

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN

KIMBERLY-CLARK WORLDWIDE, Inc., and ,
KIMBERLY-CLARK GLOBAL SALES, LLC,

Plaintiffs,

v.

Case No. 09-C-916

FIRST QUALITY BABY PRODUCTS, LLC, and
FIRST QUALITY RETAIL SALES, LLC,

Defendants.

**FINDINGS OF FACT, CONCLUSIONS OF LAW IN SUPPORT OF ORDER
GRANTING RENEWED MOTION FOR PRELIMINARY INJUNCTION**

I. Procedural History

1. On September 21, 2009, Plaintiffs Kimberly-Clark Worldwide, Inc., and Kimberly-Clark Global Sales, LLC, (collectively “K-C”) filed this action for patent infringement against Defendants First Quality Baby Products, LLC, and First Quality Retail Sales, LLC (collectively “First Quality”) alleging that First Quality was preparing to market and sell a new brand of disposable training pants with refastenable side seams that infringed various patents held by K-C. K-C sought but was denied a preliminary injunction enjoining First Quality from proceeding with its new entry into the \$900 million disposable training pants market. Although the Court found that K-C had established a likelihood of irreparable harm if the injunction was not granted, it was unconvinced that K-C had established a likelihood of success on the merits because of the substantial questions First Quality had raised over the validity of K-C’s patents. The Court’s decision denying K-C’s motion is currently on appeal to the Federal Circuit.

2. On March 1, 2010, K-C filed a First Amended Complaint, in which it alleged that in addition to infringing K-C's patents relating to the product itself, First Quality was also infringing four process patents K-C held relating to the method K-C had invented to manufacture its disposable training pants with refastenable sideseams: U.S. Patent Nos. 6,514,187 ("the '187 patent"), 6,776,316 ("the '316 patent"), 6,888,143 ("the '143 patent") and 7,156,939 ("the '939 patent"). K-C also brought claims for breach of contract and breach of the implied duty of good faith. At the same time, K-C filed a renewed motion for a preliminary injunction seeking to enjoin First Quality from, *inter alia*, using the infringing manufacturing methods. An expedited briefing schedule was set by the Court, and following a two-day hearing and the parties' closing arguments on April 8, 2010, the Court took the matter under advisement. Having considered the evidence presented at both of the preliminary injunction hearings, and the briefs, affidavits, exhibits and argument of counsel, the Court enters the following findings of fact and conclusions of law in support of its order granting K-C's motion for a preliminary injunction against the defendants.

II. Legal Standard Governing Preliminary Injunctions In Patent Cases

3. In deciding whether to grant a motion for a preliminary injunction, the Court must consider four factors: 1) likelihood of success on the merits; 2) irreparable harm if an injunction is not granted; 3) the balance of hardships; and 4) the impact on the public interest. *See Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1350 (Fed. Cir. 2001). No single factor, taken individually, mandates such relief. Each factor must be weighed in view of the other factors and against the relief requested. *Id.* However, as the First Circuit has observed, "[t]he sine qua non of this four-part inquiry is likelihood of success on the merits: if the moving party cannot demonstrate

that he is likely to succeed in his quest, the remaining factors become matters of idle curiosity.” *New Comm Wireless Servs., Inc. v. SprintCom, Inc.*, 287 F.3d 1, 9 (1st Cir. 2002) (citation omitted).

4. To establish a reasonable likelihood of success on the merits in a patent case, a plaintiff must show that in light of the presumptions and burdens that will inhere at trial on the merits: 1) the plaintiff will likely prove that the defendant infringes the patent, and 2) the plaintiff's infringement claim will likely withstand the defendant's challenges to the validity and enforceability of the patent. *See Amazon.com*, 239 F.3d at 1350. “If [the defendant] raises a substantial question concerning either infringement or validity, *i.e.*, asserts an infringement or invalidity defense that the patentee cannot prove ‘lacks substantial merit,’ the preliminary injunction should not issue.” *Id.* at 1350-51; *see also Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1379 (Fed. Cir. 2009) (“[I]f the trial court concludes there is a ‘substantial question’ concerning the validity of the patent, meaning that the alleged infringer has presented an invalidity defense that the patentee has not shown lacks substantial merit, it necessarily follows that the patentee has not succeeded in showing it is likely to succeed at trial on the merits of the validity issue.”).

III. Likelihood of Success On the Merits at Trial

A. Background of the Patents

5. All four of the patents that are the subject of K-C's current motion are the result of K-C's efforts to bring to market a disposable training pant with refastenable side seams. Based on the consumer testing and market research it conducted in the late 1990s, K-C concluded that a significant demand existed, or could be created, for disposable training pants with refastenable side seams. K-C had first introduced disposable training pants to the market under its PULL-UPS®

trademark in 1989. The new training pant products had the appearance of underwear, and thus were attractive to young children as their parents attempted to transition them out of diapers, which older children identified with babies. At the same time, they had the convenience of disposable diapers in that they were leakproof and could simply be thrown away if accidents occurred or at the end of the day. Unlike disposable diapers, however, K-C's original PULL-UPS® were permanently sealed, or bonded, at the sides. This made removal and clean-up more difficult if the child had an accident. It also required complete removal of the child's shoes and outer pants whenever a parent wanted to put on a new training pant, even when it was inconvenient to do so. K-C's consumer testing showed that parents would prefer disposable training pants with refastenable sides, which made cleanup or simply checking the condition of the training pant easier and afforded the option of replacing the training pant without removing the child's shoes and outer clothing. After investing significant resources into its research and testing, K-C developed a side seam that was easy to open and could be securely re-fastened. The fasteners consisted of a hook type material on the outer side of each front side panel that matched up with a loop material located on the inner side of the back side panels. When pressed together, they create a refastenable seam. In order to maintain the appearance of training pants, which was crucial from a marketing standpoint, however, K-C realized it would be necessary to package and sell its new PULL-UPS® with its "Easy Open Sides" feature with the sides pre-fastened. And for the product to be commercially successful, K-C realized it would need machines capable of producing and packaging the training pants in a pre-fastened condition at a high rate of speed.

