

United States Court of Appeals for the Federal Circuit

96-1286,-1287

CYBOR CORPORATION,

Plaintiff-Appellant,

v.

FAS TECHNOLOGIES, INC., and FASTAR LTD.,

Defendants-Cross Appellants.

Tod L. Gamlen, Baker & McKenzie, of Palo Alto, California, argued for plaintiff- appellant. With him on the brief was David I. Roche, of Chicago, Illinois.

Douglas A. Cawley, Hughes & Luce, L.L.P., of Dallas, Texas, argued for defendants-cross appellants. With him on the brief was Aubrey Nick Pittman.

Appealed from: U.S. District Court for the Northern District of California

Judge Whyte

United States Court of Appeals for the Federal Circuit

96-1286,-1287

CYBOR CORPORATION,

Plaintiff-Appellant,

v.

FAS TECHNOLOGIES, INC., and FASTAR, LTD.,

Defendants/Cross-Appellants.

DECIDED: March 25, 1998

Before MAYER, Chief Judge,* RICH, NEWMAN, Circuit Judges, ARCHER, Senior Circuit Judge,** MICHEL, PLAGER, LOURIE, CLEVINGER, RADER, SCHALL, BRYSON, and GAJARSA, Circuit Judges.

Opinion for the court filed by Senior Circuit Judge ARCHER, in which Circuit Judges RICH, MICHEL,

PLAGER, LOURIE, CLEVINGER, SCHALL, BRYSON, and GAJARSA join; Circuit Judge RADER joins as to part IV. Concurring opinions filed by Circuit Judges PLAGER and BRYSON. Opinions concurring in the judgment filed by Chief Judge MAYER, which Circuit Judge NEWMAN joins, and Circuit Judge RADER. Additional views filed by Circuit Judge NEWMAN, which Chief Judge MAYER joins.

ARCHER, Senior Circuit Judge.

Cybor Corporation (Cybor) appeals from the judgment of the United States District Court for the Northern District of California, 93-CV-20712 (Oct. 31, 1995), that Cybor pump, Model 5226, infringes the claims of U.S. Patent No. 5,167,837 (the '837 patent), currently owned by FASStar, Ltd. and exclusively licensed to FAS Technologies, Inc. (collectively FAS). FAS cross-appeals the judgment as to the damages calculation, the denial of enhanced damages, and the refusal to declare the case exceptional and to award attorney fees. A panel heard oral argument on January 29, 1997. Before its opinion issued, however, this court sua sponte on September 5, 1997 ordered that this case be decided in banc.

We affirm the district court's judgment in its entirety. In so doing, we conclude that the Supreme Court's unanimous affirmance in Markman v. Westview Instruments, Inc., 116 S. Ct. 1384 (1996) (Markman II), of our in banc judgment in that case fully supports our conclusion that claim construction, as a purely legal issue, is subject to de novo review on appeal. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995) (in banc) (Markman I).

BACKGROUND

The '837 patent discloses a device and method for accurately dispensing industrial liquids. The primary use of the patented inventions is to dispense small volumes of liquid onto semiconductor wafers. Claim 1 is representative and reads: [1](#)

1. In a device for filtering and dispensing fluid in a precisely controlled manner, the combination of:

first pumping means;

second pumping means in fluid communication with said first pumping means; and

filtering means between said first and second pumping means, whereby said first pumping means pumps the fluid through said filtering means to said second pumping means;

in which each of said first and second pumping means includes surfaces that contact the fluid, said surfaces being of materials that are non-contaminating to industrial fluids which are viscous and/or high purity and/or sensitive to molecular shear; and

comprising means to enable said second pumping means to collect and/or dispense the fluid, or both, at rates or during periods of operation, or both, which are independent of rates or periods of operation, or both, respectively, of said first pumping means.

Figure 2 of the patent illustrates a preferred embodiment of the invention:

In the preferred embodiment, the fluid to be filtered enters the system through tubing 14 and travels through the ball valve 24 to the first pumping means 30 via tubing 41. The pumping means 30 then pumps the liquid

back through the ball valve 24, which rotates to close tubing 14 and open tubing 102. The liquid then flows to the filter means 100 in which it is filtered. The filtered liquid (filtrate) then flows through tubing 116 and into the second pumping means 120. The filtrate can then be immediately dispensed, accumulated in the upper compartment 131 of the pumping means 120, or simultaneously accumulated and dispensed. The filtrate is dispensed in precise measurements by the second pumping means 120 through tubing 16 at rates and during periods of operation that are independent of the first pumping means 30.

The dual stage pump manufactured by Cybor is used for the same purpose as that of the patented invention – application of liquid in precise, small volumes onto semiconductor wafers. It is illustrated below:

In the accused device, pump 1 draws the liquid from a source bottle through a feed line and through a three-way solenoid valve. The solenoid valve then closes the passage to the source bottle and opens the line to the filter, allowing pump 1 to deliver the liquid to the filter. After the liquid passes through the filter, the filtrate flows to a reservoir external to pump 2, where it accumulates until dispensed by pump 2. It is uncontested that the external reservoir, coupled with the second pump, allows the system to accumulate, dispense, or simultaneously accumulate and dispense filtrate. The filtrate leaves the reservoir through another three-way solenoid connector, or valve, and enters the second pump. The solenoid valve then closes the passage to the reservoir and opens the dispense port, through which the second pump dispenses the filtrate back through the solenoid valve and on through the dispensing port and line.

