interpretation of the Warner-Jenkinson presumption language is likely to continue. The Supreme Court, therefore, should have granted the petition for certiorari in the appeal of Hughes Aircraft Co. v. United States n188 to clarify the Warner-Jenkinson presumption.

Warner-Jenkinson created a rebuttable prosecution history estoppel presumption. n189 The patentee has a burden to establish the reason for an amendment made during prosecution. n190 The court then decides if the reason for the amendment overcomes prosecution history estoppel. n191 If the patentee cannot establish an explanation for the amendment, the court should presume a reason related to patentability. n192 "In those circumstances, prosecution history estoppel would bar the application of the doctrine of equivalents as to that element." n193

This presumption has created some confusion in the Federal Circuit and among commentators. Some have felt the Supreme Court meant to bar the doctrine of equivalents for any amendment related to patentability. n194 If a claim element is amended for patentability, then prosecution history estoppel would completely bar any application of the doctrine of equivalents as to that amended element. n195 When a claim element is amended to overcome prior art, the patentee is, according to some, held to a literal interpretation of the amended claim language. n196

There is, however, a very simple explanation for the use of the "bar." The prosecution history estoppel bar only applies when the patentee cannot establish a reason for the amendment. When a reason for the amendment is unknown, there is obviously no applicable prosecution history to consult. If there is no prosecution history surrounding the amended claim element, then there is no way to determine whether the doctrine of equivalents applies. No prosecution history means, quite simply, no doctrine of equivalents.

Sextant Avionique, S.A. v. Analog Devices, Inc. n197 applied this same interpretation and analysis. *Sextant* sued *Analog* for infringement of two patents. n198 These patents related to accelerometers manufactured on semiconductor wafers. n199 Each of the allegedly infringed claims included "metallization" limitations to distinguish over the prior art. n200 The trial court construed "metallization" to mean a deposited metallic coating. n201 Because *Analog's* accelerometers were doped with a non-metallization polysilicon coating, the trial court granted summary judgment of literal noninfringement in favor of *Analog*. n202 The Federal Circuit reviewed the grant of summary judgment de novo and found no error in the claim construction. n203

When the Federal Circuit next considered the doctrine of equivalents, the Warner-Jenkinson presumption arose. n204 One of *Sextant's* patents added the "metallization" limitation without arguing that the limitation was added to overcome the prior art. n205 Because the prosecution history did not disclose why the "metallization" limitation was added, the Warner-Jenkinson presumption applied. n206

Sextant was barred from asserting the doctrine of equivalents. n207 *Sextant* could not establish a reason for the amendment and thus, could not rebut the presumption. n208 When the presumption arises, and is not rebutted, prosecution history estoppel bars the application of the doctrine of equivalents for that element. n209 *Sextant* was barred, therefore, from asserting that *Analog's* doped polysilicon accelerometers were equivalent to the patented deposited metallization accelerometers. n210

Hughes, n211 again, would have been an opportunity to clarify the Warner-Jenkinson presumption. Federal Circuit judges and commentators have taken different views of the presumption. n212 Some Federal Circuit judges have invited the Supreme Court to clarify the presumption. n213 The United States petitioned the Court for certiorari. n214 The Supreme Court, however, denied the petition. n215 Perhaps the Supreme Court approved of the Federal Circuit's handling of the *Sextant* case and, for that reason, denied the *Hughes* petition for certiorari. The debate is likely, however, to continue.

V. IS THE WARNER-JENKINSON PRESUMPTION DISCRETIONARY OR SUBSTANTIVE?

Part V discusses the standard of review for the Warner-Jenkinson presumption. The Supreme Court's Warner-Jenkinson opinion did not specify whether the presumption was a discretionary procedural tool for the district courts or a substantive question of law. This section will review two other presumptions in patent law, the "bursting bubble" laches presumption and the assignor estoppel presumption, and, again, argue that the Supreme Court should have granted the petition for certiorari in the appeal of *Hughes Aircraft Co. v. United States* n216 to clarify the Warner-Jenkinson presumption.

A. The "Bursting Bubble" Presumption

A.C. Aukerman Co. v. R.L. Chaides Construction Co. n217 clarified the equitable "bursting bubble" presumption. Aukerman sued for infringement of patents relating to concrete highway barriers. n218 Chaides asserted the equitable defense of laches. n219 The Federal Circuit heard the case en banc to clarify and apply the equitable defense of laches in patent infringement cases. n220

Laches is an equitable defense to patent infringement. n221 A rebuttable presumption of laches arises when a patentee delays bringing an infringement suit for more than six years after the patentee knew, or should have known, of the infringement. n222 The presumption operates as a "bursting bubble." n223 The "presumption is not merely rebuttable but, completely vanishes upon introduction of evidence sufficient to support. . . the nonexistence of the presumed delay." n224 The patentee must produce a minimum quantum of evidence sufficient to put the presumed delay into genuine dispute. n225 No greater quantum of proof is required. n226

Application of the equitable defense of laches is, more importantly, committed to the trial court's discretion. n227 The court must consider and weigh any justification offered by the patentee for delay. n228 The presumption of laches is reviewed, on appeal, for an abuse of discretion, for an erroneous view of the law, or for clearly erroneous factual findings. n229

