

United States District Court,
D. Delaware.

LNP ENGINEERING PLASTICS, INC., and KAWASAKI CHEMICAL HOLDING CO., INC,
Plaintiffs.

v.
MILLER WASTE MILLS, INC., Trading as RTP Company,
Defendant.

No. CIV. A. 96-462-RRM

Aug. 8, 2000.

Josy W. Ingersoll, Esquire and John W. Shaw, Esquire, Young Conaway Stargatt & Taylor, LLP, Wilmington, Delaware; Thomas B. Kenworthy, Esquire, David W. Cromley, Esquire, John V. Gorman, Esquire, and Gayle R. Gilgore, Esquire, Morgan, Lewis & Bockius, Philadelphia, Pennsylvania; William W. Schwarze, Esquire and Lynda L. Calderone, Esquire, Akin, Gump, Strauss, Hauer & Feld, L.L.P., Philadelphia, Pennsylvania; for plaintiffs.

Donald F. Parsons, Jr., Esquire, Karen Jacobs Loudon, Esquire, and Stephanie L. Nagel, Esquire, Morris, Nichols, Arsht & Tunnell, Wilmington, Delaware; Raphael V. Lupo, Esquire, Donna M. Tanguay, Esquire, and Mark G. Davis, Esquire, McDermott, Will & Emery, Washington, D.C.; Margaret M. Duncan, Esquire and John G. Bisbikis, Esquire, McDermott, Will & Emery, Chicago, Illinois; for defendant.

MEMORANDUM OPINION

MCKELVIE, District J.

This is a patent case. Plaintiff LNP Engineering Plastics, Inc. is a Delaware corporation with its principal place of business in Exton, Pennsylvania. Plaintiff Kawasaki Chemical Holding Co., Inc. is a Delaware corporation with its principal place of business in Wilmington, Delaware. Kawasaki owns U.S. Patent Nos. 4,559,262 (the '262 patent); 5,019,450 as reexamined (the '450 patent); and 5,213,889 as reexamined (the '889 patent). LNP is a licensee of the patents at issue. Defendant Miller Waste Mills, Inc. is a Minnesota corporation with its principal place of business in Winona, Minnesota. Miller Waste Mills trades as RTP Company.

On September 16, 1996, plaintiffs (collectively "LNP") filed the complaint in this case, alleging infringement of the '262, '450, and '889 patents. On January 28, 1998, RTP filed its answer, which it amended on September 3, 1998, denying LNP's allegations of infringement, and asserting the affirmative defenses and counterclaims that the patents at issue are invalid and unenforceable.

Due to delays in certain discovery matters, the court determined that it would postpone resolution of RTP's affirmative defenses and counterclaims that the patents at issue are invalid for failure to disclose the best

mode, and unenforceable due to inequitable conduct. Beginning on November 12, 1998, the parties tried the remaining issues to a jury, which found that the claims in suit were not infringed and were invalid for indefiniteness. The jury also found that claim 3 of the '262 patent and claim 1 of the '889 patent were invalid due to obviousness, but that claim 1 of the '450 patent was nonobvious.

On December 17, 1999, the court issued an Opinion and Order in which it found, as a matter of law, that the asserted claims were infringed, and were not invalid due to obviousness or anticipation. The court determined that claim 3 of the '262 patent and claim 1 of the '450 patent were not invalid for indefiniteness, but that claim 1 of the '889 patent was indefinite. The court granted LNP a new trial on damages and willfulness.

On May 30, 2000, the court began a four-day jury trial to resolve the issues of actual damages, willfulness, and best mode. The jury found that claim 3 of the '262 patent was invalid for failure to disclose the best mode, but that claim 1 of the '450 patent and claim 1 of the '889 patent were not invalid. The jury awarded LNP \$13,322.00 based upon a 5% royalty rate, and found that RTP did not willfully infringe the patents at issue. On June 16, 2000, RTP moved for judgment as a matter of law on its best mode defense and on actual damages.

On June 29, 2000, the court held a bench trial on the issue of inequitable conduct.

On July 27, 2000, the court heard oral arguments on the pending motions and on RTP's counterclaim of inequitable conduct. This is the court's decision on RTP's motions for judgment as a matter of law and on RTP's counterclaim of inequitable conduct.

I. FACTUAL AND PROCEDURAL BACKGROUND

The court draws the following facts from the testimony presented at the May 30, 2000 and the June 29, 2000 trials in this case. The court has set forth the technological and procedural background of this case in its December 17, 1999 Opinion. Following is a summary of the facts relevant to the pending matters.

A. Williams' Laboratory Notebook

The patents at issue relate to fiber-reinforced plastics, wherein the reinforcement filaments are "substantially completely wetted" by a thermoplastic resin. The claimed technology was developed in the 1980s at Imperial Chemical Industries, PLC ("ICI"), which employed the following three inventors of the patents in suit: Frederic Cogswell, David Hezzell, and Peter Williams. The process for making the claimed plastics involves pulling strands of fiber (also known as laces, tapes, rovings, or tows) over and under a series of "spreader bars" in a tank containing plastic resin. Through this process, the resin is forced into the strands and surrounds the individual filaments of the fiber. The strands exit the wetting tank and are pulled through a die. Multiple parallel strands are simultaneously processed in this manner.

