IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

INTERMARK FABRIC CORPORATION,	)	
Plaintiff,	)	Civil Action No. 3:02-CV-1267 (AVC)
v.	)	
MICROFIBRES, INC.,	)	
Defendant.	)	

JOINT TRIAL MEMORANDUM

1. Trial Counsel

a. Plaintiff Intermark Fabric Corporation

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b. Defendant Microfibres, Inc.

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2. Jurisdiction

The Plaintiff commenced this action for declaratory judgment of non-infringement and patent invalidity of U.S. Patent No. 5,981,021, entitled *Transfer Printed Flocked Fabric*, hereinafter the " '021 Patent". Jurisdiction is proper under the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et. seq., and the patent laws of the United States. The Plaintiff has also

brought counts under the Connecticut Unfair Trade Practices Act ("CUTPA") and for patent misuse. The Defendant, Microfibres, Inc. ("Microfibres"), has commenced a counter-claim for patent infringement and unfair trade practices. This court has primary jurisdiction under 28 U.S.C. §§ 1331, 1338(a) and 2201.

3. Jury Trial

This case is a jury trial.

4. Nature of the Case

The Plaintiff commenced this action for declaratory judgment of non-infringement and patent invalidity of U.S. Patent No. 5,981,021, entitled *Transfer Printed Flocked Fabric*, hereinafter the " '021 Patent". Jurisdiction is proper under the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et. seq., and the patent laws of the United States. The Plaintiff has also brought counts under the Connecticut Unfair Trade Practices Act ("CUTPA") and for patent misuse. The Defendant, Microfibres, Inc. ("Microfibres"), has commenced a counter-claim for patent infringement and unfair trade practices.

5. Stipulations of Law and Fact

The parties stipulate to the following:

(1) James McCulloch ("McCulloch") filed a patent application with the Patent and Trademark Office related to a transfer printed flocked fabric on July 31, 1992.

(2) U.S. Patent No. 5,981,021, entitled *Transfer Printed Flocked* (hereinafter *Fabric* the " '021 Patent") issued on November 9, 1999 to McCulloch.

(3) McCulloch assigned the patent to Microfibres.

(4) Claim 1 of the '021 patent claims as the invention: "A transfer printed, flocked fabric comprising a textile substrate, raised thermoplastic fibers on the substrate, a dark pigmented

adhesive adhering said fibers to said substrate and disperse dye distributed in a pattern in upper portions of said thermoplastic fibers."

6. Plaintiffs' Contentions

a. Overview

In 1989, the Plaintiff, Wayne Turcotte, of Intermark, created a flocked fabric with a dark pigmented adhesive called "Frosty." A flocked fabric is created by taking a substrate, such as a woven textile, coating an adhesive onto the textile substrate, and placing the coated substrate in a flocking chamber. In the flocking chamber, small pieces of flock, typically short pieces of nylon strands, are electrostatically charged, causing them to adhere into the adhesive in an upward orientation. The result is a material which has the appearance of velvet. Flocked fabrics have a wide range of applications such as clothing and upholstery. Flocked fabrics may be printed by a variety of printing methods – such as transfer printing and wet printing. Flocked fabrics are frequently referred to as Greige goods prior to finishing operations such as transfer printing. Mr. Turcotte specifically designed the Frosty product to be capacble of being transfer printed by manufacturing Frosty with a Type 66 nylon flock, which is the type of flock that will not melt during the transfer printing process.

From 1989, Intermark had sold the *Frosty* product with dark pigmented adhesives, however, the pigmented adhesives used for *Frosty* also included many shades which are not dark, including, white, tan, etc. The original name of Frosty was Cosmos. Intermark also sells another product known as *Flash*.

Microfibres, Inc., and its President, James R. McCulloch ("McCulloch"), certainly knew of Intermark's *Frosty* product prior to filing his application for a patent on July 31, 1992. Prior to applying for a patent, Microfibres supplied the nylon flock used to make the *Frosty* product,

and was informed by Intermark of a quality issue with its flock. Moreover, Intermark informed Microfibres of the need for consistent flock for various printing applications, including transfer printing.

In July of 1992, McCulloch applied for a patent for transfer printing on a textile substrate in which the flock was adhered to the substrate with a dark pigmented adhesive. Microfibres never informed the Patent Office of Intermark's *Frosty* product. For approximately seven years, the Patent Office rejected McCulloch's application. Microfibre's distinguished the prior art cited by the Patent Office by representing that the use of dark pigments was unknown, even though Mr. McCulloch was aware of the *Frosty* product. In distinguishing a patent to Smith, Microfibres represented that even though the use of a pigment in Smith was disclosed, the pigment used would not impart significant color to the adhesive. The examiner relied on this statement as indicated in the Reasons for Allowance.