B. The Assignor Estoppel Presumption

In Diamond Scientific Co. v. Ambico, Inc., n230 the Federal Circuit reaffirmed the doctrine of assignor estoppel. Diamond was the assignee of three patents. n231 The inventor of those patents left the employment of Diamond and started his own competing company, Ambico. n232 When Diamond sued Ambico for infringement of the three patents, Ambico asserted the patents were invalid. n233 Diamond then asserted the doctrine of assignor estoppel and argued that one who assigns the rights to a patent, cannot later contend those rights were worthless. n234 The trial court granted Diamond's motion to strike Ambico's defenses, and Ambico appealed. n235

The Federal Circuit explained that the doctrine of assignor estoppel is equitably applied to prevent unfairness and injustice. n236 The inventor executed the oath, power of attorney, and petition attesting to his belief in the validity of the patents. n237 The inventor assigned the rights to his patents in exchange for valuable consideration. n238 The implicit representation of the validity of the patents acts to presumptively estop the assignor from proving the assignments were worthless. n239

Ambico may, however, attempt to rebut the presumption. n240 Ambico may introduce evidence that the claims were amended, during prosecution but after the assignment was executed, and those amendments were beyond what could be validly claimed. n241 Ambico could, then, introduce the prior art to show that the claims were too broad and should be narrowed. n242 If Ambico is successful, this may bring Ambico's accused devices outside the proper scope of the claims in suit. n243 Whether Ambico is successful or not, the doctrine of assignor estoppel does not necessarily prevent Ambico from successfully defending the patent infringement suit on other grounds. n244

Yet the standard of review for assignor estoppel is not clear. Diamond Scientific makes no mention of whether the assignor estoppel presumption is committed to the court's discretion, or whether the presumption is a question of law. Other cases applying the presumption of assignor estoppel offer slight guidance.

Q.G. Products Inc. v. Shorty Inc. n245 involved a shoe used to aid fastening metal corner strips to drywall. n246 Shorty reassigned the rights to a patent application describing the shoe in exchange for money and stock. n247 A patent describing the shoe eventually issued as a continuation-in-part ("CIP") of the original application. n248 *Q.G. Products*, the licensee of the eventual assignee of the CIP, sued Shorty for patent infringement. n249 Shorty asserted the patent was invalid. n250 The trial court agreed that assignor estoppel barred the defense and granted *Q.G. Products'* motion for summary judgment. n251

Shorty appealed but the appellate standard of review was unclear. The Federal Circuit first determined whether the district court correctly applied the doctrine of assignor estoppel. n252 "This determination requires a balancing of the equities in the case." n253 The Federal Circuit reviewed the equitable considerations that led the trial court to apply the doctrine. n254 The Federal Circuit then upheld the trial court's weighing of the equities and the decision to apply the doctrine. n255 "Therefore, the district court properly estopped Shorty from contesting the validity of the . . . patent. In light of Shorty's virtual admission of infringement, this court affirms the district court's summary judgment." n256

So what is the standard of review for assignor estoppel? Is assignor estoppel an equitable determination, like the "bursting bubble" presumption of laches, n257 and committed to the trial court's discretion? Or is assignor estoppel a question of law subject to de novo review? Once Shorty's invalidity defense was barred, its "virtual admission of infringement" precluded a genuine issue of material fact. n258 Perhaps the trial court's application of assignor estoppel was not an abuse of discretion, and the Federal Circuit's summary judgment de novo review also showed no genuine issue of material fact. Or, perhaps the Federal Circuit performed a de novo review and agreed with the trial court's determination. Unfortunately, the Federal Circuit did not clearly elucidate its standard of review.

Assignor estoppel was also applied in *Mentor Graphics Corp. v. Quickturn Design Systems Inc.* n259 Mentor Graphics sold some assets, including the patent-in-suit, to Quickturn. n260 Mentor Graphics later acquired a small French company, Meta Systems, for its technology. When Meta began importing its products into the United States, Quickturn believed these products infringed Quickturn's patents. n261 Thus Quickturn asked the International Trade Commission to prevent the importation. n262 Protecting its wholly-owned subsidiary, Mentor Graphics sought a declaratory judgment of invalidity and noninfringement. n263 Quickturn filed a counterclaim, asserting the doctrine of assignor estoppel, and the trial court granted partial summary judgment which prevented "Mentor and Meta from challenging the validity of its patents." n264 The trial court later granted Quickturn's motion for a preliminary injunction "preventing Mentor and Meta from making, using, selling, offering to sell, and either importing into or exporting from the United States a variety of the accused products or their components." n265 The trial court found a likelihood of success based on assignor estoppel. n266

On appeal, the Federal Circuit reviewed the grant of preliminary injunction for abuse of discretion. n267 The Federal Circuit first reviewed the equities and determined that the trial court correctly applied the doctrine of assignor estoppel. n268 Mentor Graphics and Meta were estopped from challenging the validity of the patent-in-suit. n269 "Therefore, the district court did not abuse its discretion in determining Quickturn had demonstrated a likelihood of success on the merits." n270

Again we see a clouded standard of review for assignor estoppel. Both Q.G. Products and Mentor Graphics obfuscate the standard of review for the equitable presumption. Although each case appears to treat assignor estoppel as a substantive question of law, a procedural abuse of discretion standard would meld with the laches presumption.

Because these two presumptions do not have consistent standards of review, one must question what the standard of review should be for the Warner-Jenkinson presumption. Is the Warner-Jenkinson presumption a procedural device committed to the district court's discretion? Or is the Warner-Jenkinson presumption a substantive question of law? Warner-Jenkinson did not discuss the required standard of review. Had the Supreme Court accepted the petition for certiorari, the Hughes case could have clarified the standard of review for the Warner-Jenkinson presumption.