On September 23, 1993, Cybor sued FAS for a declaratory judgment of non-infringement, invalidity, and unenforceability of the '837 patent. FAS counterclaimed for infringement of all twenty claims and sought damages and injunctive relief. The case proceeded to trial, and the jury found by special verdict that the claims were not invalid, that Cybor literally infringed all the claims except 11, 12, and 16, and that these three remaining claims were infringed under the doctrine of equivalents. The jury determined the infringement to be willful for all claims except claim 16.

After the jury rendered its liability verdict, the district court denied Cybor's renewed motion for Judgment as a Matter of Law (JMOL) that it did not infringe the '837 patent, and also denied FAS's motion for an exceptional case award of attorney fees pursuant to 35 U.S.C. § 285 (1994). Prior to the entry of final judgment, however, this court decided Markman I, which held that claim construction is a matter of law to be determined exclusively by the judge. Cybor then filed a motion for reconsideration of its JMOL motion in light of that decision, but the district court denied reconsideration. After further proceedings on damages, the district court on October 11, 1995, filed its Findings of Fact and Conclusions of Law permanently enjoining Cybor from making, using, or selling its system, awarding FAS \$130,912 in damages, and denying FAS's motion for enhanced damages under 35 U.S.C. § 284 (1994). The district court entered its final judgment on October 31, 1995, and these appeals followed.

DISCUSSION

I.

A. This court reviews a denial of a motion for JMOL de novo by reapplying the JMOL standard. See Read Corp. v. Portec, Inc., 970 F.2d 816, 821, 23 USPQ2d 1426, 1431 (Fed. Cir. 1992). Under this standard, we can reverse a denial of a motion for JMOL only if the jury's factual findings are not supported by substantial evidence or if the legal conclusions implied from the jury's verdict cannot in law be supported by those findings. See Kearns v. Chrysler Corp., 32 F.3d 1541, 1547-48, 31 USPQ2d 1746, 1751 (Fed. Cir.

1994).

An infringement analysis involves two steps. First, the court determines the scope and meaning of the patent claims asserted, *see Markman II*, 116 S. Ct. at 1387, and then the properly construed claims are compared to the allegedly infringing device, *see Read Corp.*, 970 F.2d at 821, 23 USPQ2d at 1431. Although the law is clear that the judge, and not the jury, is to construe the claims, this case presents the issue of the proper role of this court in reviewing the district court's claim construction.

In *Markman I*, we held that, because claim construction is purely a matter of law, this court reviews the district court's claim construction *de novo* on appeal. *See Markman I*, 52 F.3d at 979, 981, 34 USPQ2d at 1329, 1331. In reaching this conclusion, we recognized that

[t]hrough this process of construing claims by, among other things, using certain extrinsic evidence that the court finds helpful and rejecting other evidence as unhelpful, and resolving disputes *en route* to pronouncing the meaning of claim language as a matter of law based on the patent documents themselves, the court is not crediting certain evidence over other evidence or making factual evidentiary findings. Rather, the court is looking to the extrinsic evidence to assist in its construction of the written document, a task it is required to perform. The district court's claim construction, enlightened by such extrinsic evidence as may be helpful, is still based upon the patent and prosecution history. It is therefore still construction, and is a matter of law subject to *de novo* review.

Id. at 981, 34 USPQ2d at 1331 (emphasis in original and footnote omitted).

After the Supreme Court's decision in *Markman II*, panels of this court have generally followed the review standard of *Markman I*. *See Serrano v. Telular Corp.*, 111 F.3d 1578, 42 USPQ2d 1538 (Fed. Cir. 1997); *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 40 USPQ2d 1667 (Fed. Cir. 1996); *Insituform Techs., Inc. v. CAT Contracting, Inc.*, 99 F.3d 1098, 40 USPQ2d 1602 (Fed. Cir. 1996); *General Am. Transp. v. Cryo-Trans, Inc.*, 93 F.3d 766, 39 USPQ2d 1801 (Fed. Cir. 1996). In some cases, however, a clearly erroneous standard has been applied to findings considered to be factual in nature that are incident to the judge's construction of patent claims. *See Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1555-56, 42 USPQ2d 1737, 1742 (Fed. Cir. 1997); *Serrano*, 111 F.3d at 1586, 42 USPQ2d at 1544, (Mayer, J., concurring); *Wiener v. NEC Elecs. Inc.*, 102 F.3d 534, 539, 41 USPQ2d 1023, 1026 (Fed. Cir. 1996); *Metallics Sys. Co. v. Cooper*, 100 F.3d 938, 939, 40 USPQ2d 1798, 1799 (Fed. Cir. 1996). We ordered that this case be decided in banc to resolve this conflict, and we conclude that the *de novo* standard of review as stated in *Markman I* remains good law.