Thus, on November 9, 1999, the '021 patent issued to McCulloch and was later assigned to Microfibres, which has been owned by McCulloch's family for several generations.

Microfibres has now accused Intermark, and its customers, of infringing the '021 patent, by selling *Frosty*. Microfibres has contacted various customers of Intermark. Intermark commenced this declaratory judgment action under the patent laws of the United States, seeking a declaration that it does not infringe the '021 patent and that the '021 patent is invalid. Intermark has since ceased operations.

The Intermark *Frosty* and *Flash* products were conceived, reduced to practice, offered for sale, publicly disclosed and known to the inventor, McCulloch, before he applied for his patent.

Intermark's contentions with respect to patent invalidity are numerous. For example, during discovery it was also revealed that Microfibres began using dark pigmented adhesives for

flocked fabrics in the early 1980's, and again never disclosed this information to the Patent Office. Other companies besides Intermark were also in the marketplace with a flocked fabric with a dark pigmented adhesive, used for transfer printing, prior to the bar date of the patent, which is July 31, 1991. Intermark has also uncovered flocking publications that predate the patent and which specifically teach a transfer printed flocked fabric with a pigmenting the adhesive.

Thus, Intermark contends that the '021 patent is invalid as anticipated under 35 U.S.C. §102 in light of (a) multiple prior art references, (b) prior knowledge and use of the invention and (c) sales of the invention more than a year before the filing date. Intermark also contends that the '021 patent is invalid under 35 U.S.C. §102(f) because McCulloch did not himself invent that subject matter of the '021 patent, or at a minimum was not the sole inventor as he claimed. The '021 patent is further invalid as obvious under 35 U.S.C. §103 based on prior art not before the examiner.

In addition to being invalid, the '021 patent is unenforceable based upon McCulloch's fraudulent procurement in obtaining the patent, including: McCulloch's intentional withholding of material information from the Patent Office concerning Intermark's Frosty product; McCulloch's intentional withholding of material information concerning Microfibres' use of dark pigmented adhesives to construct flocked fabrics in the 1980's; McCulloch's statements that with his invention the pressure used to transfer print the material could be reduced to 10 to 59 pounds, even though Microfibres had been using such pressures for years; and the inventor's admitted intentional failure to disclose the best mode of the invention. Further, McCulloch derived his alleged invention from his knowledge of Intermark's products and committed unfair trade practices by using the business relationship between Intermark and Microfibres, learning of

Intermark's processes and products, and passing them off as his own, fraudulently obtaining a patent, contacting Intermark's customers, and commencing litigation against Intermark without testing Intermark's products.

In addition to a declaration of non-infringement and patent invalidity, Intermark has brought claims for patent misuse and violations of the Connecticut Unfair Trade Practices Act ("CUTPA"). Intermark is also seeking its attorneys fees for this action pursuant to 35 U.S.C. §285.

B. Intermark's Frosty Product and Microfibre's Knowledge of Frosty

In 1989, Wayne Turcotte, formerly the Executive Vice President of Intermark, developed a flocked fabric with a dark pigmented adhesive, including black, used to adhere the flock to the substrate. The product was initially called Cosmos but ultimately was given the name Frosty. Frosty was first manufactured and sold by Intermark in 1989. Intermark also created another product called "Flash" which had various fluorescent adhesives, such as pinks, yellows, oranges, etc. Intermark's customers include both wet printers, transfer printers, and piece dyers. In this action, Intermark has produced or otherwise made available its production logs and samples of Frosty dating back to 1989. Mr. Turcotte specifically designed the Frosty product to be capable of being transfer printed by manufacturing Frosty with a Type 66 nylon flock, which is the type of flock that will not melt during the transfer printing process.

On August 14, 1991, William Lucchesi, President of Intermark, wrote Arnold Kaija of Microfibres, informing Microfibres that Intermark was interested in purchasing a "Type 66" nylon flock. Type 66 nylon flock has a high melting temperature, thus allowing it to be used in transfer printing. Intermark initially purchased 5,500 pounds of natural flock from Microfibres to use in the manufacture of its products, including Flash and Frosty. In September of 1991,

Intermark purchased an additional 1,000 pounds of natural flock to use in the manufacture of its products, including Flash and Frosty. In accordance with the relationship, Microfibres committed itself to supply Intermark with 25,000 pounds of natural flock per week.

By October of 1991, a quality problem arose with the consistency of the flock supplied by Microfibres. On October 2, 1991, Mr. Lucchesi informed Mr. Kaija of Microfibres of the need for flock consistency:

> As I am sure you are aware, consistency of Greige goods is critical in the market place today and Intermark Flock Corp. prides itself for producing a problem free product. Our products are used by many different customers, some wet printing and some transfer printing. . .
>
> It is critical that you remain consistent in the 1.8 Denier, 3.0 Denier and 1.0 Denier flock you ship in the following areas . . .
>
> Dye index is very critical for once transfer printer matches paper on your fiber, it must not change. . . (emphasis added)

Dye index refers to the calculated amount of color that a transfer print paper will deliver to a product. If a dye index is changed, the resulting transfer printed flocked fabric will change color.

