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THE CHARADE: TRYING A PATENT CASE TO ALL "THREE" JURIES

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***2** "[T]he effect of this case is to make of the judicial process a *charade*, for notwithstanding any trial level activity, this court will do pretty much what it wants under its *de novo* retrial."[1]

I. Introduction

The *en banc* decisions by the Federal Circuit in recent years have been heated with strongly differing views. In *Markman v. Westview Instruments, Inc.*,[2] this friction is immediately apparent in the strongly worded concurring opinion of Judge Mayer and the dissenting opinion of Judge Newman. The Federal Circuit was even more divided—although the concurring and dissenting opinions were not as sharply worded—in *Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc.*[3] Even the decision of *In re Lockwood*[4] contains a vigorously worded dissenting opinion.[5]

Despite these strong divisions, the Federal Circuit has essentially become a court of last resort on substantive patent law issues. The Federal Circuit was created in 1982[6] and has exclusive jurisdiction over all appeals in patent cases from district courts.[7] In its first decision, the Federal Circuit adopted as controlling authority decisions from the United States Supreme Court and the Federal Circuit's predecessor courts—the Court of Customs and Patent Appeals and the Court of Claims.[8] The Federal Circuit has chastised attorneys for citing authority on substantive patent law from circuits other than the Federal Circuit.[9] It quickly became clear to those practicing before the Federal Circuit that this court was developing a uniform body of law for trying intellectual property cases.

***3** To date, the Supreme Court has not overruled the Federal Circuit on a major substantive patent law issue.[10] The Supreme Court had a prime opportunity to rule on the Federal Circuit's determination of substantive patent law issues during the appeals of *Markman*[11] and *Hilton Davis*.[12] Instead, the Court rubber-stamped the opinion of the Federal Circuit in *Markman*. In *Hilton Davis*, the Court did not overturn the Federal Circuit's finding that patent infringement under the doctrine of equivalence was a question of fact.[13] Instead, the Supreme Court validated the doctrine of equivalents, but did take the opportunity to clarify that an "element-by-element" analysis should be used, which the Federal Circuit had failed to do.[14] In addition, the Supreme Court declined to adopt a more rigid rule allowing prosecution history estoppel no matter the reason for the change, but did adopt a rebuttable presumption of estoppel for the patentee when it is not clear from the prosecution record why an amendment was made.[15] When the Federal Circuit recently changed the substantive law by allowing patent protection for computerization of a business method, the Supreme Court denied certiorari, thereby making the Federal Circuit the final authority.[16]

After *Hilton Davis*, the Supreme Court had an opportunity in *Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd. v. Festo Corp.*[17] to address two important patent law issues, the doctrine of equivalents and the limits of prosecution history estoppel. Instead, the ***4** Court sent the case back to the Federal Circuit. The Federal Circuit has granted a rehearing *en banc* to determine the limits of these two issues.[18]

This article is for the attorney who may try a patent case in front of a jury. In light of these recent rulings by the Federal Circuit as well as the Supreme Court's deference to the Federal Circuit, the attorney representing the patent holder will essentially have to convince three juries of the merits of their case. These "juries" include (1) the traditional jury, (2) the Federal Circuit, and (3) the trial judge.

Part II of this article will explore the "first" jury, which is the traditional jury sitting in the jury box. The historical perspective of the first jury deciding patent cases both preand post-Federal Circuit will be explored, as well as the judicial tendency to distrust juries when they start awarding large judgments in favor of the patentee.

Part III of this article will explore the "second" jury—the Federal Circuit. While the Federal Circuit initially embraced the traditional jury, it ultimately became a second jury by substituting its opinion for the jury verdict. Furthermore, the Federal Circuit took on the role of a second jury by redefining many issues as issues of law rather than fact.

Part IV will discuss the "third" jury, which is the trial judge. The Federal Circuit has forced the trial judge to become the "third" jury because it has redefined many items from issues of fact to issues of law over which the Federal Circuit has *de novo* review.

Part V of the article reviews the modern issues still determined by traditional juries after the Federal Circuit limited the

juries' role as fact-finders. Finally, Part VI will summarize the real world of patent litigation involving jury trials in light of all three juries.

II. First Jury - Historical Perspective

A. The Jury Trial in Patent Cases

The Seventh Amendment to the United States Constitution established the right to a jury trial. Under this right, either party to a lawsuit may request a jury trial when damages are sought. This issue can be very important in a patent infringement suit when damages are the primary remedy sought.

The original Patent Act of 1790 provided "such damages as shall be assessed by a jury" as a remedy for patent infringement.[19] In fact, juries were the norm during the first ***5** century of our legal system.[20] At that time, the judge submitted questions of novelty, infringement, and sufficiency of disclosure to the jury.[21] The Supreme Court subsequently limited the jury's power when it held that courts should construe the meaning of the patent document instead of submitting the question to a jury.[22] However, when the issue involves the consideration of evidence outside the patent document, courts should submit the question to a jury.[23] Therefore, only when "extrinsic evidence" is unnecessary to explain the terms of the patent description will the court decide the issue as a matter of law. In addition, the issue of claim language was a matter of law for the court.[24]

Early in this century, the Supreme Court held in *Singer Manufacturing Co. v. Cramer*,[25] that when "it is apparent from the face of the [patent] that extrinsic evidence is not needed to explain terms of art therein," infringement should be submitted to the court as a matter of law.[26] Even after *Singer*, the right to a jury on issues such as validity was determined based upon whether patent invalidity was pleaded in law or in equity.[27] Whether a suit is at law or in equity has resulted in considerable confusion as courts try to determine whether a case is primarily equitable or primarily legal.[28] If the suit was found to be primarily equitable, the court could use a concept termed the "equitable clean-up doctrine" to foreclose the right to a jury, even if legal issues were present.[29]

After the Supreme Court decisions in *Beacon Theaters, Inc. v. Westover*[30] and *Dairy Queen, Inc. v. Wood*,[31] the equitable clean-up doctrine was no longer valid; thus, the jury could decide issues that were common to both legal and equitable causes.[32] The ***6** jury would decide mixed questions of law and fact,[33] and presumably, the right to a jury trial would control.[34] However, after the decision in *Markman*, this changed.

After the creation of the Federal Circuit under the leadership of Chief Judge Markey, but before the *Markman* decision, it appeared that jury trials were sacred to the court.[35] While the Federal Circuit did not always extend the right of a jury trial to the limits requested by patentees,[36] the Federal Circuit nonetheless continually reiterated the litigant's right to a jury trial. Mere complexity of the issues presented to the jury was not an acceptable basis for rejecting a jury trial.[37] When lower courts denied jury trials in infringement actions, the Federal Circuit often reversed to allow for a jury trial when the court believed factual issues were raised, even under the reverse doctrine of equivalents.[38] Over the course of his career, Judge Markey continued to defend a party's right to a jury trial in patent cases.[39]

1. *Markman* Reaffirmed Right to Jury in Patent Cases

Markman clarified the role of a jury in a patent infringement case when deciding a mixed question of law and fact.[40] As pointed out by the lower court, two separate lines of cases had developed on whether the legal issue of claim interpretation should be submitted to the jury if it involved factual determinations;[41] even the judges of the Federal ***7** Circuit could not agree as to what the controlling precedent meant.[42] The Supreme Court in *Markman* applied a historical test going back to 1791 to determine if claim construction was a guaranteed jury issue that was necessary to preserve the common law right to a jury.[43] Even though there was a timely jury request, as well as an absolute right to a jury on the issue of infringement, the Supreme Court used the policy arguments of uniformity and predictability to support the Federal Circuit's holding that claim construction was a matter of law for the court.[44]

In reviewing the historical precedent to determine if claim interpretation should be submitted to a jury, the Court bolstered its conclusion with two out-of-date treatises over one hundred years old.[45] Ultimately, the Supreme Court decided that neither history nor precedent answered the question of whether a judge or jury should determine the meaning of claim terms[46] and

concluded that court determination of claim language would "foster technological growth and industrial innovation."[47] The Supreme Court also concluded that "uniformity would, however, be ill served by submitting issues of document construction to juries."[48] While *Markman* overruled cases which state that claim construction with underlying factual inquiries may be submitted to the jury,[49] *Markman* makes it very clear that a patent owner is entitled to a jury for infringement cases after the claims have been properly interpreted by the court.

2. Number (or Percent) of Patent Cases Tried to a Jury

A little more than a decade before the creation of the Federal Circuit, commentators described jury trials of patent cases as "an unusual occurrence."[50] The Supreme Court even commented on the small number of cases being tried to juries and noted that juries ***8** decided 13 out of 382 patent suits in the period from 1968 through 1970.[51] For a twelve-month period ending June 30, 1972, only two of 121 patent cases were tried to a jury.[52] Ten years earlier in 1961, all 125 patent cases were tried to the court rather than to the jury.[53]

After the birth of the Federal Circuit and the development of uniform rules concerning instructions and interrogatories for the jury, there was a significant increase in the number of patent cases tried to a jury. In 1994, there was a high-water mark, with seventy percent of patent cases tried to a jury.[54] Later, in 1998, 103 patent cases were tried, 62 of which were tried to a jury.[55] The main reason for the significant increase in demand for juries was the perception that juries favored patent holders.[56] Even the Federal Circuit has noted the statistical increase in the number of patent cases being tried to juries.[57]

During the fiscal years 1991-92 through 1993-94, only 4,644 patent cases were filed out of a total of 696,750 civil cases.[58] Therefore, only 0.67 percent of all civil cases commenced in United States District Courts were patent cases. Of those cases, only 274 reached trial, 163 of which were tried to juries.[59] In 1998, a total of 261,902 civil cases were filed in federal district court, with 2,034, or 0.77 percent, being patent cases.[60] Only 62 of these cases were tried to a jury. This constitutes 0.024 percent of the total number of civil cases filed. With the current number of federal district court judges exceeding five hundred, the typical district court judge will try, on average, one patent jury case every eight years.

***9** Despite the relatively small number of patent cases being tried, statistics are maintained in many different ways on patent cases, both jury and non-jury. For example, some commentators have reviewed and dissected all patent validity decisions by either district courts or the Federal Circuit that were reported in the United States Patent Quarterly during an eight-year period, 1989 through 1996.[61] Realizing that only a fraction of a percentage of the patents issued are ever litigated, the study indicates that juries are more likely than judges are to hold patents valid.[62] The Federal Circuit has affirmed an overwhelming majority of the district courts' decisions on validity.[63]

Another study dealing with the Federal Circuit's disposition of motions for judgment notwithstanding the verdict ("JNOV"), showed that the Federal Circuit tended to affirm the trial judge's decision about seventy percent of the time.[64] During the first six years of the Federal Circuit's existence, it affirmed the lower courts' decisions more than twice as often as it reversed them.[65] It is difficult to evaluate these statistics with true accuracy because a decision may be "affirmed in part," "reversed in part," "modified in part," etc., rather than a straight affirmation or reversal.

