

United States Court of Appeals for the Federal Circuit

2009-1265

OPTIUM CORPORATION,

Plaintiff-Appellant,

v.

EMCORE CORPORATION,

Defendant-Appellee.

Douglas J. Kline, Goodwin Procter LLP, of Boston, Massachusetts, argued for plaintiff-appellant. With him on the brief were Don M. Kennedy, of Boston, Massachusetts, and Charles Wizenfeld, of New York, New York.

Gregory A. Castanias, Jones Day, of Washington, DC, argued for defendant-appellee. With him on the brief were Robert C. Kahrl and Sheryl H. Love, of Cleveland, Ohio.

Appealed from: United States District Court for the Western District of Pennsylvania

Chief Judge Donetta W. Ambrose

United States Court of Appeals for the Federal Circuit

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OPTIUM CORPORATION,

Plaintiff-Appellant,

v.

EMCORE CORPORATION,

Defendant-Appellee.

Appeal from the United States District Court for the Western District of Pennsylvania in Case no. 07-CV-1683, Chief Judge Donetta W. Ambrose.

DECIDED: May 5, 2010

Before NEWMAN, MAYER and PROST, Circuit Judges.

Opinion for the court filed by Circuit Judge NEWMAN. Concurring in the result opinion filed by Circuit Judge PROST.

NEWMAN, Circuit Judge.

Optium Corporation appeals the summary judgment of the United States District Court for the Western District of Pennsylvania, holding that Emcore Corporation did not commit inequitable conduct in obtaining the patents in suit. The district court had accepted the premise, for summary judgment purposes, that Emcore did not disclose a material reference to the patent examiner. The court ruled that because Optium had not presented evidence upon which the court could find intent to deceive or mislead the examiner,

summary judgment should be granted in favor of Emcore. We affirm the district court's ruling.¹

BACKGROUND

The patented technology

The Emcore patents in suit, U.S. Patent Nos. 6,282,003 ("the '003 patent") and 6,490,071 ("the '071 patent"), concern improvements in an optical communication system wherein a laser transmits a signal in the form of a light wave along an optical fiber. The two patents are related, and each is titled "Method and Apparatus for Optimizing SBS Performance in an Optical Communication System Using at Least Two Phase Modulation Tones." The acronym "SBS" stands for "stimulated Brillouin scattering," which is a kind of interference that limits the amount of power that can be transmitted over fiber-optic lines, and thereby limits the distance across which information is transmitted. Stimulated Brillouin scattering occurs when the energy from the laser causes so much excitation of the molecules within the optical fiber that a portion of the light energy is reflected backward toward the transmitter. Such interference can cause problems with optical communication systems such as cable television, in which signals must be transmitted across long distances. The '003 and '071 patents relate to the use of "two-tone phase modulation" to minimize this SBS interference.

The technique of phase modulation was known, and refers to the division of the optical signal into different frequency bands (known as "sidebands") that are sufficiently separate to have independent power thresholds at which SBS interference occurs. This division occurs when a separate radio signal (or "tone") is applied to the optical signal. By

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Optium Corp. v. Emcore Corp., No. 07-CV-1683 (W.D. Pa. Feb. 18, 2009).

distributing the optical signal across several such sidebands, the overall power transmitted across the optical fiber can be increased without producing deleterious interference. Two-tone phase modulation refers to the known application of two separate radio frequency signals with the effect of splitting the optical signal into an even greater number of sidebands. See '003 patent col.1 ll.36–38 (“[T]he utilization of two modulation tones, specifically 2 and 6 GHz tones, to achieve the desired phase modulation is admitted prior art.”).

