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**Post *Markman*: Claim Construction Trends In The Federal Circuit**

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**I. BACKGROUND**

{1}The strength of a patent as a legal instrument to protect an invention rests primarily on the drafting quality of its claims. The claims of a patent recite the invention "that is deemed by [the] applicant to be operable and patentable."<sup>[1]</sup> Furthermore, the claims define the legal metes and bounds of an invention so that a patent owner can prevent others from making, using, and selling<sup>[2]</sup> a patented product in the United States for a period of twenty years from the filing of the patent application.<sup>[3]</sup> The Supreme Court has long held that a patent's claim, more so than any other aspect of the patent, bears the distinction of being the sole measure of the grant of the patent.<sup>[4]</sup>

{2}In a typical suit claiming infringement of a patent, the trial court undertakes a two-step analysis. First, the patent claims at issue must be properly construed, and second, the claims must be compared to the allegedly infringing device.<sup>[5]</sup> Since a particular claim construction is often outcome determinative in an action for infringement, the stakes for the claim construction are very high for both the patent owner and the accused infringer. Patent claims, however, are made up of simple words, and the nature of language can render words and corresponding patent claims ambiguous and open to competing interpretations. Often attorneys for the patent owner will try to convince the court that their interpretation of the claims at issue is correct, while another team of attorneys for the accused infringer will attempt to impress a contrary construction upon the court.

{3}Prior to *Markman v. Westview Instruments, Inc.*,<sup>[6]</sup> Federal Circuit opinions were incongruous as to whether claim interpretation was a factual, legal, or mixed question of fact and law.<sup>[7]</sup> In *Markman v. Westview Instruments, Inc.*,<sup>[8]</sup> the Supreme Court laid to rest the issue of whether claim interpretation is a question of fact to be decided by the jury or a question of law for the court. Prior to the Supreme Court's decision, a divided Court of Appeals for the Federal Circuit held, *en banc*, that claim construction is a question of law to be decided by a judge.<sup>[9]</sup> To support its reasoning, the Federal Circuit stated that it is a fundamental principle of American law that "the construction of a written evidence is exclusively with the court."<sup>[10]</sup> Furthermore, the Federal Circuit reasoned that since a patent is essentially a government grant of legal rights to the patentee, the judge must define those legal rights on behalf of the government.<sup>[11]</sup> Public policy considerations also motivated the Federal Circuit's decision. The court reasoned that judges, rather than lay jurors, are superior appraisers in determining the scope of patent rights because of the serious consequences resulting from infringement.<sup>[12]</sup> In addition, consistency motivated the Federal Circuit to support a rule that makes claim construction the province of the judge.<sup>[13]</sup>

{4}The Supreme Court affirmed the Federal Circuit's decision, unanimously holding that patent claim construction is a question of law for the court to resolve and not subject to the Seventh Amendment right to a jury trial.<sup>[14]</sup> The Court acknowledged that claim construction "falls somewhere between a pristine legal standard and a simple historical fact."<sup>[15]</sup> Therefore, the Court turned to functional considerations and concluded that "judges, not juries, are the better suited to find the acquired meaning of patent terms."<sup>[16]</sup> Additionally, the Court observed that requiring judges to construe patent claims would result in greater consistency and "uniformity in the treatment of a given patent."<sup>[17]</sup> Notably, the Supreme Court did not address the question of the proper standard of review to be applied by an appellate court considering the issue of claim construction.

{5}Two years later, the Federal Circuit directly addressed the proper standard of review for claim construction. In *Cybor Corp. v. FAS Technologies, Inc.*, the Federal Circuit reaffirmed earlier holdings that claim construction is entirely a matter of law and is subject to *de novo* review on appeal.<sup>[18]</sup> *De novo* review means that "[o]n appeal the Federal Circuit is required to construe the claim . . . without deference to the trial court."<sup>[19]</sup> Therefore, on appeal, a successful party must undertake the arduous task of re-litigating the proper construction of the patent claims.

{6}Since *Markman I*, the Federal Circuit has attempted to delineate the proper analysis to be employed to

interpret patent claims.<sup>[20]</sup> In *Vitronics Corp. v. Conceptoronic*,<sup>[21]</sup> the Federal Circuit limited references to extrinsic evidence (such as technical treatises, prior art, dictionaries, and expert testimony), to occasions when the claims remain ambiguous after all intrinsic evidence (such as the claim language, the specification,<sup>[22]</sup> and the patent's prosecution history)<sup>[23]</sup>, has been considered.<sup>[24]</sup>

{7} While it is clear that intrinsic evidence should be primarily used in construing patent claims, district courts have been left to resolve the vexing question of precisely how to analyze and apply intrinsic evidence in the claim construction process, and the equally troublesome issue of when reference to extrinsic evidence is permissible. Virtually every Federal Circuit decision since *Markman I* presents the opportunity for practitioners and trial courts to learn how that court resolves complex claim construction issues.

## **II. Recent Federal Circuit Decisions**

### **A. Pitney Bowes, Inc. v. Hewlett-Packard Co.**

{8} *The Federal Circuit finds the preambles of patent claims to be highly persuasive, details the proper weight to be given to parts of the intrinsic record, and sends a modified directive to the district courts regarding the use of extrinsic evidence.*

{9} In *Pitney Bowes, Inc. v. Hewlett-Packard Co.*,<sup>[25]</sup> the Federal Circuit vacated and remanded the district court's summary judgment of noninfringement in favor of the defendant based on improper claim construction.<sup>[26]</sup> Pitney Bowes ("Pitney") is the assignee of United States patent 4,386,272 ("272"), entitled "Apparatus and Method for Generating Images by Producing Light Spots of Different Sizes," which is directed towards the technology of laser printing.<sup>[27]</sup> Laser printers operate by directing laser light onto a photoreceptor, which is essentially the surface of a drum covered with an electrical charge.<sup>[28]</sup> During printing, a beam of light strikes the surface of the drum and dissipates a small area of charge.<sup>[29]</sup> This discharged area then attracts charged toner, which is transferred from the drum to the paper. Hence, every image is made up of thousands of small dots of toner particles.<sup>[30]</sup> Because of the use of similarly sized toner dots, the edges of certain characters can have an uneven appearance.<sup>[31]</sup> The '272 patent is meant to solve the computer printing problem of "jaggies"—the uneven appearance of the edges of certain printing characters—by disclosing a method to vary the size of the toner dots.<sup>[32]</sup>

{10} The '272 patent involves attaching an intensity modulator to the light source.<sup>[33]</sup> The intensity of the light in turn affects the number of electrons displaced on the photoreceptor.<sup>[34]</sup> Depending on the number of electrons displaced, the size of the exposed area generated on the photoreceptor will vary and, thus, the size of the toner dot ultimately produced will also vary.<sup>[35]</sup>

{11} Hewlett Packard ("HP") manufactures printers, which use essentially the same light scanning system as the Pitney printers. HP's printers, however, do not adjust the intensity of the light beam, but rather, modify the pulse-width of the light beam, the length of time that the light beam is in contact with the surface of the photoreceptor.<sup>[36]</sup> By varying the length of time that the beam of light remains in contact with the photoreceptor, HP's method, likewise, varies the size of the exposed area generated on the photoreceptor, also varying the size of the toner dot ultimately produced. In 1995, Pitney sued HP, charging that HP's laser printers infringed claims 1, 2, and 3 of its '272 patent.<sup>[37]</sup> The dispute centered on the meaning of the claim limitation "spots of different sizes."<sup>[38]</sup> HP contended that "spots" meant spots of light generated on the photoreceptor, while Pitney argued that "spots" meant spots of discharged area on the photoreceptor that result from contact with the light beam.<sup>[39]</sup> Upon examining the specification and the prosecution history, the district court adopted HP's argument and granted HP's motion for summary judgment of non-infringement.<sup>[40]</sup>

