

United States Court of Appeals for the Federal Circuit

02-1496

BJ SERVICES COMPANY,

Plaintiff-Appellee,

v.

HALLIBURTON ENERGY SERVICES, INC.,

Defendant-Appellant.

William C. Slusser, Slusser & Frost, L.L.P., of Houston, Texas, argued for plaintiff-appellee. Of counsel was Claudia Wilson Frost.

Donald R. Dunner, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., of Washington, DC, argued for defendant-appellant. With him on the brief were Allen M. Sokal, and James R. Barney.

Appealed from: United States District Court for the Southern District of Texas

Judge Sim Lake

United States Court of Appeals for the Federal Circuit

02-1496

BJ SERVICES COMPANY,

Plaintiff-Appellee,

v.

HALLIBURTON ENERGY SERVICES, INC.,

Defendant-Appellant.

DECIDED: August 6, 2003

Before MAYER, Chief Judge, DYK and PROST, Circuit Judges.

MAYER, Chief Judge.

Halliburton Energy Services, Inc. appeals the final judgment of the United States District Court for the Southern District of Texas that United States Patent No. 6,017,855 (“855 patent”) is not invalid and infringed. BJ Serv. Co. v. Halliburton Energy Serv., Inc., 00-CV-948 (S.D. Tex. Apr. 23, 2002). Because the district court did not err on the law and the jury’s verdict is supported by substantial evidence, we affirm.

Background

BJ Services owns the ’855 patent directed to a method of fracturing subterranean formations to stimulate oil and gas wells. It achieves this by injecting a viscous fluid into a wellbore at a pressure sufficient to induce a crack in the formation. Claim 17, the sole claim at issue depends from claim 5. Those claims read:

5. A method of fracturing a subterranean formation, comprising the steps of:
blending together an aqueous fluid and a hydratable polymer to form a base fluid, wherein the hydratable polymer is a guar polymer having carboxymethyl substituents and a C* value of about 0.06 percent by weight;
adding a crosslinking agent to the base fluid to form a gel; and
injecting the gel into at least a portion of the subterranean formation at high pressure to form fractures within the formation.

17. A method according to claim 5, wherein the hydratable polymer comprises CMG.

'855 patent, col. 8, ll. 28-40, and col. 9, ll. 15-16. The C* concentration, central to this case, is described by the patent as "that concentration necessary to cause polymer chain overlap. Suitable polymer chain overlap to effectively obtain a crosslinked gel is thought to occur when polymer concentration exceeds the C* concentration." *Id.* at col. 2, ll. 57-61. CMG stands for carboxymethyl guar. *Id.* at col. 1, l. 48. The patent says that it had been previously thought by those of skill in the art that to successfully achieve a fracturing polymer gel, C* values of 0.19 to 0.22 weight percent were necessary.

BJ Services brought suit against Halliburton alleging that its Phoenix system infringed claim 17 of the '855 patent. Halliburton argued that the patent was invalid because claim 17 is indefinite, the patent does not contain a written description of the invention, the specification is not enabling to one of skill in the art, claim 17 is anticipated, and the patent does not name the proper inventors. The jury rejected these arguments, found Halliburton to have infringed claim 17, and awarded damages in the amount of \$98.1 million. After the district court denied its motions for judgment as a matter of law and for a new trial, Halliburton appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a).

Discussion

"We review a trial court's decision on a motion for judgment as a matter of law following a jury verdict by reapplying its own standard of review. Therefore, for [Halliburton] to prevail on appeal it must prove that the jury's factual findings were not supported by substantial evidence

or that the facts were not sufficient to support the conclusions necessarily drawn by the jury on the way to its verdict." Tec Air, Inc. v. Denso Mfg. Mich., Inc., 192 F.3d 1353, 1357 (Fed. Cir. 1999) (citations omitted). In evaluating whether Halliburton met this standard, "we must consider the evidence of record in the light most favorable to [BJ Services], drawing all reasonable inferences in its favor, without disturbing the jury's credibility determinations or substituting our resolutions of conflicting evidence for those of the jury." Id., at 1357-58. If no reasonable person could have reached a verdict for BJ Services in light of the record before the jury, Halliburton will prevail. Id. at 1358.