The invention described and claimed in the '003 and '071 patents is an improvement on this technology, optimizing SBS suppression by a method in which “an operational region of SBS suppression is established as a function of the phase modulation of the light such that the operational region identifies combinations of first and second phase modulation levels at which optimum SBS suppression is achieved for the first and second tones.” '003 patent col.1 ll. 60–64. The “phase modulation levels” are the power levels at which each radio frequency tone is applied. Based on this operational region, “the first and second phase modulation levels are adjusted such that the system operates with optimum SBS suppression.” Id. col.1 ll.65–67. The inventors’ key contribution is the determination of how to derive this function of two variables so that the performance of a given pair of tones used for phase modulation can be determined or predicted through mathematical relationships instead of empirical laboratory measurement. E.g., id. col.4 l.64 – col.5 l.14.

The patents also describe how the operational region, after it is calculated, can be expressed in the form of a “contour map” as shown in Figure 2 of both patents, with each contour line representing an “SBS threshold level,” meaning the maximum power level at which the optical signal can be transmitted without encountering SBS interference:

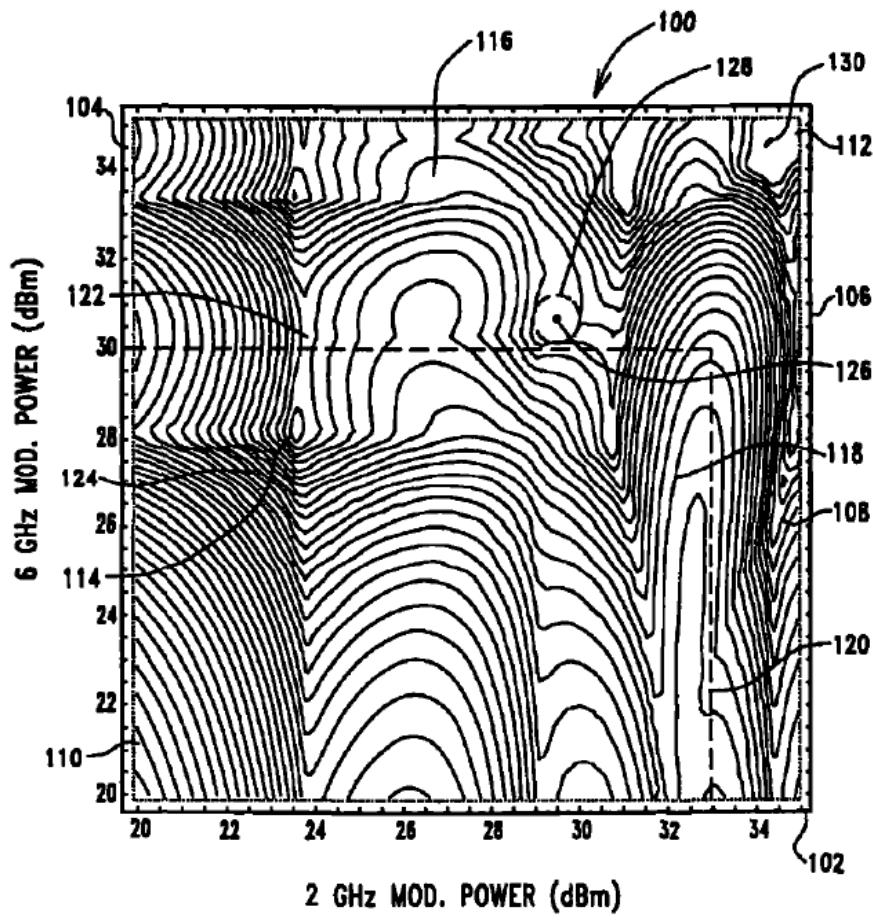


FIG.2

In Figure 2, region 114 is a local peak on the contour map, and thus indicates an operating region at which the corresponding power levels for the two phase modulation tones result in relatively high SBS suppression. Peak 114 is quite narrow and steep, however, and thus a slight variation in the phase modulation power levels can result in a significant drop-off in the SBS threshold level. The contour map enables identification of other favorable regions with relatively high SBS suppression that are less susceptible to this problem, such as circular region 128, within the broader "plateau" region indicated by 116. Because region 128 is relatively flat the SBS threshold level is less susceptible to variation even if the

phase modulation power levels vary slightly. See generally '003 patent col.4 l.31 – col.6 l.8.