B. Large Jury Awards After Creation of the Federal Circuit

Jury verdicts in patent cases have reached the billion-dollar range since the inception of the Federal Circuit.[66] Of the top fifteen awards in patent cases between 1982 and 1992, the damages ranged between $873 million and $19.8 million.[67] Also, one study has indicated that the Federal Circuit is somewhat more hospitable to patentees than to accused infringers on appeal.[68]

These large jury awards and the statistics for patent cases on appeal suggest that the Federal Circuit has established a favorable climate for jury trials on patents.[69] In fact, ***10** newspapers and other non-technical publications have viewed jury trials in patent suits as the latest fad.[70] Despite the large jury awards, some commentators believe that the pendulum is swinging back towards a more neutral position.[71] Even Federal Circuit judges comment on the unpredictability of jury verdicts as a reason why their brethren are taking certain actions.[72] There have also been reports prepared by the government proposing to limit the right to jury trials in patent cases because of the concern over juries granting large damage awards.[73]

C. Complexity Exception

With former Chief Judge Markey indicating (and the cases holding) that juries were competent to try complex patent cases,[74] the Federal Circuit began discussing the extent to which juries should be used in patent cases.[75] In *Ross v. Bernhard*,[76] the Supreme Court mentioned in a single footnote in the dissenting opinion that some cases might be too complex for juries.[77]

Judge Markey helped eradicate any remaining discrepancy about the use of juries in complex patent cases in a later *en banc* decision.[78] While Judge Markey voiced his rejection of the complexity exception, a rejection generally accepted throughout the patent community, other commentators continue to push for the complexity exception in a myriad of cases. One commentator even suggests an elitist type of jury that must have a certain number of college graduates to handle complex cases.[79] Another commentator believes that juries have poor decision making abilities when determining punitive ***11** damages in complex cases.[80] In a counterargument to the use of a complexity exception, some judges note that there is no evidence that judges can render a qualitatively better decision than juries.[81]

Despite arguments by proponents for a complexity exception, there does not appear to be support for the use of the exception. A study of juries involved in lengthy civil trials revealed that jurors do not feel the duration and complexity of the trial affected their ability to comprehend and make decisions based on what had occurred.[82] In another study by the American Bar Association, an opposite conclusion was reached.[83] Still, other research suggests that the combined knowledge of the jury is just as capable as the single knowledge of a judge in reaching a just outcome in a complex case.[84] Regardless of whether the case is complex or simple, juries are here to stay in patent cases. However, their role, or ability to make the ultimate decision, may be limited by the decisions of the Federal Circuit.

III. Second Jury - Federal Circuit

Since its inception, the Federal Circuit, through its exclusive appellate jurisdiction over patent issues, has been responsible for developing uniform rules and principles in patent law.[85] Pursuant to this mandate, the Federal Circuit initially attempted to solve problems at the lower court level by correcting the errors in instructions and interrogatories submitted to the jury. If errors in instructions were made, the appellate court would reverse the lower court's judgment, and possibly remand the case for a new trial with proper instructions.

*12 A. Errors in Instructions

After the Federal Circuit was created, one of the first things the Federal Circuit did was to establish and clarify the proper instructions to submit to the jury in a patent case. The Federal Circuit did this in a series of decisions.

In *American Hoist & Derrick Co. v. Sowa & Signs, Inc.*,[86] the Federal Circuit reversed the judgment of the lower court on the grounds that the court submitted erroneous jury instructions regarding burden of proof, presumption of validity, and fraud. The Federal Circuit commented, "[t]his case is a good illustration of the difficulties inherent, generally, in the use of juries to resolve patent disputes and, specifically, in allowing the use in such cases of general verdict forms...."[87] After reviewing precedent from its predecessor courts, the Federal Circuit explained that the presumption of validity continues to rest with the patentee and that this presumption never shifts at trial.[88] In addition, the Federal Circuit noted that the trial court improperly instructed the jury on obviousness.[89] The trial court used the improper standard that the invention should have a "new and unexpected function in combination."[90] The lower court also improperly instructed the jury to use too broad a test for fraud on the Patent and Trademark Office.[91] After the lower court held that the patentee had a duty to disclose any prior art of which the patentee "reasonably should be aware," the Federal Circuit explained that those instructions were in error because the instructions failed to take into account the materiality and intent requirements.[92] *American Hoist* did a good job of not only telling the lower court what it could not do in its instructions, but also instructed the lower court on what it should do.

Not long after *American Hoist*, the Federal Circuit decided *Envirotech Corp. v. Al George, Inc.*[93] In *Envirotech*, the court reversed the lower court's judgment for giving inadequate instructions on the presumption of validity and the lack of utility defense.[94] At this time, the court was citing its own prior decisions such as *American Hoist* and ***13** *Connell*[95] in support of its position.[96] The lower court's decision was also reversed because of a defective charge on the issue of obviousness.[97]

When lower district courts gave instructions that tended to attack the presumption of validity in patent cases, the Federal Circuit would soundly reverse the lower courts' decisions.[98] By 1985, the "clear and convincing evidence" standard to prove

invalidity was etched in the decisions of the Federal Circuit, resulting in reversal if the lower court did not use that standard with a jury.[99] In addition, if lower courts erred in instructions on novelty, the lower courts' judgments were promptly reversed.[100]

In *Structural Rubber Products Co. v. Park Rubber Co.*,[101] the lower court's decision was reversed for submitting an issue to the jury when there was no evidence to support the submission.[102] The lower court's decision was also reversed for submitting a novelty instruction that confused and misled the jury.[103] When the lower court made further errors in its instructions on presumption of validity, the instructions were rejected as "plain error."[104] Within this decision, the Federal Circuit recognized that with proper instructions a patent case could be presented to a jury using a general verdict on validity and infringement.[105] However, despite the recognition that general verdicts are proper, this opinion lobbies for the use of special verdicts under Rule 49(a).[106]

Within three or four years after the creation of the Federal Circuit, patent practitioners understood which instructions the Federal Circuit would or would not approve. Accordingly, the number of cases overturned due to erroneous jury instructions decreased rapidly. While the decisions of the Federal Circuit led to a decrease in ***14** reversals based on improper instructions, there was a simultaneous increase in reversals of jury verdicts for failing to meet the "substantial evidence" test.

B. Verdict Not Supported by Substantial Evidence

Early in its existence, two standards of review existed for the Federal Circuit. The first standard on factual issues was the "clearly erroneous standard," which applied to reversals of decisions by lower court judges.[107] However, a more difficult standard—the "substantial evidence" test—existed to reverse jury verdicts.[108] On issues of law, any ruling or determination made by the trial court is reviewable on appeal in a *de novo* proceeding by the Federal Circuit.[109]

When the substantial evidence test is applied to a motion for JNOV, the trial court must (1) consider all of the evidence presented in a light most favorable to the nonmovant, (2) not determine witness credibility, and (3) not substitute its choice for that of the jury, where conflicting evidence exists.[110] Applying these factors, the trial court will determine if there is substantial evidence to support the jury's findings, and if so, whether the findings support the verdict.[111] The court should grant the motion only when the court is convinced that reasonable persons could not have reached a verdict for the nonmovant.[112]

While the principle of law underlying the substantial evidence test stated by the Federal Circuit seems clear, the court does not uniformly apply the substantial evidence test. The tables found in Appendix A attempt to demonstrate the apparent difference in application of the substantial evidence test by illustrating not only the jury verdict, but also the court's reasons for either affirming or reversing the jury verdict. A more detailed review of each of the referenced cases shows that the Federal Circuit panels do not uniformly agree on when the substantial evidence test has been met. From these cases, it appears that when the Federal Circuit believes the jury verdict was correct, it simply holds that the substantial evidence test was met. On the other hand, when the Federal Circuit believes the jury verdict was wrong, it substitutes its opinion for that of the jury and simply states that the substantial evidence test was not met. During its infancy, the ***15** Federal Circuit was criticized on numerous occasions for this apparently haphazard decision-making.[113]

From 1982 through 1988, the Federal Circuit affirmed jury decisions fifteen out of thirty-six times.[114] While the Federal Circuit only completely reversed the jury's conclusion five times, the remaining sixteen jury decisions were changed in some way by the Federal Circuit.[115] By 1991, if a motion for JNOV on a jury finding of validity/invalidity was denied, the Federal Circuit would affirm the lower court's decision in approximately two out of three cases. On the other hand, if the motion was granted, the Federal Circuit would change the outcome approximately half of the time.[116] On the issue of infringement, the Federal Circuit would affirm the lower court's decision approximately 70 percent of the time if the lower court denied a motion for JNOV. Conversely, if the motion for JNOV on the issue of infringement was granted, the lower court's decision would be reversed by the Federal Circuit approximately 50 percent of the time.[117]

A recent study, conducted from 1989 to 1996, showed that juries are much more likely to hold a patent valid.[118] Surprisingly, the Federal Circuit affirmed jury verdicts on validity 87% of the time.[119] These figures suggest that the Federal Circuit is not haphazardly substituting its opinion for the jury under the substantial evidence test. However, the Federal Circuit has also reversed jury findings under the substantial evidence test and then, rather than remanding the case to the lower court for a new trial, substituted its opinion for that of the jury.[120]

***16 C. Redefining Issues as Questions of Law for the Judge**

1. Claim Interpretation

For approximately a century, claim interpretation based only on documentary evidence was a question of law for the court in jury trials.[121] Even prior to the creation of the Federal Circuit, it was recognized that infringement constituted a mixed question of fact and law, which one commentator described as "nebulous" and "flexible."[122] In 1985, another commentator on the issue of patent juries stated that "questions of law and fact stand on the same footing as questions of fact and are not subject to review by appellate courts beyond the substantial evidence standard."[123]

While this appears to be true on the issue of obviousness, which has been submitted to the jury since the early existence of the Federal Circuit,[124] this was not always the case with infringement. A line of cases developed pursuant to the holding in *McGill, Inc. v. John Zink, Co.*,[125] which held that claim interpretation could be submitted to the jury if extrinsic evidence was necessary to interpret the claim.[126] However, this line of decisions was overruled in *Markman*.[127] After *Markman*, the judge must interpret the claims even if extrinsic evidence, such as expert witness testimony, is used to help construe or interpret the claims.[128]

In *Markman*, the sole issue in the case was whether the term "inventory" as contained in the claim covered only articles of clothing in a dry cleaning establishment or also included invoices.[129] After hearing conflicting evidence on the meaning of the term "inventory," which included extrinsic evidence from expert witnesses, the jury interpreted the claims, but the trial judge rejected the jury verdict and reinterpreted the claims as a matter of law.[130] The Federal Circuit held that the trial judge should have ***17** interpreted the claims before giving the case to the jury, but that the error was harmless because the trial judge correctly interpreted the claims as a matter of law after the jury verdict.[131] This decision has had a significant impact on claim interpretation. After *Markman*, commentators have described the process of claim interpretation as subject to two separate trials because of the Federal Circuit's *de novo* review of the trial judge's interpretation of the patent claims.[132]

A spin-off from the *Markman* decision was a line of cases holding that the Federal Circuit could review the lower court's claim construction *de novo* on appeal,[133] despite the fact that extrinsic evidence such as expert testimony could be used during trial.[134] However, another line of cases developed holding the clearly erroneous standard applicable to factual findings that are incident to the lower court's construction of patent claims.[135] This line of cases was quickly put to rest in the *en banc* decision in *Cybor Corp. v. FAS Technologies, Inc.*,[136] which specifically reversed the cases supporting the clearly erroneous standard of review. After *Cybor Corp.*, the trial court must determine claim interpretation, and on appeal, the Federal Circuit gets a second bite of the apple under its *de novo* review. After the claims are interpreted, the jury will determine the issue of infringement.