6. K-C found that its proposed new product posed a number of challenges to the existing manufacturing technology for disposable garments. Existing diaper machines produced

disposable diapers in an unfastened condition so there was no need for the machine to match the inside of one side panel with the outside of another during the folding process so as to fasten them together. The same was true of the machines that had been designed to manufacture disposable training pants with permanently bonded seams on a commercial scale. The product could simply be folded in half with the sides held together until they were bonded. Given the design of its product, however, and the desire to package them in a prefastened condition, K-C needed a machine that would keep the side panels separated until the hook fastener on the outside of the front side panels could be matched up, or aligned, with the loop fastener on the inside of the back side panels and brought together to form the refastenable side seams. And given the windy conditions created by the high speed at which the training pants would move through the machine and the light weight of the material they were made of, it was difficult to maintain the control needed to properly fasten the seams and fold them for packaging. Once the seams were fastened together, the seam had to be inspected to insure the fasteners were properly engaged and the side of the pant had to be tucked so that the pant could be folded for packaging. In order to maintain the strength of the seam, however, the fold could not be located on the fasteners.

7. K-C turned to various machine manufacturers around the world in a search for equipment that could address the problems K-C had identified. K-C could find no manufacturer that produced equipment that could meet its needs, and soon realized it would have to design its own machine. K-C also recognized that if it was successful in designing and constructing a machine capable of producing training pants with refastenable side seams, it would likely reap the benefit of being the only company capable of producing a product for which it anticipated there would be significant market demand. For this reason, K-C was willing to invest significant time, money and

effort into developing such a machine. Robert Popp, the highest ranking technical leader at K-C, was placed in charge of designing and constructing a machine dedicated to the production of the training pants. Beginning in May of 1999, Popp led a team that eventually grew to as many as 50 technical personnel dedicated to the project that had become known internally as FIDO. In order to solve the various technical problems they encountered, Popp and his team tested various ideas in a dynamic process K-C refers to as “ideating.” Popp kept an “inventions needed list,” in an effort to find solutions to these and other production problems. Several months were spent developing and creating prototype equipment before the equipment was put into commercialization mode. The machine K-C developed to manufacture its refastenable training pants is over 300 feet long, 60 feet wide, and stands two stories high. More than twenty different raw materials are added to the machine in order to produce the training pant. According to Popp, the machine is capable of producing hundreds of training pants per minute. In the course of developing a machine capable of rapidly producing and packaging the prefastened and refastenable disposable training pants, Popp and his team obtained between 60 and 70 patents on its various components with more than 10 applications still pending.

8. K-C alleges that First Quality is infringing four of its process patents in the manufacture of its own disposable training pants with refastenable seams. The first patent that K-C asserts is the ‘187 patent which teaches the initial folding of the pant with separation plates to keep the side panels from prematurely fastening. The ‘143 patent teaches a method of inspecting the engagement seam after the side panels are fastened. The ‘316 patent teaches a method of tucking the refastenable side seams into the body of the pant before the training pant is packaged. Finally,

the '939 patent teaches a method of generating a shear stress at the location of the engagement seam to promote a secure engagement between the fastening components during the tucking process.

(1) Infringement of the '187 Patent

9. Infringement analysis requires the Court to first determine the meaning of the claim and then compare the properly construed claim to the accused device. *See Amazon.com*, 239 F.3d at 1350. All claims must be construed in light of the specification and the prosecution history.

10. K-C will almost certainly prevail on its allegation that First Quality's manufacturing process infringes on the '187 patent. First Quality does not contest K-C's claim that it infringes Claims 1, and 3-5 of the '187 patent. Instead, its sole defense to K-C's claim on the '187 patent is a challenge to its validity, which is addressed below. The Court therefore concludes that K-C will likely prevail on its allegation that the process First Quality employs in producing its disposable training pants with refastenable seams infringes Claims 1, 3-5 of the '187 patent.

(2) Infringement of the '143 Patent

11. K-C is also likely to prevail on its allegation that the production method First Quality uses for its refastenable disposable training pants infringes Claims 63-65, 67-68, and 142-143 of the '143 patent. Indeed, First Quality concedes that its process infringes each of the claims asserted by K-C except for Claim 63. The relevant claim limitation of Claim 63 describes a method of "inspecting the engagement seam while said portion of the pants is expanded." ('143 patent, col. 49, lines 22-23.) K-C's technical expert, Donald Sheldon, testified credibly that First Quality's inspection method met this limitation either literally or by equivalents. Sheldon visited First Quality's production facility on March 17, 2010, and observed the way in which First Quality's machine manufactured refastenable training pants. Sheldon had high speed photographs and video

footage taken of a section of the First Quality machine where training pants are expanded, illuminated with green light and photographed. Sheldon also observed monitors on the machine which displayed the images taken by the camera at the inspection station. Superimposed over the image taken by the camera were various boxes or lines, which Sheldon refers to as “analytical tools” generated by the computer to aid the operator in inspecting the side seams. The purpose of this inspection is to ensure that the seam is present and taut.

12. First Quality argues its machine does not infringe the ‘143 patent because it does not inspect the engagement seam. Although its inspection method captures an image of the side panel of its training pant, First Quality emphasizes that its two inspection tools, a “cluster tool” and a “leading edge tool” inspect other areas of the side panel or the edge of the side panel and not the engagement seam itself. However, the ‘143 patent does not require the use of analytical tools or subsequent analysis of the image once the image is captured. The ‘143 specification states that after the image of the engagement seam is captured, “[t]he image is then processed and analyzed by a suitable image analyzer (not shown).” (‘143 patent, col. 39, lines 64-66.) The ‘143 patent itself notes that the analyzing step is described as being found in a wholly different patent owned by K-C. (*Id.*, col. 39, line 66 - col. 40, line 3.) Because the image First Quality captures of the side panel does include the engagement seam, K-C is likely to prevail on its claim that First Quality literally infringes Claim 63 of the ‘143 patent.