{12}The first three claims of the '272 patent were the only claims at issue on appeal. Claim 1 of the '272 patent recited:

A method of producing on a photoreceptor an image of generated shapes made up of spots, comprising: directing a plurality of beams towards a photoreceptor, each beam of light generating a spot on the photoreceptor and controlling a parameter of the light beams to produce spots of different sizes whereby the appearance of smoothed edges are given to the generated shapes.[41]

{13}Claim 2 recited in part: "The method of claim 1 wherein the parameter controlled is . . . intensity." [42]

Claim 3 recited in part: "Apparatus for producing on a photoreceptor an image of generated shapes made up of spots, comprising: ... generating spots of different sizes whereby the appearance of smoothed edges are given to the generated shapes." [43] In construing the claims *de novo*, the Federal Circuit analyzed the claim language, the specification, and the prosecution history. Starting, as it always does, with the claim language, the court looked to the language of the preambles of Claims 1 and 3. [44] Noting that Claims 1 and 3 contain a preamble stating claims of either a method or apparatus for "producing on a photoreceptor an image of generated shapes made up of spots," the court concluded that the disputed term "spots" must be the constituent parts that comprise the image of the desired character on the photoreceptor. [45] The court reasoned that the spots of light generated by the light beam could not be the "spots" referred to in the preamble because spots of light are transient and do not by themselves form an image of the desired character. [46] Rather, as the court observed, the spots of discharged area created by the light beam, "last long enough to combine to form images of characters and they produce those images 'on the photoreceptor.'" [47] Thus, the court found the language of the preamble compelling and that the interpretation of the claim phrase "spots of different sizes" referred to the spots of discharged area on the photoreceptor as Pitney had contended, and not the light spots generated by the light beam as HP had argued. [48]

{14}Perhaps sensing that it might be criticized for basing its construction on the preamble language of the claims, the Federal Circuit defended its reliance on the preambles:

If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is "necessary to give life, meaning, and vitality" to the claim, then the claim preamble should be construed as if in the balance of the claim. [49]

{15}The court declared that when the body of the claim fully delineates the complete invention and its limitations, and the preamble does not define any of the limitations, "but rather merely states ... the purpose or intended use of the invention, then the preamble is of no significance to claim construction." [50]

{16}Here, according to the court, the preamble states more than the mere intended use or field of the invention. Rather, the preamble "statement is intimately meshed with the ensuing ... claim." [51] The court observed that both independent Claims 1 and 3 conclude with the clause "whereby the appearance of smoothed edges are given to *the* generated shapes." [52] Due to the fact that this is the first occurrence in the claim language of the phrase "generated shapes," the court reasoned that the phrase could only "be understood in the context of the preamble." [53] Undoubtedly, the court also realized that, without reference to the preamble statement, no antecedent basis would exist for the phrase "the generated shapes" in the concluding clauses of the body of the claims. [54] In addition, the court noted that the term "spots" is initially recited in the preamble to refer to the constituent parts of the image of generated shapes produced on the photoreceptor. [55] Moreover, "that the claim term 'spots' refers to the components that together make up the images of generated shapes on the photoreceptor is *only discernible from the claim preamble*." [56] In instructive language to trial courts, the Federal Circuit stated that "[i]n such a case, it is essential that the court charged with claim construction construe the preamble and the remainder of the claim ... as one unified

and internally consistent recitation of the claimed invention." [57] The court then construed the remainder of the claim text in a manner consistent with the preamble, and concluded that the "spots of different sizes" (in the body of the claim) make up "the generated shapes." [58] Again, the court reasoned that the transient spots of light created by the light beam do not constitute "the generated shapes" but, rather, the spots of light cause the dissipation of charge on the photoreceptor creating "spots" of discharged area, which make up "the generated shapes." [59]

{17}The Federal Circuit also addressed the district court's heavy reliance on the written description of the '272 patent. The court faulted the district court for placing undue reliance on the fact that the written description used the term "spot" forty-four times, forty-two of which referred to spots of light generated by the light beam, not to spots of discharged area on the photoreceptor. [60] Since inventors are instructed to use words in the claims in the same way as in the specification, the district court reasoned that, in view of the description, the term "spot" in the claims also means a spot of light. [61] The Federal Circuit agreed with the district court's "logic," noting that "the same word appearing in the same claim should be interpreted consistently." [62] The court, however, noted that its precedent also recognizes that a patent's written description may disclose more than one definition of a claim term. [63] Analyzing the written description, the court found that the description uses the term "spot" in noticeably different ways. [64] The court observed that the portion of the written description which uses the term "spot" to refer to a spot of discharged area on the photoreceptor occurs towards the end of the description, while the earlier parts of the description use the term "spot" to refer to a spot in the sense of a moving spot. [65] The court reasoned that since a spot of discharged area on the photoreceptor cannot be a moving spot, the earlier usage of the term "spot" refers to a spot of light. [66] And since the usage of the term "spot" in the latter portion of the description is in the context of the "spot size" used "to avoid roughed edges," this different usage of the term "spot size" refers to the spots that make up the printed characters.

{18}Proclaiming a significant rule, the court stated that "where the language of the written description is sufficient to put a reader on notice of different uses of a term ... it is appropriate to depart from the normal rule of construing seemingly identical terms in the same manner." [67] Accordingly, the court held that the meaning of the term "spot size" as used in the latter part of the description refers to the spot of discharged area on the photoreceptor. [68]

{19}The district court was also persuaded by the Examiner's addition of the modifier "light" to the patent title during prosecution. The Federal Circuit faulted the district court for attaching too much weight to the patent title and its amendment. [69] The court acknowledged that Section 606.01 of the Manual of Patent Examining Procedure provides that an Examiner may require a change in the patent title if the Examiner determines that the title is not sufficiently descriptive of the invention. [70] The court, however, noted that "the purpose of the patent title is not to demarcate the precise boundaries of the claimed invention but rather to provide a useful reference ... for future classification purposes." [71] The court noted the scarcity of case law in which the patent title was used to aid in claim construction and reiterated the irrelevancy of the patent title to issues of claim construction. [72] "Consequently, an amendment of the patent title during prosecution should not be regarded as having the same or similar effect as an amendment of the claims themselves by the applicant." [73] Therefore, the court stated that it was error for the district court to place heavy reliance on the amendment of the title. [74]

{20}Lastly, on appeal, Pitney argued that the district court erroneously relied on extrinsic evidence to contradict the clear meaning of the term "spots" that was apparent from the intrinsic evidence. [75] In a very significant part of its discussion, the Federal Circuit seemingly went out of its way to address the propriety of the district court's use of expert testimony for purposes of its claim interpretation analysis. The court took this opportunity to clarify its prior *Vitronics* [76] decision. [77] "*Vitronics* does not prohibit courts from examining extrinsic evidence, even when the patent document is itself clear. Moreover, *Vitronics* does not set forth any rules regarding the admissibility of expert testimony into evidence." [78] Rather, the court held that *Vitronics*

"merely warned courts not to rely on extrinsic evidence in claim construction to contradict the meaning of claims discernible from ... the intrinsic evidence." [79]