B. The Supreme Court framed the question before it in *Markman II* in the alternative: "whether the interpretation of a so-called patent claim . . . is a matter of law reserved entirely for the court, or subject to a Seventh Amendment guarantee that a jury will determine the meaning of any disputed term of art about which expert testimony is offered." *Markman II*, 116 S. Ct. at 1387 (emphasis added). When it answered that question by stating that "[w]e hold that the construction of a patent, including terms of art within its claim, is exclusively within the province of the court," *id.*, the Court held that the totality of claim construction is a legal question to be decided by the judge. Nothing in the Supreme Court's opinion supports the view that the Court endorsed a silent, third option – that claim construction may involve subsidiary or underlying questions of fact. To the contrary, the Court expressly stated that "treating interpretive issues as purely legal will promote (though not guarantee) intrajudicial certainty through the application of stare decisis on those

questions not yet subject to interjurisdictional uniformity under the authority of the single appeals court.” Id. at 1396 (emphasis added); see also id. at 1394 (“Questions of construction are questions of law for the judge, not questions of fact for the jury” (quoting A. Walker, Patent Laws § 75 at 173 (3d ed. 1895))). Indeed, the sentence demonstrates that the Supreme Court endorsed this court’s role in providing national uniformity to the construction of a patent claim, a role that would be impeded if we were bound to give deference to a trial judge’s asserted factual determinations incident to claim construction.

The opinions in some of our cases suggesting that there should be deference to what are asserted to be factual underpinnings of claim construction assert support from the language in Markman II stating that “construing a term of art after receipt of evidence” is a “mongrel practice,” id. at 1390, and that the issue may “fall[] somewhere between a pristine legal standard and a simple historical fact,” id. at 1395 (quoting Miller v. Fenton, 474 U.S. 104, 114 (1985)). These characterizations, however, are only prefatory comments demonstrating the Supreme Court’s recognition that the determination of whether patent claim construction is a question of law or fact is not simple or clear cut; they do not support the view that the Court held that while construction is a legal question for the judge, there may also be underlying fact questions. To the contrary, the court noted that

when an issue “falls somewhere between a pristine legal standard and a simple historical fact, the fact/law distinction at times has turned on a determination that, as a matter of sound administration of justice, one judicial actor is better positioned than another to decide the issue in question.”

Id. (quoting Miller v. Fenton, 474 U.S. 104, 114 (1985)) (emphasis added). Thus, the Supreme Court was addressing under which category, fact or law, claim construction should fall and not whether it should be classified as having two components, fact and law.

Further supporting the conclusion that claim construction is a pure issue of law is the Supreme Court’s analysis of the role of expert testimony in claim construction. Generally, the Court has recognized the important role played by juries in evaluating the credibility of a witness, a key consideration in determining the appropriate judicial actor to decide an issue. See Miller, 474 U.S. at 114. In the context of claim construction, however, the Court reasoned that, while credibility determinations theoretically could play a role in claim construction, the chance of such an occurrence is “doubtful” and that “any credibility determinations will be subsumed within the necessarily sophisticated analysis of the whole document, required by the standard construction rule that a term can be defined only in a way that comports with the instrument as a whole.” Markman II, 116 S. Ct. at 1395; see also id. at 1394-95 (“[T]he testimony of witnesses may be received But in the actual interpretation of the patent the court proceeds upon its own responsibility, as an arbiter of the law, giving to the patent its true and final character and force.” (quoting 2 W. Robinson, Law of Patents § 732 at 481-83 (1890))). Such a conclusion is consistent with the view that claim construction, as a form of “document construction,” id. at 1395, is solely a question of law subject to de novo review, as noted above. See Markman I, 52 F.3d at 981, 34 USPQ2d at 1331.

Moreover, while the Supreme Court’s opinion conclusively and repeatedly states that claim construction is purely legal, another view of the Court’s decision also demonstrates that our standard of review remains intact. The Court’s primary concern in Markman II was the Seventh Amendment issue of whether a right to a jury trial on claim construction inured to a party due to any potential factual issues involved. Because the Court did not discuss the appellate standard of review, Markman II can be read as addressing solely the respective roles of the judge and jury at the trial level and not the relationship between the district courts and

this court. Although our conclusion in Markman I that claim construction is a matter of law was affirmed in all respects, even this narrower view of Markman II leaves Markman I as the controlling authority regarding our standard of review.