Williams kept a laboratory notebook from 1980 to 1982 that purportedly describes three techniques to improve the wetting of the reinforcement filaments. First, the notebook describes that, as the unwetted strands enter the resin bath, a grooved roller can be used to separate the strands. The notebook provides a diagram of the roller, and states: "This roller kept the laces separated at the point of entry into the molten polymer, thereby increasing the area of lace subjected to wetting."

Second, the notebook describes the "lace path" of the fiber strand through the impregnation tank. The

notebook contains a diagram of the lace path, and states that "the path through the melt was critical, in that, one lacing up pattern was superior to another, giving rise to an indication of the entire wetting achieved, in conjunction with the number of spreader bars engaged."

Third, the notebook describes the angle at which the laces exit the tank and enter the die. The notebook states that as the laces exit the tank, "the laces are left in a path of travel, so the entry into the die is as near to horizontal as possible, then an increase in wetting could be achieved."

B. The Patents at Issue

Beginning in 1983, the inventors applied for a series of the patents on this reinforced plastic. William Schwarze is the patent attorney responsible for prosecuting the patents at issue. The '262 patent claims a fiber strand whose individual filaments are wetted by a polymer resin. The '450 patent claims pellets that are chopped from this strand. The '889 patent claims a product that is injection molded from such pellets. The asserted claims require that the reinforcement fibers be "substantially completely wetted," which this court has determined to mean:

Largely, but not necessarily wholly, surrounded by resin. In the context of LFRT pellets, it is surrounding the individual filaments by resin to the extent that in articles injection molded from such pellets, the individual filaments are randomly dispersed and at least 50% by weight of the filaments retain a length of 2 millimeters or greater.

Under this claim construction, the claimed invention has two essential characteristics: (1) the individual filaments in an injection molded article must be randomly dispersed; and (2) the individual filaments must have sufficiently retained their length such that at least 50% by weight of the filaments are at least 2 millimeters long.

The patents share a common specification. The specification contains 50 examples describing characteristics of the claimed technology. Example 32 explains the process for drawing tapes of filaments through a melt bath. In part, Example 32 states:

In the apparatus five cylindrical bars each of diameter 12.5 mm were heated to 380 (deg.)C. The 14 tapes were drawn under tension to give a band 50 mm wide passing into an adjustable nip formed by the first two bars with their longitudinal axes in a horizontal plane. The band subsequently passed under and over three further heated bars also having their longitudinal axes in the same horizontal plane. The use of the first two bars to form a nip enabled a polymer feed to be fed on both sides of the band.

C. The Japanese Proceedings

1. The Japanese counterpart application

In the 1990s, ICI sought Japanese and European counterparts for the '889 patent. On August 29, 1994, the Japanese patent office issued a final rejection of the counterpart application for the '889 patent. The examiner based his rejection on Japanese Unexamined Patent Publication No. 56-5714 ("JPP '714"), stating that "there is no substantial difference between the fibers of the present invention and those of JPP '714." The examiner also explained that "a state of dispersion of the fibers in the fiber-reinforced molded articles can be suitably controlled depending upon the desired use of the articles, and that inclusion of individual filaments in the fiber-reinforced molded articles as in the present invention can be easily attained by a

person skilled in the art."

2. JPP '714

JPP '714 was filed in the Japanese patent office on June 28, 1979 by Aisin Sekei Co, Aisin Kakou Co., and Toyota Chuo Kenkyusho K.K. Claim 1 of the application, from which the remaining claims depend, refers to thermoplastic resin pellets "containing long fiber bundles comprising from several ten to several thousand single fibers," and "said long fiber bundles being disposed" to extend parallel to an axial direction, and a "filler substantially uniformly dispersed in said thermoplastic resin pellets." FN1

FN1. The partial translation of JPP '714 that Schwarze later obtained has slightly different claim language. The partial translation refers to "strands of long fibers comprising bundled single fibers."

The detailed description recites that the filler is added "for the purpose of reducing molding anisotropy and warpage during production of the reinforced pellets." It states, moreover, that the "long fiber bundles are disposed to extend substantially parallel to the axial direction over the entire length of the reinforced pellet," and that "the greater part of the long fiber bundles were distributed in the molded piece with a median of about 4 mm." The patent provides a table of the physical characteristics of molded articles formed from the claimed pellets, and states that "the molded pieces using the reinforced pellets according to the present invention are free from problems such as molding anisotropy and warpage."