{21}The Federal Circuit noted that the use of expert testimony could be helpful in explaining an invention. [80] Drawing a distinction between expert testimony and extrinsic evidence used solely to assist a court to understand the underlying technology, and other extrinsic evidence on the proper construction of a disputed claim term, the court stated that the latter "may only be relied upon if the patent documents ... are insufficient to enable the [trial] court to construe disputed claim terms." [81] The court acknowledged that in addition to interpreting the strictly legal aspects of the patent document, a task the court stated that judges are well equipped to do, the judge must also interpret the technical aspects of the patent from the perspective of "one skilled in the art." [82] Accordingly, the court observed that, while the patent file is most often sufficient to allow a judge to decipher the underlying technical aspects of the patent, the judge may nonetheless appropriately consult extrinsic evidence "to ensure that [the judge's] understanding of the technical aspects of the patent is not entirely at variance with the understanding of one skilled in the art." [83] Here, the Federal Circuit was satisfied that the extrinsic evidence of the "common convention" [84] was not relied upon by the district court to contradict the meaning of the claims apparent from the intrinsic evidence. [85]

{22}Judge Rader joined by Judge Plager offered additional views on this issue of expert testimony in claim construction. "Vitronics offers good counsel when it urges trial judges to focus on the patent document ... to ascertain the scope of patent coverage. This court, however, should refrain from dictating a claim interpretation that excludes reliable expert testimony." [86] Judge Rader noted that the use of expert testimony will often benefit claim interpretation at the trial level because it can: (1) provide a proper technical context for the judge to understand the claims; (2) explain the import of claim terms as understood by one skilled in the art; and (3) help the trial judge understand the patent prosecution process, which is not familiar to most trial courts. [87]

### **B. Elkay Mfg. Co. v. Ebco Mfg. Co.**

{23}*The Federal Circuit held that the article "a" can mean more than one, and that the prosecution history of an earlier related patent applies to the construction of a subsequent patent.*

{24}In *Elkay Manuf. Co. v. Ebco Manuf. Co.*, [88] the Federal Circuit was called upon to analyze intrinsic evidence and prosecution history to interpret a disputed claim. Once again, the Federal Circuit held that improper claim construction led the district court to err in finding infringement. [89]

{25}Elkay Manufacturing Company ("Elkay") owns United States patent 5,222,531 ("531") and United States patent 5,289,855 ("855") on "no-spill" adapters for bottled water coolers. The adapters facilitate the insertion of water jugs into coolers with their caps still attached, thereby eliminating possible contamination or spilling when the bottle is inserted into the cooler. [90] Ebco Manufacturing Company ("Ebco") manufactures the competing WaterGuard no spill adapter. The Ebco device comprises two concentric tubes designed such that water flows down from the jug into the cooler and air flows up into the bottle through the annular between the two tubes. [91] Elkay sued Ebco, asserting that the Ebco device infringed claims 1 and 7 of the '531 patent and claim 1 of the '855 patent. [92] The district court concluded that the Ebco device embodied the patent limitations in both the '531 and '855 patents through its use of concentric feed tubes and, therefore, infringed both literally and under the doctrine of equivalents. On appeal, the Federal Circuit reversed the district court's judgment of infringement based on an improper claim construction. [93]

{26}Commencing its analysis with the actual words of the claim, [94] the Federal Circuit first noted that claim 1 of the '531 patent includes the limitation: "an upstanding feed tube ... to provide a hygienic flow path for delivering liquid from ... and for admitting air ... into said container." [95] In addition, claim 7 of the '531

patent includes the limitation: "*an* elongated feed tube... for admitting air into and dispensing drinking water ... from within said ... container."<sup>[96]</sup> Lastly, claim 1 of the '855 patent includes the limitation "*an* upstanding feed probe ... to provide a hygienic flow path for delivering liquid from ... and for admitting air ... into said container."<sup>[97]</sup> The Federal Circuit initially focused on the limitation in claim 1 of the '531 patent.<sup>[98]</sup> Interpreting the limitation in claim 1 of the '531 patent, the district court concluded that, although the claim language used the article "an," the claim did not preclude a separation of the water and air flows as in the Ebco device.<sup>[99]</sup> The district court also found that Elkay's claim language did not require the intermixing of air and water within one feed tube.<sup>[100]</sup> Based on this interpretation, the district court concluded that Ebco's WaterGuard adapters embodied Elkay's claim limitations.

{27} On appeal, Ebco challenged the district court's claim construction. Ebco argued that the normal and accepted meaning of the articles "a" and "an" in the claim limitations must result in a construction describing one single feed tube corresponding to a single flow path for both water and air. The Federal Circuit rejected Ebco's argument. "While the article 'a' or 'an' may suggest 'one,' our cases emphasize that 'a' or 'an' can mean 'one' or 'more than one,' depending on the context in which the article is used."<sup>[101]</sup> The court agreed that, when the articles "a" and "an" are used in connection with "feed tube" and "flow path," the language suggests one single flow tube corresponding to one single flow path for both liquid and air.<sup>[102]</sup> The court, however, observed that the asserted claims use the open term "comprising" in their transition phrases. Accordingly, the court summarily concluded that the disputed limitation in claim 1 was not limited to a single feed tube and a single flow path for both air and water. Notably, unlike it has done in similar cases, the court did not look to the specification for guidance as to whether the patentee intended the article "a" to have other than its ordinary accepted singular meaning.<sup>[103]</sup> Moreover, by the court's own concession,<sup>[104]</sup> the written description militates strongly against a finding that Elkay sought to have the article "a" carry other than its ordinary singular meaning. The Federal Circuits' holding in this regard, suggests that so long as the transitional term "comprising" appears anywhere in the claim language, a competitor cannot safely assume that the article "a" or "an" describes a single item or element.

{28} Ebco also maintained that the written description of the '531 patent shows that the feed tube in the '531 patent must have a single flow path for air and water. The Federal Circuit acknowledged that the description makes numerous references to "a feed tube" and "the feed tube."<sup>[105]</sup> Furthermore, the court observed that the figures in the description showed a single feed tube with a single flow path, and that the description does not disclose a no-spill adapter incorporating separate flow paths.<sup>[106]</sup> The court noted, however, that the written description states that it describes a preferred embodiment of the invention. Rejecting Ebco's argument, the court stated that "[t]he general rule, of course, is that the claims of a patent are not limited to the preferred embodiment, *unless by their own language*."<sup>[107]</sup> Since the language of claims 1 and 7 did not explicitly state that they were so limited, the court refused to hold that the claims were limited solely to the preferred embodiment disclosed in the written description.<sup>[108]</sup>

{29} Next, the Federal Circuit focused its attention on the prosecution history. Reiterating the importance of analyzing the prosecution history when a court undertakes to interpret patent claims, the court stated that "[t]he prosecution history gives insight into what the applicant originally claimed as the invention, and often what the applicant gave up in order to meet the Examiner's objections."<sup>[109]</sup> The court noted an earlier Patent Office action, where the Examiner rejected earlier versions of claims 1 and 7 of the '531 patent for obviousness.<sup>[110]</sup> In that action, the Examiner rejected the claims based on the *Krug* patent in view of the *Savage* patent.<sup>[111]</sup> In a response to the Examiner's rejection, Elkay distinguished *Krug*:

