United States Court of Appeals for the Federal Circuit

2006-1275

RESEARCH CORPORATION TECHNOLOGIES, INC.,

Plaintiff-Appellant,

v.

MICROSOFT CORPORATION,

Defendant-Appellee.

Brian E. Ferguson, McDermott Will & Emery LLP, of Washington, DC, argued for plaintiff-appellant. With him on the brief were Mark G. Davis, John R. Fuisz, Paul E. Poirot, and Natalia V. Blinkova. Of counsel was Paul Devinsky. Of counsel on the brief was Michael J. Rusing, Rusing & Lopez, PLLC, of Tucson, Arizona.

John D. Vandenberg, Klarquist Sparkman, LLP, of Portland, Oregon, argued for defendant-appellee. With him on the brief were Stephen J. Joncus, Todd M. Siegel, and Garth A. Winn. Of counsel on the brief were Jeffrey Willis and Andrew Jacobs, Snell & Wilmer, L.L.P., of Tucson, Arizona, and Stephen McGrath, Microsoft Corporation, of Redmond, Washington.

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

Judge Manuel L. Real

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2006-1275

RESEARCH CORPORATION TECHNOLOGIES, INC.,

Plaintiff-Appellant,

v.

MICROSOFT CORPORATION,

Defendant-Appellee.

Appeal from the United States District Court for the District of Arizona in case no. 01-CV-00658, Judge Manuel L. Real.

DECIDED: August 1, 2008

Before NEWMAN, Circuit Judge, FRIEDMAN, Senior Circuit Judge, and RADER, Circuit Judge.

RADER, Circuit Judge.

The United States District Court for the District of Arizona held Research Corporation Technologies' (RCT's) patents unenforceable due to inequitable conduct. The district court also granted the Microsoft Corporation summary judgment of invalidity and noninfringement. Because the trial court incorrectly held RCT's patents unenforceable due to inequitable conduct, this court reverses, and, accordingly, vacates the award of attorney fees based on the exceptional case finding. This court also vacates the trial court's summary grants of noninfringement and invalidity as well as the

motions in limine orders. Pursuant to 28 U.S.C. § 2106, this court also remands with instructions to reassign the case.

I

On December 21, 2001, RCT filed suit against Microsoft for infringement of six patents claiming digital halftoning—U.S. Patent Nos. 5,111,310 ('310); 5,341,228 ('228); 5,477,305 ('305); 5,543,941 ('941); 5,708,518 ('518); and 5,726,772 ('772). Dr. Kevin J. Parker, from the University of Rochester, and his graduate student at the time, Dr. Theophano Mista, made these inventions. After a Markman hearing, RCT moved for partial summary judgment that certain Microsoft products contain infringing halftoning masks. Microsoft filed a motion for partial summary judgment that the same claims are invalid for anticipation under 35 U.S.C. § 102(b) and lack of written description under 35 U.S.C. § 112 ¶1.

The trial court granted RCT's infringement motion, and then appointed a special master, Mr. Bruce Brunda, to consider the additional summary judgment motions. At that point, the case was transferred to a different trial judge. After the transfer, the parties filed additional summary judgment motions.

Without opinion, the new district judge reversed the prior judge's grant of RCT's summary judgment motion for infringement and also granted, without opinion, Microsoft's summary judgment motion for noninfringement. Again without opinion, the new trial judge also granted Microsoft summary judgment on invalidity. Finally, the judge who received the transfer granted all of Microsoft's motions in limine and set a jury trial to commence August 8, 2005.

But then, at Microsoft's request, the new judge cancelled the scheduled jury trial and ordered a trial on inequitable conduct instead. Microsoft's argument at this inequitable conduct trial lasted an hour and featured no witnesses. The new judge barred RCT from presenting expert testimony on materiality. RCT's case was limited to testimony from the inventors about candor and good faith. On November 23, 2005, the trial court ruled from the bench that the RCT patents were unenforceable due to inequitable conduct. The court entered its cursory final order on January 27, 2006.