13. Alternatively, even if First Quality’s product did not literally infringe Claim 63 of the ‘143 patent, it would do so under the doctrine of equivalents. Under the doctrine of equivalents, infringement may be found even where there is no literal infringement if an accused device performs substantially the same overall function or work, in substantially the same way, to obtain

substantially the same overall result as the claimed invention. *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 901-02 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 857 (1984). Even if First Quality does not inspect at the seam itself, it admits that it inspects the area directly above and below where the seam forms. Because it inspects areas near the engagement seam, and the difference between inspecting in the engagement seam and near the engagement seam is insubstantial, K-C is likely to show that First Quality infringes under the doctrine of equivalents.

(3) Infringement of the '316 Patent

14. K-C is likely to prevail on its allegation that the production method First Quality has recently begun using infringes Claims 1, 5, 6 and 8 of the '316 patent. Two limitations of Claim 1 of the '316 patent are at issue. The first is that the pant-like garment be positioned on a conveyor belt having a vacuum zone with "a transverse width about equal to a desired folded transverse width of the body portion in contact with the vacuum zone." ('316 patent, col. 15, lines 58-60.) The other limitation of Claim 1 that K-C alleges First Quality's process meets is that the tucking method create "longitudinal folds in the garment along outer longitudinal edges of the vacuum zone." ('316 patent, col. 15, lines 66-67.)

15. Sheldon opined that First Quality's processes infringed both the transverse width limitation and the longitudinal fold limitation of the '316 patent. In photos and video taken by K-C at First Quality's facility, it appears that the top of the pant on the conveyor belt is held to the top conveyor, which is consistent with a vacuum zone of a transverse width about equal to a desired folded transverse width of the body portion. (Second Decl. of Donald A. Sheldon ¶ 58.) In the photo demonstrating the process at First Quality, it appears that the tucking blade is touching at least

the front part of the side panels. Sheldon testified that the tucking process is a violent one, as the tucking blades strike the pant with sufficient force to create a crisp crease on each side panel.

16. As to the limitation calling for the creation of longitudinal folds in the pant, Sheldon opined that First Quality's process met this limitation. He again based his opinion, at least in part, on what he saw at First Quality's plant. Sheldon testified that longitudinal folds were created at the outer edge of the vacuum zone, and such a fold is visible on one of the photographs K-C provided.

(Id.)

17. First Quality contends that its process does not literally infringe the '316 patent because its vacuum zones are inside the width of the core of the training pant and it does not create longitudinal folds along the outer longitudinal edges of the vacuum zone. According to First Quality, the width of the vacuum zone on its upper conveyor at the tucking station is 68mm, and the width of the lower conveyor's vacuum zone is 85 mm at the same point, but the width of the chassis of First Quality's training pant is 120 mm. (Decl. of Daniel Gardner ¶ 267.) But this assertion is based on CAD drawings which allegedly reflect First Quality's process instead of evidence of what is actually occurring on the production line. It is also inconsistent with the photographic evidence obtained by K-C. While First Quality questions whether the photos K-C took at its plant demonstrate infringement, it inexplicably did not provide its own photographs and video of its own machine. The fact First Quality has failed to do so in support of its contention that it is not infringing the claims at issue does not help its case. Based on the evidence submitted by K-C, the Court concludes that it is likely to prevail in its contention that First Quality literally infringes the '316 patent.

18. Even if it did not prevail in its claim that First Quality literally infringes the '316 patent, the evidence demonstrates that K-C is likely to show that First Quality infringes the patent under the doctrine of equivalents. Specifically, First Quality's process performs the claimed function of creating longitudinal folds in a substantially similar way—by using a vacuum to hold the garment along its width while it is tucked—to achieve substantially the same result, creating a tucked garment with folds in a location other than on the seam created by the fastening components.

(4) Infringement of the '939 Patent

19. Finally, K-C has shown a likelihood of demonstrating that First Quality infringes Claims 12, 19 and 29 of the '939 patent. The only limitation of these claims that First Quality contends it does not infringe is a limitation of Claim 12 relating to “mechanically handling the garment to generate a shear stress at the engagement seam to promote increased engagement between the fastening components while one of stretching at least one of the fastening components and maintaining the fastening components in a generally relaxed condition.” ('939 patent, col. 37, lines 7-12.) A shear stress is one generally parallel to the face of the material and pulling in opposite directions.

20. First Quality contends that its method does not “mechanically handl[e] the garment to generate shear stress at the engagement seam.” This is difficult to square with Sheldon's testimony, in which he described what he saw at First Quality's plant. The photograph he provided the Court (Second Decl. of Donald Sheldon ¶ 73) shows the First Quality machine's tucking blade at or near the tucking station, where the side panels of the pant appear to be engaged by the blades so as to create a shear stress along each of the two engagement seams. First Quality also argues that its process does not infringe because the photographs show there is slack in the side panels (i.e., they

are not tensioned). K-C's photographs of First Quality's machine, however, reveal that there is no slack at the engagement seam when the tucking blade is in contact with the side panel. Based upon this evidence that First Quality's production methods meet the disputed limitation of Claim 12 of the '939 patent, K-C is likely to show that First Quality infringes the '939 patent.

B. Patent Validity

21. First Quality challenges the validity of all four process patents K-C asserts in its amended complaint. Of course, all four patents are presumed valid. 35 U.S.C. § 282. An alleged infringer who raises validity as an affirmative defense has the ultimate burden of persuasion at trial and must prove invalidity by clear and convincing evidence, as well as the initial burden of going forward with the evidence to support its invalidity allegation. *Technology Licensing v. Video Tech, Inc.*, 545 F.3d 316, 327 (Fed. Cir. 2008). At the preliminary injunction stage, the trial court does not resolve the validity question, but only makes an assessment of the persuasiveness of the challenger's evidence, recognizing that it is doing so without all evidence that may come out at trial. *New England Braiding Co. v. A.W. Chesterton Co.*, 970 F.2d 878, 883-83 (Fed. Cir. 1992). At this stage, the patentee, or movant, must persuade the Court that, despite the challenge presented to validity, the patentee nevertheless is likely to succeed at trial on the validity issue. "While it is not the patentee's burden to prove validity, the patentee must show that the alleged infringer's defense lacks substantial merit." *Id.* at 883; *see also Titon Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1377 (Fed. Cir. 2009).