Krug has no reservoir open at its upper end as recited in the preamble of [the claims] and, more importantly therefore, cannot possibly teach or suggest ... *a flow path* or "fluid passage means" *for delivering liquid* from said ... container into said reservoir ... *and for admitting air* from said reservoir ... into said container as recited in the body of each of applicants' ... claims ..." <sup>[112]</sup>

{30}The Federal Circuit reasoned that because the Krug patent teaches the utilization of a liquid tube and a separate air tube, Elkay's response to the Examiner's rejection gave up a construction of its claim language that would encompass the employment of separate tubes.[113] During the appeal, Elkay argued that its response to the Examiner's rejection did not amend the claim language regarding the feed tube structure and, in any event, its response was focused on the lack of a reservoir in the Krug patent and Savage patent.[114] Notably, Elkay's response to the Examiner's rejection did not mention Krug's preferred embodiment in which the air feed tube is contained within the liquid feed tube. The absence of Krug's separate feed tubes embodiment from Elkay's response detracts from the conclusiveness of the Federal Circuit's finding that Elkay disavowed an interpretation of separate feed tubes in its claim limitation of "*a flow path ...*" Nonetheless, the court rejected Elkay's argument and stated that "[a]rguments made during the prosecution of a patent application are given the same weight as claim amendments ... [115] [I]t is the totality of the prosecution history that must be assessed, not the individual segments of the presentation made to the [Patent Office]."[116] Therefore, the court concluded that it is irrelevant whether Elkay gave up a potential claim interpretation encompassing separate paths in an amendment or in an argument to overcome an objection by the Examiner based on the prior art reference.[117]

{31}As to Elkay's argument that its statement distinguishing Krug was insignificant, the Federal Circuit looked to the Examiner's response to Elkay's statement.[118] In the Examiner's Statement of Reasons for Allowance, the Examiner stated that claim 7 of the '531 patent was being allowed because the claim described a single feed tube with a single flow path for both air and liquid:

In regard to [claim 7], the prior art of record does not teach a container support with a removable mounting means and feed tube as claimed wherein *the feed tube has a passage means which both dispenses liquid from the container into the reservoir and admits air from the reservoir into the container. . . .* [Liquid] feed tube 13 [in the Krug patent] does not provide a means for admitting air. Note that Krug provides a *separate conduit* for exterior air 27/34 in order to relieve the vacuum in [the Krug] container..."[119]

{32}In contrast to Elkay's statement distinguishing Krug, the Examiner's response, allowing the claim, focused on Krug's use of separate flow paths as the distinguishing feature. As the court observed, however, Elkay did not respond to the Examiner's allowance.[120] The court did not elaborate on how Elkay's silence affected its analysis. Presumably, the court reasoned that Elkay's silence evinced Elkay's acquiescence with the Examiner's remarks and, thus, Elkay's acknowledgment that the critical distinguishing feature overcoming a rejection based on obviousness was Krug's use of separate flow paths and Elkay's use of a single flow path.

{33}The court, therefore, concluded that during the prosecution history "Elkay disavowed a potential interpretation of the feed tube limitations in claims 1 and 7 of the '531 patent that would include separate feed tubes or flow paths for liquid and air." [121] Accordingly, the Federal Circuit narrowly interpreted the "feed tube" limitation in claims 1 and 7 to refer to a "single feed tube with a single flow path for both liquid and air." [122]

{34}The court then turned its attention to the '855 patent. The court noted that the relevant portion of the disputed limitation in claim 1 of the '855 patent is identical to the disputed limitation in claim 1 of the '531 patent with the sole exception that the "feed tube" in the '531 patent is described as a "feed probe" in the '855 patent.[123] The court, however, dismissed this distinction.[124] Earlier in its opinion, the court outlined the application history of the '531 patent and the '855 patent.[125] The '531 and '855 patents stemmed from the same genus.[126] The '531 patent issued from application number 898,570, which was filed as a continuation application of an earlier application, number 684,642.[127] The '855 patent issued from application number 58,639, which had been filed as a separate continuation application of the 684,642 application after the '531 patent issued.[128] The court stated that "[w]hen multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to

subsequently issued patents that contain the same claim limitation." [129] The court noted that application of this rule in the present case was especially compelling because Elkay affirmatively linked the meaning of claim 1 in the '855 patent as patterned on claims 1, 3 and 5 of the '531 patent. [130] The court concluded that Elkay's statement during its prosecution of the '855 patent "put competitors on clear notice of that linkage and because the '531 and '855 patents stem from the same genus, it is proper to consider the prosecution history of claim 1 of the '855 patent to be an amalgam of the prosecution histories of both patents." [131] Applying this expansive intrinsic record, the court reached the same conclusion regarding the "feed probe" limitation in the '855 patent as it did with respect to the "feed tube" limitation in the '531 patent. [132]

### **C. Micro Chemical, Inc. v. Great Plains Chemical Co.**

{35}The Federal Circuit holds that means-plus-function claims were wrongly narrowed by the preferred embodiment and prosecution history.

{36}In a recent decision, the Federal Circuit was presented with the issue of interpreting means-plus-function claims [133] under the framework of § 112 of the Patent Code concerning patent specifications. [134] In *Micro Chemical, Inc. v. Great Plains Chemical Co.*, [135] the Federal Circuit held that the district court improperly limited means-plus-function claims for dispensing additives into livestock feed to the method described in the patent's preferred embodiment, which is disclosed in the specification.

{37}Micro Chemical Inc. ("Micro Chemical") owns United States patent 4,733,971 ("971") relating to devices and methods for dispensing the proper amount of additives into livestock feed. [136] The '971 patent discloses machines and methods for weighing, dispensing and delivering microingredients such as vitamins and medicine into livestock feed. The '971 patent's preferred embodiment employs the "cumulative weigh" method which uses a compartmented hopper to weigh the additives before dispensing them into a liquid to be delivered to the livestock. [137] In the preferred embodiment, a first storage bin is used to dispense an additive into a hopper compartment. Then, each storage bin, in turn, pours its additive into a separate hopper compartment. A load cell measures the cumulative weight of the hopper and its contents. In turn, a central processing unit uses the cumulative weight measurements from the load cell to regulate the amount of each microingredient added. This process continues until each chamber of the hopper contains the precise amount of different additive. [138]

{38}Lextron, Inc. ("Lextron" and formerly Great Plains Chemical Co.) also makes and sells microingredient feed additive systems. [139] Originally, Lextron manufactured machines, which used a cumulative weigh method similar to the preferred embodiment in the '971 patent. [140] After issuance of the '971 patent, Lextron adapted its machines to employ the "weigh dump" method. [141] The weigh dump method calls for dumping each additive one at a time directly into the liquid. [142] In 1995, Micro Chemical sued Lextron for direct infringement. [143] Following an appeal by Micro Chemical to the Federal Circuit and a remand back to the district for trial, the district court concluded that Micro Chemical disavowed any coverage of the "weigh dump" method and, therefore, Lextron did not infringe Micro Chemical's '971 patent. [144]