On appeal, Halliburton argues that the '855 patent is invalid for failing to meet the requirements of the first and second paragraphs of 35 U.S.C. § 112: the specification does not "enable any person skilled in the art to which it pertains . . . to make and use the [invention]," 35 U.S.C. § 112, ¶ 1; and the claims do not "particularly [point] out and distinctly [claim] the subject matter which the applicant regards as his invention." Id. § 112, ¶ 2. See Personalized Media Communications v. Int'l Trade Comm'n, 161 F.3d 696, 705 (Fed. Cir. 1998). Halliburton argues that because the patent does not disclose the method for determining the C* value, it is invalid for lack of enablement. And, blurring the line between enablement and indefiniteness, it further argues that because "about 0.06" is indefinite, the patent would not enable one of skill in the art to make and use the invention.

"Enablement is a legal determination of whether a patent enables one skilled in the art to make and use the claimed invention." (citations omitted) Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384 (Fed. Cir. 1986). Even if some experimentation is required, so long as it is not unduly extensive, a specification can still be enabling. Atlas Powder Co. v. E. I. Du Pont De Nemours & Co., 750 F.2d 1569, 1576 (Fed. Cir. 1984). Although enablement is a question of law, because of the factual nature of the inquiry in this case, it is amenable to resolution by the jury. Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1533 (Fed. Cir. 1987). And because a jury decided the issue here based on factual determinations, we look to whether a reasonable jury could have made the underlying factual

findings necessary to provide substantial evidence in support of its conclusion. Allen Organ Co. v. Kimball Int'l, Inc., 839 F.2d 1556, 1566 (Fed. Cir. 1988).

Indefiniteness is also a legal determination arising out of the court's performance of its duty construing the claims, Personalized Media Communications, 161 F.3d at 705, and is reviewed *de novo*. Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002). "The definiteness inquiry focuses on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the rest of the specification." Union Pac. Res. Co. v. Chesapeake Energy Corp., 236 F.3d 684, 692 (Fed. Cir. 2001) citing Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1983). Like enablement, definiteness, too, is amenable to resolution by the jury where the issues are factual in nature. Because the issues here are essentially factual, we review the jury's verdict to determine if the ultimate conclusion reached is supported by substantial evidence.

Halliburton argues that because the '855 patent does not instruct someone of skill in the art what method and under what conditions to measure C^* , it is not enabling. Evidence was presented at trial that C^* can be calculated either theoretically or experimentally. The parties acknowledge that the experimental method is the more precise of the two, but they differ over what experimental conditions should be employed. The patent is silent about the conditions, but BJ Services argues that it would have been readily known to one of ordinary skill in the art to measure C^* of the polymer in the presence of deionized water and a clay stabilizer. To that end, it presented the testimony of the inventors, its rheology expert, as well as excerpts from a textbook that all confirmed that one of skill in the art would have known to measure the polymer in a solution of deionized water and a clay stabilizer. Halliburton merely showed that the value of C^* could vary depending upon the chosen conditions; it did not call its expert who was supposed to testify about the measurement conditions one of skill in the art would employ.

Halliburton further argued that because “about 0.06” was not defined by the '855 patent, one of ordinary skill in the art could not make and use the invention. As discussed above, one of skill in the art would have known how to measure C^* ; the question is whether one of skill in the art, having done the experiments to calculate C^* , would have known if the result that he reached was “about 0.06.” This is a question of definiteness, not enablement.

“Definiteness problems often arise when words of degree are used in a claim. That some claim language may not be precise, however, does not automatically render a claim invalid.” Seattle Box Co., Inc. v. Indus. Crating & Packing, Inc., 731 F.2d 818, 826 (Fed. Cir. 1984). The question becomes whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification. Id. BJ Services argues that the term “about” is intended to encompass the range of experimental error that occurs in any measurement and that one of skill in the art would readily understand the range that “about 0.06” was intended to include. To that end, it presented the experimental results obtained by its expert, all of which were slightly above or below 0.06 for an average of 0.0596. In an effort to contradict this testimony, Halliburton presented the results of its expert which varied wildly and conveniently ranged as high as the prior art. However, BJ Services presented evidence that Halliburton’s expert had tampered with his rheometric equipment by substituting his software for that of the machine, improperly mixed the test solutions, and had specifically chosen imbalanced data points necessary to measure C^* . Moreover, BJ Services offered evidence that if the raw data were analyzed without the tampering, the results would be very similar to those of its expert. All of this likely impacted the credibility of Halliburton’s expert. We conclude that substantial evidence supports the jury’s finding that the '855 patent was not invalid for indefiniteness or lack of enablement.