22. A person is only entitled to a patent for an invention that is novel. 35 U.S.C. § 102. Thus, a patent is invalid if it is anticipated by the prior art. A prior art reference "anticipates" a claim if it includes all of the elements and limitations of the claim and enables one of skill in the

field of the invention to make and use the claimed invention. *Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc.*, 347 F.3d 1367, 1372 (Fed. Cir. 2003). Anticipation is established usually by documentary evidence, often previously issued patents, and requires that every claim element and limitation is set forth in a single prior art reference, in the same form and order as in the claim. See *In re Omeprazole Patent Litigation*, 483 F.3d 1364, 1373 (Fed. Cir. 2007); *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1267 (Fed. Cir. 1991). An anticipating reference must enable that which it is asserted to anticipate. *Omeprazole*, 483 F.3d at 1378 (“To ‘anticipate,’ the identical subject matter must not only be previously known, but the knowledge must be sufficiently enabling to place the information in the possession of the public.”)

23. A patent claim will also be found invalid if it would have been obvious to a person of ordinary skill in the art. 35 U.S.C. § 103(a). The Supreme Court recently reaffirmed the objective analysis a court or patent examiner must undertake when deciding whether a claimed invention is obvious:

“Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.”

KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere of Kansas City*, 383 U.S. 1, 17-18 (1966)). *KSR* also cautioned, however, the mere fact that most or all of the elements of a claimed invention were previously known is not, by itself, sufficient to show invalidity.

[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

Id. at 418-19.

24. One skilled in the art for the four patents at issue in this motion is a person with two-to-four years of work experience in process development, product design and testing of training pants and other similar absorbent articles.

25. A significant dispute between the parties in this case is over what may properly be considered prior art. First Quality relies for its invalidity defenses upon several machines that it contends were being used to manufacture diapers or training pants prior to the application dates of K-C's patents. For example, First Quality relies on the TP3 Machine, which was manufactured by Automated Systems of Tacoma, Inc. ("AST") at the request of Paragon Trade Brands, Inc. ("Paragon") to manufacture training pants in the mid-1990s. AST also sold to Paragon several machines used to manufacture disposable diapers (the "Diaper Machine") that First Quality asserts as prior art. In addition, First Quality cites as prior art several machines designed and built by Fameccanica, an Italian engineering firm that designs and fabricates equipment for the manufacture of a variety of absorbent articles, including training pants, diapers, feminine hygiene and adult incontinence products. These include a machine built for Proctor and Gamble (the "P&G Machine") to manufacture disposable training pants and a machine built for Drypers Corporation

(the “Drypers Machine”) also used to manufacture disposable training pants. First Quality contends that each of these machines was in use in the United States before the pertinent inventions claimed in the K-C patents and therefore constitute prior art under 35 U.S.C. § 102.

26. In order for a machine in use at the time a patent application is made to be considered prior art with respect to the claimed invention, however, the use must be known to the public. *See Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (“prior knowledge or use by others may invalidate a patent under Section 102(a) if the prior knowledge or use was accessible to the public”). “The nonsecret use of a claimed process in the usual course of producing articles for commercial purposes is a public use.” *W.L. Gore & Assocs, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1549 (7th Cir. 1983) (citing *Electric Storage Battery Co. v. Shimadzu*, 307 U.S. 5, 20 (1939)); *see also Vulcan Eng’g Co., Inc. v. Fata Aluminum, Inc.*, 278 F.3d 1366, 1372 (Fed. Cir. 2002) (observing that district court correctly found that machine kept secret which was not on sale or publicly known or used was not prior art). In *W.L. Gore*, the Federal Circuit held that a machine purchased from a third party and used in a factory where employees were subject to confidentiality agreements did not constitute a “public” use or sale under 35 U.S.C. §102(b).

27. K-C argues that the machines that First Quality asserts as prior art do not constitute prior art within the meaning of § 102 because they were used in a clandestine manner and not openly or publicly. Indeed, K-C notes that the TP3 Machine was subject to a confidentiality agreement between AST and Paragon that expressly maintained the “trade secret status” and prohibited the disclosure of proprietary information which was defined to include “data, know-how, formulae, processes, designs, sketches, photographs, plans, drawings, specifications, samples, reports, plant arrangements, equipment configuration, findings, software, biological material, video

tape, inventions or ideas.” (March 22, 2010 Decl. of Daniel T. Flaherty, Ex. 3 at FQ19759.) The Fameccanica machines were subject to a similar agreement. (*Id.*, Ex. 5 at FQ19744.)

28. First Quality offered some evidence that, notwithstanding the confidentiality agreements governing them, the machines were in public use. For example, Mickey Calvert, who worked for Paragon at the time, testified that from 1996 to 1998 many visitors toured Paragon’s Macon facility and saw how the TP3 Machine worked. Calvert testified that during his time at Paragon’s Macon facility various customers, contractors and members of the community had access to the area in which the TP3 Machine operated. According to Calvert, Paragon had a rather cavalier approach to security at the site. He testified that the back door of the facility was left unlocked to allow contractors to enter the facility. Calvert claimed that these contractors viewed and worked on various aspects of the TP3 Machine that First Quality now claims invalidate K-C’s patents, and that they did so without any confidentiality agreements in place. Calvert offered similar testimony with respect to Paragon’s Diaper Machines. Daniel Gardner, First Quality’s technical expert, likewise testified that when he was employed at Drypers, the use of the Fameccanica machine that company purchased was also open and public. But as K-C points out, both Calvert and Gardner are interested parties. Calvert is employed by First Quality and Gardner is not only First Quality’s expert but also still associated with Fameccanica, who supplied the machine at issue here. The same is true of Donald Teodoro, AST’s chief engineer for the TP3 Machine, and Giampiero De Angelis, who is employed by Fameccanica, both of whom offered affidavits in support of First Quality’s contention that the TP3 and Drypers machines constituted prior art that rendered certain of K-C’s patent claims obvious. In *Woodland Trust v. Flowertree Nursery*, 148 F.3d 1368 (Fed. Cir. 1998), the Federal Circuit reversed a finding of prior public knowledge and use based solely on

uncorroborated oral testimony. The court observed: “[T]here is a very heavy burden to be met by one challenging validity when the only evidence is the oral testimony of interested persons and their friends, particularly as to long-past events.” 148 F.3d at 1371; *see also Finnigan Corp. v. Int’l Trade Comm’n*, 180 F.3d 1354, 1366 (Fed. Cir. 1999) (“The law has long looked with disfavor upon invalidating patents on the basis of mere testimonial evidence absent other evidence that corroborates that testimony.”). K-C argues on the basis of these cases that First Quality’s evidence of public use is legally insufficient to support a finding that the machines it offers constitute prior art.