{39}On appeal, the major dispute centered on the trial court's claim construction. Two disputed limitations consisted of the "weighing means" element in apparatus claim 74, and a similar limitation element in apparatus claim 91. [145] Apparatus claim 74 recites in part "weighing means *for* determining the weights of selected additives dispensed by said dispensing means from said storage means." [146] Apparatus claim 91 recites in part "weighing means on said support frame means *for* weighing predetermined weights of said different additive concentrates dispensed into said multiple hopper container means by said dispensing means." [147] Initially, the Federal Circuit set out to determine whether apparatus claims 74 and 91 contained limitations invoking application of 35 U.S.C. §112, ¶6. The court instructed that "[i]f the word 'means' appears in a claim element in association with a function, this court presumes that 35 U.S.C. §112, ¶6

applies." [148] "[I]f the claim itself[, however,] recites sufficient structure, material, or acts to perform the claimed function," this presumption collapses. [149] The court noted that the disputed "weighing means" claim elements in both claim 74 and claim 91 use means-plus-function terminology and, therefore, concluded that 35 U.S.C. §112, ¶6 applies. [150] The court also reasoned that since neither claim recites structure adequate to perform the recited function, the presumption was un rebutted. [151]

{40} After determining that §112, ¶6 treatment applies, the court set out to identify the structure in the specification that performs the recited function. [152] The court, however, admonished that "[t]he statute does not permit limitation of a means-plus-function claim by adopting a function different from that *explicitly recited in the claim*. Nor does the statute permit incorporation of structure from the written description beyond that necessary to perform the claimed function." [153] Setting out to determine the function, the court reiterated that the function of a means-plus-function element is signaled by the preposition "for." [154] Apparatus claims 74 and 91 each recite a "weighing means ... for" performing a function. [155] Accordingly, the court looked to the language immediately following the preposition "for" in claims 74 [156] and 91 [157] and concluded that the properly identified functions are "determining the weights of selected additives," and "weighing predetermined weights of said different additive concentrates" respectively. [158] Upon concluding that the claim language specifies the function as "simply weighing the microingredient," [159] the Federal Circuit criticized the district court for narrowing that function to "sequential and cumulative weighing." [160] The court noted that because the district court adopted a narrow function for the "weighing means" it incorrectly confined its search for the corresponding structure in the specification. [161] In cautionary language to trial courts, the Federal Circuit warned that "[a]n error in identification of the function can improperly alter the identification of structure in the specification corresponding to that function." [162]

{41} Applying step two of the analysis, the court looked to the written description to identify the structure corresponding to the claimed function. Noting that the specification describes several structures corresponding to the claimed function, the court held that "[w]hen multiple embodiments in the specification correspond to the claimed function, proper application of §112, ¶6 ... reads the claim element to embrace each of those embodiments." [163] The court looked to the patent's summary of the invention [164] and found a more general structure consisting of a "weight scale means supporting the weigh hopper or supporting the storage means." [165] The court stated that "[t]his more general structure [sufficiently] performs the recited function of 'determining the weights' and 'weighing predetermined weights' of [additives]." [166] Accordingly, the court held that "weighing means" literally embraces this more general structure. [167]

{42} Micro Chemical also alleged that Lextron had infringed method claims 63, 93 and 94 of the '971 patent. The Federal Circuit held that these claims were infringed whether or not interpreted under the rubric of §112, ¶6. [168] "Claim 63 is illustrative of the method claims," and recites: "[a] method of dispensing and delivering microingredient ... comprising the steps: ... *dispensing predetermined weights of selected said additive concentrates into a liquid carrier with no substantial intermixing* of the additive concentrates before they enter the liquid carrier." [169] "Claim 94, however, contains a different disputed limitation: 'weighing predetermined amounts of selected said additives, with no substantial intermixing of the selected additives during the weighing process.'" [170] The Federal Circuit faulted the district court for limiting the scope of these method claims to the cumulative weigh method of the preferred embodiment. [171] First, the Federal Circuit assumed that the disputed method claim fell within the ambit of §112, ¶6 and stated that under that statute "this court looks to the specification for acts corresponding to the step-plus-function element which are necessary to perform the recited function." [172] Noting that the function of claim 63 followed the signal "comprising the steps," the court looked for "all acts described in the specification for dispensing microingredient quantities measured by weight." [173] The court noted that the cumulative weigh method of the preferred embodiment and another method in an alternative embodiment, as well as the "weigh dump" method of the prior art were all described in the specification as sufficient methods or acts to accomplish the desired function. [174]

{43}The Federal Circuit also held that even if §112, ¶6 did not apply, the claims were nonetheless literally infringed.[175] The court stated that "[c]laim treatment outside of the requirements of §112, ¶6 generally gives the claims a broader scope." [176] Since §112, ¶6 did not apply, the court reasoned that the meaning of the method claim elements is not limited to specific acts described in the specification. The court, therefore, proceeded to construe the claim elements in a manner to be given "their ordinarily understood meanings in the art." [177] The court determined that the "weigh dump" method, used by the accused Lextron device, satisfied the ordinarily understood meaning of the limitation elements of claim 63, 93 and 94.[178]

{44}Lastly, the Federal Circuit noted that, in narrowing the scope of the apparatus and method claims to encompass only the cumulative weigh system of the preferred embodiment, the district court relied on the patentee's statements about the *Brewster* device in the background section [179] and prosecution history of the patent, as a "disavowal of the weigh dump method." [180] The background section noted that the Brewster system, which employed the "weigh dump" method, was less effective than the preferred embodiment in performing the claimed function. [181] In addition, the prosecution history described the Brewster system in order to facilitate a comparison by the examiner. [182] The Federal Circuit criticized the district court for placing heavy reliance on these statements as a disavowal of the "weigh dump" method. "[A]lthough the applicant noted certain inefficiencies in the Brewster *system*, the patent never clearly disavows the weigh dump *method* as being incapable of performing the claimed functions." [183] The court observed that the applicant of the '971 patent did not attribute the failure of the Brewster system to the "weigh dump" method used by Brewster, but, rather to the particular Brewster design. [184] In so holding, the Federal Circuit cautioned trial courts to carefully distinguish statements directed to a particular prior art device from statements directed to a general method employed by that device, in a patent's background section or prosecution history.

### III. Conclusion/Future

{45}Having assumed direct control over claim construction, the Federal Circuit has, since *Markman II*, [185] struggled to refine the rules that trial courts must apply in the process of claim construction. The decisions illustrated in this Note are necessarily tailored to the vagaries of the specific claims in dispute. Despite the different nature of the cases, a pattern emerges in the Federal Circuit's claim construction jurisprudence.

{46}The court has somewhat relaxed the prohibition on the use of extrinsic evidence. It remains to be seen whether a trial court, concededly at a disadvantage in understanding complex technical terms, will be capable of receiving evidence to help it understand the underlying technology and concomitantly not allow the same extrinsic evidence to influence its interpretation of the claims. Despite the Federal Circuit's clarification regarding the use of extrinsic evidence, the cases illustrated in this Note demonstrate that the court remains firm in the view that claim construction begins with the language of the claim and with reference to the specification and prosecution history whenever practicable. The court also reminded the district courts and the intellectual property bar to analyze carefully the specification, while cautioning that the specification will not limit the express language of the claims if that language does not call for such limitation.

{47}In addition, the Federal Circuit may be broadening the scope of the prosecution history of a given patent. Accordingly, patent prosecutors and litigators must not only cautiously draft their statements to the Patent Office, but also must carefully scrutinize correspondence from the Patent Office. Moreover, patent prosecutors and litigators must determine whether the prosecution history of earlier related patents might attach to subsequent patents. The past year also revealed increasing attention by the Federal Circuit to means-plus-function form, and the court set strict rules for courts to determine when a claim falls within the

special construction rules of mean-plus-function claims.

{48}Patent infringement suits often turn on the particular construction given to the claims. Therefore, as the Federal Circuit continues to clarify and refine the law of claim construction, patent owners and those seeking to evaluate the scope of a patent must be vigilant in keeping apprised of post-*Markman* Federal Circuit case law.