One example of the Federal Circuit's *de novo* power is found in *Exxon Chemicals Patents, Inc. v. Lubrizol Corp.*,[137] in which the trial judge selected Exxon's interpretation of the patent claim and instructed the jury to adopt that interpretation.[138] The jury subsequently found for Exxon. The Federal Circuit reviewed the trial judge's claim ***18** interpretation *de novo*,[139] and stated that Exxon's interpretation was incorrect.[140] The court then reversed the judgment below and granted judgment as a matter of law (JMOL) in favor of Lubrizol.[141] Interestingly, the case was not remanded for a second trial for the jury to determine infringement with the correct claim interpretation.[142] Instead, the Federal Circuit used its *de novo* review powers to render a final decision, thus eliminating the jury. The criticism following the *Markman* decision was immediate and strong. As one commentator stated:
In patent infringement cases, the [Federal Circuit] has been appointed the ringleader, and the trial is becoming more of a sideshow every day.

....

…Consequently, it is important to determine exactly how much power a jury has in patent-infringement litigation. For better or worse, that power is decreasing.

....

The effect of *Markman* is to vest more power in the trial judge and, ultimately, in the judges of the [Federal Circuit], who will review claim construction *de novo*.[143]
Perhaps the Supreme Court in *Markman* did not understand how often extrinsic evidence is necessary for claim interpretation. The Court simply dismissed the matter as not occurring often enough to be of any concern.[144]

Many commentators believe the practical effect of *Markman* will be the elimination of juries in many patent infringement cases when juries have been properly requested. This problem is exacerbated by the fact that claim interpretation in many cases determines infringement.[145]

2. Public Use/Experimental Use

Another area of concern in patent law is the public and experimental use determination. For a number of years the Federal Circuit has held that public use under 35 U.S.C. § 102(b) was a legal conclusion based on factual findings,[146] while treating ***19** experimental use as a factual issue that the jury should decide. In numerous cases, juries decided the issue of experimental use, which could negate the public use bar.[147] Therefore, when a finding of experimental use was challenged on appeal, the court decided whether a reasonable jury, with all of the evidence before it, could have reached the same conclusion as the existing jury.[148] Because public use would support a finding of invalidity, any finding of invalidity must have been by "clear and convincing evidence."[149]

With this line of authority in place, the holding in *Lough v. Brunswick Corp.*[150] was a surprise. In response to proper instruction by the court, the jury found use by the inventor to be experimental.[151] Without overruling any of the prior cases that treated experimental use as a question of fact that would be determined by the jury, the Federal Circuit stated that experimental use was a question of law.[152] The Federal Circuit held that "the jury had no legal basis to conclude that the uses of [[[the inventor's] prototypes were experimental and that the prototypes were not in public use prior to the critical date."[153] The court further stated: "We conclude that the jury's determination that [the inventor's] use of the invention was experimental so as to defeat the assertion of public use was incorrect as a matter of law."[154] At no time did the Federal Circuit ever state it was changing experimental use from a question of fact to be determined by the jury to a question of law to be determined by the court, but that was the effect of the ruling in *Lough*. Naturally, a question of law is subject to *de novo* review by the Federal Circuit.

The Federal Circuit has repeatedly taken issues out of the hands of the jury by redefining the issues as matters of law to be decided initially by the trial judge, and ultimately by the Federal Circuit under its *de novo* review. The most critical of the redefined issues is claim interpretation under *Markman*, which can dictate the outcome in many patent infringement suits. The overall effect is to reduce the impact of juries in patent litigation and increase the control of the judges at both the trial and appellate levels.

***20 IV. Third Jury - Trial Judge**

Long before *Markman*, the trial judge, not the jury, decided some issues in patent cases. According to *Winans v. Denmead*,[155] which was cited in *Markman*, the trial judge construes the patent document to determine the invention that is patented.[156] If the trial judge is wrong in the construction of the patent, the trial judge will be reversed. Basically, any issue tried in equity will be submitted to the court even though a jury demand has been filed. For example, the equitable defense of laches, which could bar recovery for patent infringement, has been repeatedly held as a matter for the trial judge, not the jury.[157] In the unusual case of *Refac International Ltd. v. Matsushita Electrical Corp. of America*,[158] the court held that the issue of "champerty," if it arose in a context of patent litigation, was an issue to be tried by the trial judge, not the jury.[159] In addition, "obviousness-type" double patenting is an issue for the trial judge to decide under judge-made criteria.[160] Another issue that arises in this context is which entity, judge or jury, should determine inequitable conduct.

A. Inequitable Conduct

One would expect that determining what constitutes fraud on the United States Patent and Trademark Office would be a question of fact for a jury since it involves a determination of intent. However, in *Gardco Manufacturing, Inc. v. Herst*

Lighting Co.,[161] a case of first impression, the Federal Circuit held that inequitable conduct (i.e., fraud) is properly determined by the trial judge and is not an issue for the jury.[162] The Federal Circuit stated that fraud on the U.S. Patent and Trademark Office is "equitable in nature and thus does not give rise to the right of trial by jury."[163] Therefore, the jury's role is at best restricted and at worst eliminated on the issue of inequitable conduct. After *Gardco*, trial courts have handled the issue of inequitable conduct a number of different ***21** ways. In one case, inequitable conduct was submitted to the jury by agreement of the parties.[164] In another case, the questions of "materiality" and "intent" were submitted to the jury for a factual determination, but the judge made the ultimate determination of inequitable conduct.[165]

The Federal Circuit does not seem to have a problem with underlying factual issues of materiality and intent being submitted to the jury as long as the ultimate decision of inequitable conduct remains with the trial judge.[166] Therefore, the only question on appeal of the jury verdict is whether there was substantial evidence to support the findings to the factual questions submitted. Intent itself is an independent element of inequitable conduct and must be separately established.[167]

Interestingly, in *Gardco* the Federal Circuit held that inequitable conduct is equitable in nature and therefore is for the trial judge to decide. However, the court then repeatedly approved the submission of factual determinations of "materiality" and "intent" to the jury.[168] In instances when extrinsic evidence through expert witnesses was submitted to the jury on the issue of inequitable conduct, the Federal Circuit would reverse the verdict under the "substantial evidence" standard only if it did not agree with the outcome.[169]

B. Claim Interpretation

Trial courts may implement the *Markman* decision in different ways since the trial judge has three options for resolving disputes concerning claim interpretation.[170] The options are:

1. The trial judge can resolve the dispute from the paper record, namely, the cited references, file wrapper and the claims at issue;

2. The trial judge can hold a hearing and, if he so desires, admit extrinsic evidence such as expert witness testimony; or

***22** 3. The trial judge can wait until trial and resolve the disputed claim issues at the conclusion of the evidence but before the jury is instructed.[171]

Whatever the trial judge's choice, the judge's interpretation of the patent claims will be reviewed *de novo*.[172] The trend among trial judges is to try for an early resolution on the issue of claim interpretation via a "*Markman*" hearing, which often results in a summary judgment.[173] The trial judge, rather than the jury, must determine the issue of claim interpretation. As has been repeatedly stated, claim interpretation, like infringement, is normally the ultimate issue in a case.[174] This change after *Markman* has given the trial judge the final word on various patent issues, hence lending credibility to the trial judge's function as a third jury.

Though cases clearly hold that claim interpretation can no longer be submitted to the jury in a general verdict form, this holding has created more questions than answers for the trial judge. Judge Schwartz was probably the first trial judge to apply *Markman* in *Lucas Aerospace, Ltd. v. Unison Industries, L.P.*[175] In response to the *Markman* court's statement that extrinsic evidence could not be relied upon,[176] Judge Schwartz stated the following:

> As I understand *Markman*, because claim construction represents a purely legal question, trial judges must ignore all, non-transcribible [sic] courtroom occurrences such as a witness's body language, inability to maintain eye conduct when confronted with a telling question, hesitance or delay in giving an answer, an affirmative answer in a voice revealing the truthful answer is "no", or the changing demeanor from shifting from sure to traitorous footing. All of the preceding occurred in this trial. When two expert witnesses testify differently as to the meaning of a technical term, the court embraces the view of one, the other, or neither while construing a patent claim as a manner of law, the court has engaged in weighing evidence and making credibility determinations. "*If those possessed of a higher commission wish to rely on a cold written record and engage in de novo review of all claim constructions, that is their privilege. But when the Federal Circuit Court of Appeals states that the trial court does not do something that the trial judge does and must do to perform the judicial function, that court knowingly enters a land of sophistry and fiction*."[177]

***23** Judge Schwartz' comments have been referred to by numerous commentators, many of whom believe that *Markman* creates more problems than it solves.[178] From the numerous references to Judge Schwartz' statements regarding *Markman*, it is clear that many district courts are still unsure about proper procedure in light of *Markman*.

Since 1995, the three options for handling claim interpretation have been applied with approval by lower courts.[179] Numerous commentators also cite the three-option approach of claim construction with approval under *Markman*.[180] Judge McKelvie in *Elf Atochem North America, Inc. v. Libbey-Owens-Ford Co.*[181] was also frustrated by the *Markman* decision, although he stated his opinion in a slightly less offensive manner than Judge Schwartz:
In *Markman*, the Federal Circuit stated, in no uncertain terms, that it would have the final say as to the meaning of words in a claim of a patent, according no deference to the decisions of the various United Stated District Court judges. That is, in spite of a trial judge's ruling on the meaning of disputed words in a claim, should a three-judge panel of the Federal Circuit disagree, the entire case could be remanded for a retrial on different claims.