3. JPP '715

Japanese Unexamined Patent Publication No. 56-5715 ("JPP '715") was filed on the same date by the same applicants as JPP '714. JPP '715 also refers to pellets of reinforced thermoplastic resin. The claims refer to "strands of long glass fibers ... compris[ing] bundled single fibers in the amount of several tens through thousands." The specification states, moreover, that a molded article was analyzed, and that "glass fibers are contained in the molded article, and many of them are distributed therein in a substantial normal distribution with the middle length value of about 4 mm, an increase of the mechanical strengths could be obtained in the article."

D. The United States Reexamination Proceedings

In 1994, LNP informed several of its competitors, including RTP, of its claims to the technology at issue. The competitors asserted that the patents were invalid in light of the prior art, including U .S. Patent Nos. 4,312,917 and 4,439,387, issued to Ronald Hawley, and U.S. Patent Nos. 3,042,570 and 2,877,501, issued to Rexford Bradt.

On September 25, 1995, LNP requested reexamination of the '450 and '889 patents. Among the prior art references that LNP submitted to the PTO were the Hawley patents, the Bradt patents, JPP '715, and UK Patent No. 1,167,849, issued to Kiyoshi Hattori. On February 6, 1996, the examiner rejected the claims of the '450 patent, stating that the pellets of the Hattori '849 reference inherently possess the fiber length retention and dispersal properties of the claims. Shortly after receiving the rejection, Schwarze conducted an interview with the examiner during which he discussed laboratory results comparing the claimed articles to prior art plastics, especially those disclosed by Hattori. In a subsequent filing, Schwarze stated that "it is submitted that all of the present claims 1, 2, 4-7 and 8-10 patentably distinguish over the prior art of record and known to Requestor." After a series of further communications, the examiner allowed the claims. On

October 29, 1996, the PTO issued reexamination certificates for the '450 and '889 patents.

E. The First Trial

On September 3, 1998, the court held a pre-trial conference prior to the first trial in this matter. In the pre-trial order submitted by the parties, RTP included among its "Issues of Fact Which Remain To Be Litigated" a listing of the prior art references which it contended anticipate or render obvious the claimed invention. RTP included JPP '714 in this list.

Beginning on November 12, 1998, the court held the first trial in this action, during which the parties litigated issues including anticipation and obviousness. As reflected in the trial testimony and on the verdict form, RTP based its invalidity defenses on the Hawley patents, the Bradt patents, the Hattori patent, and the commercial embodiments of these patents. As noted above, the jury found, among other things, that the claims were not invalid for anticipation; that claim 3 of the '262 patent and claim 1 of the '889 patent were invalid due to obviousness; and that claim 1 of the '450 patent was nonobvious. On December 17, 1999, the court issued an Opinion and Order in which it found, as a matter of law, that the asserted claims were not invalid due to obviousness nor anticipation.

F. The Trial on Best Mode and Damages

On May 30, 2000, the court began a four-day jury trial to resolve the issues of actual damages, willfulness, and best mode.

The parties presented deposition testimony of Williams, Hezzell, and Cogswell. Williams read the portions of his laboratory notebook discussing the use of a grooved roller, the lace path, and the entry angle of the lace into the die. Williams acknowledged that he used no method other than a grooved roller for separating the laces as they enter the wetting tank. Williams testified, however, that "the grooved roller did not improve the wetting." He stated that the inventors "were concerned with wetting individual filaments of fiber tows, and the grooved roller did nothing for [them] in that at all."

LNP presented expert testimony of Arthur Gibson, a professor of materials science at New Castle University in the United Kingdom. Gibson testified that the use of a grooved roller is a production detail: "It was an absolute detail and I think you could choose from rollers, pins, combs, plates with holes in, and in fact, the alternatives would probably be more effective than a grooved roller."

Gibson also testified that the entry angle of the roving into the exit die did not affect the degree of impregnation of the resin into the individual filaments of the strand. He stated:

Q. Does the entry of the roving into the exit die affect the wetting of the individual filaments?

A. No. The wetting-the whole teaching of the patents is that the wetting is accomplished by the contact between the roving and the spreader surface. The exit die will have very little effect on the roving. It's simply the hole by which the material exits the bath.

Cogswell further discussed the effect of the entry angle on the degree of wetting, stating that "I don't think the entry into the die was related to the wetting of either the filaments or the strand ."

The inventors discussed the extent to which the preferred lace path is disclosed in the patent. Williams

acknowledged that the features of the lace up pattern that produced superior wetting were "the increased number of bars and the fact that the lace went over and under those bars." Hezzell testified that the specification is sufficiently descriptive as to obviate the need for a diagram of the lace path. He stated:

There is no diagram, but there are descriptions. For example, Example 32 tells me very clearly to use five cylindrical bars 12.5 millimeters in diameter. I have to heat them to 380 degrees C, and if I put 14 tapes under them, I will get a product. It describes very accurately that the tapes pass through an adjustable nip formed by the first two bars with their longitudinal axes on a horizontal plane. It also describes that the bound subsequently passed under and over three further heated bars, also having their longitudinal axes in the same horizontal plane. That indicates to me that those five bars are in a straight line.