The patents state that “operating points centered within relatively broad features of the map will inherently be more tolerant to drift of the operating point, thus providing a more stable SBS threshold” and increasing the “operational stability” of the system. Id. col.5 II.53–60.

The '003 and '071 patents include both method and apparatus claims directed to optimizing SBS suppression using these contributions.

The Willems reference

Optium's charge of inequitable conduct is based on Emcore's failure to cite to the patent examiner an article by F.W. Willems, J.C. van der Plaats, and W. Muys, titled “Harmonic distortion caused by stimulated Brillouin scattering suppression in externally modulated lightwave AM-CATV systems,” published in Electronics Letters, Vol. 30, No. 4, 343 (1994) (herein “Willems”). Willems describes single-tone phase modulation, and discusses the kinds of intermodulation distortion that can be caused by the larger spectral width that results from the separation of the light signal into sidebands. Willems states that this distortion is virtually eliminated when single-tone phase modulation is applied at a frequency above twice the highest cable television subcarrier frequency. Willems does not discuss two-tone phase modulation, and does not show a contour map or the use of a contour map to identify optimal SBS suppression regions as described in the '003 and '071 patents.

Emcore does not dispute that the inventors knew of Willems, for the article was cited in the background section of an internal research report they prepared in February 1997, at endnote [1] referenced in the following passage:

While observations of SBS-induced noise enhancement and CSO [composite second-order] degradation have been reported previously [1], to our knowledge, no quantitative analysis of these effects has been reported. We believe that the observed intensity noise enhancement may originate from the random nature of the photon scattering from the forward-propagating wave into the backscattered wave. The CSO degradation may be due to clipping of the optical waveform peaks at the onset of SBS that induces asymmetry, and hence, enhanced second-order distortion. However, both of these effects require more study to obtain a quantitative understanding and correlation with observations.

The inventors again referred to Willems in their invention disclosure form to their employer, in the section titled "Background information on the invention," in response to the question:

C. What were the previous methods or apparatus that were used but failed to solve the problem? (Give source of previous information on the subject that is closest to your invention, such as known use, publication or patents.)

The inventors responded:

To achieve SBS suppression in fiber-optic transmission systems, frequency-modulation of the laser source, as well as phase modulation using a phase modulation section on an external modulator have been employed [1]. Since high-power semiconductor lasers are not typically optimized for high-frequency injection current modulation, phase modulation is the only approach available. However, it has not been previously apparent what the characteristics of the phase modulation signal are to achieve optimum performance.

While [1] is not referenced again within the invention disclosure form, which contains no endnotes, Emcore does not dispute that the notation was a reference to the same endnote in the inventors' research report that contained the Willems citation.

During prosecution of the '003 patent, Emcore's patent attorneys submitted an Information Disclosure Statement that mentioned several references, but did not list Willems. The examiner cited additional references, including U.S. Patent No. 5,828,477, which discussed Willems in its section on the background art. See '477 patent col.2 ll.26–36. During prosecution of the '071 patent, which was filed as a continuation of the earlier

application, the examiner identified another patent, U.S. Patent No. 5,953,139, as a “reference of interest”; this reference, too, discussed Willems in the context of the background art. See '139 patent col.2 l.61 – col.3 l.17. The examiner did not cite or mention Willems during prosecution of either the '003 or the '071 patent.