***24** ....

Finally, it remains to be seen what the impact of the court's new role as arbiter of the meaning of disputed words in claims of patents will have on a party's right to a jury trial on validity issues. For example, it is unclear how the issue of indefiniteness will be presented to a jury where this court instructs the jury on the meaning of vague words that commonly appear in patent claims, such as "substantially."[182]

By 1998, a good body of case law under *Markman* had developed, as cited by Judge Young in *Mediacom Corp. v. Rates Technology, Inc.*[183] Judge Young, not understanding the complicated computer technology in the patent claims at issue, appointed a neutral technical advisor, an expert in the field, to assist him on the issue of claim interpretation.[184] The parties paid the costs of the "neutral" technical advisor and assisted in his selection.[185] In reality, this neutral technical advisor interpreted the claims even though the trial judge signed the final judgment. This approach may become common within the courts. In such a situation, even though the judge has replaced the jury on matters of claim interpretation, judges may still utilize the outside input of a technical advisor for their final decision.

Just as trial judges do not know the full ramifications of *Markman*, commentators also argue about the effects of *Markman*. At this stage, it is difficult to predict the overall end result. However, it is clear that whatever the trial judge decides on claim interpretation, that opinion will be set aside and the three-judge panel of the Federal Circuit will substitute its opinion for the trial judge's opinion under its *de novo* review authority when the panel disagrees with the trial judge's opinion.

C. *Daubert* Hearings

Just as the Federal Circuit is imposing additional duties and obligations on the trial judge, the United States Supreme Court has imposed additional "gatekeeping" obligations on the trial judge that could have a significant effect in patent litigation. In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,[186] the trial judge was made the gatekeeper on the submission of scientific evidence to the jury. The Supreme Court rejected the test of general acceptance in the community (the *Frye* test), holding that adoption of the Federal Rules of Evidence replaced the general acceptance in the community standard.[187]

***25** In *Daubert*, the jury accepted the testimony of one expert witness that the drug Bendectin did not cause birth defects, over eight experts who said that it could cause birth defects.[188] In vacating and remanding the case to the lower court, the Supreme Court assigned to the trial judge the responsibility of ensuring that an expert's testimony rested on "a reliable foundation and is relevant to the task at hand."[189] The trial judge was directed to use Rule 702 of the Federal Rules of Evidence to determine the admissibility of the expert's testimony.[190] Recently the Court extended the trial judge's gatekeeping obligation not only to scientific testimony but also to all expert testimony, including testimony given by engineers.[191]

The effect of the trial court's gatekeeping function in patent litigation can be critical. An invention, by definition, must be novel and nonobvious to those of ordinary skill in the art.[192] If the invention is new, little or no expertise on the subject matter may exist. Therefore, it may be difficult to have scientific testimony in patent cases that satisfies all of the requirements of *Daubert*, such as peer review.[193] As was stated in the *Frye* test, "[j]ust when a scientific principle or discovery crosses the line

between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized...."[194]

A patent infringement trial in front of a jury may have several critical experts, including a technical expert, a patent law expert, and a damages expert. The trial judge must approve each of these experts before the expert testimony is presented to the jury. While most patents are new combinations of old elements, some patents constitute a scientific breakthrough. Any technical expert testifying on the scientific breakthrough of the invention will be testifying in an area where expertise is just developing. Therefore, there will not be a large body of scientific knowledge against which the technical expert's opinion can be measured. Unfortunately, this scientific knowledge is one of the key factors indicated in *Daubert* to determine "good science."[195]

While the Supreme Court seems to be concerned that a jury may not understand the scientific testimony, one survey found that in evaluating expert testimony, jurors use ***26** criteria as rational and practical as those suggested by the Court for the trial judge.[196] The same study found that jurors made their decision based upon the "expert's qualifications, reasoning, factual familiarity, and impartiality."[197]

The long-range effect of *Daubert* on jury trials in patent cases is unknown at the present time. However, it does put the trial judge in the position of being a "third" jury, just as the Federal Circuit plays this role pursuant to the *Markman* decision.

V. Issues Juries Still Decide in Patent Cases

In 1991, one commentator listed 15 issues in a patent case that were triable to the jury.[198] While there have been some serious challenges since then as to which issues remain triable to a jury, the right to a jury trial on patent validity was reaffirmed by *In re Lockwood*.[199] It is usually to the patentee's advantage to request a jury because a jury is statistically more likely to hold a patent valid than a judge.[200]

A patent attorney, when arguing for the validity of a patent claim, should be cautioned not to argue one way for validity (normally narrower) and a different way for infringement (normally broader). If the attorney chooses to argue the claim both ways, the patentee may be caught in a catch-22 of his patent being declared either invalid or not infringed.[201]

After *Hilton Davis*, it is now clear that the jury, not the trial judge, determines if there is infringement under the doctrine of equivalents.[202] The trial judge must submit the charge to the jury with the proper instructions,[203] and the jury verdict on infringement can only be set aside for lack of substantial evidence.[204] *Hilton Davis* generated an interesting side issue when the Supreme Court remanded the case to determine if there ***27** was prosecution history estoppel that would avoid infringement under the doctrine of equivalents.[205] The Federal Circuit subsequently remanded the case back to the district court,[206] granting the trial judge discretion on how to augment the record to determine if there was prosecution history estoppel. No explicit statement was made as to whether a jury would be involved in determining prosecution history estoppel, the counterargument to the doctrine of equivalents. Yet, normally a trial judge must instruct a jury under both the doctrine of equivalents and prosecution history estoppel.

VI. Conclusion

A patent litigator, when deciding whether to request a jury, should realize that up to "three" juries may ultimately decide the patent issues in the case. The first jury is the traditional jury in the jury box. All of the normal factors in determining whether to request a jury will go into the decision of whether to use a traditional jury. Statistics indicate that the traditional or "first" jury tends to favor the patentee over the accused infringer more frequently than trial judges do.

After the verdict is returned, judgment is entered, and post trial motions are ruled on by the trial judge, the Federal Circuit then functions as the "second" jury. Under its *de novo* review, the Federal Circuit can reverse the trial judge on any mistakes made on issues of law. The Federal Circuit can only reverse the jury if the jury's verdict is contrary to the substantial evidence test.

Today, the trial judge is forced to act as a "third" jury by interpreting the claims, which becomes the law of the case. Moreover, the trial judge also acts as the gatekeeper for much of the scientific evidence used in the jury trial. Over time, the

trial judge has been forced to decide more while the jury decides less.

The trial attorney must balance all the arguments and evidence to satisfy any one of the three juries that may ultimately decide the case. The concern about *Markman* in jury cases is not as great as initially thought. It is likely that the trial judge will interpret the claims in a very general way and give very general meaning to the terms. Since the trial judge's interpretation is reviewed *de novo* by the Federal Circuit, the more explicit the trial judge is in his/her interpretation of the claims, the greater the likelihood that the trial judge will be reversed by the Federal Circuit. It appears that the battle will continue between the Federal Circuit's attempt to force trial judges to be more explicit in their rulings and trial judges' resistance of that pressure.

***28** While there have been some bumps in the road, jury trials in patent cases are alive and well. *Markman* hearings may require a little additional time and effort, but in the long term do not appear to have a significant overall effect on jury trials of patent cases. Today, all one needs to remember is that a patent case is being tried not to one, but to "three" juries.

Footnotes

[a1] Gunn, Lee & Keeling, San Antonio, Texas. The authors wish to thank Hsin-Wei Luang and Steve Toland for their invaluable assistance in researching and proofing this article.

[1] Markman v. Westview Instruments, Inc., 52 F.3d 967, 993, 34 U.S.P.Q.2d (BNA) 1321, 1341 (Fed. Cir. 1995) (en banc) (Mayer, J. concurring) (emphasis added), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996).

[2] *Id.*

[3] 62 F.3d 1512, 30 U.S.P.Q.2d (BNA) 1641 (Fed. Cir. 1995) (en banc), *rev'd*, 520 U.S. 17, 41 U.S.P.Q.2d (BNA) 186 (1997).

[4] 50 F.3d 966, 33 U.S.P.Q.2d (BNA) 1406 (Fed. Cir.) (en banc), *vacated sub nom.* American Airlines, Inc. v. Lockwood, 515 U.S. 1182 (1995).

[5] *See id.* at 980-90 (dissenting opinion from order denying rehearing en banc)

[6] Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, § 101, 96 Stat. 25 (codified as amended in scattered sections of 28 U.S.C.).

[7] See 28 U.S.C. § 1295(a)(1), (4)(C) (1994).

[8] *See* South Corp. v. United States, 690 F.2d 1368, 1369, 215 U.S.P.Q. (BNA) 657 (Fed. Cir. 1982).

[9] The authors are aware of attorneys being chastised during oral arguments for relying on circuit opinions from circuits other than the Federal Circuit on issues of substantive patent law.

[10] The Supreme Court did overrule the predecessor Court of Customs and Patent Appeals several times on the issue of patentability of algorithms, which eventually ended. *See* Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981). The Supreme Court has overruled the Federal Circuit in cases dealing with issues other than substantive patent law issues. *See, e.g.*, Asgrow Seed Co. v. Winterboer, 513 U.S. 179, 33 U.S.P.Q.2d (BNA) 1430 (1995) (dealing with the Plant Variety Protection Act, 7 U.S.C. § 2321 *et seq.* (1994)); Cardinal Chem. Co. v. Morton Int'l, Inc., 508 U.S. 83, 26 U.S.P.Q.2d (BNA) 1721 (1993) (vacating Federal Circuit's ruling that a finding of noninfringement makes a declaratory judgment of patent invalidity moot); Christianson v. Colt Indus. Operating Corp., 486 U.S. 800, 7 U.S.P.Q.2d (BNA) 1109 (1988) (concerning jurisdiction); Panduit Corp. v. Dennison Mfg. Co., 475 U.S. 809, 229 U.S.P.Q. (BNA) 478 (1986) (concerning FED. R. CIV. P. 52(a)).

[11] *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996).

[12] *See* Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512, 35 U.S.P.Q.2d (BNA) 1641 (Fed. Cir. 1995) (en banc), *rev'd*, 520 U.S. 17, 41 U.S.P.Q.2d (BNA) 186 (1997).

[13] *See* Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 39, 41 U.S.P.Q.2d (BNA) 1865, 1875 (1997).

[14] *See id.* at 40-41, 41 U.S.P.Q.2d at 1876.

[15] *See id.* at 33, 41 U.S.P.Q.2d at 1873.

[16] *See* State St. Bank & Trust Co. v. Signature Fin. Group, 149 F.3d 1368, 47 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1998), *cert. denied*, 119 S. Ct. 851 (1999).

[17] 520 U.S. 1111 (1997).

[18] *See* Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 187 F.3d 1381, 51 U.S.P.Q.2d (BNA) 1959 (Fed. Cir. 1999). [These authors predict that the ruling from the Federal Circuit will further limit the right to a jury and give more *de novo* review powers to the Federal Circuit.]

[19] Patent Act of 1790, ch. 7, § 4, 1 Stat. 109.

[20] *See* Donald Zarley, *Jury Trials in Patent Litigation*, 20 DRAKE L. REV. 243 (1971).

[21] *See* Battin v. Taggert, 58 U.S. 74, 85 (1854).