Thus, we conclude that the standard of review in Markman I, as discussed above, was not changed by the Supreme Court's decision in Markman II, and we therefore reaffirm that, as a purely legal question, we review claim construction de novo on appeal including any allegedly fact-based questions relating to claim construction. Accordingly, we today disavow any language in previous opinions of this court that holds, purports to hold, states, or suggests anything to the contrary, *see, e.g.*, Fromson, 132 F.3d at 1444, 45 USPQ2d at 1274 ("The district court's findings of scientific/technological fact were material to the issue of construction of the term 'anodizing.'"); Eastman Kodak, 114 F.3d at 1555-56, 42 USPQ2d at 1742 (affirming district court's claim construction "recognizing both the trial court's 'trained ability to evaluate [expert] testimony in relation to the overall structure of the patent' and the trial court's 'better position to ascertain whether an expert's proposed definition fully comports with the specification and claims" (quoting Markman II, 116 S. Ct. at 1395)); Wiener, 102 F.3d at 539, 41 USPQ2d at 1026 (citing Markman II as controlling our standard of review and parenthetically quoting language from Markman II that claim construction "falls somewhere between a pristine legal standard and a simple historical fact."); Metalluics, 100 F.3d at 939, 40 USPQ2d at 1799 ("[B]ecause claim construction is a mixed question of law and fact, we may be required to defer to a trial court's factual findings. Where a district court makes findings of fact as part of claim construction, we may not set them aside absent clear error." (citations omitted)).

II.

Cybor argues in this appeal that the district court improperly construed the two means-plus-function limitations in the relevant claims of the '837 patent – the “second pumping means” and the “means to enable” the second pumping means to accumulate liquid, dispense liquid, or both. Cybor also challenges the district court's construction of the limitation requiring that the fluid flow “to a second pumping means.” All of these arguments turn on the question of whether the district court erred in refusing to limit the scope of the claims based on statements made to the examiner during prosecution. In particular, Cybor contends that the prosecution history does not allow the claimed “second pumping means” to cover any reservoir for accumulating fluid that is external to the second pump. Because Cybor's reservoir is external, Cybor argues that its second pump does not meet the second pumping means limitation. Its second pump alone, without regard to the external reservoir, is not able to satisfy the functional limitation of enabling the second pumping means to “accumulate liquid, dispense liquid, or both.” With an intervening external reservoir, Cybor also argues that the fluid does not flow “to” a second pumping means from the filter means as required by the claims.

A. Under § 112, 6, an accused device with structure not identical to the structure described in the patent will literally infringe the patent if the device performs the identical function required by the claim with a structure equivalent to that described in the patent. *See Micro Chem., Inc. v. Great Plains Chem. Co.*, 103 F.3d 1538, 1547, 41 USPQ2d 1238, 1245-46 (Fed. Cir. 1997). Prosecution history is relevant to the construction of a claim written in means-plus-function form. *See United States v. Teletronics, Inc.*, 857 F.2d 778, 782, 8 USPQ2d 1217, 1220 (Fed. Cir. 1988); *Rite-Hite Corp. v. Kelley Co.*, 819 F.2d 1120, 1123, 2 USPQ2d 1915, 1917 (Fed. Cir. 1987). Indeed, “just as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction under § 112, 6.” *Alpex*, 102 F.3d at 1221, 40 USPQ2d at 1673.

Clear assertions made in support of patentability thus may affect the range of equivalents under § 112, 6. Cf. American Permahedge, Inc. v. Barcana, Inc., 105 F.3d 1441, 1446, 41 USPQ2d 1614, 1618 (Fed. Cir. 1997); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1582, 37 USPQ2d 1365, 1373 (Fed. Cir. 1996). The relevant inquiry is whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter. See Insituform Techs., Inc., v. CAT Contracting, Inc., 99 F.3d 1098, 1107-08, 40 USPQ2d 1602, 1608 (Fed. Cir. 1996).

Cybor relies on two responses by the inventors to the examiner's obviousness rejection of the claims for its position that a pump structure with any external reservoir was given up during prosecution. In each instance, the examiner had cited Storkebaum et al., U.S. Patent No. 4,749,476 (Storkebaum). Storkebaum's container not only collects permeate; it also vents or discharges the fluid. The container feeds a conveying pump that powers the flow of a big circulation loop. The design of Storkebaum is not for the controlled dispensing of fluid. In the first response, the inventors argued that "Storkebaum specifically provides a separate container 12 for collecting permeate. Obviously, Storkebaum does not teach the collection of fluid in a second pumping means." (Emphasis added). In response to a later rejection, the inventors argued that "Storkebaum discloses a permeate collecting container 12 that is separate from the conveying pump 13. Nothing in Storkebaum discloses or makes obvious the claimed invention, nor the precise or flexible control provided by the second pump means of Claim 1." (Emphasis in original). From these statements, Cybor contends that FAS is precluded from asserting that a pump device with an external reservoir is a structural equivalent under § 112, 6 to its patented device and that the district court, as a matter of law, should not have permitted the jury to consider its external reservoir in determining whether the differences between Cybor's second pump and the '837 patent's second pumping means were insubstantial.

FAS responds that the district court made all of the required determinations regarding claim construction and, in doing so, fully considered the prosecution history at issue. It then submitted the construed claims to the jury for its determination of infringement.