District court proceedings

In September 2006 Emcore filed suit against Optium in the Western District of Pennsylvania, charging infringement of the '003 and '071 patents. After discovery, in December 2007 Optium filed a separate declaratory judgment action against Emcore in the same court, requesting a declaration that the '003 and '071 patents are unenforceable for inequitable conduct. This declaratory action was referred to a Special Master, upon the parties' cross-motions for summary judgment. The Special Master reviewed the testimonial and documentary evidence relating to the patent filing and prosecution, including the deposition testimony of the inventors and three of the four attorneys who prosecuted the patent applications, the research report and invention disclosure forms the inventors had prepared, and reports prepared by Optium's expert, Dr. Katherine Hall, Ph.D. Neither the inventors nor the prosecuting attorneys could recall the precise details of the events that had occurred ten years earlier, and none provided an explanation why Willems, which had been cited as a background reference in the inventors' research report and invention disclosure, had not been submitted to the Patent Office. Dr. Hall opined that Willems was material prior art, and that claims 1, 6, 7, 13, 14, 15, 21, 24, and 27 of the '003 patent, and claim 1 of the '071 patent, were *prima facie* obvious in view of a combination of references including Willems. Optium referred only to claim 24 of the '003 patent, however, in its briefing of the materiality issue in its motion for summary judgment.

The Special Master concluded that, on the criteria of summary judgment, Optium had raised a genuine issue of material fact as to whether Willems was material to patentability. As to intent, the Special Master concluded that intent to deceive could not be inferred merely on the basis of “high materiality” of the reference and a lack of explanation for the nondisclosure. Optium had provided no evidence of an intent to deceive or mislead the examiner, and no basis for such an inference. The Special Master thus held that even assuming Willems was a material reference, in the absence of any evidence on which deceptive intent could be found or reasonably inferred, inequitable conduct could not lie. The district court adopted the Special Master’s analysis, and entered judgment in Encore’s favor. This appeal followed.

DISCUSSION

The grant of summary judgment receives plenary review, applying the same standard as did the district court. Innogenetics, N.V. v. Abbott Labs., 512 F.3d 1363, 1378 (Fed. Cir. 2008). Although the issue of inequitable conduct is reviewed on the standard of abuse of discretion, it requires proof by clear and convincing evidence of the threshold facts of both materiality and intent. Thus summary judgment may be granted when, drawing all reasonable factual inferences in favor of the non-movant, the evidence is such that the non-movant cannot prevail. ATD Corp. v. Lydall, Inc., 159 F.3d 534, 547 (Fed. Cir. 1998). When a party has failed to introduce evidence sufficient to establish the existence of an essential element of that party’s case in accordance with the applicable standard of proof, summary judgment is properly granted against that party. Novartis Corp. v. Ben Venue Labs., Inc., 271 F.3d 1043, 1046 (Fed. Cir. 2001); see Astrazeneca Pharm. LP v. Teva Pharm. USA, Inc., 583 F.3d 766, 777 (Fed. Cir. 2009) (affirming summary judgment of no

inequitable conduct, when the factual premises could not be established by clear and convincing evidence).

Inequitable conduct resides in failure to disclose material information, or submission of false material information, with an intent to mislead or deceive the examiner, and those two elements, materiality and intent, must be proven by clear and convincing evidence. Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1330–31 (Fed. Cir. 2004). Clear and convincing evidence must support “at least a threshold level of each element.” Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 537 F.3d 1357, 1365 (Fed. Cir. 2008). When both materiality and intent have been established, the court must balance the equities and determine whether the applicant’s conduct in prosecuting the patent application was egregious enough to warrant holding the entire patent unenforceable. Id.; see J.P. Stevens & Co. v. Lex Tex Ltd., 747 F.2d 1553, 1560 (Fed. Cir. 1984) (“Once the thresholds of materiality and intent are established, the court must balance them and determine as a matter of law whether the scales tilt to a conclusion that inequitable conduct occurred.”). Because the district court concluded that Optium made a sufficient showing of materiality to survive summary judgment, but concluded that the facts could not support a finding of intent under the relevant standard, the question of intent frames this appeal.

Optium argues that Emcore should have brought Willems specifically to the examiner’s attention, in view of the inventors’ own reference to this article as background art in their contemporaneous internal documents. Optium states that since Willems was a “highly material” reference, deceptive intent can be presumed from high materiality absent contrary evidence from the applicants. Emcore responds that even if Optium could ultimately succeed in proving high materiality—a point that Emcore has not conceded—no

presumption or inference of deceptive intent is permissible in the absence of evidence that a person involved in obtaining the patent acted with the specific intent to mislead or deceive the patent examiner. Emcore contends that Optium improperly seeks to shift the burden to the applicants to explain why a reference was not submitted, in the absence of even threshold evidence of deceptive intent. The parties cite competing lines of authority from this court in support of their respective positions.