After RCT appealed, Microsoft filed motions with the district court seeking attorney fees, amplification of the court's findings, and an extension of the effective date for appeal pending a decision on the first two motions. The trial judge granted the motions on the deadline and attorney fees but did not amplify its findings of fact or conclusions of law on any topic.

II

All the patents at issue relate to image halftoning technology used in computers and printers. A halftone is an image which simulates a continuous tone image, but is actually an arrangement of individual dots. The particular spacing between the dots gives the viewer the illusion of a continuous picture consisting of varying shades of gray in a halftone image. Halftoning may feature one tone (single bit dots) or more than one tone (multi-bit dots). The prior art of halftoning images at the time of this invention produced grainy results and contained distracting artifacts.

A black and white image is broken down into 256 shades of gray. Common usage represents these 256 shades with numbers ranging from 1 to 256. The number 1

is black, the number 256 is white. As shades become lighter, their assigned number ascends.

One method of halftoning is thresholding, a point algorithm technique to generate digital halftoning images and prints. If a gray level number in the image exceeds a predetermined number (the threshold), the method initiates the pixel. A grid-like array, or mask, carries the threshold for any particular pattern. At the time of invention, the halftoning art used different kinds of masks, including constant threshold masks, varying threshold masks, random masks, and white noise masks. Due to difficulties with each of these masks, Dr. Parker and Dr. Mista invented a blue noise mask.

Scientist and author, Dr. Robert Ulichney, published a book in 1987 in which he analyzed digital halftoning techniques and defined various metrics to measure the quality of the halftone image. This book chronicled that low frequency dots caused the graininess and artifacts common in digital halftoning pictures. While studying these problems, Dr. Ulichney discovered blue noise in halftoning. Dr. Ulicheny discovered that dot profiles would be more visually pleasing if they contained blue noise properties (low frequency dots). But, Dr. Ulichney could only generate blue noise halftone using a complex mathematical process called error diffusion.

Drs. Parker and Mista recognized the drawbacks of Dr. Ulichney's method, namely slow speed, intensive computation demands, and missing blue noise results at the mid-gray level. Drs. Parker and Mista then invented a Blue Noise Mask that was quick, used very little computer memory, and produced high quality halftone images, and subsequently applied for patents on their inventions.

The Principal Frequency (Fg) represents the desired average spacing between the dots in a dot profile at each gray level. The Principal Frequency is represented as follows:

$$F_g = \frac{\sqrt{g}}{R}, where\ g \leq 0.5$$

$$F_g = \frac{\sqrt{1-g}}{R}, where\ g > 0.5$$

where "R" is the distance between dots and "g" is the gray level.

The "K factor" is a scaling factor and constitutes the number by which the Principal Frequency equation can be multiplied to change the size of the filter. For example, where g is > 0.5, K would factor into the Principal Frequency equation in the following manner: $F_g = \frac{\sqrt{1-g}}{R}$. For typical blue noise patterns, K=1.

The K factor is not required in the patented invention and not mentioned in the patent. After the filing of the patent application, and as a part of her continuing doctoral thesis, Dr. Mista set out to test the strictness of Dr. Ulichney's Principal Frequency equation by testing it with three different scaling factors. The power spectrum is a two-dimensional plot that expresses the frequency with which dots appear in any given direction of the dot profile. Dr. Mista was attempting to manipulate the shape of the power spectrum and assess the impact on the dot profiles. Dr. Mista concluded that Dr. Ulichney's equation could indeed be broadened. After this work, Drs. Mista, Parker, and Ulichney together published an article summarizing these results. T. Mitsa, R. Ulichney, and K. Parker, The Construction and Evaluation of Halftone Patterns with Manipulated

Power Spectra, RIDT, The 2nd Int'l Workshop on Raster Imaging and Digital Typography, Boston, MA, pp. 90-97, Oct. 15-16, 1991.

III

Because inequitable conduct ultimately falls within the discretion of the district court, this court reviews that determination for an abuse of discretion. Kingsdown Med. Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 876 (Fed. Cir. 1988) (en banc). The trial court's factual findings on the issues of materiality and intent, however, receive review for clear error. Id.