We are not convinced that the district court erred in its claim construction or in denying Cybor's motion for JMOL. The district court construed several limitations, or disputed language, in the claims. With respect to the second pumping means limitation, the jury was instructed that it "refers to a structure identical to the structure disclosed in the specification of the patent, or the equivalent to that structure, which performs the function of fluid accumulator/dispense pump." With this instruction, the district court did not narrow the scope of the claim language to exclude a pump with any external reservoir as urged by Cybor. Instead, the jury was instructed to determine whether Cybor's device, with its pump and attached reservoir, was structurally equivalent and whether it had the same functionality as the second pumping means of the '837 patent.

From our reading of the patent document and the prosecution history, we agree with the district court's construction and jury instructions. While it is quite clear the inventors limited the scope of their claims to overcome the Storkebaum reference, they emphasized the separateness of Storkebaum's container, both physically and functionally, as compared to the claimed invention. For example, the statements noted that Storkebaum "provides a separate container" and that it has a container "that is separate from the conveying pump." The specification of the '837 patent elaborates on the structure of the second pumping means and its "means to enable" as having tubing connecting the second pumping means to the second incremental pump advancement means, see col. 5, lines 49-52. While in the preferred embodiment, the '837 patent disclosed a storage reservoir inside the pump, it is not disputed that the claimed second pumping means encompasses both a pump and a reservoir having connecting tubing.

The Storkebaum device differs materially from the patented invention. Storkebaum discloses a filtering system to separate pressure sensitive substances from a liquid suspension. It has a conveying pump that operates to circulate the fluid through a large closed circuit loop. It also has a separate reservoir to collect and regulate the amount of permeate in the closed circuit. Thus, the container in the Storkebaum apparatus has the separate function and capability of venting or discharging excessive liquid in order to prevent undesirable build up of liquids in the system.

In view of the significant differences between the cited Storkebaum patent and the claimed invention, including the structurally separate container and independent function of discharging excess fluid in Storkebaum, the prosecution statements cannot properly be interpreted as precluding coverage of every type of external reservoir. In particular, we agree with the district court's apparent conclusion that these statements only disclaimed a physically unattached reservoir which has independent functionality. They did not disclaim a reservoir which is physically connected to the pump and which only collects fluid to be dispensed by that pump. Thus, we conclude that the district court did not err in instructing the jury in a manner which would permit it to consider the equivalency of Cybor's pump and reservoir to the claimed second pumping means. Further, it did not err in denying Cybor's JMOL motion on this issue.

B. Cybor further challenges the district court's claim interpretation regarding the claim limitation that the first pumping means pumps the fluid through the filtering means "to" the second pumping means. Cybor contends that this language requires that the liquid flow directly from the filtering means to the second pumping means without passing through any additional components. Because the fluid in Cybor's device flows through the external reservoir, which Cybor views as a component separate from the claimed second pumping means, Cybor argues that it does not infringe.

We reject Cybor's arguments because, as previously discussed, the external reservoir in the Cybor's device was apparently held by the jury to be a part of its "second pumping means" and not a separate component.

We also agree with the district court's interpretation that the "to" limitation requires only that the liquid move from the filter "in a pathway with a destination of the second pumping means" and does not preclude the fluid from passing through intervening components. Cf. Webster's II New Riverside Univ. Dictionary 1214 (1984) (defining "to" as "[i]n a direction toward"); see Vitronics, 9 F.3d at 1584 n.6, 39 USPQ2d at 1578 n.3 (noting that, although technically extrinsic evidence, the court is free to consult dictionaries at any time to help determine the meaning of claim terms). Nothing in the specification or prosecution history suggests the interpretation put forth by Cybor.

Applying the above interpretations, substantial evidence supports the jury's verdict that Cybor's device literally infringes the claims of the '837 patent. Accordingly, we conclude that the district court properly denied Cybor's motion for JMOL as to literal infringement.

III.

Cybor also challenges the denial of its JMOL motion on the ground that its device does not infringe the '837 patent under the doctrine of equivalents. The jury determined that claims 11, 12, and 16 are not literally infringed but are infringed under the doctrine of equivalents. Claims 10, 11, and 12 read:

10. A method for filtering and dispensing industrial fluids which are viscous and/or high purity and/or shear sensitive, comprising the steps of: pumping the fluid through filtering means by first pumping means to second

pumping means; accumulating the fluid in second pumping means at rates or during periods of operation, or both, independent of the rates or periods of operation, or both, respectively, of said first pumping means; and dispensing the fluid by operating said second pumping means.

11. The method of claim 10 wherein said accumulating step is achieved by operating said second pumping means on an intake stroke at the same rate at which said first pumping means is pumping said fluid through said filter, so that the fluid which has been filtered is accumulated in said second pumping means without being dispensed from said second pumping means.

12. The method of claim 10 wherein said accumulating step includes operating said second pumping means to draw said filtered fluid at a rate slightly greater than the rate at which said filtered fluid is being pumped by said first pumping means, such that there is a slight drawback of said fluid from a dispensing means of said second pumping means.