Despite some divergence, the great weight of Federal Circuit authority has followed Kingsdown Medical Consultants, Ltd. v. Hollister Inc., 863 F.2d 867, 876–77 (Fed. Cir. 1988) (en banc), and applied the rule that the “intent” element of inequitable conduct is not simply intent to take the action or omission complained of, but intent to deceive or mislead the patent examiner into granting the patent. E.g., Dayco Prods., Inc. v. Total Containment, Inc., 329 F.3d 1358, 1367 (Fed. Cir. 2003) (“[I]nequitable conduct requires not intent to withhold, but rather intent to deceive.”). That is, “one must have intended to act inequitably.” Kingsdown, 863 F.2d at 872 (quoting FMC Corp. v. Manitowoc Co., 835 F.2d 1411, 1415 (Fed. Cir. 1987)). In situations of nondisclosure of information rather than affirmative misrepresentation, “clear and convincing evidence must show that the applicant made a deliberate decision to withhold a known material reference.” Molins PLC v. Textron, Inc., 48 F.3d 1172, 1181 (Fed. Cir. 1995). Thus “[i]ntent to deceive can not be inferred solely from the fact that information was not disclosed; there must be a factual basis for a finding of deceptive intent.” Herbert v. Lisle Corp., 99 F.3d 1109, 1116 (Fed. Cir. 1996). Extensive precedent continues to reinforce this standard. E.g., Larson Mfg. Co. of S.D. v. Aluminart Prods. Ltd., 559 F.3d 1317, 1340 (Fed. Cir. 2009) (“[N]ondisclosure, by itself, cannot satisfy the deceptive intent element.”); Star Scientific, 537 F.3d at 1366

(internal citation omitted) (“Thus, the fact that information later found material was not disclosed cannot, by itself, satisfy the deceptive intent element of inequitable conduct.”).

Optium points out that this court has recognized that direct evidence of deceptive intent is rarely available, and that intent may be inferred from circumstantial evidence. See Merck & Co. v. Danbury Pharmacal, Inc., 873 F.2d 1418, 1422 (Fed. Cir. 1989). Optium argues that deceptive intent can be inferred if the reference is “highly material,” even with no evidence, direct or circumstantial, of intent to deceive. However, consistent precedent has rejected the notion that the materiality of a reference alone can suffice to prove deceptive intent. See, e.g., Astrazeneca, 583 F.3d at 770 (“Intent to deceive cannot be inferred from a high degree of materiality alone, but must be separately proved to establish unenforceability due to inequitable conduct.”); Ariad Pharm., Inc. v. Eli Lilly & Co., 560 F.3d 1366, 1380 (Fed. Cir. 2009) (“Lilly cannot prove deceptive intent by clear and convincing evidence simply by relying on the materiality of the errors.”), vacated pending reh’g en banc, 595 F.3d 1329 (Fed. Cir. 2009), reinstated in relevant part, 598 F.3d 1336, 1358 (Fed. Cir. 2010) (en banc); Abbott Labs. v. Sandoz, Inc., 544 F.3d 1341, 1356 (Fed. Cir. 2008) (“Materiality is not evidence of intent, which must be established as a separate factual element of a discretionary ruling of inequitable conduct.”); Braun Inc. v. Dynamics Corp. of Am., 975 F.2d 815, 822 (Fed. Cir. 1992) (“[M]ateriality does not presume intent, which is a separate and essential component of inequitable conduct.”); Halliburton Co. v. Schlumberger Technology Corp., 925 F.2d 1435, 1443 (Fed. Cir. 1991) (intent to deceive cannot be based on the materiality of a reference that was not submitted, even if gross negligence were shown); Allen Organ Co. v. Kimball Int’l, Inc., 839 F.2d 1556, 1567 (Fed.