To support its case on damages, LNP presented deposition testimony of Peter McCamley, RTP's Vice President of Research and Development. McCamley reviewed a price list for RTP's products, and acknowledged that the price list states that the profit margins for RTP's products [REDACTED].

LNP called Richard Burns, who was president of LNP in 1992. Burns stated that he would have been involved in any royalty negotiations between LNP and RTP, but that LNP has sought to fully exploit its patent position and was not interested in licensing its patents. Burns stated that, had LNP been forced to negotiate a license, it would have allowed RTP to recover its incremental costs, "plus no more than 10 percent above that." Burns testified that LNP would have sought the remainder of RTP's margin as a royalty.

LNP presented internal RTP memoranda listing RTP's sales of long fiber reinforced thermoplastics containing 30% or more by volume of fibers. The documents show that RTP's sales figures for these products totaled \$238,283 from 1990 to February 18, 1998, and \$26,894 between February 19, 1998 to September 30, 1998.

On June 2, 2000, the jury rendered its verdict, finding: (1) that RTP did not willfully infringe the '262 and '450 patents; (2) that claim 3 of the '262 patent is invalid for failure to disclose the best mode; (3) that claim 1 of the '450 patent and claim 1 of the '889 patent are not invalid for failure to disclose the best mode; and (4) that LNP was entitled to damages for past infringement in the amount of \$13,322.00, using a reasonable royalty rate of 5%.

G. The Trial on Inequitable Conduct

On June 29, 2000, the court held a bench trial on the issue of inequitable conduct. RTP called Schwarze, who testified that he was aware of the Japanese patent office's rejection of the Japanese counterpart to the '889 patent based on JPP '714. Schwarze stated that he obtained a partial translation of JPP '714 which contains its claims. Schwarze testified that he determined, based on the partial translation, that JPP '714 was cumulative to JPP '715, and that he accordingly submitted only JPP '715 to the U.S. PTO during the reexamination proceedings.

LNP called George Niznik, the Vice President of Research & Development and Technology at LNP. Niznik testified that he was partially responsible for LNP's litigation strategy. He stated that after LNP originally asserted its patents against several competitors, the competitors raises a substantial question of the validity of LNP's patents. He testified that LNP initiated reexamination proceedings in the PTO for the '450 and '889 patents to ascertain their validity prior to litigation.

H. *Post-Trial Motions*

On June 16, 2000, RTP moved for judgment as a matter of law on the issues of best mode and damages. RTP contends that the trial testimony conclusively demonstrates that the three features of the claimed invention discussed in Williams' laboratory notebook are undisclosed best modes of practicing the claimed invention. RTP also contends that the jury's damage award is wholly unsupported by the evidence.

On July 17, 2000, the parties filed post-hearing memoranda on the issue of inequitable conduct. The issues raised by the parties include whether JPP '714 is a material reference that LNP and its counsel had a duty to disclose to the U.S. PTO, whether JPP '714 is cumulative of JPP '715, and whether LNP and its counsel acted with an intent to deceive the PTO by withholding this reference.

II. *DISCUSSION*

A. *Standard of Review for RTP's Motions for Judgment as a Matter of Law*

The court may grant RTP's motions for judgment as a matter of law only if "there is no legally sufficient evidentiary basis for a reasonable jury" to have ruled in favor of LNP. *See* Fed.R.Civ.P. 50(a). A district court may overturn a jury's verdict on a motion for judgment as a matter of law only if, upon the trial record, a reasonable jury could not have reached that verdict. *See* Embrex, Inc. v. Service Engineering Corp., 2000 WL 827315, at (Fed. Cir. June 28, 2000).

B. *Best Mode*

1. *Legal principles*

A patent specification must "set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. s. 112. The best mode requirement applies to all classes of inventions. The Federal Circuit teaches that determining whether a patent fails to comply with the best mode requirement involves two factual inquiries. First, the fact finder must determine whether at the time the applicant filed his patent application, he had a best mode of practicing the invention. *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1064 (Fed.Cir.1998). Second, if the inventor had a best mode, the fact finder must determine whether the best mode was disclosed in sufficient detail to allow a skilled artisan to practice it without undue experimentation. *Id.*

In cases involving multiple inventors, "[b]est mode issues can arise if any inventor fails to disclose the best mode known to him or her." *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1351 n. 5 (Fed.Cir.1998).