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## ENDNOTES

[\*] J.D. Candidate, St. John's University School of Law, 2001; B.S. Mechanical Engineering, *cum laude*, Polytechnic University, 1995. The author would like to thank his parents for their continual support; and to thank his wife, Linda, and daughter, Lauren, for their ceaseless love and patience.

[1] RONALD B. HILDRETH, *PATENT LAW: A PRACTITIONER'S GUIDE* 171 (2d ed. 1993).

[2] *Id.*

[3] *See* 35 U.S.C. § 154(a)(2) (1994 & Supp. IV 1998) (regarding the contents and term of a patent).

[4] *See* *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 n.4, 340 (1961) (citing *Mercoid Corp. v. Mid-Continent Co.*, 320 U.S. 661, 667 (1944)).

[5] *See* *Gen. Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 981 (Fed. Cir. 1997) (citing *Markman v. Westview Instruments, Inc.* 52 F.3d 967, 976 (Fed. Cir. 1995), *aff'd* 116 S.Ct. 1384 (1996)).

[6] 52 F.3d 967 (Fed. Cir. 1995) (en banc) [hereinafter *Markman I*], *aff'd*, 517 U.S. 370 (1996).

[7] *See, e.g.*, *SSIH Equip. S.A. v. United States Int'l Trade Comm'n*, 718 F.2d 365, 371-72 (Fed. Cir. 1983) (claim construction is an issue of law); *McGill Inc. v. John Zink Co.*, 736 F.2d 666, 671-72 (Fed. Cir. 1984) (claim construction encompasses inherent factual inquiries that must be decided by a jury).

[8] 517 U.S. 370, 372 (1996) [hereinafter *Markman II*], *aff'g* 52 F.3d 967 (Fed. Cir. 1995).

[9] *See Markman I*, 52 F.3d at 970-71.

[10] *Id.* at 978 (citing *Levy v. Gadsby*, 7 U.S. 180, 186 (1805)).

[11] *Id.*

[12] *Id.* at 979.

[13] *Id.* (stating that a patentee's competitors should be able to ascertain the scope of the disputed claims with a reasonable degree of certainty).

[14] *See Markman II*, 517 U.S. 370, 372 (1996).

[15] *Id.* at 388 (quoting *Miller v. Fenton*, 474 U.S. 104, 114 (1985)).

[16] *Id.* The Court stated that construing written documents is a task for which judges are trained and often perform. *Id.*

[17] *Id.* at 390.

[18] 138 F.3d 1448, 1451 (Fed. Cir. 1998) (en banc) (concluding that based on "the Supreme Court's unanimous affirmance" of the Federal Circuit's en banc judgment in *Markman II*, "claim construction, as a purely legal issue, is subject to de novo review on appeal." *Markman I*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)).

[19] *See Pall Corp. v. Hermasure, Inc.*, 181 F.3d 1305, 1308 (Fed. Cir. 1999) (citing *Cybor Corp. v. Fas Technologies, Inc.*, 138 F.3d 1448 (Fed. Cir. 1998) (en banc)).

[20] *See e.g.*, *Pall Corp. v. Hermasure, Inc.*, 181 F.3d 1305 (Fed. Cir. 1999); *Cybor Corp.*, 138 F.3d 1448 (Fed. Cir. 1998) (en banc).

[21] 90 F.3d 1576 (Fed. Cir. 1996).

[22] The specification "provides a complete description of the operable invention and forms the basis for the claims." Hildreth, *supra* note 1, at 16. In addition, the specification is often referred to as the "description." *Id.*

[23] The prosecution history records the dialogue between the applicant and Patent Office representative, such as correspondences, affidavits, prior art, amendments, summaries of examiner interviews, and other documents leading to the finalized allowance of the claims by the Patent Office. *See John R. Thomas, On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 185 (1999).

[24] *Vitronics Corp.*, 90 F.3d at 1583.

[25] 182 F.3d 1298 (Fed. Cir. 1999).

[26] *Id.* at 1300.

[27] *Id.* at 1301.

[28] *Id.*

[29] *Id.*

[30] *Pitney Bowes, Inc.*, 182 F.3d at 1301.

[31] *Id.*

[32] *Id.*

[33] *Id.* at 1302.

[34] *Id.*

[35] *Pitney Bowes, Inc.*, 182 F.3d at 1302.

[36] *Id.* at 1303.

[37] *Id.*

[38] *Id.* at 1303-04.

[39] *Id.* at 1303.

[40] *Pitney Bowes, Inc.*, 182 F.3d at 1303. The district court construed the claim phrase "spots of different sizes" as referring to the different sized spots of light generated by the light beam rather than to the different sized spots of the of discharged area on the photoreceptor. *Id.* at 1303-04.

[41] *Id.* at 1302. The language prior to the transitional term "comprising" constitutes the preamble of claim 1.

[42] *Id.*

[43] *Id.* The language prior to the transitional term "comprising" constitutes the preamble of claim 3.

[44] *Id.* at 1305.

[45] *Pitney Bowes, Inc.*, 182 F.3d at 1305.

[46] *Id.*

[47] *Id.*

[48] *Id.*

[49] *Id.*

[50] *Pitney Bowes, Inc.*, 182 F.3d at 1305.

[51] *Id.* at 1306.

[52] *Id.* (emphasis added).

[53] *Id.* The preambles of claims 1 and 3 both recite: "producing on a photoreceptor an image of generated shapes made up of spots." *Id.*

[54] The court's opinion did not mention the lack of an antecedent basis.

[55] *Pitney Bowes, Inc.*, 182 F.3d at 1306.

[56] *Id.* (emphasis added).

[57] *Id.*

[58] *Id.*

[59] *Id.*

[60] *Pitney Bowes, Inc.*, 182 F.3d at 1310.

[61] *Id.*

[62] *Id.* (internal quotations and citations omitted).

[63] *Id.* (citing *Genentech, Inc. v. Wellcome Foundation, Ltd.*, 29 F.3d 1555 (Fed. Cir. 1994)).

[64] *Id.* at 1311.

[65] *Pitney Bowes, Inc.*, 182 F.3d at 1310-11.

[66] *Id.* at 1311.

[67] *Id.*

[68] *Id.*

[69] *Id.* at 1312.

[70] *Pitney Bowes, Inc.*, 182 F.3d at 1312.

[71] *Id.*

[72] *Id.* The court could only find one case where the patent title was briefly mentioned in connection with the construction of the claims. *See Exxon Chem. Patent, Inc. v. Lubrizol Corp.*, 64 F.3d 1553 (Fed. Cir. 1995).

[73] *Id.*

[74] *Id.* at 1313. Because the district court's summary judgment of non-infringement turned on its erroneous interpretation of the claim term "spots," the Federal Circuit vacated that judgement and remanded the case for further proceedings in accordance with its correct interpretation of the claims. *Id.* at 1314.

[75] The extrinsic evidence at issue was evidence proffered by HP of the existence of a "common convention" in the "digital printing field" that defines spot size as the area of light where the light intensity exceeds a set threshold. *Pitney Bowes, Inc.*, 182 F.3d at 1307. The district court adopted this extrinsic evidence in a footnote in order to address a collateral argument made by Pitney. *Id.* at 1309.

[76] *Vitronics Corp.*, 90 F.3d 1576 (Fed. Cir. 1996).

[77] *Pitney Bowes, Inc.* 182 F.3d at 1308. Notably, both the *Vitronics Corp.* and *Pitney Bowes, Inc.* decisions

were authored by Judge Michel.