(Emphasis added). Claim 16 is a combination claim that reads:

16. In a device for filtering and dispensing high-purity and/or viscous and/or shear- sensitive fluid, the combination of: a first diaphragm-type pump; filtering means connected to receive the fluid from said first diaphragm-type pump; and a second diaphragm-type pump connected to receive the fluid from said filtering means, in which each of said first and second diaphragm-type pumps includes surfaces that contact the fluid, said surfaces being of materials that are non-contaminating to industrial fluids which are viscous and/or high purity and/or sensitive to molecular shear; and comprising means to enable said second diaphragm-type pump to collect and/or dispense the fluid, or both, at rates or during periods of operation, or both, which are independent of rates or periods of operation, or both, respectively of said first diaphragm-type pump.

(Emphasis added).

An accused device that does not literally infringe a claim may still infringe under the doctrine of equivalents if each limitation of the claim is met in the accused device either literally or equivalently. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S. Ct. 1040, 1054 (1997); see also Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 935, 4 USPQ2d 1737, 1740 (Fed. Cir. 1987) (in banc). Prosecution history estoppel provides a legal limitation on the application of the doctrine of equivalents by excluding from the range of equivalents subject matter surrendered during prosecution of the application for the patent. See Warner- Jenkinson, 117 S. Ct. at 1049. The estoppel may arise from matter surrendered as a result of amendments to overcome patentability rejections, see id., or as a result of argument to secure allowance of a claim, see Wang Lab., Inc. v. Mitsubishi Elecs., Inc., 103 F.3d 1571, 1578, 41 USPQ2d 1263, 1269 (Fed. Cir. 1997). Prosecution history estoppel is a legal question subject to de novo review on appeal. See Insituform, 99 F.3d at 1107, 40 USPQ2d at 1609.

Cybor argues that there is no infringement under the doctrine of equivalents because prosecution history estoppel precludes FAS both from claiming an external reservoir and a pump as an equivalent to the second pumping means of claims 11 and 12 and from claiming an external, attached reservoir as the equivalent to the means to enable the second diaphragm-type pump in claim 16 to accumulate, dispense, or both accumulate and dispense the liquid. Additionally, Cybor urges that, because the accused device has an intervening reservoir, the limitation requiring the filtrate to flow to the second pumping means in claims 11 and 12 would not equivalently be met.

These arguments are unpersuasive for the same reasons that we rejected them under our § 112, 6 claim construction and literal infringement analysis. The inventor's statements to the PTO regarding the Storkebaum reference, given the marked differences between the reference and the patented and accused devices, do not show the deliberate, unequivocal surrender of all external reservoirs. See Read Corp. v. Portec, Inc., 970 F.2d 816, 824, 23 USPQ2d 1426, 1433 (Fed. Cir. 1992) ("Every statement made by a patentee during a prosecution to distinguish a prior art reference does not create a separate estoppel. Arguments must be viewed in context."). Because Cybor's pump and reservoir with connecting tubing do not fall within the range of subject matter relinquished, prosecution history does not preclude infringement under the doctrine of equivalents. Accordingly, the district court's denial of Cybor's motion for JMOL with respect to infringement under the doctrine of equivalents was not error.

IV.

On cross-appeal, FAS argues that, in light of the jury's determination that Cybor's infringement was willful, the district court erred both by refusing to find this case exceptional, and thus denying attorney fees under 35 U.S.C. § 285 (1994), and by denying enhanced damages under 35 U.S.C. § 284 (1994). FAS also challenges the district court's approach in calculating damages.

A. The determination of whether a case is exceptional and, thus, eligible for an award of attorney fees under § 285 is a two-step process. See Reactive Metal Alloys Corp. v. ESM, Inc., 769 F.2d 1578, 1582, 226 USPQ 821, 824 (Fed. Cir. 1985). First, the district court must determine whether a case is exceptional, a factual determination reviewed for clear error. See Baldwin Hardware Corp. v. Franksu Enter. Corp., 78 F.3d 550, 563, 37 USPQ2d 1829, 1838 (Fed. Cir. 1996). After determining that a case is exceptional, the district court must determine whether attorney fees are appropriate, a determination that we review for an abuse of discretion. See Molins PLC v. Textron, Inc., 48 F.3d 1172, 1186, 33 USPQ2d 1823, 1833 (Fed. Cir. 1995). A district court abuses its discretion when its decision is based on clearly erroneous findings of fact, is based on erroneous interpretations of the law, or is clearly unreasonable, arbitrary or fanciful. See Fraige v. American-National Watermattress Corp., 996 F.2d 295, 297, 27 USPQ2d 1149, 1151 (Fed. Cir. 1993).

We conclude that the district court's denial of exceptional status was not clearly erroneous. The court specifically noted that it considered the evidence of willful infringement sufficient but weak. Similarly, it considered the evidence of copying also to be weak. The court concluded that Cybor's arguments in litigation, while ultimately unsuccessful, were not frivolous or asserted for an improper purpose and that Cybor litigated in good faith. Finally, the court concluded that evidence supported Cybor's contention that it in good faith did not consider its system to be infringing.