Halliburton also argues that the '855 patent is inherently anticipated by United States Patent No. 5,697,444 to Moorhouse (“Moorhouse”), which discloses a fracturing fluid comprising one or more polymers, preferably carboxymethyl guar. Moorhouse, col. 2, ll. 45-47, and ll. 56-57. While the Moorhouse reference itself does not disclose the C^* value, it was

measured as 0.077. Thus, Halliburton argues that “about 0.06” includes 0.077 and this renders the patent invalid.

“What a prior art reference discloses in an anticipation analysis is a factual determination that we review for substantial evidence when decided by a jury.” Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1323 (Fed. Cir. 2002). In the district court, Halliburton did not request that the court construe “about 0.06,” it agreed that the jury should be instructed to give “about 0.06” its plain and ordinary meaning. Given that the term “about” was used to encompass experimental error and that the jury had before it the typical experimental range, substantial evidence supports the jury’s finding that Moorhouse does not anticipate the ’855 patent.

Additionally, Halliburton argues that the ’855 patent is invalid for failing to name the proper inventors. It argues that William Stivers, a Rhodia employee who allegedly invented the CMG polymer, should have been listed as an inventor. Inventorship is a question of law with factual underpinnings, which are reviewed for substantial evidence. Hess v. Advanced Cardiovascular Sys., Inc., 106 F.3d 976, 980 (Fed. Cir. 1997). “There is a presumption that the inventors named on an issued patent are correct, so misjoinder of inventors must be proven by clear and convincing evidence.” Fina Oil & Chem. Co. v. Ewen, 123 F.3d 1466, 1472 (Fed. Cir. 1997); see also Hess, 106 F.3d at 980 (stating that “[t]he burden of showing misjoinder or nonjoinder of inventors is a heavy one” (quoting Garrett Corp. v. United States, 422 F.2d 874, 880 (Cl. Ct. 1970))); Price v. Symsek, 988 F.2d 1187, 1191 (Fed. Cir. 1993). Uncorroborated testimony alone cannot constitute clear and convincing proof. Price, 988 F.2d at 1194. What is required is “corroborating evidence of a contemporaneous disclosure that would enable one skilled in the art to make the invention.” Burroughs Wellcome Co. v. Barr Labs. Inc., 40 F.3d 1223, 1228 (Fed. Cir. 1994). Conception is the touchstone of inventorship, and each joint inventor must contribute in some significant manner to the conception of the invention. Id. at 1227-28. Conception is the formation in the mind of the inventor a definite and permanent idea of the complete and operative invention as it is applied in practice. Sewall

v. Walters, 21 F.3d 411, 415 (Fed. Cir. 1994).

The claim here is drawn to a method of fracturing a subterranean formation. As a part of that method, a polymer with a certain C* value is used. The claim is not to the polymer itself but rather to a method that incorporates that polymer. BJ Services presented evidence at trial that Stivers had no knowledge of the method, how the polymer would be used, or the C* value. Substantial evidence therefore supports the jury's finding that the '855 patent is not invalid for failing to properly name the true inventors.

Last, Halliburton argues for a new trial based upon a demonstration conducted by BJ Services near the close of trial. We review the trial court's denial of a motion for a new trial for abuse of discretion. Stryker Corp. v Davol Inc., 234 F.3d 1252, 1259 (Fed. Cir. 2000). "That question turns on whether an error occurred in the conduct of the trial that was so grievous as to have rendered the trial unfair." Id. For the reasons set out above, the jury verdict was not against the great weight of the evidence, and the denial of a new trial was not an abuse of discretion.

Conclusion

Accordingly, the judgment of the United States District Court for the Southern District of Texas is affirmed.

AFFIRMED