Cir. 1988) (“[M]ateriality does not presume intent, which is a separate and essential component of inequitable conduct.”).

Optium argues that a divergent line of precedent places a lesser burden on the challenger, whereby deceptive intent is presumptively established when the evidence could support a finding of “high materiality,” at least in instances where the applicant has not provided a credible explanation for the nondisclosure. Optium argues that in such cases, unless the applicant has persuasively explained why the information was not provided to the examiner, it is appropriate to infer that the withholding was deliberate and intended to deceive. Optium states that Ferring B.V. v. Barr Labs., Inc., 437 F.3d 1181 (Fed. Cir. 2006), established this proposition. However, Ferring did not relieve the challenger of the burden of establishing a threshold level of deceptive intent; the court in Ferring recognized that intent is a “separate and essential component of inequitable conduct,” and that “[m]ateriality does not presume intent.” 437 F.3d at 1190. The Ferring court found that the applicant had deliberately concealed the personal and professional interests of several affiants whose affidavits were provided to the examiner, and that this concealment, without credible explanation, constituted affirmative evidence of deceptive intent. Ferring did not establish a new rule for “inferring” intent from the mere nondisclosure of information. Nor did Paragon Podiatry Laboratory, Inc. v. KLM Laboratories, Inc., also cited by Optium. See 984 F.2d 1182, 1191 (Fed Cir. 1993) (stating that intent to mislead cannot be inferred from “the mere failure to disclose known highly material information”). The Paragon court explained that only when the challenger has met its threshold burden of showing intent does the burden of coming forward with evidence shift to the applicant. Id.; see Star Scientific, 537 F.3d at 1368 (“The patentee need not offer any good faith explanation unless

the accused infringer first carried his burden to prove a threshold level of intent to deceive by clear and convincing evidence.”).

Optium offered no evidence, but simply argued that the “high materiality” of the Willems reference relieved it of the burden to produce any affirmative evidence of intent, and instead required Emcore to provide a credible explanation for the nondisclosure. However, this proposed shift in the burdens is contrary to precedent. See Larson, 559 F.3d at 1340–41 (“[J]ust as merely withholding a reference cannot support an inference of deceptive intent, so too an accused infringer cannot carry its threshold burden simply by pointing to the absence of a credible good faith explanation.” (internal citation omitted)); M. Eagles Tool Warehouse, Inc. v. Fisher Tooling Co., 439 F.3d 1335, 1341 (Fed.Cir.2006) (“[A] failure to disclose a prior art device to the PTO, where the only evidence of intent is a lack of a good faith explanation for the nondisclosure, cannot constitute clear and convincing evidence sufficient to support a determination of culpable intent.”).

The district court correctly ruled that on Optium’s version of the facts, and accepting the disputed premise that Willems was highly material, Optium had offered no evidence that could succeed in proving deceptive intent by clear and convincing evidence. We affirm the district court’s grant of summary judgment of no inequitable conduct.

AFFIRMED

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PROST, Circuit Judge, concurring in the result.

While I agree with the result in this case, I write separately from the majority because I am concerned that the majority opinion might be interpreted to limit the kind of evidence that may be considered by the district court in determining deceptive intent. Although the majority correctly points out that a high level of materiality does not automatically presume intent, the language of the majority opinion seems to imply that a high level of materiality is entirely irrelevant to an inference of intent. See Majority Op. at 11-12. If my reading is correct, this implication is contrary to both Federal Circuit precedent and basic principles of evidence law.