29. First Quality notes that *Woodland Trust* and the other cases upon which K-C relies for the proposition that there must be corroboration for such evidence were decided at the summary judgment stage and not on a motion for a preliminary injunction where the standard for establishing a validity defense is lower than at summary judgment. Moreover, given the expedited hearing held by the Court and the lack of time for further discovery, First Quality contends it would be unfair to require greater corroboration at this stage of the proceeding.

30. While the Court has serious doubts that First Quality will be able to provide the requisite corroboration that the TP3 and other machines constitute prior art in the sense that they were in public use prior to the application dates for K-C’s patents, it would be premature to rest its determination of K-C’s likelihood of success on a finding that they are not. Though First Quality appears to lack such corroboration at this point, it is possible that with more time to complete discovery First Quality will later come forward with evidence corroborating the statements of its interested witnesses and declarants. Given the preliminary nature of these proceedings and the

expedited discovery schedule, the Court will accept First Quality's contention that these machines constitute prior art as to K-C's patents.

(1) Validity of the '187 Patent

31. First Quality contends that Claims 1, 3-5 of the '187 patent are invalid because they are obvious. Most of its argument is based on its contention that the claims are obvious given the combination of either the Italian manufacturer Fameccanica's patent application (the "Fameccanica Application") and the TP3 Machine used by Paragon in the 1990s, or the Fameccanica Application and the Herrmann patent, U.S. Pat. No. 5, 626, 711. According to First Quality, the Fameccanica Application taught everything claimed by K-C in the '187 patent but the separation members, and both the TP3 Machine or the patent upon which it was based, the Herrmann patent, disclosed separation members.

32. First Quality is unlikely to show that Claims 1 and 3-5 of the '187 patent would have been obvious to one skilled in the art over the Herrmann patent in combination with the unspecified "prior art" First Quality mentions. The Herrmann patent discloses a process in which a non-refastenable article is folded in half, the side panels are held in place, the side panels are permanently bonded and then the excess side panel material is removed. (Doc. # 121, Ex. 23.) The Herrmann patent calls for the use of "grippers" (64 and 66) on conveyor chains (74 and 84) that hold the side panels laterally stretched and extended as the product moves down the assembly. The fabric is held on the grippers with pins (64b and 66b) attached to the grippers (64 and 66). The absorbent article is folded in half in an "S" shaped roller system around the holding rods. To First Quality, these holding rods (106 and 108) perform the same function as the separation members of Claim 1 of the '187 patent. In fact, however, they do not perform the same function. As Popp

explained, the separation members which the '187 patent teaches were intended to prevent the fasteners on the front and back side panels from coming together and fastening prematurely before they can be properly aligned. This was not a concern for the TP3 and other machines used to manufacture disposable training pants with bonded seams. Indeed, the TP3 brought the side panels together in preparation for the bonding that occurred in the next stage of the manufacturing process. The rods shown in Herrmann and embodied in the TP3 helped control the training pant once the seam was formed and the excess material was cut away, thereby releasing the “grippers” hold on the material. This is a completely different function than that performed by the separation plates in the '187 patent.

33. First Quality is unlikely to show that the holding rods of the Herrmann patent are separation members as disclosed in the '187 patent. Instead, as Butterworth described, the holding rods were simply designed to hold the chassis in line, not to separate the panels. As Figures 13 and 14 of the Herrmann patent demonstrate, the holding rods (106 and 108) are in place to hold the chassis after the pants are folded and while the side seams are sealed. Figure 15 demonstrates that after the excess material of the sides are severed after sealing, the holding rods then support the pant at the side seams. Herrmann had nothing to do with the manufacture of absorbent articles with refastenable side seams, as it spoke to a way of manufacturing articles with permanently-bonded seams. Hence, there was no reason to include separation plates or members to keep the two panels separate until the appropriate time in the manufacturing process. Beyond not disclosing the separation members of the '187 patent, the Herrmann patent does not disclose the following claim limitations from Claims 1 and 3-5 of the '187 patent: creating a folding nip comprising first and second vacuum rolls; drawing the side panels toward the vacuum rolls; positioning the leading half

of the pant in proximity to the first vacuum roll; transporting the leading half past the folding nip; folding pants having mating components; and contacting the interconnecting region with folding blades. (Decl. of G.A.M. Butterworth ¶ 22.)

34. First Quality also contends that the '187 patent would have been obvious over the TP3 Machine in combination with unspecified "prior art." The TP3 Machine contained plates and later rods, which First Quality views as separation members. Butterworth examined photographs and diagrams of the TP3 Machine and concluded that the separation plates or rods did not accomplish the separation of side panels. Based on this, Butterworth opined they are not the "separation members" claimed in the '187 patent. Calvert's recollection of the way the TP3 Machine operated differed, as he testified that one of the purposes of the separation plates or rods was to help separate the side panels. (Doc. # 148 at 63:4-6; Tr. Prelim. Inj. Hrg 363:4-6, Mar. 26, 2010.) According to Calvert, the separation plates of the TP3 Machine "were needed to keep the upper side panel from detaching from the grippers and falling onto the lower side panels."¹ (Decl. of Mickey Calvert ¶ 72.) Calvert described the problems that arose with using paddles or plates, given their propensity to collect glue; this is why Paragon modified the TP3 to use stainless steel,

¹ Calvert testified at the hearing about the purpose of the separation plates or rods in the TP3 Machine:

Number one is what we found out was that the grippers just because of the vibration of going through here, especially the top panel, would be dropping off all of the time. So we had to basically hold especially the top panel up away from the--so we can get some forces into the grippers to keep them from dropping off all the time.