[78] *Pitney Bowes, Inc.*, 182 F.3d at 1308.

[79] *Id.*

[80] *Id.*

[81] *Id.* at 1308-09.

[82] *Id.* at 1309.

[83] *Pitney Bowes, Inc.*, 182 F.3d at 1309.

[84] *See supra* note 75.

[85] *Pitney Bowes, Inc.*, 182 F.3d at 1309. The Federal Circuit found that the district court relied upon the intrinsic record to reach its claim interpretation, albeit an erroneous interpretation, and adopted the extrinsic evidence merely to address, in a footnote, a collateral argument made by Pitney. *Id.*

[86] *Id.* at 1314.

[87] *Id.*

[88] *Elkay Mfg. Co. v Ebco Mfg. Co.*, 192 F.3d 973 (Fed. Cir. 1999).

[89] *Id.*

[90] *Id.* at 975.

[91] *Id.*

[92] *Id.* at 976. *See Elkay Mfg. Co. v. Ebco Mfg. Co.*, No. 93-C-S106, 1998 U.S. Dist. LEXIS 10697 (N.D. Ill. July 10, 1998).

[93] *Elkay Mfg. Co.*, 192 F.3d at 976.

[94] *Id.* at 977.

[95] *Id.* at 975-76. (emphasis added).

[96] *Id.* at 976. (emphasis added).

[97] *Id.*

[98] *Elkay Mfg. Co.*, 192 F.3d.at 977. The court observed that since the language of claim 1 and claim 7 was similar, its analysis would be identical.

[99] *Id.* at 976.

[100] *Id.* at 977.

[101] *Id.*

[102] *Id.*

[103] *Compare* North Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571, 1576-77 (Fed. Cir. 1993) (looking to the written description for guidance regarding the interpretation of the article "a," and finding no support in the description that the inventors intended "a" to have other than its normal singular meaning).

[104] *See infra* notes 104-05 and accompanying text (detailing the court's analysis of the written description).

[105] *Elkay Mfg. Co.*, 192 F.3d.973, 977-78 (Fed. Cir. 1999).

[106] *Id.* at 977.

[107] *Id.* at 978 (emphasis added) (citing *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 973 (Fed. Cir. 1999)).

[108] *Id.*

[109] *Id.* (citing *Lemelson v. Gen. Mills, Inc.*, 968 F.2d 1202, 1206 (Fed. Cir. 1992)).

[110] *See* 35 U.S.C. § 103 (1994 & Supp. IV 1998) (outlining conditions for patentability and non-obvious subject matter). "Even if an invention is new and useful, to be patentable it must also be unobvious over the prior art to a person skilled in the field of the invention." HILDRETH, *supra* note 1, at 91.

[111] *Elkay Mfg. Co.*, 192 F.3d at 978. The Krug patent teaches the use of separate liquid and air feed tubes. Notably, the feed tube arrangement in the Ebco devices was similar to the preferred embodiment in the Krug patent. Savage describes an apparatus that facilitates the connection of a liquid feed tube to a collapsible bag so that air is not introduced into the bag when the connection is made.

[112] *Id.* at 978-79 (emphasis added).

[113] *Id.* at 979.

[114] *Id.*

[115] *Id.* (citing *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985)).

[116] *Elkay Mfg. Co.*, 192 F.3d at 979.

[117] *Id.*

[118] *Id.* Notably, here, the court referred to Elkay's response to the Examiner as a "statement distinguishing Krug on the basis of Krug's use of separate feed tubes." Elkay's statement, however, does not mention Krug's use of separate feed tubes. *See supra* note 111. The court's opinion does not explain why it recasts the prosecution history regarding Elkay's response to the Examiner as focused on Krug's use of separate feed tubes.

[119] *Id.* (emphasis added) (quoting the Examiner's statement of Reasons for Allowance, Mar. 30, 1993).

[120] *Id.*

[121] *Elkay Mfg. Co.*, 192 F.3d at 979.

[122] *Id.*

[123] *Id.*

[124] *Id.* at 980. The court also noted that the written description of the '855 patent is fundamentally identical as the written description in the '531 patent. *Id.*

[125] *Id.* at 975.

[126] *Elkay Mfg. Co.*, 192 F.3d at 975.

[127] *Id.*

[128] *Id.*

[129] *Id.* at 980 (citing *Jonsson v. The Stanley Works*, 903 F.2d 812, 817-18 (Fed. Cir. 1990). The *Jonsson* court held that "prosecution history of a claim limitation in the first patent to issue was properly applied to the same claim limitation in the second patent to issue. *Id.*).

[130] *Id.* During the prosecution of the 58,639 application, Elkay added a new claim, which issued as claim 1 of the '855 patent. During that prosecution Elkay stated that this new claim "is patterned after a combination of claims 1, 3 and 5 of the [531 patent] with the 'feed tube' changed to - feed probe -. . . ." *Id.*

[131] *Elkay Mfg. Co.*, 192 F.3d at 980.

[132] *Id.* The Federal Circuit concluded that both the feed tube limitation in claim 1 and 7 of the '531 patent and the feed probe limitation in claim 1 of the '855 patent encompassed a single feed tube (probe) with a single a single flow path for both liquid and air. Thus, since Ebco's WaterGuard devices use separate feed tubes for air and water, the Federal Circuit reversed and vacated the district court's decision and held that Ebco's devices do not infringe the asserted claims of Elkay's patents either literally or under the doctrine of equivalents. *See id.* at 981.

[133] Generally, means-plus function claims recite a means for carrying out a specific function, and are useful in securing broader protection. The basis for a means clause is established in 35 U.S.C. § 112, ¶ 6 (1994). *See HILDRETH*, *supra* note 1, at 179.

[134] *See* 35 U.S.C. § 112, ¶6.

[135] 194 F.3d 1250, 1253 (Fed. Cir. 1999).

[136] *Micro Chem., Inc.*, 194 F.3d at 1253.

[137] *Id.*

[138] *Id.*

[139] *Id.*

[140] *Id.*

[141] *Micro Chem., Inc.*, 194 F.3d at 1254.

[142] *Id.*

[143] *Id.* Initially, the district court held that the '971 claims were invalid and that the '971 "isolation" claims were un infringed. On appeal, the Federal Circuit reversed the district court's finding of invalidity, upheld the finding of noninfringement and remanded the case back to the district court for a ruling on the remaining claims. *See Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 103 F.3d 1538, 1540 (Fed. Cir. 1997).

[144] *Micro Chem., Inc.*, 194 F.3d at 1255. *See Micro Chem., Inc., v. Great Plains Chem. Co.*, No. 88-z-499, 1997 U.S. Dist. LEXIS 23654, at \*3-4 (D. Colo. Dec. 8, 1997).

[145] *Micro Chem., Inc.*, 194 F.3d at 1258. The parties had stipulated that the weighing means elements in both claims had the same meaning.

[146] *Id.* at 1254. (emphasis added).

[147] *Id.* at 1255. (emphasis supplied). *See* 35 U.S.C. §112 (1994).

[148] *Id.* at 1257.

[149] *Id.*

[150] *Micro Chem., Inc.*, 194 F.3d at 1257.

[151] *Id.*

[152] *See id.* at 1258 ("§112, ¶6 requires both identification of the claimed function and identification of the structure in the written description necessary to perform that function.") *Id.*

[153] *Id.* (emphasis added).

[154] *Id.* at 1258.