[22] *See* Bischoff v. Wethered, 76 U.S. 812, 815 (1869).

[23] *See* Heald v. Rice, 104 U.S. 737, 749 (1881).

[24] *See* Winans v. Denmead, 56 U.S. 330, 338 (1853).

[25] 192 U.S. 265 (1904).

[26] *Id.* at 275.

[27] *See* Barry S. Wilson, *Patent Invalidity and the Seventh Amendment: Is the Jury Out?*, 34 SAN DIEGO L. REV. 1787, 1803-04 (1997).

[28] *See* John E. Sanchez, *Jury Trials in Hybrid and Non-Hybrid Actions: The Equitable Clean-Up Doctrine in the Guise of Inseparability and Other Analytical Problems*, 38 DEPAUL L. REV. 627, 642-43 (1989).

[29] *See id.* at 643.

[30] 359 U.S. 500 (1959).

[31] 369 U.S. 469, 133 U.S.P.Q. (BNA) 294 (1982).

[32] *See* Wilson, *supra* note 27, at 1814.

[33] *See generally* V. Bryan Medlock, Jr., *Jury Trials of Patent Cases, in* PATENT LITIGATION 1991, at 9, 15-19 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 321, 1991) (noting that the line between law and fact is especially blurred in patent law, and contains a list of matters typically decided by a jury).

[34] *See* Dairy Queen, Inc. v. Woods, 369 U.S. 469, 473 n.8, 133 U.S.P.Q. (BNA) 294, 295 n.8 (1982).

[35] "No warrant appears for distinguishing the submission of legal questions to a jury in patent cases from such submissions routinely made in other types of cases. So long as the Seventh Amendment stands, the right to a jury trial should not be rationed, nor should particular issues in particular types of cases be treated differently from similar issues in other types of cases." Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1547, 220 U.S.P.Q. (BNA) 193, 197 (Fed. Cir. 1983).

[36] *See, e.g.*, Patlex Corp. v. Mossinghoff, 758 F.2d 594, 603-04, 225 U.S.P.Q. (BNA) 243, 250-51 (Fed. Cir. 1985) (refusing to extend the jury trial to a reissue proceeding).

[37] *See* Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 719-20, 223 U.S.P.Q. (BNA) 1264, 1273-74 (Fed. Cir. 1984).

[38] *See, e.g.*, SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1123-26, 1126 n.23, 227 U.S.P.Q. (BNA) 577, 587-89, 589 n.23 (Fed. Cir. 1985) (en banc) (holding that question of noninfringement under reverse doctrine of equivalents raises a genuine issue of material fact; thus, a jury trial should be allowed on remand).

[39] *See* Howard T. Markey, *On Simplifying Patent Trials*, 116 F.R.D. 369, 372 (1987) (On an assertion that juries should not try patent cases, Judge Markey states the proponents "never cite[] empirical evidence that each of more than 500 trial judges can be guaranteed to reach more 'correct' judgments than those entered on jury verdicts.").

[40] *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 384-88, 38 U.S.P.Q.2d (BNA) 1461, 1468-71 (1996).

[41] *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976-77, 34 U.S.P.Q.2d (BNA) 1321, 1327-28 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461 (1996).

[42] *See id.* at 989-90, 34 U.S.P.Q.2d at 1337-39 (Mayer, J., concurring).

[43] *See Markman*, 517 U.S. at 376-77, 38 U.S.P.Q.2d at 1465-66.

[44] *See id.* at 390-91, 38 U.S.P.Q.2d at 1470-71.

[45] *See id.* at 387-88, 38 U.S.P.Q.2d at 1469 (discussing A. WALKER, PATENT LAW, § 75, at 68 (3d ed. 1895) and 2 WILLIAM ROBINSON, LAW OF PATENTS, § 731, at 481-83 (Boston, Little, Brown, and Co. 1890)).

[46] *See Markman*, 517 U.S. at 388, 38 U.S.P.Q.2d at 1470.

[47] *Id.* at 390, 38 U.S.P.Q.2d at 1471 (citing H.R. REP. NO. 97-312, at 20 (1981)).

[48] *Id.* at 391, 38 U.S.P.Q.2d at 1471.

[49] The first Federal Circuit case to state that claim construction with underlying factual inquiries may be submitted to the jury was McGill, Inc. v. John Zink, Co., 736 F.2d 666, 221 U.S.P.Q. (BNA) 944 (Fed. Cir. 1984). A line of cases developed subsequent to *McGill. See, e.g.*, Tol-O-Matic, Inc. v. Proma Produkt-Und Mktg. Gesellschaft m.b.H., 945 F.2d 1546, 20 U.S.P.Q.2d (BNA) 1332 (Fed. Cir. 1991); H.H. Robertson v. United Steel Deck, Inc., 820 F.2d 304, 2 U.S.P.Q.2d (BNA) 1926 (Fed. Cir. 1987); Palumbo v. Don-Joy Co., 762 F.2d 969, 262 U.S.P.Q. (BNA) 5 (Fed. Cir. 1985).

[50] Zarley, *supra* note 20, at 243.

[51] *See* Blonder-Tongue Lab. v. University of Ill. Found., 402 U.S. 313, 336 n.30, 169 U.S.P.Q. (BNA) 513, 522 n.30 (1971).

[52] *See* Steven B. Judlowe & Lee A. Goldberg, *Jury Trials, in* PATENT LITIGATION 1994, at 173, 175 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 397, 1994).

[53] *See* Allen N. Littman, *The Jury's Role in Determining Key Issues in Patent Cases: Markman, Hilton Davis and Beyond*, 37 IDEA 207, 208 n.10 (1997) (citing UNITED STATES DEPARTMENT OF COMMERCE ADVISORY COMMISSION ON PATENT LAW REFORM, A REPORT TO THE SECRETARY OF COMMERCE (1992)).

[54] *See* ADMINISTRATIVE OFFICE OF THE UNITED STATES COURT, JUDICIAL BUSINESS OF THE UNITED STATES COURTS: 1994 REPORT OF THE DIRECTOR, Table C-4, at A-37 (1994).

[55] *See* ADMINISTRATIVE OFFICE OF THE UNITED STATES COURT, JUDICIAL BUSINESS OF THE UNITED STATES COURTS: 1998 REPORT OF THE DIRECTOR, Table C-4 at 167 (1998).

[56] *See* Anthony Baldo, *Juries Love the Patent Holder*, FORBES, June 17, 1985, at 147.

[57] *See In re* Lockwood, 50 F.3d 966, 980-81 n.1, 33 U.S.P.Q.2d (BNA) 1406 (Fed. Cir. 1994) (Nies, J., dissenting), *vacated sub nom.* American Airlines, Inc. v. Lockwood, 515 U.S. 1182 (1995).

[58] *See* Paul R. Michel, *Improving Patent Jury Trials*, 6 FED. CIR. B. J. 89, 91 n.6 (1996).

[59] *See id.*

[60] *See* ADMINISTRATIVE OFFICE OF THE UNITED STATES COURT, *supra* note 55, at 166-67.

[61] *See* John R. Allison & Mark. A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q. J. 185, 187 (1998).

[62] *See id.* at 212.

[63] *See id.* at 240-41.

[64] *See* Medlock, Jr., *supra* note 33, at 33.

[65] *See* Ronald B. Coolley, *What the Federal Circuit Has Done and How Often: Statistical Study of the CAFC Patent Decisions - 1982 to 1988*, 71 J. PAT. OFF. SOC'Y 385, 387 (1989).

[66] *See* Litton Sys., Inc. v. Honeywell, 87 F.3d 1559, 1576, 39 U.S.P.Q.2d (BNA) 1321, 1332 (Fed. Cir. 1996) (1.2 billion dollar award by jury was subsequently set aside), *vacated*, 520 U.S. 1111 (1997).

[67] *See* Judlowe, *supra* note 52, at 175.

[68] *See* Allison, *supra* note 61, at 244.

[69] *See* ROBERT L. HARMON, PATENTS IN THE FEDERAL CIRCUIT 794 (2d ed. Supp. 1993). *But see* ROBERT L. HARMON, PATENTS IN THE FEDERAL CIRCUIT 794 (3d ed. 1994) (author retracted his earlier comment that the Federal Circuit established a positive climate for patents).

[70] *See generally* Baldo, *supra* note 56, at 147; Daniel Akst, *Patent Suit Jury Trials Are the Rage*, LOS ANGELES TIMES, April 20, 1994, at 8; *Jury Cases on Patent Infringement on Trial*, CHI. TRIB., June 12, 1995, at 6.

[71] *See* ROBERT L. HARMON, PATENTS IN THE FEDERAL CIRCUIT 794 (3d ed. 1994).

[72] *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 989, 34 U.S.P.Q.2d (BNA) 1321, 1338 (Mayer, J., concurring).

[73] *See* UNITED STATES DEPARTMENT OF COMMERCE ADVISORY COMMISSION ON PATENT LAW REFORM, A REPORT TO THE SECRETARY OF COMMERCE 107-110 (1992).

[74] *See* Markey, *supra* note 39, at 372.

[75] *See* The Eleventh Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, *To What Extent Must Juries Be Used in Patent Cases?*, 153 F.R.D. 177, 240-44 (1993).

[76] 396 U.S. 531 (1970).

[77] *See id.* at 545 n.5 (Stewart, J., dissenting).

[78] *See* SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1130-31, 227 U.S.P.Q. (BNA) 577, 592-93 (Fed.Cir. 1985) (en banc) (rejecting the use of a complexity exception in patent cases to deny jury trial, as found in Judge Markey's additional views and concurred with by Judge Newman).

[79] *See* Franklin Strier, *The Educated Jury: A Proposal for Complex Litigation*, 47 DEPAUL L. REV. 49, 79 (1997).

[80] *See* Reid Hastie & W. Kip Viscusi, *What Juries Can't Do Well: The Jury's Performance As a Risk Manager*, 40 ARIZ. L. REV. 901, 917 (1998).

[81] *See* The Eleventh Annual Judicial Conference of the United States Court of Appeals for the Federal Circuit, *Remarks of Judge Robert Mayer*, 153 F.R.D. 177, 252 (1993).

[82] *See* Joe S. Cecil et al., *Citizen Comprehension of Difficult Issues: Lessons from Civil Jury Trials*, 40 AM. U. L. REV. 727, 752 (1991).

[83] *See* AMERICAN BAR ASSOCIATION, JURY COMPREHENSION IN COMPLEX CASES: REPORT OF A SPECIAL COMMITTEE OF THE ABA LITIGATION SECTION 61 (Dec. 1989) (study only involved four cases).

[84] *See* Judlowe, *supra* note 52, at 178 ("In a recent three year study by the American Bar Association's section on litigation, it was concluded that juries in complex cases, including those involving high technology, reached verdicts consistent with the trial judges' own opinion of the evidence.").