There is no dispute that materiality and intent are separate prongs of the inequitable conduct analysis, both of which must be proven by clear and convincing evidence. See Kingsdown Med. Consultants, Ltd. v. Hollister Inc., 863 F.2d 867, 872 (Fed. Cir. 1988). After thresholds of materiality and intent are established, the court conducts a balancing test and determines whether the scales tilt to a conclusion that

“inequitable conduct” occurred. Halliburton Co. v. Schlumberger Tech. Corp., 925 F.2d 1435, 1440 (Fed. Cir. 1991). Within that balancing test, the more material the omission or the misrepresentation, the lower the level of intent required to establish inequitable conduct, and vice versa. Akzo N.V. v. United States Int’l Trade Comm’n, 808 F.2d 1471, 1481-82 (Fed. Cir. 1986). In the context of inequitable conduct, just as in all other areas of patent law, and all other areas of civil and criminal law, intent may be proven by circumstantial evidence. See, e.g., Molins PLC v. Textron, Inc., 48 F.3d 1172, 1181 (Fed. Cir. 1995); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1272 (Fed. Cir. 1986).

Optium argues that it presented sufficient evidence of materiality and intent to survive summary judgment. See KangaROOS U.S.A. v. Caldor, Inc., 778 F.2d 1571, 1576 (Fed. Cir. 1988) (“Intent to mislead or deceive is a factual issue that, if contested, is not readily determined within the confines of Fed. R. Civ. Proc. 56.”). In doing so, Optium asserts that it presented evidence of a highly material reference that was known to the patentee and not disclosed to the patent examiner. Optium argues that since materiality and knowledge may support an inference of intent and the district court was required to draw all justifiable inferences in its favor for purposes of Emcore’s motion for summary judgment, the district court improperly granted Emcore’s motion.

The majority seems to reject Optium’s argument, at least in part, by holding that materiality and knowledge are *per se* irrelevant to the determination of whether an inference of intent is appropriate. See Majority Op. at 11-13. To the extent the majority opinion can be read this way, this aspect of the opinion is contrary to the law of this court and inconsistent with fundamental concepts of relevant evidence. Moreover, it is

unnecessary to the disposition of this case, which could easily be affirmed on its undisputed facts.

The definition of “relevant evidence” is evidence that tends to make the existence of any fact of consequence more or less probable. Fed. R. Evid. 401. If a reference is of very high materiality, and it is shown that the patentee knew of the reference, then it is more probable that the reference was withheld from the examiner with deceptive intent, as compared to a reference of low materiality. In other words, framed under our standard for deceptive intent, the more material the withheld reference, the more likely that an inference of deceptive intent is “the single most reasonable inference able to be drawn from the evidence.” See Larson Mfg. Co. of S. Dakota, Inc. v. Aluminart Prods. Ltd., 559 F.3d 1317, 1340 (Fed. Cir. 2009) (quoting Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 537 F.3d 1357, 1366 (Fed. Cir. 2008)). As such, this court has expressly considered the level of materiality of a withheld reference in determining whether an inference of deceptive intent is appropriate. See, e.g., Cargill, Inc. v. Canbra Foods, Ltd., 476 F.3d 1359, 1366-67 (Fed. Cir. 2007) (quoting Critikon, Inc. v. Becton Dickinson Vascular Access, Inc., 120 F.3d 1253, 1257 (Fed. Cir. 1997)) (“We have never held that materiality is irrelevant to the question of intent. To the contrary, we have recognized that ‘a patentee facing a high level of materiality and clear proof that it knew or should have known of that materiality, can expect to find it difficult to establish “subjective good faith” sufficient to prevent the drawing of an inference of intent to mislead.’”); Purdue Pharma L.P. v. Endo Pharms. Inc., 438 F.3d 1123, 1134-35 (Fed. Cir. 2006) (“In a case such as this, when the materiality of the undisclosed information is relatively low, there is less basis for inferring intent from materiality alone.”); see also Praxair, Inc. v. ATMI,

Inc., 543 F.3d 1306, 1315-16 (Fed. Cir. 2008); Ferring B.V. v. Barr Labs., Inc., 437 F.3d 1181, 1190-91 (Fed. Cir. 2006); Critikon, Inc., 120 F.3d at 1256-57. Such consideration of materiality in determining intent does not mean that a high level of materiality alone presumes intent without other evidence as to the patentee's state of mind. See M. Eagles Tool Warehouse, Inc. v. Fisher Tooling Co., 439 F.3d 1335, 1340 (Fed. Cir. 2006). It likewise does not conflate the two prongs of the inequitable conduct test for a district court to find that the same evidence of materiality is probative of both prongs.