Where a court premises its inequitable conduct determination upon clearly erroneous findings of fact or a misapplication of law, this court must reverse. Id. To find a patent unenforceable for inequitable conduct, there must be clear and convincing evidence that the applicant (1) made an affirmative misrepresentation of material fact, failed to disclose material information, or submitted false material information, and (2) intended to deceive the PTO. Cargill, Inc. v. Canbra Foods, Ltd., 476 F.3d 1359, 1363 (Fed. Cir. 2007). A determination based solely on one part of the test is legally erroneous. Id. Here, the trial court erroneously found the patent unenforceable based on only one prong of the two-pronged test for inequitable conduct, intent to deceive the USPTO. The first prong, materiality, is a required element of the inequitable conduct analysis.

The trial judge found inequitable conduct because the inventors did not disclose Dr. Mista's post-filing K factor tests to the USPTO. Because Dr. Mista's work occurred after she and Dr. Parker had filed the patent application, these K factor experiments

were not material to their inventive activity. In the circumstances of this case, therefore, the inventors had no obligation to report their later tests to the USPTO.

After the patents at issue were filed, Dr. Mista decided to expand on her research by testing the strictness of Ulichney's Principal Frequency Equation as the cutoff frequency. Using one of her algorithms, BIPPSMA, she tested three different K factors (K=1, K=0.543, and K=0.707). As mentioned above, K=1 is most often used to generate blue noise patterns. Of the three K factors tested, K=0.707 produced the best—or the most visually pleasing—images.

Dr. Mista performed the experiment to determine the feasibility of broadening the cutoff frequency in Ulichney's Principal Frequency equation to include a scaling factor of 0.707. Dr. Mista had not performed the tests to attempt to generate more pleasing images, which was the objective of the patents. In sum, the experiments did not attempt to test the patented invention but instead sought to explore the consequences of manipulating the power spectrum. The inventors had tested the algorithms in the patents long before filing their application. These post-filing K factor experiments were basic scientific research, not a verification of the patented technology. Dr. Mista, as a final part of her doctoral thesis, was merely conducting studies on broadening Dr. Ulichney's Principal Frequency Equation.

Additionally, the patents do not even mention the K factor. The K factor research is not necessary to practice the patented invention. In fact, most of Dr. Mista's mask-generating programs included no K factor at all, including her final program called makemask. Importantly, Dr. Mista and her coauthors published the K factor tests to the

scientific community. Publication is an act inconsistent with an intent to conceal data from the USPTO.

Because the trial court focused exclusively on candor, its findings and conclusions improperly excluded and ignored proferred testimony on the immateriality of the K-factor experiments. Similarly, the court also did not allow any testimony from qualified experts regarding whether the K factor experiments had any bearing on any statutory ground for patentability.

Using the language from the RIDT paper discussing the K factor experiments, Microsoft argues that the patents discussed production of "visually pleasing" images. Microsoft also contends that the patented technology can instead produce "visually annoying" images. Further, Microsoft contends that Dr. Mista's K factor experiments disclosed some limitations of the patented technology. According to Microsoft, the inventors had an obligation to submit the post-filing tests to the USPTO. The trial court agreed, concluding that in common English usage "pleasing" is the opposite of "annoying." Indeed, these words are antonyms, but the distinction between pleasing and annoying images does not make the K factor experiments material to the patented technology, which does not refer to or rely upon K factors at all. The post-filing K factor experiments were not intended to produce the most visually pleasing images but instead test the strictness of Ulichney's Principal Frequency Equation as the cutoff frequency.

In sum, the trial court completely ignored the materiality prong. Indeed the trial court, in its sparse articulation of reasons for the decision, noted "I am not trying a patent case I am trying a particular matter that has been presented to me having to do

with candor and good faith." Neglecting to consider both prongs of the analysis was clear error. The K factor tests probed the limits of accepted halftoning principles as part of a doctoral thesis. In light of the different purposes and disclosures of the patented technology, these experiments were not material to the patented invention and did not give rise to any disclosure obligation.