VI. Will The Warner-Jenkinson Presumption Incorporate?

Part VI asks whether the Warner-Jenkinson presumption will be incorporated into the prosecution history of related applications.

Because the presumption may only arise during litigation of a patent, the Court has unintentionally interjected itself into the prosecution of patents before the Patent and Trademark Office. The Court needs to answer whether the presumption will carry forward and be incorporated into later-filed applications.

There are several different types of later-filed applications: a Continued Prosecution Application ("CPA"), n271 a CIP, n272 a Continuation, n273 and a Divisional. n274 Some types of applications will use the file wrapper of the prior application and some will not. The Patent and Trademark Office has also changed the rules of practice, n275 so the courts are going to see patents filed under the present rules and the former rules. Should the courts incorporate a Warner-Jenkinson presumption from a prior application and into a later-filed application? n276 Had the Supreme Court accepted certiorari in the appeal from Hughes Aircraft Co. v. United States, n277 this question could have been briefed and resolved.

VII. Summary

This article argues that the Court must recognize a necessary and pragmatic justification for the doctrine of equivalents. Part II of this article demonstrates how patent claims can never perfectly delineate the claimed from the unclaimed. The drafter of a patent claim is often faced with an inadequate selection of words to describe an invention. Drafting and interpreting claims is further complicated by the subjective nature of our languages; no two drafters will describe an invention using the same words, and no two claim drafters will write the same claim for the same invention. Language is the harsh reality of patent practice. No claim is perfect.

Because claims are imperfect, the doctrine of equivalents must protect the patentee's "invention." This has always been the historical objective for the doctrine. The inventor's right is to be protected, as Justice Story stated in *Odiorne v. Winkley*, n278 despite any literal discrepancies and despite any difficulties in analysis. Courts will always differ, as Judge Learned Hand stated, n279 when determining the latitude of equivalents. A grant of certiorari in the appeal from *Hughes Aircraft Co. v. United States* n280 would have been a vehicle for the Court to reaffirm the overriding pragmatic justifications underlying the doctrine of equivalents: 1) claims are imperfect; and 2) the doctrine of equivalents protects the patentee's "invention."

Did the Supreme Court's Warner-Jenkinson opinion truly seek to curtail the doctrine of equivalents. Although some have argued the Supreme Court sought to rein in the doctrine of equivalents, Part III of this article shows that the Supreme Court had no such intention. The doctrine of equivalents, with its emphasis on "fairness" and its history of protecting a patentee's "invention," furthers more important pragmatic concerns than the "notice" function of claims. Had the Supreme Court granted the petition for certiorari in the appeal from *Hughes Aircraft Co. v. United States*, n281 the Court could have reiterated and clarified their intention not to limit the doctrine of equivalents.

Part IV discusses the controversy surrounding the application of the Warner-Jenkinson presumption. Although various judges and commentators have disagreed as to the Court's meaning, this section proposes a simple explanation for the Warner-Jenkinson presumption. If a reason for an amendment is unknown, there is no prosecution history to consult. There is no way to determine the limits of a doctrine of equivalents analysis when the prosecution history is unknown. A very recent Federal Circuit case applying the presumption is also discussed. although this simple explanation exists, the debate as to the correct interpretation of the Warner-Jenkinson presumption language is likely to continue. The Supreme Court, therefore, should have granted the petition for certiorari in the appeal from *Hughes Aircraft Co. v. United States* n282 to clarify the Warner-Jenkinson presumption.

Part V discusses possible alternative standards of review for the Warner-Jenkinson presumption. The Supreme Court's Warner-Jenkinson opinion did not specify whether the presumption was a discretionary procedural tool for the district courts, or whether the presumption was a substantive question of law. This section reviews two other presumptions in patent law, the "bursting bubble" laches presumption and the assignor estoppel presumption, and again, argues that the Supreme Court should have granted the petition for certiorari in the appeal from *Hughes Aircraft Co. v. United States* n283 to clarify the Warner-Jenkinson presumption.

Part VI asks whether the Warner-Jenkinson presumption will be incorporated into the prosecution history of related applications. The Court needs to answer whether the presumption will carry forward and be incorporated into later-filed Continued Prosecution Applications, Continuation-In-Part applications, Continuations, and Divisionals. Had the Supreme Court accepted certiorari in the appeal from *Hughes Aircraft Co. v. United States*, n284 this question could have been briefed and resolved.

n1 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998), cert. denied, 119 S. Ct. 1112 (1999).

n2 See 67 U.S.L.W. 3407, 3418 (Jan. 5, 1999). If a patentee cannot establish an explanation for a claim amendment, then the Warner-Jenkinson Court says a court should presume the amendment was for patentability. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 33, 41 U.S.P.Q.2d (BNA) 1865, 1873 (1997). This presumption, if not rebutted, limits the application of the doctrine of equivalents. See *id.* The doctrine of equivalents protects a patentee from products or processes that have "identical or equivalent" elements, but those elements lie beyond any literal interpretation of the claims. *Id.* at 40, 41 U.S.P.Q.2d at 1875.

n3 520 U.S. 17, 41 U.S.P.Q.2d (BNA) 1865 (1997).