A patent specification need not disclose production details. The Federal Circuit has explained that production details "refer to details which do relate to the quality or nature of the invention but which need not be disclosed because they are routine-i.e., details of production about which those of ordinary skill in the art would already know." *Great Northern Corp. v. Henry Molded Prods., Inc.*, 94 F.3d 1569, 1572 (Fed.Cir.1996). The duty to disclose is measured by the claims. *See* *Engel Industries, Inc. v. Lockformer Co.*, 946 F.2d 1528, 1531 (Fed.Cir.1991). For pragmatic reasons, unclaimed subject is generally not subject to the disclosure requirements of s. 112. *Id.*

2. *RTP's position*

RTP contends that Williams' laboratory notebook sets forth Williams' view of the best mode for practicing the claimed invention. RTP points to three features described in Williams' notebook that purportedly are not disclosed in the specification: (1) the use of a grooved roller to separate the laces; (2) the lace path in the wetting tank; and (3) the angle of entry of the laces from the wetting tank into the die. RTP argues that, because the claims of the reissued '450 and '889 patents recite the term "substantially completely wetted," all techniques used by the inventors to increase the wetting of the laces must be disclosed. RTP contends that Williams' notebook conclusively demonstrates that these three features all improve the wetting of the laces as they pass through the wetting tank. RTP argues, moreover, that the patent specification lacks the diagrams set forth in Williams' notebook, and lacks written description of these features.

3. LNP's position

LNP argues that the grooved roller discussed by Williams in his laboratory notebook is merely a production detail that was not subject to the disclosure requirements of s. 112. LNP contends that the use of a grooved roller does not improve the degree of wetting of the individual filaments of a fiber strand. LNP points to the trial testimony of Williams that "the grooved roller did not improve the wetting," and that the inventors "were concerned with wetting individual filaments of fiber tows, and the grooved roller did nothing for [them] in that at all." LNP also relies on the testimony of Gibson that the use of a grooved roller is a production detail: "It was an absolute detail and I think you could choose from rollers, pins, combs, plates with holes in, and, in fact, the alternatives would probably be more effective than a grooved roller."

LNP argues that the entry angle of the roving into the exit die was also a production detail. LNP contends that the entry angle might have affected the amount of resin clinging to the exterior of a strand, but that it bears no relation to the wetting of the individual filaments. LNP points to the following testimony of Gibson:

Q. Does the entry of the roving into the exit die affect the wetting of the individual filaments?

A. No. The wetting—the whole teaching of the patents is that the wetting is accomplished by the contact between the roving and the spreader surface. The exit die will have very little effect on the roving. It's simply the hole by which the material exits the bath.

LNP also relies on the testimony of Cogswell that "I don't think the entry into the die was related to the wetting of either the filaments or the strand."

LNP argues that the lace path was fully disclosed in the specification. LNP points to the testimony of Williams that the features of the lace up pattern that produced superior wetting were "the increased number of bars and the fact that the lace went over and under those bars." LNP contends that the design of the spreader bars was fully disclosed in Example 32. LNP relies on the testimony of Hezzell that Example 32 is sufficiently descriptive to obviate the need for a diagram.

4. The court's findings

The scope of the disclosure requirement under s. 112 is measured by the claims. *Engel Industries*, 946 F.2d at 1531. The claimed invention is a plastic whose reinforcement filaments are "substantially completely wetted." Production techniques are most relevant to the best mode inquiry when they directly affect the degree of wetting of the individual filaments of the fiber strand.

The grooved roller provides a means for keeping multiple fiber strands separated as they simultaneously enter the melting chamber. Williams testified that this technique did not affect the wetting of the individual filaments. Gibson testified that the use of a grooved roller was a production detail, and that there were multiple alternatives that would be at least as effective as a grooved roller. This testimony constitutes substantial evidence that the grooved roller does not significantly affect the degree of wetting of the individual filaments, and that use of the grooved roller is a production detail that is not subject to the disclosure requirements of s. 112.

The trial testimony indicates that the entry angle of the strand into the exit die does not affect the degree of impregnation of the resin into the individual filaments, but that it only affects the amount of resin on the exterior surface of the strands. Gibson testified that the entry angle "will have very little effect on the roving," and will not affect the wetting of the individual filaments. Hezzell similarly testified. As with the grooved roller, substantial evidence shows that the entry angle of the strand into the exit die is a production detail.

The witnesses discussed the extent to which the patent specification discloses the preferred design of the lace path, as contemplated by Williams in his laboratory notebook. Williams acknowledged that the lace path is defined by a series of spreader bars in the wetting tank that the lace passes over and under. Hezzell testified that Example 32 provides a detailed written description of the layout of the spreader bars, and that no drawing is needed to explain how to achieve an optimal lace path. This testimony constitutes substantial evidence that the inventors did disclose the preferred design of the lace path through the wetting tank.

The court finds that substantial evidence supports the jury's conclusion that the claims at issue are not invalid for failure to disclose the best mode.

C. Damages

RTP contends that no reasonable jury could have awarded damages based on the trial testimony, because the testimony was inadequate. RTP points out that LNP presented no expert testimony on damages. RTP also asserts that LNP failed to present witness testimony to show the extent of RTP's sales of the accused products.