IV

In addition to missing the materiality prong, the district court's intent analysis was clearly erroneous. The trial court, for instance, focused improperly on comments that Dr. Parker made at trial regarding the purposes of the patent system. An inventor's motives in applying for a patent or his views on the purposes of the patent system are generally irrelevant to a proper determination of inequitable conduct. Dr. Parker is not required to know or recite the purposes of the patent system. Moreover, although Dr. Parker may likely not profit directly from the patent himself, even if he did hope for remuneration, any financial reward does not alone show an intent to deceive the USPTO.

The district court also erred in relying on an email exchange a few days after filing as evidence that Dr. Parker was not in possession of the invention at the time of filing. In an email to Dr. Ulichney, Dr. Parker indicated that he was thinking about starting some experiments regarding blue noise masks. Indeed this was not an entirely truthful statement.

To the contrary, Dr. Parker testified that he wanted to discuss the research with Dr. Ulichney, but could not discuss confidential research before filing of the patent. Accordingly, he waited until after filing to initiate the discussion. Indeed, Dr. Parker

noted that he had not disclosed the actual status of his research with Dr. Ulichney in an effort to keep his research confidential. Nonetheless, an email from one scientist to another scientist in a competitive field that does not disclose the actual status of research is again hardly dispositive proof that the inventor was not in possession of the invention at the time of filing. The court misinterpreted the exchange between Dr. Parker and Dr. Ulichney to mean that Dr. Mista's blue noise mask research that had been filed with the USPTO was nothing more than a premature "promissory note." It is equally plausible that Dr. Parker was merely attempting to initiate scientific discussions with Dr. Ulichney without disclosing the status of his research for reasons of confidentiality. In the competitive environment of university research with potential market applications, Dr. Parker's incomplete casual email would hardly indicate that an invention already disclosed to the USPTO was a promissory note or a lie.

In sum, the trial court erred in ignoring the materiality prong and in misapplying the intent prong of the inequitable conduct test. This court therefore reverses those findings and conclusions.

V

The exceptional case determination and attorney fees findings under 35 U.S.C. § 285 occur in a two-step process. Enzo Biochem, Inc. v. Calgene, Inc., 188 F.3d 1362, 1370 (Fed. Cir. 1999) ("The district court must first determine whether the case is exceptional, a factual determination that we review for clear error; if the case is found to be exceptional, the district court must then determine whether attorney fees should be awarded, a determination that we review for abuse of discretion."). Because this court has vacated the trial court's determination of unenforceability due to inequitable conduct

for multiple errors, this court also vacates the exceptionality finding and the grant of attorney fees.

VI

This court reviews grants of summary judgment without deference. Johns Hopkins Univ. v. Cellpro, Inc., 152 F.3d 1342, 1353 (Fed. Cir. 1998); Conroy v. Reebok Int'l, 14 F.3d 1570, 1575 (Fed. Cir. 1994). The court must decide for itself "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). In deciding whether a genuine issue of material fact exists, the court must draw all justifiable inferences in the non-movant's favor. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255 (1986).

The special master determined that several later-filed RCT patents were not entitled to their ancestor application filing date and were thus invalid over intervening prior art. The trial court, without explanation or reasoning, adopted the special master's recommendation that the '310 application did not support the later-filed claims and therefore was anticipatory prior art to the later-filed claims.

Similarly, the special master determined that Microsoft's multi-bit images do not literally infringe the claim at issue. The special master did not enter a recommendation regarding infringement under the doctrine of equivalents because he was uncertain about infringement under the doctrine of equivalents. Again without explanation, the district court adopted the special master's recommendations for no literal infringement

and held—even though the special master did not recommend it—no infringement under the doctrine of equivalents.