Contrary to FAS's assertions, a finding of willful infringement does not require a finding that a case is exceptional. See Modine Mfg. Co. v. The Allen Group, Inc., 917 F.2d 538, 543, 16 USPQ2d 1622, 1624 (Fed. Cir. 1990). Moreover, FAS's mere argument that Cybor's defenses and claims were "baseless" and pursued in "bad faith" does not undermine the district court's conclusions to the contrary. The record evidence supports the district court's conclusion that Cybor acted in good faith. Moreover, Cybor's arguments, particularly relating to claim construction and prosecution history estoppel, were not meritless, and resolution of those issues in FAS's favor was far from a foregone conclusion.

B. FAS further challenges the district court's decision not to enhance the damages in this case. The statute

allows a court to enhance damages “up to three times the amount found or assessed.” 35 U.S.C. § 284 (1994). A denial of enhanced damages under § 284 is reviewed on appeal for an abuse of discretion. See Electro Medical Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1056, 32 USPQ2d 1017, 1023 (Fed. Cir. 1994). Enhanced damages have been awarded when a party is found to have willfully infringed or to have acted in bad faith. Id. A finding of willfulness, however, does not mandate enhanced damages. See Read Corp., 970 F.2d at 826, 23 USPQ2d at 1435. Instead, “[t]he paramount determination . . . is the egregiousness of the defendant’s conduct based on all the facts and circumstances.” Id.

We conclude that the district court did not abuse its discretion in denying enhanced damages. Particularly, we note that there is no merit to the argument that a finding of willfulness but a denial of enhanced damages is necessarily an abuse of discretion. See Modine, 917 F.2d at 543, 16 USPQ2d at 1624. Indeed, the district court determined that the evidence regarding willfulness and copying was weak. Moreover, although Cybor was found to infringe all twenty of the claims, this result does not mean that the case was not close, particularly in light of its justifiable albeit unsuccessful arguments regarding the prosecution history of the ’837 patent. Finally, nothing in the record supports FAS’s arguments that Cybor litigated in an inappropriate fashion; the district court actually found the contrary to be true. Thus, we conclude that the district court did not abuse its discretion in denying enhanced damages.

C. Finally, FAS contests both the district court’s method in calculating damages and the court’s ultimate damages award. Section 284 requires that the damages awarded to a claimant must be adequate to compensate for infringement. See Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1544, 35 USPQ2d 1065, 1068 (Fed. Cir. 1995) (in banc). The amount of damages determined by a district court is a question of fact that is reviewed for clear error on appeal, while the method used by a district court in reaching that determination is reviewed for an abuse of discretion. See Stryker Corp. v. Intermedics Orthopedics, Inc., 96 F.3d 1409, 1413, 40 USPQ2d 1065, 1068 (Fed. Cir. 1996).

FAS argues that the district court abused its discretion by using a method that was “too stringent” and thus did not afford adequate relief. We disagree. The district court performed a thorough, well- reasoned analysis of the facts underlying the award of damages. Contrary to FAS’s assertions, the court acted within its discretion in its evaluation of the two-supplier market by concluding that FAS’s sale to the purchaser would not have occurred at the same time that the infringing sales occurred because of FAS’s prior history with that purchaser. As to the other aspects of the methodology challenged by FAS, we conclude that the district court weighed the evidence before it in an appropriate fashion. We decline FAS’s inappropriate invitation that we essentially reweigh the record evidence.

CONCLUSION

Because the district court properly denied defendant’s motion for JMOL, did not abuse its discretion in its damages methodology or in its decision not to enhance damages, and did not clearly err in determining that this case was not exceptional or clearly err in determining the amount of damages, we affirm.

AFFIRMED

United States Court of Appeals for the Federal Circuit

96-1286, -1287

CYBOR CORPORATION,

Plaintiff-Appellant,

v.

FAS TECHNOLOGIES, INC. and FASTAR LTD.,

Defendants/Cross-Appellants.

PLAGER, Circuit Judge, concurring.

The concerned reader of the several opinions in this case might be led to believe that there is more to this case than there is. This otherwise unremarkable case was taken in banc for the sole purpose of laying to rest any residual doubts about how, in claim construction, the verbalizations surrounding the familiar “fact-law” dichotomy should be understood. I join the court’s opinion and judgment, eliminating the unnecessary obfuscation that seems to have emerged since our decision in *Markman v. Westview Instruments, Inc.*, 52 F. 3d 967, 34 USPQ2d 1321 (Fed. Cir. 1995) (in banc) (hereinafter *Markman I*).

In *Markman I* we held that “claim construction is a matter of law,” and that “the construction given the claims is reviewed de novo on appeal.” *Id.* at 979. The Supreme Court agreed with our view, and concluded that the Seventh Amendment right to trial by jury was not an obstacle. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, ___, 116 S.Ct. 1384, 1391-93 (1996) (*Markman II*).