n4 Claim amendments made during patent prosecution affect how an invention is construed. See *Graham v. John Deere Co.*, 383 U.S. 1, 33, 148 U.S.P.Q. (BNA) 459, 473 (1966). Litigated patent claims must be interpreted in light of rejected claims, amended terms, and prior art. See *id.*

n5 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998), cert. denied, 119 S. Ct. 1112 (1999).

n6 See *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 945, 4 U.S.P.Q.2d (BNA) 1737, 1748 (Fed. Cir. 1987) (Bennett, J., dissenting in part); see also *id.* at 954, 4 U.S.P.Q.2d at 1755 (Nies, J., additional views). The "notice-fairness" duality is also discussed in *Texas Instruments, Inc. v. United States International Trade Commission*, 805 F.2d 1558, 1572, 231 U.S.P.Q. (BNA) 833, 841-42 (Fed. Cir. 1986). See also James K. Folker, A Legislative Proposal to Clarify and Simplify Patent Infringement Analysis Under the Doctrine of Equivalents, 6 Fed. Circuit B.J. 211, 222 (1996).

n7 See *Pennwalt*, 833 F.2d at 945-46, 4 U.S.P.Q.2d at 1748 (Bennett, J., dissenting in part).

n8 See *id.*

n9 See *id.*

n10 See *id.*; see also U.S. Const. art. I, § 8, cl. 8.

n11 See *Pennwalt*, 833 F.2d at 945-46, 4 U.S.P.Q.2d at 1748 (Bennett, J., dissenting in part).

n12 See *id.*

n13 See *id.*; see also James K. Folker, A Legislative Proposal to Clarify and Simplify Patent Infringement Analysis Under the Doctrine of Equivalents, 6 Fed. Circuit B.J. 211, 222 (1996); W. Edward Bailey, The Judiciary's Attack on Infringement, in Patent Litigation 291, 301-02 (PLI Patents, Copyrights, Trademarks and Literary Property Course Handbook Series No. 531, 1998).

n14 See *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576-77 (Fed. Cir. 1996); see also *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388, 21 U.S.P.Q.2d (BNA) 1383, 1386 (Fed. Cir. 1992) (explaining an inventor may "be his own lexicographer and . . . give terms uncommon meanings").

n15 See, e.g., U.S. Patent No. 5,892,642 issued to Watanabe (Apr. 6, 1999) (describing a shutter member slidably mounted on a cassette); U.S. Patent No. 5,892,589 issued to Beckett et al. (Apr. 6, 1999) (describing a tailstock and a carriage slidably mounted on a bed); U.S. Patent No. 5,892,238 issued to Huttner & Milligan (Apr. 6, 1999) (describing a rod slidably mounted in a cross hole).

n16 See, e.g., U.S. Patent No. 5,873,851 issued to Nilsson (Feb. 23, 1999) (describing a pair of diametrically opposed rigid features); U.S. Patent No. 5,868,187 issued to Brand (Feb. 9, 1999) (explaining mechanical dogs could be provided with diametrically opposed knife edges); U.S. Patent No. 5,842,641 issued to Mazzalveri (Dec. 1, 1998) (describing two diametrically opposed vertical slots).

n17 See, e.g., The Random House Dictionary of the English Language 547 (2d ed. 1987); The New Shorter Oxford English Dictionary 661 (4th ed. 1993); The American Heritage Dictionary of the English Language 364 (2d ed. 1973).

n18 *18 F. Cas. 581 (C.C.D. Mass. 1814)* (No. 10,432). Although Justice Story was appointed to the Supreme Court in November, 1811, the Judiciary Act of 1807 required the Justices to serve on the United States Circuit Courts. See Judiciary Act of 1802, ch. 31, § 4-5, 2 Stat. 156, 157-58; Act of February 24, 1807, ch. 16, § 5, 2 Stat. 420, 421; see also G. Edward White, *The Marshall Court & Cultural Change 1815-35*, 161-64, 358-59 (1991).

n19 See *Odiorne, 18 F. Cas. at 581*. (See summary of facts preceding the opinion. - Ed.)

n20 See *id.*

n21 See *id.*

n22 See *id.*

n23 See *id. at 582*.

n24 See *id.*

n25 *Id.* (emphasis added).

n26 *Id.*

n27 See generally *Graver Tank & Mfg. Co. v. Linde Air Prod. Co.*, 339 U.S. 605, 85 U.S.P.Q. (BNA) 328 (1950); *McCormick v. Talcott*, 61 U.S. (20 How.) 402 (1857); *Winans v. Denmead*, 56 U.S. (15 How.) 330 (1853); *Evans v. Eaton*, 20 U.S. (7 Wheat.) 356 (1822); *Royal Typewriter Co. v. Remington Rand, Inc.*, 168 F.2d 691, 77 U.S.P.Q. (BNA) 517 (2d Cir. 1948).

n28 *20 U.S. (7 Wheat.) 356 (1822)*.

n29 See P.J. Federico, *The Patent Trials of Oliver Evans*, 27 *J. Pat. Off. Soc'y* 586 (1945); see also Letter from Thomas Jefferson to Oliver Evans (May, 1807), in 5 *Writings of Thomas Jefferson*, at 75-76 (Washington ed.).

n30 See *Evans, 20 U.S. (7 Wheat.) at 357*.

n31 See *id. at 358*.

n32 See *id. at 359-60*.

n33 See *id. at 361*.

n34 *Id.*

n35 See *id.* The jury found against Evans, and the Court found the Evans patent lacking any description of a patentable improvement. See *id. at 366-70*.

n36 See *id. at 361-62*.

n37 *Id. at 361*.

n38 *56 U.S. (15 How.) 330 (1853)*.

n39 See *id. at 342*. Also see the plaintiff's statement in *Winans* citing to *Odiorne v. Winkley, 18 F. Cas. 581 (C.C.D. Mass. 1814)* (No. 10,432), as authority. *Winans, 56 U.S. at 337*. Justice Woodbury was appointed in 1845 to fill Justice Story's seat on the Court. See Louis Fisher, *American Constitutional Law A.17* (1990).

n40 See *Winans, 56 U.S. at 330*.

n41 See *id.*

n42 See *id. at 331-32*.

n43 *Id. at 332*.

n44 See *id. at 337*.

n45 See *id.*

n46 *Id. at 340*.

n47 *Id. at 339-40*.