[155] *Micro Chem., Inc.*, 194 F.3d at 1258.

[156] *Id.* at 1254.

[157] *Id.*

[158] *Id.* at 1258.

[159] *Id.*

[160] *Micro Chem., Inc.*, 194 F.3d at 1258. Since it narrowed the claimed function to cumulative weighing as stated in the preferred embodiment, the district court determined that the function accomplished by the Lextron machine was not identical to the function recited in the '971 patent. *See id.* at 1255.

[161] *Id.* at 1258.

[162] *Id.*

[163] *Id.* (citing *Serrano v. Telular Corp.*, 111 F.3d 1578, 1583 (Fed. Cir. 1997)). Since the district court incorrectly limited the function to "sequential and cumulative weighing," it had improperly restricted "weighing means" to specific structures of the preferred embodiment that accomplish "cumulative weighing" and erroneously overlooked alternative embodiments of the invention. Thus, the district court erred both by incorporating unrecited functional limitations and by incorporating unnecessary structure beyond that necessary to achieve the claimed function.

[164] The summary of the invention is a brief summary of the invention and often includes the invention's nature and substance. *See HILDRETH, supra* note 1, at 159.

[165] *Micro Chem., Inc.*, 194 F.3d at 1258 (quoting a patent's summary of the invention).

[166] *Id.*

[167] *Id.* at 1259. The court then looked to the accused Lextron device and found it to use a structure encompassed within a literal interpretation of the '971 patent. Thus, the Federal Circuit reversed the district court's decision and held that Lextron's machines literally infringe claim 74. With respect to claim 91, however, the court found additional limitations. Since the accused device did not employ a structure within the meaning of the claim language corresponding to those additional limitations, the Federal Circuit affirmed the district court's finding of noninfringement of claim 91. *Id.*

[168] *See id.*

[169] *Micro Chem., Inc.* 194 F.3d at 1256.

[170] *Id.* The district court concluded that these claims were not in proper step-plus-function form. *See id.* at 1256, 1259. And just as it did with apparatus claims 74 and 91, the district court construed the method claims as covering only the cumulative weigh method of the preferred embodiment. *See id.* at 1256.

[171] *Micro Chem., Inc.*, 194 F.3d at 1260.

[172] *Id.* at 1259.

[173] *Id.* at 1259. (emphasis added).

[174] *See id.* at 1259 - 60. Accordingly, the court concluded that the claims "encompass the weigh dump method used by the accused device" and, therefore, were literally infringed. *Id.* at 1260.

[175] *Id.* at 1260.

[176] *Micro Chem., Inc.*, 194 F.3d at 1260.

[177] *Id.*

[178] *Id.* at 1260. The court observed that the "weigh dump method weighs predetermined amounts of the microingredients and dispenses them into the liquid carrier with no substantial intermixing of microingredients during the weighing process." Accordingly, the Federal Circuit reversed the district court's holding of noninfringement. *Id.*

[179] The background section is composed of a brief statement concerning the field of the invention and a description of any related and material prior art. *See Hildreth, supra* note 1, at 159.

[180] *Id.* at 1260.

[181] *Micro Chem., Inc.*, 194 F.3d at 1260. The background section stated that the Brewster machine "was unsuccessful because it was too slow and too inaccurate for handling additive concentrates in a feedlot environment." *Id.*

[182] *Id.*

[183] *Id.* (emphasis added).

[184] *Id.*

[185] *Markman II*, 517 U.S. 370 (1996).

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(1) <http://www.patentlawlinks.com> Provides links to statutes, regulations, case law, patent forms, litigation resources.

(2) <http://www.bitlaw.com> BitLaw is a comprehensive Internet resource focused on technology law, containing over 1,800 pages on patent, copyright, trademark, and Internet legal issues. BitLaw was created by Daniel A. Tysver, a partner with the intellectual property law firm of Beck & Tysver.

(3) <http://www.patents.com> Oppedahl & Larson, LLP is a law firm offering patent, copyright, trademark, trade secret, and other intellectual property services. This Web server is intended to provide information about intellectual property and about the firm.

(4) <http://www.uspto.gov/web/offices/pac/doc/general/> The U.S. Patent and Trademark Office provides general information concerning patents.

(5) <http://www.abanet.org/intelprop/comm106/106general.html> ABA patent overview contains the same or similar information as U.S. Patent and Trademark Office.

(6) <http://www.law.cornell.edu/topics/patent.html> Provides an overview of materials, federal statutes, case law, international material.

(7) <http://www.richmond.edu/~jolt/v3i1/mota.html> Previous Richmond Journal of Law and Technology

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(8) <http://www.escm.com/new/art/MARKMAN.html> Eckert Seamans Cherin & Mellott, LLC. Markman: Where Are We Now?

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(11) <http://www.oblon.com/Pub/seeker.php3?lipman-110.html> Steven E. Lipman & Elaine Wu, "The Pliability of the Nose of Wax in the Post-Markman Era." This article explores the impact of the Markman decision. In addition, the article includes a table of significant court decisions after Markman through January 31, 1997.

(12) <http://www.jurytrials.com/main.htm> Gary M. Hoffman & John A. Wasleff, "What They Really Meant: The Aftermath of Markman and Hilton-Davis." This article explains the decision in Markman and related cases. Further, the article explores the Hilton-Davis decision and its impact on the doctrine of equivalents.

(13) <http://supct.law.cornell.edu/supct/html/95-26.ZO.html> This is a direct link to the decision in *Markman et al. v. Westview Instruments, Inc. et al.* 517 U.S. 370 (1996).

(14) <http://www.ljx.com/patents/evidence.html> Law Journal Extra! Claim Construction (& Markman). This site has short summaries of the developments in patent construction post-Markman in the Federal Circuit.

(15) <http://www.fr.com/publis/claimmark.html> Fish & Richardson, P.C., Claim Construction in Markman Hearings: Recent Trends and Evidentiary Considerations. This site outlines the Markman decisions and their implications on the use of extrinsic evidence in patent claim construction cases.

(16) <http://www.finnegan.com/letters/april98.htm> FEDERAL CIRCUIT NEWS: John Albright summarizes the de novo review of claim construction.

(17) <http://www.finnegan.com/pubs/iplit/markmanclaim.htm> Markman, Claim Construction, and Webster's New World Dictionary - Barry Webster and John Albright discuss how Markman has impacted about several significant changes to patent litigation procedure.

(18) <http://www.pgfm.com/publications/patentinfringement.html> PRESENTING THE WITNESSES UNIQUE TO A PATENT INFRINGEMENT ACTION - Blackstock, McMurtry, and Ragland address the stages at which the courts may rely upon witness testimony in a patent infringement action, the cast of witnesses that may be called upon to present the testimony, the proper scope of the testimony, and how to prepare a witness to present his or her testimony most effectively.

(19) <http://www.law.mercer.edu/lawreview/Articles/48209.htm> Markman v. Westview Instruments, Inc.: The

Supreme Court Narrows the Jury's Role in Patent Litigation - Criticizes how effect of Markman is to jettison the jury from patent infringement litigation altogether.

(20) [http://www.oppenheimer.com/intprop/news/litigating\\_patent\\_defenses.pdf](http://www.oppenheimer.com/intprop/news/litigating_patent_defenses.pdf) Tactical Considerations and Strategies for Success in Litigating Patent Issues - Experienced federal judges, leading litigators, and expert patent litigation consultants offer their insights, tips, and techniques on building a winning patent case.

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