LNP argues that there is no requirement to present expert testimony in support of a damages theory. LNP states that Markey testified that profit margins for RTP's products ranged from [REDACTED]. LNP asserts that Burns testified that, had LNP elected to license its technology to RTP, LNP would have permitted RTP to recoup a 10% profit margin, and that it would seek the remainder of RTP's profits as a royalty. LNP contends that it presented internal RTP memoranda listing RTP's sales of long fiber reinforced thermoplastics containing 30% or more by volume of fibers, and that these documents show that RTP sold \$265,177 of these products from 1990 to September 30, 1998.

In light of Markey's testimony that RTP had a [REDACTED] profit margin on its accused products, the court finds that a reasonable jury could award LNP a 5% royalty rate. RTP's internal documents show that it sold \$265,177 worth of the accused products between 1990 and September 30, 1998. This evidence is sufficient to support the jury's award of \$13,322.00.

D. Inequitable Conduct

1. Legal standards

The Federal Circuit has explained that a patent applicant's duty to disclose material information to the PTO arises under the general duty of candor, good faith, and honesty found in 37 C.F.R. s. 1.56(a) (1996) ("Rule 56"). The standards articulated in Rule 56 apply to all PTO filings made after March 16, 1992. *See Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1179 n. 8 (Fed.Cir.1995). Because LNP initiated the reexamination proceedings on September 25, 1995, Rule 56 governs the present dispute. Under Rule 56, patent applicants and their patent attorneys have a duty to disclose to the PTO information of which they are aware which is material to the examination of the application. *Elk Corp. of Dallas v. GAF Bldg. Materials Corp.*, 168 F.3d 28, 30 (Fed.Cir.1999); *see also Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1256 (Fed.Cir.1997).

A finding of inequitable conduct arising from failure to satisfy the duty to disclose requires clear and convincing proof of: (1) information that is material; (2) knowledge chargeable to the patent applicant of such information and its materiality; and (3) the applicant's failure to disclose such information resulting from an intent to mislead the PTO. *FMC Corp. v. Manitowoc Co., Inc.*, 835 F.2d 1411, 1415 (Fed.Cir.1987); *see also Key Pharmaceuticals v. Hercon Labs. Corp.*, 161 F.3d 709, 719 (Fed.Cir.1998); *Critikon*, 120 F.3d at 1256.

Once materiality and intent have been established, "the court conducts a balancing test and determines whether the scales tilt to a conclusion that 'inequitable conduct' occurred." *Critikon, Inc.*, 120 F.3d at 1256. In balancing materiality and intent, the more material the omission or the misrepresentation, the lower the level of intent required to establish inequitable conduct, and vice versa. *Id.*

a. *What is the definition of materiality?*

Rule 56 establishes the standards for what constitutes a material prior art reference. Rule 56 provides in relevant part that information is material to patentability when:

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

37 C.F.R. s. 1.56(b) (1996); *see also* Manual of Patent Examining Procedure ("MPEP") s. 2001.05. Rule 56 further provides that:

[a] prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

37 C.F.R. s. 1.56(b) (1996).

Materiality of an uncited prior art reference can be shown by evidence that the applicant cited the prior art

in related foreign prosecutions. *See* Molins, 48 F.3d at 1180. If the uncited prior art provided a basis for a foreign patent office's rejection of counterpart application, then the inference of materiality is especially strong. *See* MPEP s. 2001.06(a) ("The inference that such prior art or other information is material is especially strong where it is the only prior art cited [in a foreign patent application] or where it has been used in rejecting the same or similar claims in the foreign application."). While the MPEP does not have the force of law, it is entitled to judicial notice as an official interpretation of statutes or regulations as long as it is not in conflict therewith. *See* Litton Systems, Inc. v. Whirlpool Corp., 728 F.2d 1423, 1439 (Fed.Cir.1984), implied overruling recognized on other grounds, Braun Inc. v. Dynamics Corp., 975 F.2d 815 (Fed.Cir.1992).

An applicant has no duty to submit information which is not material to the patentability of any existing claim. 37 C.F.R. s. 1.56(a). Moreover, the PTO has explained that "[w]hile information may be material under the definition, there is no duty on an individual to disclose the information if the information is unknown to the individual." 57 Federal Register 2026 (Jan. 17, 1992). The PTO has also noted that "there can be no duty to disclose the information if it is material only in combination with unknown information." *Id.*; *see also* MPEP s. 2001.05.

A material reference need not be disclosed if the reference is cumulative or less material than those already before the examiner. Elk Corp., 168 F.3d at 31; *see also* Engel Industries, Inc. v. Lockformer Co., 946 F.2d 1528, 1534 (Fed.Cir.1991) ("When a reference is cumulative to other prior art that was before the examiner, the element of materiality is not established, and inequitable conduct can not lie.").

b. How does the court determine if the applicant intended to deceive the PTO?