N48 *Id.* Justice Curtis also stated that the question of "invention" is a question of law. See *id.* "What is patented" is "determined by the court, construing the letters-patent, and the description of the invention and specification of claim annexed to them." *Id.* Infringement, on the other hand, "is a question of fact, to be submitted to a jury." *Id.*

n49 See *id. at 337*.

n50 *Id. at 337-38*.

n51 See *id. at 339*.

n52 See *id.*

n53 See *id. at 340*.

n54 See *id.*

n55 See *id. at 340-41*.

n56 See *id. at 341*.

n57 *Id. at 342*.

n58 *Id. at 341*.

n59 See *id. at 342*.

n60 See *id.* at 343-44.

n61 *Id.* at 345. Justice Campbell wrote the dissenting opinion, in which Chief Justice Taney, Justice Catron, and Justice Daniel joined.

n62 *Id.* at 346.

n63 See *id.* at 346.

n64 *Id.* at 347.

n65 See *id.*

n66 See *id.* at 343.

n67 See *id.* at 340-41.

n68 See *id.* at 340.

n69 61 U.S. (20 How.) 402 (1857).

n70 See *id.* at 403-04.

n71 See *id.*

n72 See *id.* at 404

n73 See *id.* at 405.

n74 See *id.*

n75 *Id.*

n76 See *id.*

n77 See *id.* at 406.

n78 *Id.*

n79 See *id.* at 406-07.

n80 See *id.* at 407.

n81 *Id.*

n82 *Id.*

n83 See *id.*

n84 See *id.* at 408.

n85 See *id.* at 407.

n86 See *id.* at 408.

n87 See *id.*

n88 See *id.*

n89 See *id.* at 409.

n90 See *id.*

n91 See *id.*

n92 Id.

n93 See *id.* at 412.

n94 See *id.* at 406.

n95 Id.

n96 See *id.* at 405.

n97 Id.

n98 See *id.* at 409.

n99 *168 F.2d 691, 77 U.S.P.Q. (BNA) 517 (2d Cir. 1948).*

n100 *Id.* at 692, *77 U.S.P.Q.* at 518.

n101 Id. (emphasis added). Footnote 4 of the opinion cites *Winans v. Denmead*, 56 U.S. (15 How.) 330 (1853), yet, as this article has shown, this principle had been applied prior to *Winans*.

n102 Id. at 692, *77 U.S.P.Q.* at 518 (quoting the "accepted rubric").

n103 Id. at 693, *77 U.S.P.Q.* at 518-19.

n104 See *id.* at 692, *77 U.S.P.Q.* at 518.

n105 Id. at 693, *77 U.S.P.Q.* at 519.

n106 See *id.* at 692, *77 U.S.P.Q.* at 518.

n107 See *id.* at 693, *77 U.S.P.Q.* at 519.

n108 Id.; see also 35 U.S.C. § 112, P 2 (1994).

n109 *Royal Typewriter, 168 F.2d at 693, 77 U.S.P.Q. at 519.*

n110 See *id.*

n111 See *id.*

n112 See *id.* at 694, *77 U.S.P.Q.* at 519.

n113 See *id.*

n114 See *id.*, *77 U.S.P.Q.* at 520.

n115 *339 U.S. 605, 85 U.S.P.Q. (BNA) 328 (1950).*

n116 Justice Minton took no part in the decision, and Justices Black and Douglas dissented. *Id.* at 612, *85 U.S.P.Q.* at 332.

n117 See *id.* at 607-08, *85 U.S.P.Q.* at 330.

n118 See *id.* at 607, *85 U.S.P.Q.* at 330.

n119 See *id.*

n120 See *id.*

n121 See *id.*

n122 56 U.S. (15 How.) 329 (1853).

n123 See *Graver Tank*, 339 U.S. at 608, 85 U.S.P.Q. at 330.

n124 See *id.*

n125 See *id.* at 609, 85 U.S.P.Q. at 331.

n126 See *id.*

n127 See *id.* at 610, 85 U.S.P.Q. at 331.

n128 See *id.* at 612, 85 U.S.P.Q. at 332; see also *Linde Air Prod. Co. v. Graver Tank & Mfg. Co.*, 86 F. Supp. 191, 199-200, 75 U.S.P.Q. (BNA) 231, 238 (N.D. Ind. 1947), *aff'd in part, rev'd in part*, 167 F.2d 531, 77 U.S.P.Q. (BNA) 207 (7th Cir. 1948), *rev'd in part*, 336 U.S. 271, 80 U.S.P.Q. (BNA) 451 (1949).