[85] *See* Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified as amended at 28 U.S.C. § 1295 (1994)); 35 U.S.C. §§ 141-146 (1994); H.R. REP. NO. 97-312, at 8, 20-24 (1981); S. REP. NO. 97-275, at 2-7 (1981); Helen Wilson Nies, *Dissents at the Federal Circuit and Supreme Court Review*, 45 AM. U. L. REV. 1519 (1996); Pauline Newman, *Federal Circuit: Judicial Stability or Judicial Activism?* 42 AM. U. L. REV. 683, 685 (1993).

[86] 725 F.2d 1350, 220 U.S.P.Q. (BNA) 763 (Fed. Cir. 1984).

[87] *Id.* at 1356, 220 U.S.P.Q. at 768.

[88] *See id.* at 1358-60, 220 U.S.P.Q. at 769-71.

[89] *See id.* at 1360, 220 U.S.P.Q. at 771.

[90] *Id.*, 220 U.S.P.Q. at 771.

[91] *See id.* at 1362, 220 U.S.P.Q.2d at 772.

[92] *Id.*, 220 U.S.P.Q.2d at 772.

[93] 730 F.2d 753, 221 U.S.P.Q. (BNA) 473 (Fed. Cir. 1984).

[94] *See id.* at 761, 221 U.S.P.Q. at 479-80.

[95] Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 U.S.P.Q. (BNA) 193 (Fed. Cir. 1983).

[96] *See Envirotech Corp.*, 730 F.2d at 761, 221 U.S.P.Q. at 479.

[97] *See id.* at 762, 221 U.S.P.Q. at 480 (noting that defective charge lacked the factual inquiries outlined in Graham v. John Deere Co., 383 U.S. 1, 148 U.S.P.Q. (BNA) 459 (1996)).

[98] *See, e.g.*, Jamesbury Corp. v. Litton Indus. Prods., Inc., 756 F.2d 1556, 1558, 225 U.S.P.Q. (BNA) 253, 255 (Fed. Cir. 1985), *overruled on other grounds by* A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 22 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1992) (overruling equitable estoppel issue).

[99] *See id.* at 1559, 225 U.S.P.Q. at 255.

[100] *See id.* at 1560, 225 U.S.P.Q. at 256.

[101] 749 F.2d 707, 223 U.S.P.Q. (BNA) 1264 (Fed. Cir. 1984).

[102] *See id.* at 717, 223 U.S.P.Q. at 1272.

[103] *See id.*, 223 U.S.P.Q. at 1271.

[104] *Id.* at 722, 223 U.S.P.Q. at 1276.

[105] *See id.* at 720, 223 U.S.P.Q. at 1274.

[106] *See id.* at 723-24, 223 U.S.P.Q.2d at 1276-77.

[107] *See* SSIH Equip. S.A. v. United States Int'l Trade Comm'n, 718 F.2d 365, 381-82, 218 U.S.P.Q. (BNA) 678, 691-93 (Fed. Cir. 1983) (Nies, J., supplemental opinion); *Structural Rubber Prods.*, 749 F.2d at 719, 223 U.S.P.Q. at 1273.

[108] *See* SSIH Equip. S.A., 718 F.2d at 381-82, 218 U.S.P.Q. at 691-93.

[109] *See* Judlowe, *supra* note 52, at 178-79.

[110] *See* Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893, 221 U.S.P.Q. (BNA) 669, 672 (Fed. Cir. 1984).

[111] *See id.*, 221 U.S.P.Q.2d at 673.

[112] *See id.*

[113] *See* Douglas A. Strawbridge et al., *Patent Law Developments in the United States Court of Appeals for the Federal Circuit During 1986*, 36 AM. U. L. REV. 861, 879 (1987).

[114] *See* Coolley, *supra* note 65, at 397.

[115] *See id.*

[116] *See* Medlock, Jr., *supra* note 33, at 33.

[117] *See id.*

[118] *See* Allison, *supra* note 61, at 212.

[119] *See id.* at 242.

[120] *See* Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1550, 220 U.S.P.Q. (BNA) 193, 199-200 (Fed. Cir. 1983); Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 717, 223 U.S.P.Q. (BNA) 1264, 1271-72 (Fed. Cir. 1984).

[121] *See* Singer Mfg. Co. v. Cramer, 192 U.S. 265, 275 (1904).

[122] Ropski, *Constitutional and Procedural Aspects of the Use of Juries in Patent Litigation (Part 2)*, 58 J. PAT. & TRADEMARK OFF. SOC'Y 673, 695 (1976).

[123] Ronald B. Coolley, *Patent Jury Issues: What the Federal Circuit Has Done and Will Do In Comparison With Standards of Review Established by Other Circuit Courts*, 67 J. PAT. OFF. SOC'Y 3, 24 (1985).

[124] *See, e.g.*, Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 U.S.P.Q. (BNA) 871, 876 (Fed. Cir. 1983).

[125] 736 F.2d 666, 221 U.S.P.Q.2d (BNA) 944 (Fed. Cir. 1984).

[126] *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976, 34 U.S.P.Q.2d (BNA) 1321, 1327 (Fed. Cir. 1995) (enbanc), *aff'd*, 517 U.S. 370 (citing McGill, Inc. v. John Zink Co., 736 F.2d 666, 672, 221 U.S.P.Q. (BNA) 944, 948 (Fed. Cir. 1984)).

[127] *See id* at 979, 34 U.S.P.Q.2d at 1329.

[128] *See id.* at 981, 34 U.S.P.Q.2d at 1331.

[129] *See id.* at 973, 34 U.S.P.Q.2d at 1324.

[130] *See id.*

[131] *See id.* at 981-82, 34 U.S.P.Q.2d at 1331. In his dissenting opinion, Judge Newman noted that the jury was superfluous since after the judge reinterpreted the claims, the judge decided the entire case as a JMOL without sending the matter back to the jury. *See id.* at 1008, 34 U.S.P.Q.2d at 1353-54 (Newman, J., dissenting).

[132] *See* Elizabeth J. Norman, Markman v. Westview Instruments, Inc. *: The Supreme Court Narrows the Jury's Role in Patent Litigation*, 48 MERCER L. REV. 955, 963 (1997); Gregory D. Leibold, *In Juries We Do Not Trust: Appellate Review of Patent-Infringement Litigation*, 67 U. COLO. L. REV. 623, 646 (1996).

[133] *See* Serrano v. Telular Corp., 111 F.3d 1578, 1582, 42 U.S.P.Q.2d (BNA) 1538, 1541 (Fed. Cir. 1997); Alpex Computer Corp. v. Nintendo Co. Ltd., 102 F.3d 1214, 1218, 40 U.S.P.Q.2d (BNA) 1667, 1670 (Fed. Cir. 1996); Insituform Techs., Inc. v. CAT Contracting, Inc., 99 F.3d 1098, 1105, 40 U.S.P.Q.2d (BNA) 1602, 1607 (Fed. Cir. 1996); General Am. Transp. Corp. v. Cryo-Trans Inc. 93 F.3d 766, 769, 39 U.S.P.Q.2d (BNA) 1801, 1803 (Fed. Cir. 1996).

[134] *See Markman*, 52 F.3d at 981, 34 U.S.P.Q.2d at 1331.

[135] *See* Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1555-56, 42 U.S.P.Q.2d (BNA) 1737, 1742 (Fed. Cir. 1997); *Serrano*, 111 F.3d at 1586, 42 U.S.P.Q.2d at 1544 (Myer, J., concurring); Wiener v. NEC Elecs., Inc., 102 F.3d 534, 539, 41 U.S.P.Q.2d (BNA) 1023, 1026 (Fed. Cir. 1996); Metaullics Sys. Co. v. Cooper, 100 F.3d 938, 939, 40 U.S.P.Q.2d (BNA) 1798, 1799 (Fed. Cir. 1996).

[136] 138 F.3d 1448, 46 U.S.P.Q.2d (BNA) 1169 (Fed. Cir. 1998) (en banc).

[137] 64 F.3d 1553, 35 U.S.P.Q.2d (BNA) 1801 (Fed. Cir. 1995).

[138] *See id.* at 1556-57, 35 U.S.P.Q.2d at 1803-04.

[139] *See id.* at 1556, 35 U.S.P.Q.2d at 1803.

[140] *See id.* at 1558, 35 U.S.P.Q.2d at 1805.

[141] *See id.* at 1555, 35 U.S.P.Q.2d at 1802.

[142] *See id.* at 1560, 35 U.S.P.Q.2d at 1806-07.

[143] Leibold, *supra* note 132, at 625-31 (footnotes and citations omitted).

[144] *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 389, 38 U.S.P.Q.2d (BNA) 1461, 1470 (1996).

[145] *See* Theresa M. Seal, *The Jury is Out: Supreme Court Confirms Construction of Patent Claim Falls Within Exclusive Province of the Court*, 22 S. ILL. U.L.J. 785, 806-07 (1998).

[146] *See, e.g.*, Manville Sales Corp. v. Paramount Sys., Inc., 917 F.2d 544, 549, 16 U.S.P.Q.2d (BNA) 1587, 1591 (Fed. Cir. 1990).

[147] *See, e.g.*, Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1573, 1 U.S.P.Q.2d (BNA) 1081, 1086 (Fed. Cir. 1986) (noting that the defendant provided enough evidence to have convinced the jury that public use had been negated by an experimental purpose).

[148] *See* Allied Colloids, Inc. v. American Cyanamid Co., 64 F.3d 1570, 1577, 35 U.S.P.Q.2d (BNA) 1840, 1845 (Fed. Cir. 1995).

[149] Ryco, Inc. v. Ag-Bag Corp., 857 F.2d 1418, 1423, 8 U.S.P.Q.2d (BNA) 1323, 1327 (Fed. Cir. 1988).

[150] 86 F.3d 1113, 39 U.S.P.Q. 2d (BNA) 1100 (Fed. Cir. 1996).

[151] *See id.* at 1118, 39 U.S.P.Q.2d at 1103.

[152] *See id.* at 1120, 39 U.S.P.Q.2d at 1105.

[153] *Id.* at 1122, 39 U.S.P.Q.2d at 1106.

[154] *Id.*, 39 U.S.P.Q.2d at 1107.

[155] 56 U.S. 330 (1853).

[156] *See id.* at 333, 338.

[157] *See, e.g.*, Jamesbury Corp. v. Litton Indus. Prods., Inc., 839 F.2d 1544, 1551-52, 5 U.S.P.Q.2d (BNA) 1779, 1785 (Fed. Cir. 1988) (following the presumption that when the delay exceeds six years, the burden shifts to the patent owner to show the delay was not unreasonable and prejudicial), *overruled by* A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 22 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1992) (overruling equitable estoppel issue).

[158] 17 U.S.P.Q.2d (BNA) 1293 (N.J. 1990).

[159] *See id.* at 1298.

[160] Gerber Garment Tech., Inc. v. Lectra Systems, Inc., 916 F.2d 683, 686, 16 U.S.P.Q.2d (BNA) 1436, 1439 (Fed. Cir. 1990).