At the trial stage of a patent infringement suit, this means that the trial judge is obligated to determine the meaning of the claims, and, if a jury is used for the infringement phase, to instruct the jury accordingly. In the course of seeking to understand the nature and scope of the invention set forth in the claims, it is standard doctrine that the judge focuses on the language of the claims, as explained by the patent’s written description, and as constrained by the course of the patent’s prosecution. If need be, the trial judge may seek understanding outside the patent proper, from relevant texts and materials, and from experts in the art. None of this involves “fact-finding” in the sense of the traditional fact-law dichotomy. See, for example, the Supreme Court’s effort to decide whether a tomato was a “fruit” or a “vegetable.” Regarding the meaning of those words, the Court said: “Of that meaning the court is bound to take judicial notice, as it does in regard to all words in our own tongue; and upon such a question dictionaries are admitted, not as evidence, but only as aids to the memory and understanding of the court.” *Nix v. Hedden*, 149 U.S. 304, 306-07 (1893).

The effort is to understand the meaning of the terms in the claims. To the extent that involves delving into factual matters, such materials simply become part of the process of understanding. It hardly seems necessary to state that the point of seeking understanding of the terms in which the claims are cast is not for the sake of understanding in the abstract, but to ensure as much as the intrinsic nature of language permits that the court’s interpretation is a correct one.

On appeal, this court has the benefit of the trial judge’s considered view, and the record of the effort made at trial to assist the judge in understanding the terms of the claim. Though we review that record “de novo,” meaning without applying a formally deferential standard of review, common sense dictates that the trial judge’s view will carry weight. That weight may vary depending on the care, as shown in the record, with which that view was developed, and the information on which it is based.

It may or may not be true that the trial judge will have had virtually unlimited time and opportunity to pursue the matter. In any event, just where the comparative advantage in claim construction effort and accuracy lies in any particular case will be observable on appeal, and will no doubt influence the weight given to the trial court's view. And just as three minds are deemed better than one in deciding appeals, four minds may often be better than three when a complex claim construction is at issue.

This court's decision in *Markman I*, reaffirmed today, simply means that we do not spend our and appellate counsels' time debating whether the trial court's information base constitutes findings of "fact" or conclusions of "law," with verbally different standards of review. Instead both they and we can focus on the question that the trial court addressed, the question that counts: what do the claims mean? As we all recognize, that is not always easy to know, and much turns on the answer.

The decision today should help institute a simplified and clarified method by which both trial and appellate courts address claim construction issues, pursuant to the rules established in this court's *Markman I* opinion. Our purpose is to improve the process of patent infringement litigation for the benefit of patentees and their competitors, and ultimately the public. Whether this approach to patent litigation will in the long run prove beneficial remains to be seen. There is every reason to believe it will, and certainly to believe it is better than what we had. But it may be some time before we have enough experience with "Markman hearings" and with appellate review under the new regime to draw any empirically sound conclusions. In such circumstances there is much to be said for refraining from premature and argumentative judgments about what it all means, and for allowing sufficient time to actually see how it works.

United States Court of Appeals for the Federal Circuit

96-1286,-1287

CYBOR CORPORATION,

Plaintiff-Appellant,

v.

FAS TECHNOLOGIES, INC. and FASTAR, LTD.,

Defendant/Cross-Appellants.

BRYSON, Circuit Judge, concurring.

While I join the opinion of the court without reservation, I think it important to note that our adoption of the rule that claim construction is an issue of law does not mean that we intend to disregard the work done by district courts in claim construction or that we will give no weight to a district court's conclusion as to claim construction, no matter how the court may have reached that conclusion. Simply because a particular issue is denominated a question of law does not mean that the reviewing court will attach no weight to the conclusion reached by the tribunal it reviews. In fact, reviewing courts often acknowledge that as to particular legal issues lower tribunals have special competence and their judgments on those legal issues should be accorded significant weight. For example, the Supreme Court typically defers to the construction of a state statute adopted by the regional court of appeals that includes that state. See Propper v. Clark, 337 U.S. 472,

486-87 (1949). Similarly, this court has routinely noted that although contract interpretation is a question of law, the interpretation of a contract by a Board of Contract Appeals, in light of the Board's expertise in such matters, "is afforded careful consideration and great respect." Alvin, Ltd. v. United States Postal Serv., 816 F.2d 1562 (Fed. Cir. 1987). Indeed, the Supreme Court has made much the same point in referring to its review of this court's decisions on patent law, noting that the Court would "leave such refinement [of the legal test for applying the doctrine of equivalents] to [the Federal Circuit's] sound judgment in this area of its special expertise." Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S. Ct. 1040, 1054 (1997).

The Supreme Court in Markman stated that it would be a rare case in which claim construction would turn on an issue such as a credibility judgment between two competing expert witnesses. See 116 S. Ct. at 1395. Such cases, however, may arise, and in those cases it would be entirely appropriate – and consistent with our characterization of claim construction as a question of law – to factor into our legal analysis the district court's superior access to one of the pertinent tools of construction.

That does not mean that we defer to a district court on legal matters unless we find that the court has committed clear error with respect to an issue that should be characterized as factual. What it means is that we approach the legal issue of claim construction recognizing that with respect to certain aspects of the task, the district court may be better situated than we are, and that as to those aspects we should be cautious about substituting our judgment for that of the district court.