n129 See *Graver Tank*, 339 U.S. at 610, 85 U.S.P.Q. at 331

n130 See *id.* at 610-11, 85 U.S.P.Q. at 331. Judge Swygert, the trial judge, found the patentees to have invented an important improvement in arc welding. See *Linde*, 86 F. Supp. 191 at 192-93, 75 U.S.P.Q. at 232. Although the claims to the novel process make no reference to the welding composition, "it is evident that the welding composition, discovered by the inventors, is the heart of the invention." *Id.* at 196, 75 U.S.P.Q. at 236 (emphasis added). The defendant's manganese welding composition, according to Dr. Willard, one skilled in the art, was identical in operation and result and could be substituted for the welding composition. See *id.* at 199, 75 U.S.P.Q. at 238.

n131 See *Graver Tank*, 339 U.S. at 611, 85 U.S.P.Q. at 331.

n132 See *id.*

n133 See *id.* at 612, 85 U.S.P.Q. at 331-32.

n134 See *id.* at 614, 85 U.S.P.Q. at 332 (Black, J., dissenting).

n135 See *id.* at 613-14, 85 U.S.P.Q. at 332.

n136 *Id.* at 614, 85 U.S.P.Q. at 332.

n137 See *id.* at 614-15, 85 U.S.P.Q. at 333.

n138 See *id.*

n139 See *Linde Air Products Co. v. Graver Tank & Mfg. Co.*, 86 F. Supp. 191, 196, 75 U.S.P.Q. (BNA) 231, 236 (N.D. Ind. 1947) *aff'd in part, rev'd in part*, 167 F.2d 531, 77 U.S.P.Q. (BNA) 207 (7th Cir. 1948), *rev'd in part*, 336 U.S. 271, 80 U.S.P.Q. (BNA) 451 (1949).

n140 *Graver Tank*, 339 U.S. at 607, 85 U.S.P.Q. at 330.

n141 See *id.*

n142 See *id.*

n143 35 U.S.C. § 271(a) (1994 & Supp. IV 1998).

n144 140 F.3d 1470

n145

n146 ssent from the same denial, *id. at 1473, 47 U.S.P.Q.2d at 1107*. Judges Clevenger and Gajarsa continued to maintain that the Supreme Court's Warner-Jenkinson opinion meant to "whittle" the doctrine down in size. See *Hughes Aircraft Co. v. United States, 148 F.3d 1384, 1386, 47 U.S.P.Q.2d (BNA) 1542, 1544 (Fed. Cir. 1998)* (dissenting from the order denying rehearing en banc).

n147 *Litton Systems, at 1474, 46 U.S.P.Q.2d at 1108* (Gajarsa, J., dissenting) (quoting *Warner-Jenkinson, 520 U.S. at 28, 41 U.S.P.Q.2d at 1871*).

n148 *Id.* (quoting *Warner-Jenkinson, 520 U.S. at 29, 41 U.S.P.Q.2d at 1871*).

n149 *140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998)*, cert. denied, *119 S. Ct. 1112 (1999)*.

n150 *62 F.3d 1512, 35 U.S.P.Q.2d (BNA) 1641 (Fed. Cir. 1995)*. For the trial court's opinion, see *Hilton Davis Chemical Co. v. Warner-Jenkinson Co., No. C-1-91-218 (S.D. Oh. June 22, 1992)*. The en banc Federal Circuit only considered the issue of the doctrine of equivalents and did not consider Warner-Jenkinson's patent invalidity arguments. See *62 F.3d at 1515 n.1, 35 U.S.P.Q.2d at 1645 n.1*. For the Federal Circuit's unpublished panel opinion deciding the validity of the patent-in-suit, see *Hilton Davis Chemical Co. v. Warner-Jenkinson Co., No. 93-1088, 35 U.S.P.Q.2d (BNA) 1700 (Fed. Cir. Aug. 8, 1995)*.

n151 See *Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1525, 35 U.S.P.Q.2d (BNA) 1641, 1651 (Fed. Cir. 1995)*.

n152 See *id.*

n153 *Id. at 1517, 35 U.S.P.Q.2d at 1644*.

n154 See *id. at 1516-17* (quoting *Odiorne v. Winkley, 18 F. Cas. 581, 582 (C.C.D. Mass. 1814)*). The majority noted Justice Story's "mere colorable differences" language. See discussion *supra* Parts II.B.1-3.

n155 *Hilton Davis, 62 F.3d at 1516, 35 U.S.P.Q.2d at 1644*.

n156 See *id. at 1517, 35 U.S.P.Q.2d at 1644*.

n157 See *id. at 1518, 35 U.S.P.Q.2d at 1645*.

n158 See *id.*

n159 See *id. at 1519, 35 U.S.P.Q.2d at 1646*.

n160 See *id.*

n161 See *id.*

n162 See *id. at 1520, 35 U.S.P.Q.2d at 1646-47*.

n163 See *id., 35 U.S.P.Q.2d at 1647*.

n164 See *id. at 1520-21, 35 U.S.P.Q.2d at 1647-48*.

n165 See *id. at 1525, 35 U.S.P.Q.2d at 1651*.

n166 See *id.* at 1521, 35 U.S.P.Q.2d at 1647.

n167 See *id.*

n168 See *id.* at 1540, 35 U.S.P.Q.2d at 1663 (Plager, J., dissenting).

n169 See *id.*, 35 U.S.P.Q.2d at 1664.

n170 See *id.* at 1572, 35 U.S.P.Q. at 1654 (Nies, J., dissenting).

n171 See *id.* at 1541, 35 U.S.P.Q.2d at 1665.