If the court determines that a patent applicant has failed to disclose a material reference to the PTO, the court must determine whether the applicant did so with the intent to deceive or mislead the PTO. To do this, the court must examine: (1) what information the applicant had; (2) whether the applicant understood or appreciated that the information they had was material to patentability; and (3) whether the applicant had the intent to deceive or mislead the PTO by not disclosing the material information. *See* Kingsdown Medical Consultants, Ltd. v. Hollister Inc., 863 F.2d 867, 872-76 (Fed.Cir.1988).

In determining intent, the court views the involved conduct, in light of all the evidence, including evidence indicative of good faith. To show intent, "clear and convincing evidence must prove that an applicant had the specific intent to accomplish an act that the applicant ought not to have performed, viz., misleading or deceiving the PTO." Molins, 48 F.3d at 1181.

2. RTP's position

RTP alleges that the '450 and '889 patents are unenforceable because LNP committed inequitable conduct by failing to disclose JPP '714 to the PTO during the reexamination proceedings. RTP states that the Japanese patent office rejected the Japanese counterpart application to the '889 patent in light of JPP '714. RTP asserts that the Japanese patent office's rejection of the counterpart application in light of JPP '714 creates an especially strong inference of materiality. MPEP s. 2001.06(a). RTP contends, moreover, that JPP '714 is not cumulative of JPP '715, because JPP '714 discloses physical data of the claimed product that is absent in JPP '715. RTP argues that Schwarze was aware of the Japanese patent office's rejection in light of JPP '714, and that Schwarze knowingly and intentionally withheld the reference from the U.S. PTO during the reexamination proceedings. RTP contends, moreover, that if LNP had disclosed JPP '714 to the U.S. PTO, then it would not have been able to overcome the U.S. patent examiner's rejection of the claims in light of

Hattori.

3. *LNP's position*

LNP argues that JPP '714 is immaterial, because it describes a three-component plastic comprised of resin, fibers, and a filler material, and because the reference specifically refers to bundles of fibers in a molded product. LNP states that the claims of its patents refer to a two-component plastic comprised of resin and fibers, and that the filaments of the claimed invention are not bundled, but are randomly dispersed throughout the plastic. LNP points out, moreover, that RTP never contended during the first trial in this case that the patents at issue were invalid in light of JPP '714.

LNP contends, moreover, that JPP '714 is cumulative of JPP '715. LNP contends that the only difference between the references is that JPP '714 discloses certain physical data of the claimed material, and that JPP '714 states that the molded pieces using the claimed pellets "are free from problems such as molding anisotropy and warpage." LNP argues that these physical characteristics are attributable to the filler material disclosed in the patent, as the detailed description of JPP '714 states that the filler is added "for the purpose of reducing molding anisotropy and warpage during production of the reinforced pellets."

LNP argues, moreover, that it had no intent to deceive the PTO. LNP explains that it initiated reexamination of the '450 and '889 patents in order to ascertain their validity prior to asserting the patents against competitors. LNP contends that it would have been contrary to its goal of establishing the validity of its patents to knowingly withhold material prior art.

4. *The court's findings*

a. *Was JPP '714 material?*

MPEP s. 2001.06(a) provides that there is an "especially strong" inference of materiality when a prior art reference is cited as the basis for a rejection of a foreign counterpart application. In this case, the Japanese patent examiner rejected the Japanese counterpart application to the '889 patent because he concluded that "there is no substantial difference between the fibers of the present invention and those of JPP '714," and that the "state of dispersion of the fibers in the fiber-reinforced molded articles can be suitably controlled." These are the two essential characteristics of LNP's claimed plastics. Based on the examiner's comments, it appears that JPP '714 is a material reference.

Three factors indicate that JPP '714 may be less material than the Japanese examiner suggests. First, JPP '714 discloses a three-component plastic comprising fibers, resin, and a filler material. JPP '714 expressly attributes some of the improved physical characteristics of the material to the use of the filler. LNP's claimed plastic does not contain such a filler.

Second, JPP '714 refers to "fiber bundles" in its claims and throughout its written description. An essential characteristic of LNP's claimed invention is that the individual filaments are randomly dispersed throughout the resin.

Third, RTP was aware of JPP '714 before the first trial, and specifically listed JPP '714 in the pre-trial order as a prior art reference that anticipates or renders obvious LNP's claimed inventions. RTP, however, elected not to base its invalidity defense at trial on JPP '714. If JPP '714 was sufficiently material to negate the patentability of LNP's asserted claims, RTP would have relied on it at trial. Since RTP based its invalidity

defense on the Hawley, Bradt, and Hattori patents, it appears that JPP '714 is less material than these other patents.

Despite these factors relied on by LNP to show the immateriality of JPP '714, the court nonetheless finds that it is a material reference. Following the Japanese patent examiner's rejection based on JPP '714, it was for the U.S. patent examiner, and not LNP, to determine whether the reference is immaterial.

b. Is JPP '714 cumulative of JPP '715?