(Doc. # 148 at 62:14-20; Tr. Prelim. Inj. Hrg. 362:14-20, Mar. 26, 2010.)

chrome-plated rods instead.² (Doc. # 148 at 65; Tr. Prelim. Inj. 365, Mar. 26, 2010.) Further, as with the Herrmann patent, the TP3 Machine did not teach a number of processes claimed by the limitations of the ‘187 patent. (Decl. of G.A.M. Butterworth ¶ 34.) Butterworth’s opinion that the ‘187 patent would not have been obvious over the TP3 Machine and its plates or rods in view of the prior art is far more convincing.

35. First Quality also argues in its brief in opposition that the ‘187 patent would have been obvious over the P&G Machine, the Drypers Machine, or the Fameccanica Application in view of the TP3 Machine or in view of the Herrmann patent. Butterworth testified that neither the Fameccanica Application nor the Drypers Machine disclosed a folding nip formed by two vacuum rolls. According to Butterworth, the Fameccanica Application would have described the rolls at issue as vacuum rolls if that was the invention. Gardner opined that vacuum rolls were taught in the Fameccanica Application, (Doc. # 148 at 173:2-20; Tr. Prelim. Inj. 473, Mar. 26, 2010), and the fact the application did not mention anything about vacuum rollers can be attributable to the European tendency to grant “very vague” and unspecific patents. (*Id.* at 173; Tr. 473.) Butterworth’s testimony regarding the presence of vacuum rollers in the Fameccanica Application is more persuasive than Gardner’s. The Fameccanica Application speaks of the importance of keeping the “wings” of an article aligned in order to seal the edges appropriately, and it appears to have addressed this concern through the use of vacuum belts, though not vacuum rolls. Further, even if the Drypers Machine were prior art, the manual Fameccanica provided contains no mention of vacuum rolls which could form a folding nip, although the same document lists the presence of

² The TP3 Machine was apparently a constant work in progress, as Calvert testified that it was updated monthly and went through numerous updates. (Doc. # 149 at 116.)

a vacuum on a different roll elsewhere on the machine. (Decl. of G.A.M. Butterworth ¶ 51.) Finally, it is unclear how the P&G Machine taught a folding nip formed by two vacuum rolls. Given the above, it is unlikely that First Quality will ultimately establish that the Fameccanica Application, the P&G Machine, or the Drypers Machine taught a folding nip formed by two vacuum rolls.

36. First Quality fails to raise a substantial question as to the validity of the '187 patent. The evidence of prior art relied on by First Quality fails to disclose the separation members claimed in the '187 patent. Even if the machines First Quality relies on in its obviousness arguments were "prior art," and in the aggregate these machines and the Fameccanica Application taught a folding nip formed by two vacuum rollers and separation members, they would fail to render obvious the innovations claimed in the '187 patent. This is because it is unclear why a person skilled in the art would have a reason to combine the building blocks First Quality alleges existed in the prior art into the invention described in '187 patent.

(2) Validity of the '143 Patent

37. The patent claims of the '143 patent require inspection of the side seams to occur while the side panels are expanded. First Quality contends that the '143 patent is invalid under 35 U.S.C. § 102 as anticipated by the TP3 Machine. As already noted, however, the TP3 Machine did not manufacture, at least at speeds required for commercial sales, pre-fastened disposable pants; instead, the TP3 produced training pants with permanently-bonded side seams. This means it cannot anticipate Claim 63 of the '143 patent, which claims "A method for making pre-fastened disposable pants" First Quality's argument that the phrase "pre-fastened disposable pants," as used in Claim 63 of the '143 patent, includes training pants with permanently bonded seams, such

as those produced by the TP3 Machine, is unpersuasive in light of the specification. *See Kinik Co. v. Int'l Trade Comm'n*, 362 F.3d 1359, 1365 (Fed. Cir. 2004) (“The words of patent claims have the meaning and scope with which they are used in the specification and the prosecution history.”). It is clear from the specification that the invention is directed toward the inspection of the engagement seams formed by connecting the fastening components of the training pant during the manufacturing process. (*See* ‘143 patent, col. 1, lines 31-34) (“A number of such garments include fastening components which are intended to be connected together (e.g., pre-fastened) during manufacture of the garment so that the product is packaged in it’s [sic] fully assembled form.”). Thus, assuming the TP3 Machine had an inspection system, also a fact in dispute, it did not inspect the engagement seam of the “pre-fastened disposable training pant” while the pants were expanded to tension the seam. It thus follows that the TP3 Machine does not anticipate Claim 63 of the ‘143 patent even if it had been publicly in use prior to the application date of the ‘143 patent.

38. Because Claims 64, 65, 67 and 68 are all in some way dependent on Claim 63, it follows that the TP3 Machine does not anticipate these claims of the ‘143 patent either. Additionally, the TP3 Machine did not expand the seam by “pulling the front and back side panels in opposite directions to tension the side panels at the engagement seam” as called for by Claim 68 of the ‘143 patent.

39. First Quality asserts that Claims 142 and 143 of the ‘143 patent are anticipated by the TP3 Machine and the Drypers Machine, but does not specify how the Drypers Machine anticipates either claim. Because the TP3 Machine manufactured a training pant with permanently bonded side seams, it did not inspect the engagement seam as called for in Claim 142. Because Claim 143 depends from Claim 142, the TP3 Machine also does not anticipate Claim 143.