[161] 820 F.2d 1209, 2 U.S.P.Q.2d (BNA) 2015 (Fed. Cir. 1987).

[162] *See id.* at 1212-13, 2 U.S.P.Q.2d at 2018-19.

[163] *Id.* at 1212, 2 U.S.P.Q.2d at 2018 (citing General Tire & Rubber Co. v. Watson-Bowman Assocs., Inc., 74 F.R.D. 139, 141, 193 U.S.P.Q. (BNA) 484, 485 (D. Del. 1977)).

[164] *See* Modine Mfg. Co. v. Allen Group, Inc., 917 F.2d 538, 542, 16 U.S.P.Q.2d (BNA) 1622, 1625 (Fed. Cir. 1990).

[165] *See* General Elec. Music Corp. v. Samick Music Corp., 19 F.3d 1405, 1408, 30 U.S.Q.P.2d (BNA) 1149, 1151 (Fed. Cir. 1994).

[166] *See, e.g.*, Hupp v. Siroflex of Am., Inc., 122 F.3d 1456, 1465, 43 U.S.P.Q.2d (BNA) 1887, 1893 (Fed. Cir. 1997).

[167] *See* Allied Colloids, Inc. v. American Cyanamid Co., 64 F.3d 1570, 1578, 35 U.S.P.Q.2d (BNA) 1840, 1845 (Fed. Cir. 1995).

[168] *See Hupp*, 122 F.3d at 1465-66, 43 U.S.P.Q.2d at 1893-94.

[169] *See, e.g.*, Herbert v. Lisle Corp., 99 F.3d 1109, 1114-17, 40 U.S.P.Q.2d (BNA) 1611, 1614-1616 (Fed. Cir. 1996).

[170] *See* Elf Atochem N. Am., Inc. v. Libbey-Owens-Ford Co., Inc., 894 F. Supp. 844, 850, 37 U.S.P.Q.2d (BNA) 1065, 1069 (D. Del. 1995).

[171] *See id.*

[172] *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 984 n.13, 34 U.S.P.Q.2d (BNA) 1321, 1333 n.13 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).

[173] *See generally* Greg J. Michelson, *Did the Markman Court Ignore Fact, Substance, and The Spirit of the Constitution in Its Rush Toward Uniformity?* 30 LOY. L.A. L. REV. 1749, 1779 (1997) (noting that after *Markman*, parties will routinely move for the early resolution of claim construction through summary judgment or dismissal for failure to state a claim).

[174] *See Markman*, 52 F.3d at 989, 34 U.S.P.Q.2d at 1338 (Mayer, J., concurring).

[175] 890 F. Supp. 329, 36 U.S.P.Q.2d (BNA) 1235 (D. Del. 1995).

[176] *See Markman*, 52 F.3d at 983, 34 U.S.P.Q.2d at 1331.

[177] *Lucas Aerospace*, 890 F. Supp. at 333 n.7 (emphasis added).

[178] *See* Greg J. Michelson, *Did the Markman Court Ignore Fact, Substance, and the Spirit of the Constitution in Its Rush Toward Uniformity?*, 30 LOY. L.A. L. REV. 1749, 1768 (1997); Michael L. Leetzow, et al., *1996 Patent Law Decisions of the Federal Circuit*, 46 AM. U. L. REV. 1675, 1806 (1997); Mathew R. Hulse, Cybor Corp. v. FAS Technologies, Inc., 14 BERKELEY TECH. L.J. 87, 102 (1999); Louis S. Silvestri, *A Statutory Solution to the Mischief of* Markman v. Westview Instruments, Inc., 63 BROOK. L. REV. 279 (1997); Gary M. Hoffman & John A. Wasleff, *A Tale of Two Court Cases: Markman and Hilton Davis*, 13 COMP. L. 18, 21 (1996); William R. Zimmerman, *Unifying Markman and Warner-Jenkinson; A Revised Approach to the Doctrine of Equivalents*, 11 HARV. L.J. & TECH. 185, 201 (1997); John B. Pegram, *Markman and Its Implications*, 78 J. PAT. & TRADEMARK OFF. SOC'Y. 560, 571 (1996); Frank M. Gasparo, Markman v. Westview Instruments, Inc. *and Its Procedural Shockwave: The Markman Hearing*, 5 J.L. & POL'Y 723, 767 (1997); Eric C. Harrell, Markman v. Westview Instrument, Inc., 23 OHIO N.U. L. REV. 1029, 1040 (1997); Brian D. LeFort, *Bifurcation - A New Era in Patent Litigation*, 2 SUFFOLK J. TRIAL AND APPELLATE ADVOC. 175 (1997); Thomas L. Creel, *Proving Patent Infringement, in* PLI's SECOND ANNUAL INSTITUTE FOR I.P. LAW, at 311, 329 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 453, 1996); William F. Lee & Wayne L. Stoner, *The Role of the Expert Witness on Liability Issues in Patent Litigation in Light of* Markman v. Westview Instruments, Inc., *in* WINNING STRATEGIES IN PATENT LITIGATION, at 647, 679 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 423, 1995).

[179] *See, e.g.*, Optical Coding Lab., Inc. v. Applied Vision, Ltd., 1996 WL 53631, at *3 (N. D. Cal., January 19, 1996); Moll v. Northern Telecom, Inc., 37 U.S.P.Q.2d (BNA) 1839, 1842 (E.D. Pa. 1995).

[180] *See* Jennifer Urban, *Bill and* Howell v. Altek, 14 BERKELEY TECH. L.J. 103, 122 (1999); Hoffman, *supra* note 178, at 21 (1996); Kevin W. King, Markman v. Westview Instruments, Inc.: *The Jury's Diminishing Role in Patent Law Cases*, 13 GA. ST. U. L. REV. 1127 (1997); Zimmerman, *supra* note 178; Kevin R. Casey, *Means Plus Function Claims After Markman: Is Claim Construction Under 35 USC § 112, P6 a Question of Fact or an Issue of Law?* 79 J. PAT. & TRADEMARK OFF. SOC'Y. 841, 865 (1997); Pegram, *supra* note 178; Paul N. Higbee, Jr., *The Jury's Role in Paten Cases:* Markman v. Westview Instrument, Inc., 3 J. INTEL. PROP. L. 407, 428 (1996); Gasparo, *supra* note 178; Steven D. Glazer & Steven J. Rizzi, *Markman: The Supreme Court Takes Aim at Patent Juries*, 8 No. 5 J. PROPRIETARY RTS. 2 (1996); Norman, *supra* note 132, at 963; LeFort, *supra* note 178; William F. Lee, *The Ever Confounding Question of Claim Construction: Markman and Its Prodigy, in* PATENT LITIGATION 1998, at 151, 180 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 531,

1998); William L. Anthony, et al., *The Paper Side of Jury Litigation in* PATENT LITIGATION 1998, at 477, 490 (PLI Patents, Copyrights, Trademarks, and Literary Property Course Handbook Series No. 531, 1998).

[181] 894 F. Supp. 844, 37 U.S.P.Q.2d (BNA) 1065 (D. Del. 1995).

[182] *Id.* at 857-58, 37 U.S.P.Q.2d at 1075 (citation omitted).

[183] 4 F. Supp. 2d 17 (D. Mass. 1998).

[184] *See id.* at 35-38.

[185] *See id.* at 29-30.

[186] 509 U.S. 579, 27 U.S.P.Q.2d (BNA) 1200 (1993).

[187] *See Daubert*, 509 U.S. at 585-89, 27 U.S.P.Q.2d at 1203-04; *Frye v. United States*, 293 F. 1013 (1923).

[188] *See Daubert*, 509 U.S. at 582-83, 27 U.S.P.Q.2d at 1201-02.

[189] *Id.* at 597, 27 U.S.P.Q.2d at 1208.

[190] *See id.*, 27 U.S.P.Q.2d at 1208.

[191] *See* Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137, 139-40, 50 U.S.P.Q.2d (BNA) 1177, 1178-79 (1999).

[192] *See* 35 U.S.C. §§ 102 (1994), 103 (1994 & Supp. II 1996).

[193] *See Daubert*, 509 U.S. at 593-94, 27 U.S.P.Q.2d at 1206.

[194] Frye v. United States, 293 F. 1013, 1014 (1923).

[195] *See Daubert*, 509 U.S. at 589-90, 27 U.S.P.Q.2d at 1204-05. Interestingly, Learned Hand suggested presenting scientific questions to a board of experts who would decide the issues including the ultimate conclusions. Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 56 (1901).

[196] *See* Daniel M. Shuman et al., *Assessing the Believability of Expert Witnesses: Science in the Jury Box*, 37 JURIMETRICS J. 23, 30 (1996) (footnotes omitted).

[197] *Id.*

[198] *See* Medlock, Jr., *supra* note 33 at 16-18.

[199] *See In re* Lockwood, 50 F.3d 966, 971-73, 30 U.S.P.Q.2d (BNA) 1292, 1294 (Fed. Cir. 1994), *vacated sub nom.* American Airlines, Inc. v. Lockwood, 515 U.S. 1182 (1995).

[200] *See* Allison, *supra* note 61, at 213.

[201] *See, e.g.*, Sterner Lighting, Inc. v. Allied Elec. Supply, Inc., 431 F.2d 539, 544, 166 U.S.P.Q. (BNA) 454, 459 (5th Cir. 1970) ("A patent may not, like a 'nose of wax,' be twisted one way to avoid anticipation and another to find infringement.") (citing White v. Dunbar, 119 U.S. 47 (1886)).

[202] *See* Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 37-38, 41 U.S.P.Q.2d (BNA) 1865, 1874-75 (1997).

[203] *See* Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512, 1522, 35 U.S.P.Q.2d (BNA) 1641, 1648 (Fed. Cir. 1995), *rev'd*, 520 U.S. 17, 41 U.S.P.Q.2d (BNA) 1641 (1997).

[204] *See id.* at 1521, 35 U.S.P.Q.2d at 1647.

[205] *See* Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 40, 41 U.S.P.Q.2d (BNA) 1865, 1876 (1997).

[206] *See* Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 114 F.3d 1161, 1163, 43 U.S.P.Q.2d (BNA) 1152, 1154 (Fed. Cir. 1997).