n172 See *id.* at 1547, 35 U.S.P.Q.2d at 1670 (Lourie, J., dissenting).

n173 See *id.* at 1543, 35 U.S.P.Q.2d at 1664 (Plager, J., dissenting); see also Judge Lourie's dissent, *id.* at 1549, 35 U.S.P.Q.2d at 1671.

n174 *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 23-24, 41 U.S.P.Q.2d (BNA) 1865, 1868 (1997).

n175 *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 516 U.S. 1145 (1996).

n176 *Warner-Jenkinson*, 520 U.S. at 20, 41 U.S.P.Q.2d at 1868.

n177 See *id.* at 26-28, 41 U.S.P.Q.2d at 1870.

n178 See *id.* at 28, 41 U.S.P.Q.2d at 1871.

n179 *Id.*

n180 *Id.* at 28-29, 41 U.S.P.Q.2d at 1871.

n181 *Id.* at 29, 41 U.S.P.Q.2d at 1871. As the Winans dissent argued, patentees are required to "specify and point out" their invention. *Winans v. Denmead*, 56 U.S. (15 How.) 330, 347 (1853). The Winans dissent further argued that the majority opinion was "mischievous" and "productive of . . . costly litigation, of exorbitant and unjust pretensions and vexations sic demands" *Id.*; see also discussion supra Part II.B.3.

n182 See *Warner-Jenkinson*, 520 U.S. at 29, 41 U.S.P.Q.2d at 1871.

n183 See *id.* at 29-30, 41 U.S.P.Q.2d at 1871.

n184 See *id.* at 37-39, 41 U.S.P.Q.2d at 1874-75.

n185 See *id.* at 39 n.8, 41 U.S.P.Q.2d at 1876 n.8.

n186 See *id.*

n187 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (*Fed. Cir.* 1998), cert. denied, 119 S. Ct. 1112 (1999).

n188 *Id.*

n189 *Warner-Jenkinson*, 520 U.S. at 33, 41 U.S.P.Q.2d at 1873.

n190 See *id.*

n191 See *id.*

n192 See *id.*

n193 *Id.*

n194 See Judge Gajarsa's dissent from an order denying rehearing en banc in *Litton Systems, Inc. v. Honeywell, Inc.*, 145 F.3d 1472, 1475, 47 U.S.P.Q.2d (BNA) 1106, 1108 (Fed. Cir. 1998) and Judge Clevenger's dissent from an order denying rehearing en banc in *Hughes Aircraft Co. v. United States*, 148 F.3d 1384, 1385, 47 U.S.P.Q.2d (BNA) 1542, 1543 (Fed. Cir. 1998). See also Note, To Bar Or Not To Bar: Prosecution History Estoppel After Warner-Jenkinson, 111 Harv. L. Rev. 2330, 2343 (1998).

n195 See *Litton Systems*, 145 F.3d at 1476, 47 U.S.P.Q.2d at 1108 (Gajarsa, J., dissenting); see also Note, cited above at supra note 194, at 2345.

n196 See Note, cited above at supra note 194, at 2343.

n197 172 F.3d 817, 49 U.S.P.Q.2d 1865 (Fed. Cir. 1999).

n198 See *id.* at 823, 49 U.S.P.Q.2d at 1868.

n199 See *id.* at 819-20, 49 U.S.P.Q.2d at 1866.

n200 *Id.* at 823, 49 U.S.P.Q.2d at 1869.

n201 *Id.*, 49 U.S.P.Q.2d at 1868.

n202 See *id.*

n203 See *id.* at 826, 49 U.S.P.Q.2d at 1870.

n204 See *id.*

n205 See *id.* at 829, 49 U.S.P.Q.2d 1873. Sextant's other patent in suit, U.S. Patent No. 4,663,972 issued to Marcillat (May 12, 1989), added the "metallization" limitation and distinguished by arguing the prior art disclosed doped silicon. *Id.* at 826, 49 U.S.P.Q.2d at 1871. Prosecution history estoppel "plainly" applied, and Sextant was estopped from asserting the Analog doped silicon devices were equivalent. *Id.* at 826-27, 49 U.S.P.Q.2d at 1871.

n206 *Id.* at 829, 49 U.S.P.Q.2d at 1873.

n207 See *id.* at 832, 49 U.S.P.Q.2d at 1875.

n208 See *id.* at 830, 49 U.S.P.Q.2d at 1873.

n209 See *id.* at 832, 49 U.S.P.Q.2d at 1876.

n210 *Id.* at 832, 49 U.S.P.Q.2d at 1875.

n211 *Hughes Aircraft Co. v. United States*, 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998), cert. denied, 119 S. Ct. 1112 (1999).

n212 See supra notes 194-196 and accompanying text.

n213 See, e.g., *Litton Systems, Inc. v. Honeywell, Inc.*, 145 F.3d 1472, 1476, 47 U.S.P.Q.2d (BNA) 1106, 1107 (Fed. Cir. 1998) (Clevenger, J., dissenting from an order denying a rehearing en banc).

n214 *Hughes Aircraft Co. v. United States*, 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998), petition for cert. filed, 67 U.S.L.W. 3418 (U.S. Jan. 5, 1999) (No. 98-871).

n215 *Id.*, cert. denied, 119 S. Ct. 1112 (1999).

n216 *Id.*

n217 960 F.2d 1020, 22 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1992).

n218 See *id.* at 1026-27, 22 U.S.P.Q.2d at 1323-24.