(3) Validity of the '316 Patent

40. First Quality's attack on the validity of the '316 patent takes the form of an argument that Claims 1, 5, 6 and 8 of the '316 patent would have been obvious over the P&G Machine and the Drypers Machine in view of the "admitted" prior art. Neither the P&G Machine nor the Drypers Machine was used to make training pants with refastenable side seams, however, and Butterworth convincingly testified that it would not have been obvious for a person of ordinary skill in the art to use such machines to make pre-fastened training pants with refastenable side seams. Popp explained the difficulty K-C encountered in designing a means of tucking the pre-fastened disposable training pants with their refastenable side seams. Initially, the design team did not think that tucking the sides of the preassembled pants so that it could be uniformly folded and packaged would be a problem, since this was already being done with training pants with bonded seams. For training pants with permanently bonded seams, it didn't matter where the longitudinal fold created in the tucking process was located. The location of the fold did matter, however, for pre-fastened disposable training pants with refastenable side seams. If the fold fell on the engagement seam, the design team found that fastening components did not function properly. A crease on the hook fastener caused increased failures or "pop opens" of the seam. To avoid this problem, the team designed a tucking method that could control the location of the longitudinal fold. The solution they invented was the '316 patent which claims "a method of tucking a pair of opposing, refastenable side seams into a body portion of a pant-like garment" through the use of a conveyor having a vacuum zone which holds the body portion of the pant so as to create "longitudinal folds in the garment along the outer edges of the vacuum zone, and compressing the garment with each of the at least one resilient [fastening] components pushed into the body portion and in a flat

conformation.” (‘316 patent, col. 15, line 51 to col.16, line 3.) The machines upon which First Quality relies for its invalidity defense did not use the “resilient [fastening] components” called for in the ‘316 patent, since both produced training pants that did not have refastenable seams with hook fasteners. Moreover, First Quality offers no evidence that the tucking method used vacuum zones to control the location of the longitudinal folds. It follows that First Quality is unlikely to be able to show that Claim 1 of the ‘316 patent would have been obvious over the P&G Machine and the Drypers Machine in view of the prior art. The same conclusion follows for Claims 5, 6 and 8 since they are dependent on Claim 1.

(4) Validity of the ‘939 Patent

(a) Anticipation under 35 U.S.C. § 102

41. First Quality asserts that WO 98/15248 to Lindqvist *et al.* (“Lindqvist”), (Decl. of Daniel Gardner, Ex. 23), anticipates Claims 12, 19 and 29 of the ‘939 patent. K-C included Lindqvist in an information disclosure statement to the U.S. Patent Office, and the record shows it was considered by the examiner before the ‘939 patent was issued. This means First Quality’s burden to prove invalidity based on Lindqvist will be “especially difficult.” *Glaxo Group Ltd. v. Apex, Inc.*, 376 F.3d 1339, 1348 (Fed. Cir. 2004) (“This burden is “especially difficult” when, as is the present case, the infringer attempts to rely on prior art that was before the patent examiner during prosecution.”). Lindqvist “relates to a method of maintaining a fastening member of a hook and loop fastener system in a storage position on an article.” (Lindqvist, page 1, lines 10-12.) It discloses two mating rollers through which pass the fastening member and top sheet of the absorbent article. In this process, the hook portions undergo what Lindqvist calls a “relative displacement.”

In accordance with the present invention, once the hook members of the fastening members have come into contact with the outer surface of the top sheet 14, the hook members of the second portion and the surface of the top sheet are caused to effect a relative displacement in a direction substantially parallel to the surface of the top sheet.

(Lindqvist, p. 9, lines 1-6.) First Quality argues that what Lindqvist describes as “relative displacement” is actually the same “shear stress” that K-C claims in the ‘939 patent.

As Butterworth noted, however, Lindqvist discloses a compression or bending force, not a shear force. (Decl. of G.A.M. Butterworth ¶¶ 131, 140.) Moreover, the ‘939 patent speaks to generating “a shear stress at the engagement seam to promote increased engagement between the fastening components” (‘939 patent, col. 36, lines 12-13.) Lindqvist, by contrast, teaches a method of maintaining a fastening component in a storage position, where there is no need to promote increased engagement between fastening components. Thus, even if Lindqvist disclosed a shear stress, it would not anticipate the ‘939 patent.

(b) Obviousness under 35 U.S.C. § 103

42. The other invalidity challenge First Quality presents regarding the ‘939 patent is that it would have been obvious over the Paragon Diaper Machine in view of the prior art or Lindqvist. The Paragon Machine had a free-wheeling roller, which First Quality alleges created a shear force on the fastening component of the diaper. Butterworth disagreed, noting that there was no information regarding the coefficient of friction created by the free-wheeling roller’s contact with the conveyor belt. Since it was a free-wheeling roller without any braking mechanism, he reasons, it could not create a shear stress. Butterworth’s opinion is supported by the diagram of the Paragon Diaper Machine, in which the words “Hook Compression” appear above the free-wheeling roller. (Decl. of Mickey Calvert, Ex. 16.) I conclude that the Paragon Machine did not generate shear

stress as disclosed in the '939 patent, so First Quality is unlikely to succeed in demonstrating that the '939 patent is invalid as obvious.

43. Based on the foregoing analysis, the Court concludes that K-C has shown a strong probability that it will succeed on the merits of its claims that First Quality has infringed the four process patents asserted in its Amended Complaint and that its patents are valid.

IV. Remaining Factors

44. The Court incorporates its findings concerning irreparable harm and balancing of harm from its previous decision denying K-C's motion for a preliminary injunction.

45. K-C is likely to suffer irreparable harm if First Quality is allowed to unfairly compete with K-C by selling a product produced with infringing methods. K-C has invested substantial resources in the research and development of its processes in reliance on the validity of its patents. As the Court observed in the order denying K-C's first motion for a preliminary injunction, calculating what K-C might lose as a result of price erosion as a result of K-C's need to reduce its prices to compete with First Quality's new product made with the accused processes is not easy to determine. Nevertheless, it remains a real threat to K-C given the fact First Quality has been actively seeking a toehold in the market. Even though K-C may have recently obtained an agreement with a major retailer to be its exclusive supplier of refastenable training pants, the fact that First Quality offers a similar product inevitably weakens K-C's negotiating position with its customers. It is also unlikely that K-C will simply be able to raise its price back to where it would have been if it ultimately prevails in the lawsuit. Thus, there is a likelihood of future losses due to price erosion that will be difficult to capture if K-C prevails.