Microsoft's motions for summary judgment were granted without a proper analysis regarding inequitable conduct. This court therefore lacks findings and conclusions for adequate review. "For an appellate court to fulfill its role of judicial review, it must have a clear understanding of the grounds for the decision being reviewed." Gechter v. Davidson, 116 F.3d 1454, 1457 (Fed. Cir. 1997); see Nazomi Communs., Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1371 (Fed. Cir. 2005) (vacating a district court's grant of summary judgment with the explanation that "this court must be furnished sufficient findings and reasoning to permit meaningful appellate scrutiny"). Further, the record shows many potential issues of fact that would prevent entry of summary judgment. Consequently, this court remands both matters for a proper determination on the merits.

VII

The Federal Circuit applies its own law with respect to issues of substantive patent law and certain procedural issues pertaining to patent law, but applies the law of our sister circuits to non-patent issues. In re Cambridge Biotech Corp., 186 F.3d 1356, 1368 (Fed. Cir. 1999); see also Midwest Indus. Inc. v. Karavan Trailers, Inc., 175 F.3d 1356, 1359 (Fed. Cir. 1999) (en banc in relevant part). The United States Court of Appeals for the Ninth Circuit reviews evidentiary rulings under an abuse of discretion standard. United States v. Feingold, 454 F.3d 1001, 1006 (9th Cir. 2006). A district court's decision to preclude expert testimony is such an evidentiary issue. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 141-43 (1997) ("[A]buse of discretion is the proper standard

of review of a district court's evidentiary rulings."); Flex-Rest, LLC v. Steelcase, Inc., 455 F.3d 1351, 1357 (Fed. Cir. 2006). Again, without an adequate record in light of the overall procedural status of this case, this court vacates the trial court's decision to grant Microsoft's motions in limine.

VIII

This court evaluates a request to transfer to a different judge under the law of the regional circuit. Eolas Techs., Inc. v. Microsoft Corp., 457 F.3d 1279, 1280 (Fed. Cir. 2006). The Ninth Circuit considers the following three factors: (1) whether the original judge would reasonably be expected upon remand to have substantial difficulty in putting out of his or her mind previously-expressed views or findings determined to be erroneous or based on evidence that must be rejected, (2) whether reassignment is advisable to preserve the appearance of justice, and (3) whether reassignment would entail waste and duplication out of proportion to any gain in preserving the appearance of fairness. McCalden v. Cal. Library Ass'n, 955 F.2d 1214, 1224 (9th Cir. 1990) (quoting Davis & Cox v. Summa Corp., 751 F.2d 1507, 1523 (9th Cir. 1985)).

This court considers a transfer request with great caution, and, in the absence of personal bias, would grant such a request only in "unusual circumstances." Davis & Cox v. Summa Corp., 751 F.2d 1507, 1523 (9th Cir. 1985). This court understands that a transfer may require a new judge to learn material and thus may occasion some duplicative judicial effort. At the same time, this court must recognize that a pattern of error based on previously-expressed views or findings may make it difficult for a trial court to approach a remanded case with an open mind. After a thorough review of all the evidence, testimony, and facts of this case, this court concludes the strongly

expressed convictions of the trial court in this case may not be easily and objectively reconsidered. Accordingly, this court remands with instructions to reassign this case. See 28 U.S.C. § 2106; Liteky v. U.S., 510 U.S. 540, 554 (1994). See also Group One, Ltd. v. Hallmark Cards, Inc., 407 F.3d 1297 (Fed. Cir. 2005); Juicy Whip, Inc. v. Orange Bang, Inc., 382 F.3d 1367 (Fed. Cir. 2004). Thus, this court remands to the Chief Judge of the United States District Court for the District of Arizona to determine the reassignment of this case.

IX

Because the trial court incorrectly held RCT's patents unenforceable due to inequitable conduct, this court reverses that holding and vacates the award of attorney fees. We also vacate the trial court's grant of Microsoft's noninfringement and invalidity motions as well as the grants of Microsoft's motions in limine. Finally, this court remands with instructions to assign this case to a different judge for a proper determination of validity and infringement on the merits.

REVERSED, VACATED, AND REMANDED