*29 APPENDIX A

TABLE 1

CASES UPHOLDING JURY VERDICT BASED UPON SUBSTANTIAL EVIDENCE

CASE	TECHNOLOGY/CLAIMS INVOLVED	JURY VERDICT	REASONS FOR AFFIRMING
Perkin-Elmer Corporation, 732 F.2d 888, 221 U.S.P.Q. (BNA) 669 (Fed. Cir. 1984)	optical structure of projection printer	Patents valid	evidence supported a conclusion of non-obviousness by jury
Therma-True Corp. v. Peachtree Doors Inc., 44 F.3d 988, 33 U.S.P.Q.2d (BNA) 1274 (Fed. Cir. 1995)	glass fiber-reinforced plastic doors	patent valid; claims 11 and 13 willfully infringed both literally and under the doctrine of equivalents	there was substantial evidence to support the jury's finding that invalidity had not been established
Munoz v. Strahm Farms, Inc., 69 F.3d 501, 36 U.S.P.Q.2d (BNA) 1499 (Fed. Cir. 1995)	crop harvesting machine	patent invalid	there was substantial evidence to support the jury's finding of invalidity
Wang Laboratories Inc. v. Mitsubishi Electronics America Inc., 103 F.3d 1571,	single in-line memory module (SIMM)	patent valid and infringed	jury's findings were supported by substantial evidence

41 U.S.P.Q.2d (BNA) 1263 (Fed. Cir. 1997)			
Young Dental Mfg. Co., Inc. v. Q3 Special Products Inc., 112 F.3d 1137, 42 U.S.P.Q.2d (BNA) 1589 (Fed. Cir. 1997)	dental prophy angle	noninfringement under the doctrine of equivalents; invalidity for obviousness; failure to comply with the best mode requirement	patent was not infringed and was invalid due to obviousness
Ultradent Products, Inc. v. Life-Like Cosmetics Inc., 127 F.3d 1065, 44 U.S.P.Q.2d (BNA) 1336 (Fed. Cir. 1997)	dental compositions and methods for bleaching tooth surfaces	patents valid and infringed	jury's infringement finding was supported by substantial evidence
Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860, 45 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 1997)	Mechanism used to engage interchangeable test adapter (ITA) and receiver in diagnostic testing equipment	Contributory infringement under doctrine of equivalents	Submission of claim interpretation to the jury was harmless error
Nobelpharma AB v. Implant Innovations, Inc., 141 F.3d 1059, 46 U.S.P.Q.2d (BNA) 1097 (Fed. Cir. 1998)	dental implant	patent invalid and not infringed	patent invalid for failing to disclose best mode
Johns Hopkins University v. CellPro, Inc., 152 F.3d 1342, 47 U.S.P.Q.2d (BNA) 1705 (Fed. Cir. 1998)	purified suspensions of immature blood cells and monoclonal antibodies	patent willfully infringed	finding of willful infringement and award of treble damages justified
Comark Communication Inc. v. Harris Corp., 156 F.3d 1182, 48 U.S.P.Q.2d (BNA) 1001 (Fed. Cir. 1998)	aural carrier correction system	patent willfully infringed	evidence was sufficient to support findings of infringement under the doctrine of equivalents and willful infringement
Seal-Flex, Inc. v. Athletic Track and Court Construction, 172 F.3d 836, 50 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 1999)	method of constructing all-weather athletic running track	patent infringed	finding of literal infringement was supported by substantial evidence
Warner-Jenkinson Company, Inc. v. Hilton Davis Chemical Co., 62 F.3d 1512, 35 U.S.P.Q.2d (BNA) 1641 (Fed. Cir. 1995)	Ultrafiltration process	patent valid and infringed	the jury had substantial evidence from which to conclude that the infringing and patented methods were equivalent
Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1 U.S.P.Q.2d (BNA) 1081 (Fed. Cir. 1986)	pediatric wheelchairs	patent claims valid	reversed district court's JNOV since there was substantial evidence to support a conclusion of non-obviousness

***32 TABLE 2**

CASES REVERSING JURY VERDICT BASED UPON LACK OF SUBSTANTIAL EVIDENCE

CASE	TECHNOLOGY/CLAIMS INVOLVED	JURY VERDICT	REASONS FOR REVERSAL
White v. Jeffrey Mining Machinery Company, 723 F.2d 1553, 220 U.S.P.Q. (BNA) 703 (Fed. Cir. 1983)	coal mining machine	patent claims valid and infringed	claims 1, 12, and 13 were invalid for obviousness
Jamesbury Corp. v. Litton Industrial Products, Inc., 756 F.2d 1556, 225 U.S.P.Q. (BNA) 253 (Fed. Cir. 1985)	ball valve	patent invalid for lack of novelty	lack of novelty was not established and therefore court erred in denying plaintiff's motion for JNOV
Verdegaal Brothers, Inc. v. Union Oil Company of California, 814 F.2d 628, 2 U.S.P.Q.2d (BNA) 1051 (Fed. Cir. 1987)	process for making urea-sulfuric acid liquid fertilizer	patent valid and infringed	patent was invalid because it was anticipated by a prior art reference for making urea-phosphoric and urea-sulfuric acid fertilizers
Genentech, Inc. v. Wellcome Foundation Limited, 29 F.3d 1555, 31 U.S.P.Q.2d (BNA) 1161 (Fed. Cir. 1994)	glycoprotein tissue plasminogen activator	the three patents involved were infringed under the doctrine of equivalents	jury's conclusion of infringement under the doctrine of equivalents was not supported by substantial evidence.
Fonar Corporation v. General Electric Company, 107 F.3d 1543, 41 U.S.P.Q.2d (BNA) 1801 (Fed. Cir. 1997)	techniques employing nuclear magnetic resonance	JNOV that patent claims 1 and 2 were not infringed; jury verdict of validity on claims 1 and 2	JNOV was proper because there was no substantial evidence that claims 1 and 2 were infringed
Streamfeeder, L.L.C. v. Sure-feed Systems, Inc., 175 F.3d 974, 50 U.S.P.Q.2d (BNA) 1515 (Fed. Cir. 1999)	bottom sheet feeder	patent claims 1, 2, and 8 valid and infringed	the lower court erred in adopting a hypothetical claim because the scope of equivalents sought was prohibited by the prior art.
Augustine Medical, Inc. vs. Gaymar Industries Inc., 181 F.3d 1291, 50 U.S.P.Q.2d (BNA) 1900 (Fed. Cir. 1999)	various patents for convective thermal blankets	infringement of three patents under the doctrine of equivalents	the district court's failure to grant jmol of noninfringement was reversed because prosecution history estoppel limited application of the doctrine of equivalents to the asserted claims
C.R. Bard Inc. v. M3 Systems Inc., 157 F.3d 1340, 48 U.S.P.Q.2d (BNA) 1225 (Fed. Cir. 1998)	devices used to take samples of body tissue for biopsy purposes	reissue patent and original patent anticipated and obvious; patent invalid for incorrect inventor	verdict of anticipation, obviousness, and incorrect inventorship were unsupported by substantial

			evidence
Alpex Computer Corporation v. Nintendo Company LTD, 102 F.3d 1214, 40 U.S.P.Q.2d (BNA) 1667 (Fed. Cir. 1996)	microprocessor-based home video game system	patent valid and infringed	assertion by patentee was barred by prosecution estoppel and the defendant's system did not infringe under the doctrine of equivalents
Celeritas Technologies, LTD v. Rockwell International Corporation, 150 F.3d 1354, 47 U.S.P.Q.2d (BNA) 1516 (Fed. Cir. 1998)	apparatus to increase rate of data transmission over analog cellular telephone networks	patent valid and willfully infringed	patent was invalid because it was anticipated by the prior art
CVI/BETA Ventures, Inc. v. Tura L.P., 112 F.3d 1146, 42 U.S.P.Q.2d (BNA) 1577 (Fed. Cir. 1997)	shape-memory alloy eyeglass frames	claims 1-3, 5, and 6 were found valid and infringed	defendant was entitled to judgment of noninfringement as a matter of law because there was failure of proof under the correct claim construction
Dawn Equipment Company v. Kentucky Farms Incorporated, 140 F.3d 1009, 46 U.S.P.Q.2d (BNA) 1109 (Fed. Cir. 1998)	device for adjusting height of farm implements	patent valid and infringed under doctrine of equivalents	no reasonable jury could have found equivalence and therefore infringement under the facts
Exxon Chemical Patents, Inc. v. Lubrizol Corporation, 64 F.3d 1553, 35 U.S.P.Q.2d (BNA) 1801 (Fed. Cir. 1995)	lubricating oil composition	patent valid and both literally and willfully infringed	no reasonable jury could have found that the defendant's products literally infringed the claims of the plaintiff's patent
Hebert v. Lisle Corporation, 99 F.3d 1109, 40 U.S.P.Q.2d (BNA) 1611 (Fed. Cir. 1996)	exhaust manifold spreader	patent valid but unenforceable due to patentee's inequitable conduct	patentee did not engage in inequitable conduct by failing to disclose prior art
Structural Rubber Products Company v. Park Rubber Company, 749 F.2d 707, 223 U.S.P.Q. (BNA) 1264 (Fed. Cir. 1984)	highway railroad crossings	patent invalid for lack of novelty	legal errors in the record
Maxwell v. J. Baker, Inc., 86 F.3d 1098, 39 U.S.P.Q.2d (BNA) 1001 (Fed. Cir. 1996)	system for fastening mated pairs of shoes	patent valid and willfully infringed	defendant's shoes did not infringe because the patentee had dedicated the system at issue to the public by disclosing but failing to claim the system
Senmed, Inc. v. Richard Allan Medical Industries, Inc., 888 F.2d 815, 12 U.S.P.Q.2d (BNA) 1508	Surgical stapler	patent valid and willfully infringed	the jury's finding was based on a claim interpretation that cannot be sustained in the law

(Fed. Cir. 1989)			
Texas Instruments Incorporated v. Cypress Semiconductor Corporation, 90 F.3d 1558, 39 U.S.P.Q.2d (BNA) 1492 (Fed. Cir. 1996)	process of encapsulating electronic components	claims 12 and 14 of the ‘027 patent and claims 16, 17, 19 of the ‘764 patent were willfully infringed	affirmed JNOV of the district court since no reasonable jury could have found infringement
Hupp v. Siroflex of America, 122 F.3d 1456, 43 U.S.P.Q.2d (BNA) 1887 (Fed. Cir. 1997)	design patent for mold used to make simulated stone pathway	patent invalid as anticipated and not infringed	jury’s anticipation finding was not supported by the evidence
Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 U.S.P.Q. (BNA) 193 (Fed. Cir. 1983)	hair teasing and unsnarling implement	JNOV entered finding the patent invalid for obviousness	affirmed JNOV because the jury’s conclusion of nonobviousness disregarded the prior art so it was without factual foundation
Strattec Security Corporation v. General Automotive Specialty Company, Inc., 126 F.3d 1411, 44 U.S.P.Q.2d (BNA) 1030 (Fed. Cir. 1997)	resistor assembly	patent valid and willfully infringed	no infringement as a matter of law because the jury’s finding was based on erroneous claim construction
ATD Corporation v. Lydall Inc., 159 F.3d 534, 48 U.S.P.Q2d. (BNA) 1321 (Fed. Cir. 1998)	flexible insulating pads and method of making such pads	patents were invalid based on prior art; no infringement under doctrine of equivalents	Patents were not invalid for either anticipation or obviousness