46. Loss of market share is another way in which K-C argues it will be irreparably harmed unless preliminary injunctive relief is granted. It is obvious that if First Quality continues to use the accused methods to produce and sell training pants similar to those K-C produces and sells, K-C will suffer a loss of market share. While loss of market share can be measured, it is not a complete measure of damages because of the price erosion K-C incurs in its efforts to maintain its market share.

47. K-C also contends that it stands to suffer irreparable harm because First Quality's product is inferior and will damage the entire category, a category in which K-C is the main producer. First Quality takes issue with K-C's claim that the First Quality training pant is likely to generate a groundswell of consumer ill will toward refastenable training pants, as it claims to have received positive feedback from the mothers in the field who have employed the new pant. This argument in favor of irreparable harm is less convincing, however, as consumers are attentive to manufacturer reputation and appear adept at considering the quality of a good in deciding whether to make a purchase. Further, the evidence offered by K-C to show First Quality's training pant is of poor quality was too weak a foundation upon which to base a conclusion that First Quality's product will harm the product category or reduce demand.

48. Finally, First Quality has failed to provide adequate evidence of its ability to satisfy a judgment should K-C ultimately prevail. K-C has requested specific financial information, but First Quality has not produced it. The fact that it is unclear what ability First Quality may have to satisfy a judgment favors granting K-C's motion; even if K-C's injury due to the alleged infringement could be calculated as money damages, there is no assurance that First Quality would be able to pay.

49. The balance of harms would also tip in K-C's favor assuming a likelihood of success on the merits.

50. The public interest would also favor granting an injunction if K-C was likely to succeed on the merits, since there is no critical public interest at risk that would outweigh the public's interest in promoting patent rights and the innovation and investment they encourage.

V. Unclean Hands

51. First Quality argues that a further reason for denying K-C's motion arises under the doctrine of unclean hands. First Quality contends that K-C was "less than candid" in various statements it has made regarding its patents and the potential losses it will sustain if injunctive relief is not granted. "Unclean hands is a traditional defense to an action for equitable relief." *Original Great American Chocolate Chip Cookie Co., Inc. v. River Valley Cookies, Ltd.*, 970 F.2d 273, 281 (7th Cir. 1992). The defense is relevant to both preliminary and final equitable relief. *Id.* First Quality offers several examples of what it contends constitutes bad faith.

52. The first example First Quality cites is Robert Thibault's November 2009 testimony in support of K-C's initial motion for a preliminary injunction. From First Quality's point of view, Thibault wrongfully failed to disclose the existence of discussions or an agreement in principle between K-C and a major retailer at the hearing on the first motion. However, no final agreement had been arrived at by the time of the previous hearing. The failure to disclose an agreement reached in principle but not yet finalized does not constitute inequitable conduct or an effort to defraud the Court.

53. First Quality also alleges that K-C failed to highlight various prior art in the course of prosecuting the '751 patent, the '187 patent and the '939 patent before the U.S. Patent Office. First Quality points to the fact that two patents which call into question the validity of the '751 patent were merely included in a long list of other references in K-C's disclosure statement and not highlighted for the examiner's convenience in accordance with the guidance from the Manual of Patent Examining Procedure. It makes the same point regarding the disclosure of the Herrmann patent in the course of K-C's efforts to obtain the '187 patent, and Lindqvist in the prosecution of the '939 patent. First Quality's assertion that K-C has been less than candid for failing to highlight, or for "burying," these references rings hollow given the fact First Quality's own law firm has also submitted lengthy lists of references in patent prosecution. K-C's disclosure of these references without highlighting them does not demonstrate a lack of candor which would warrant a finding that K-C has unclean hands.

54. First Quality also accuses K-C of falsely claiming to be the innovator of training pants with refastenable side seams. In fact, however, K-C did not claim that it invented disposable training pants in general. Its claim is that it invented the particular design at issue here and that it was the first to commercialize disposable training pants with refastenable side seams. Viewed in light of the evidence the Court has heard over the course of the two separate hearings, K-C's statements do not appear false.

55. First Quality also observes that K-C opposed the application for EP 0 755 238 (filed April 11, 1995) ("the SCA patent") in the European Patent Office because, according to K-C, refastenable side seams were routine and obvious in 1994. (Doc. # 121, Ex. 3 at FQ05815-16.) First Quality seems to suggest that because K-C appears to have unsuccessfully opposed the SCA

application, it is precluded from later seeking its own patents for a similar invention or method. It cites no authority for this novel theory, however, and has not alleged that K-C engaged in inequitable conduct in obtaining its own patents. Indeed, First Quality has not even cited the SCA patent as prior art that invalidates K-C's patents at issue here. And while K-C may have thought at the time that it would be obvious to use known manufacturing methods to produce refastenable training pants, this does not mean that it did not learn otherwise when it embarked on its own project to manufacture them on a commercial scale in a preassembled condition. Based on the foregoing, First Quality's "unclean hands" defense must fail.

VI. CONCLUSION

56. K-C has demonstrated that it has a reasonable likelihood of success on the merits on its claims against First Quality. K-C has also established that it will suffer irreparable harm if an injunction is not granted, the balance of hardships lies in its favor, and the public interest will be furthered by affording meaningful protection to its patent rights. Because the other factors are all in favor of granting the preliminary relief K-C seeks, K-C's motion for a preliminary injunction will be granted enjoining First Quality from making, using, selling or offering to sell in the United States, or importing into the United States the methods of manufacturing disposable training pants with refastenable side seams that infringe on the '187, '316, '143 and '939 patents.

57. Rule 65(c) states that the court "may issue a preliminary injunction . . . only if the movant gives security in an amount that the court considers proper to pay the costs and damages sustained by any party found to have been wrongfully enjoined or restrained." Fed. R. Civ. P. 65(c). First Quality advised the Court that a reasonable bond in the event K-C's motion for a preliminary

injunction was issued would be \$39 million. The Court will therefore condition the issuance of the preliminary injunction on K-C's posting of a bond in such amount. In addition, the Court's order will be stayed for a period of thirty days to allow First Quality to seek a stay from the Federal Circuit in the event it chooses to appeal.

Dated this 20th day of May, 2010.

s/ William C. Griesbach
William C. Griesbach
United States District Judge