Accordingly, if a reference is of very high materiality, and it is shown that the patentee knew of the reference and appreciated its high level of materiality, and the patentee can offer no good faith explanation as to why the reference was withheld, then a district court may find such circumstantial evidence to be enough to support a finding of intent to deceive. Ferring B.V., 437 F.3d at 1191; Bruno Indep. Living Aids, Inc. v. Acorn Mobility Servs., 394 F.3d 1348, 1354 (Fed. Cir. 2005) ("[I]n the absence of a credible explanation, intent to deceive is generally inferred from the facts and circumstances surrounding a knowing failure to disclose material information."); Critikon, Inc., 120 F.3d at 1257. Depending on the facts of the case and the credibility of the witnesses, a district court might instead find that this circumstantial evidence is not sufficient to support a finding of intent to deceive. See Ferring, 437 F.3d at 1191 (declining "to lay down a general rule as to when intent may be or must be inferred from the withholding of material information by an applicant").

The district court here found that the evidence of materiality and knowledge did not support an inference of intent, and thus deceptive intent was not among the inferences that could be reasonably drawn in favor of Optium, the nonmovant for

purposes of Emcore's summary judgment motion. Even accepting Optium's contention that the withheld Willems reference was highly material, given the lack of other evidence of deceptive intent, the district court properly found that there was insufficient evidence of intent to survive summary judgment. It is undisputed that the inventors knew of the Willems reference and cited it in their internal research report and invention disclosure, but the reference was not submitted to the U.S. Patent and Trademark Office ("PTO") during the prosecution of U.S. Patent No. 6,282,003 or U.S. Patent No. 6,490,071. In his deposition, one of the inventors testified that he believed he gave a copy of the invention disclosure and the internal research report, which cited the Willems reference, to one of the prosecuting attorneys. Yet none of the prosecuting attorneys have any recollection of seeing the Willems reference. Without any evidence indicating a lack of credibility, this record suggests—at most—negligence on the part of the inventors and the prosecuting attorneys in failing to effectively collaborate to ensure that all material references were submitted to the PTO. Yet even "gross negligence" does not of itself justify an inference of intent to deceive." Kingsdown Med. Consultants, Ltd., 863 F.2d at 876. Drawing all justifiable inferences in Optium's favor, an inference of deceptive intent on these facts would be unreasonable. As such, the district court properly concluded that Optium's evidence of intent was insufficient to survive summary judgment.

The breadth of the legal rule articulated by the majority opinion, however, seems to go further. For example, the majority describes Optium's case as relying on a high level of materiality, but providing "no evidence . . . of intent." Majority Op. at 11. An accurate description, however, would be that Optium relies on a high level of materiality

and no other evidence of intent. To the extent that the majority opinion characterizes the level of materiality as per se irrelevant to the intent inquiry, the majority opinion errs. Any dicta in opinions of this court which may be interpreted as suggesting the same are also legally erroneous in that respect. See, e.g., Abbott Labs. v. Sandoz, Inc., 544 F.3d 1341, 1356 (Fed. Cir. 2008) (“Materiality is not evidence of intent . . .”). Although materiality and intent are separate inquiries, both of which must be proven, it may often be the case that a district court finds the same evidence of materiality probative for both prongs of the analysis. Thus, it is not that a high level of materiality lowers the threshold evidentiary burden for an inference of intent, but rather, that a high level of materiality is circumstantial evidence of intent that brings the challenger closer to satisfying his burden.

Because, drawing all justifiable inference in favor of Optium, the facts of this case cannot support an inference of intent to deceive, I concur with the majority in affirming the district court’s grant of summary judgment of no inequitable conduct. I depart from the majority only to the extent that the majority opinion characterizes materiality as irrelevant to an inference of intent.