The primary distinctions between JPP '714 and JPP '715 are that JPP '714 discloses a table of physical characteristics of the claimed material, and that it states that the molded pieces using the claimed pellets "are free from problems such as molding anisotropy and warpage." The statement in JPP '714 regarding "anisotropy and warpage" does not appear to be relevant to the present dispute, as JPP '714 expressly attributes the claimed material's resistance to anisotropy and warpage to the use of a filler material, such as mica. LNP's claimed plastics do not use a filler material. As such, the statement in JPP '714 directed to "anisotropy and warpage" does not disclose additional characteristics of the prior art beyond those disclosed in JPP '715 that are relevant to the claimed invention.

The table of physical characteristics disclosed in JPP '714 provides data on the flexural strength properties of the claimed material. This data is not provided in JPP '715. As described in the court's December 17, 1999 Opinion, the flexural strength data could be used by an examiner to determine whether the material claimed in JPP '714 inherently possesses the characteristics of random fiber dispersal. *See* 77 F.Supp.2d at 556 ("Given the flexural modulus of a specimen, it is possible to extrapolate backwards to determine how thoroughly wetted the reinforcement filaments were in the pellets and strand."). Moreover, the flexural strength data are directly relevant to the prosecution of claim 6 of the '450 patent, which recites a product that attains "at least 70% of the theoretically attainable flexural modulus." The court finds that JPP '714 discloses data that are absent from JPP '715, and that these data would have been useful to the U.S. examiner in the reexamination proceedings. The court accordingly finds that JPP '714 is not cumulative of JPP '715.

c. Did LNP intend to deceive the PTO?

Having determined that JPP '714 is a material, non-cumulative reference, the court must determine whether LNP and its counsel acted with an intent to deceive the PTO. In this case, the court first looks to LNP's motives for initiating reexamination proceedings. Niznik testified that LNP decided to initiate reexamination proceedings in response to competitors' assertions that the patents in suit are invalid in light of the prior art. He stated that LNP sought to ascertain the validity of its patents prior to asserting them in litigation.

The court identifies no credible motive for LNP to initiate reexamination proceedings and undertake the costs and risks of litigation with knowledge that it withheld material prior art from the examiner. LNP could reasonably foresee, as the events in the case have demonstrated, that RTP would investigate the prosecution histories of foreign counterparts of LNP's patents to identify material prior art. Knowingly withholding a material reference like JPP '714 would have been inconsistent with LNP's goal of evaluating the validity of its own patents prior to litigation.

The court next considers the conduct of LNP and its counsel during the reexamination proceedings, in light of the information they had during the proceedings, and the extent to which they were aware of the significance of the information. Schwarze testified that he was aware of the rejection by the Japanese

examiner based on JPP '714, and that he obtained a partial translation of the reference. He testified that he did not obtain a full translation of JPP '714 until after the commencement of this litigation.

The partial translation of JPP '714 contains the application's claims, which refer to "bundled single fibers." The partial translation does not contain the table of physical characteristics disclosing flexural strength data, and is thus similar in the extent of its disclosures to JPP '715. Based solely on a comparison of JPP '715 and the partial translation of JPP '714, it appears that JPP '714 is cumulative of JPP '715.

As described above, the full text of JPP '714 contains physical data absent from JPP '715 that would have been useful to the U.S. examiner. Schwarze knew that the Japanese examiner had rejected the counterpart application based on JPP '714, and yet he failed to obtain a full translation of the reference. Although he may have concluded, based on the partial translation that JPP '714 was immaterial or cumulative of JPP '715, he could not have known whether other information disclosed in JPP '714 would raise the questions of patentability identified by the Japanese examiner. Schwarze represented to the U.S. examiner during the reexamination proceedings that "it is submitted that all of the present claims 1, 2, 4-7 and 8-10 patentably distinguish over the prior art of record and known to Requestor." Without having obtained a full translation of the reference upon which the Japanese examiner based its rejection, Schwarze's statement to the U.S. examiner raises issues under Rule 56. 37 C.F.R. s. 1.56.

The court must balance its findings of intent and materiality to determine whether inequitable conduct occurred. *Critikon, Inc.*, 120 F.3d at 1256. The court finds that the overall conduct of LNP in initiating reexamination proceedings does not evince an attempt to mislead the patent office. And, RTP's decision not to base its invalidity case on JPP '714 further indicates that JPP '714 was not sufficiently material to negate the patentability of LNP's claimed inventions. Although the court finds that Schwarze's conduct during the reexamination proceedings was improper, the court does not find that this level of misconduct is sufficient to find the patents in suit unenforceable.

III. CONCLUSION

The court will deny RTP's motion for judgment as a matter of law that the claims at issue are invalid for failure to disclose the best mode. The court will deny RTP's motion for judgment as a matter of law that the damage award is unsupported by the evidence. The court finds that RTP has not shown by clear and convincing evidence that the claims of the '450 and '889 patents are unenforceable due to inequitable conduct. The court will issue an Order consistent with this Memorandum Opinion.

D.Del.,2000.

LNP Engineering Plastics, Inc. v. Miller Waste Mills, Inc.

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