n219 See *id.* at 1027, 22 U.S.P.Q.2d at 1324.

n220 See *id.* at 1028, 22 U.S.P.Q.2d at 1324.

n221 See *id.*; see also 35 U.S.C. § 282 (1994).

n222 *Id.*, 22 U.S.P.Q.2d at 1325.

n223 See *id.* at 1037, 22 U.S.P.Q.2d at 1332.

n224 *Id.*

n225 See *id.*

n226 See *id.*

n227 See *id.* at 1032, 22 U.S.P.Q.2d at 1325.

n228 See *id.* at 1033, 22 U.S.P.Q.2d at 1329.

n229 See *id.* at 1039, 22 U.S.P.Q.2d at 1333.

n230 848 F.2d 1220, 6 U.S.P.Q.2d (BNA) 2028 (Fed. Cir. 1988).

n231 See *id.* at 1222, 6 U.S.P.Q.2d at 2029.

n232 See *id.*

n233 See *id.*

n234 See *id.*

n235 See *id.*

n236 See *id.* at 1224, 6 U.S.P.Q.2d at 2031.

n237 See *id.* at 1226, 6 U.S.P.Q.2d at 2032.

n238 See *id.*

n239 See *id.*

n240 See *id.*

n241 See *id.*

n242 See *id.*

n243 See *id.*

n244 See *id.*

n245 992 F.2d 1211, 26 U.S.P.Q.2d (BNA) 1778 (Fed. Cir. 1993).

n246 See *id.* at 1212, 26 U.S.P.Q.2d at 1779.

n247 See *id.*, 26 U.S.P.Q.2d at 1780.

n248 See *id.*

n249 See *id.*

n250 See *id.*

n251 See *id.*

n252 See *id. at 1213, 26 U.S.P.Q.2d at 1780.*

n253 *Id., 26 U.S.P.Q.2d at 1781.*

n254 See *id.*

n255 See *id.* The Federal Circuit also determined the scope of the assignment and concluded the CIP claims were not materially different from the original application claims. See *id. at 1214, 26 U.S.P. Q.2d 1781.* Although this analysis is interesting, it is beyond the scope of this article.

n256 *Id., 26 U.S.P.Q.2d at 1782.*

n257 See *supra* text accompanying notes 217-29.

n258 See Fed. R. Civ. P. 56(c).

n259 *150 F.3d 1374, 47 U.S.P.Q.2d (BNA) 1683 (Fed. Cir. 1998).*

n260 See *id. at 1376, 47 U.S.P.Q.2d at 1684.*

n261 See *id., 47 U.S.P.Q.2d at 1685.*

n262 See *id. at 1376-77, 47 U.S.P.Q.2d at 1685.*

n263 See *id. at 1377, 47 U.S.P.Q.2d at 1685.*

N264 *Id.*

n265 *Id.*

n266 See *id.*

n267 See *id.*

n268 See *id. at 1378-79, 47 U.S.P.Q.2d at 1687.*

n269 See *id. at 1379, 47 U.S.P.Q.2d at 1687*

n270 *Id. at 1380, 49 U.S.P.Q.2d at 1687-88.* Mentor Graphics did not challenge the other equitable factors for granting a preliminary injunction. *Id.*

n271 See 35 U.S.C. § 111(a); 37 C.F.R. § 1.53(d) (1998); see also Patent & Trademark Office, U.S. Dep't of Commerce, Manual of Patent Examining Procedure, § 201.06(d) (orig. 7th ed. 1998).

n272 See 35 U.S.C. § 111(a); 37 C.F.R. §§ 1.53(b), 1.53(d) (1998); see also Patent & Trademark Office, U.S. Dep't of Commerce, Manual of Patent Examining Procedure, § 201.06(c) (orig. 7th ed. 1998).

n273 See 35 U.S.C. § 111(a); 37 C.F.R. §§ 1.53(b), 1.53(d) (1998); see also Patent & Trademark Office, U.S. Dep't of Commerce, Manual of Patent Examining Procedure, § 201.06(c) (orig. 7th ed. 1998).

n274 See 35 U.S.C. § 111(a); 37 C.F.R. §§ 1.53(b), 1.53(d) (1998); see also Patent & Trademark Office, U.S. Dep't of Commerce, Manual of Patent Examining Procedure, § 201.06 (orig. 7th ed. 1998).

n275 Rules 37 C.F.R. § 1.60 and § 1.62 were deleted December 1, 1997. See Patent & Trademark Office, U.S. Dep't of Commerce, Manual of Patent Examining Procedure, § 201 (orig. 7th ed. 1998).

n276 This was an argument in a recent Federal Circuit case. See *Sextant Avionique, S.A. v. Analog Devices, Inc.*, 172 F.3d 817, 49 U.S.P.Q.2d (BNA) 1865 (Fed. Cir. 1999).

n277 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998), cert. denied, 119 S. Ct. 1112 (1999).

n278 See 18 F. Cas. 581 (C.C.D. Mass. 1814) (No. 10,432).

n279 See *Royal Typewriter Co. v. Remington Rand, Inc.*, 168 F.2d 691, 694, 77 U.S.P.Q. (BNA) 517, 519 (1948).

n280 140 F.3d 1470, 46 U.S.P.Q.2d (BNA) 1285 (Fed. Cir. 1998), cert. denied, 119 S. Ct. 1112 (1999).

n281 Id.

n282 Id.

n283 Id.

n284 Id.