In response to the quality control problem, Mr. Kaija of Microfibres visited Intermark's facility in the fall of 1991 on more than one occasion. During Kaija's visit to Intermark's facility, he was able to observe production runs of the Frosty fabric, i.e. with a textile substrate, natural flock and a dark pigmented adhesive. One of the production runs used Microfibres' flock and another production run used a competitor's flock. The purpose of these production runs was identify the source of the problem. As a result of observing the production run, Microfibres was privy to machine settings used by Intermark in its production run.

McCulloch, as well as James Fulks, Vice President of Microfibres, who later both participated in the prosecution of the '021 patent, knew about the supply relationship as both received copies much of the correspondence concerning the supply of flock to Intermark. In fact, in the Fall of 1991, Kaija reported directly to James Fulks.

According to its Answers to Interrogatories, Microfibre's McCulloch "conceived" of the idea for transfer printing on a flocked fabric having a dark pigmented adhesive, i.e. Frosty, in April of 1992.[1]. On July 31, 1992, the first related patent application to the '021 patent, which contained 25 claims, was filed by Microfibres with the Patent Office. The '021 patent is assigned to Microfibres, and McCulloch is listed as the sole inventor.

On September 14, 1992, McCulloch executed a Declaration which was filed at the Patent Office, stating, in part:

> I hereby state that I have reviewed and understand the contents of the above-Identified specification, including the claims, as added by any amendment referred to above. I acknowledge a duty to disclose information which is material to the examination of this application in accordance with 37 C.F.R. 1.56(a).

In the "Background of the Invention" of the initial patent application, McCulloch represents that previous efforts to achieve "deep, dark shades" in transfer printed flocked fabrics had been unsuccessful and describes the problems in the prior art as follows:

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[1] At the depositions of McCulloch, Fulks, and Laird (the Director of Engineering), each witness testified that the "invention" was conceived in April of 1992. After Plaintiff uncovered samples of such products in 1991, McCulloch attempted to change this very important date in the errata sheet of his deposition. See Plaintiff's Motion to Exclude Evidence and to Strike Pleadings filed June 10, 2003. McCulloch and Laird also attempted to alter their testimony concerning the "best mode." *See* Court's decision striking portions McCulloch's declaration which contradicted his deposition testimony, issued September 12, 2003. All three individuals participated in the prosecution of the patent.

The revised declarations of McCulloch, Fulks, and Laird raise other issues. Specifically, the alleged earlier conception date does not help Microfibers concerning certain intervening sales by other third parties between the conception date and the application for patent under 35 U.S.C. §102(g).

> [I]t has not been possible previously in printing the flocked fabrics with transfer printing to achieve deep, dark shades using conventional print papers. When this is attempted, there are problems of grin-through, crocking and inferior lightfastness. The fabric substrate can be seen between the fibers, interfering with the desired visual effect of the printed pattern. Efforts to add dyestuff to print paper in order to achieve deeper shades have been unsuccessful because dyestuff in such heavy concentrations is not fully absorbed into the fibers. As a result the dyestuff can rub off, an undesirable and commercially unacceptable result. The rubbing off of colors in this fashion is known as "crocking." Accordingly there is a need in the art for an improved method for transfer printing onto flocked fabrics to achieve deep, dark shades, and also a need for deep, darkly transfer printed flocked fabrics.

McCulloch represented to the Patent Office that the conventional way that flocked fabric was made was with a clear adhesive. For example, in the initial patent application and in the '021 patent itself, McCulloch represented that "[f]locked fabrics are known to be made by adhering short fibers, typically nylon or polyester to a substrate using, conventionally, a clear adhesive."

Also, in the Detailed Description of the Preferred Embodiments of the patent application, McCulloch represented that under the invention, a preferably dark pigmented adhesive is used in lieu of the conventional clear adhesives to manufacture flocked fabric:

> The present invention is made possible, in part by preparation of the flocked fabric. In lieu of using the conventional clear adhesives used for adhering the flock to the substrate, a pigmented adhesive is substituted ... A pigment is added to the basic adhesive, the precise color of the pigment being dictated by desired results. Preferably, the pigment is of a dark color to help achieve the deep, dark color in the printed fabric. The pigment may be black or other dark shades such as navy blue, dark red, dark green, or the like.

Early on in prosecution of the '021 patent, Microfibres submitted to the PTO six fabric samples that consisted of two samples of three different print patterns. Microfibres represented that in each of the three pairs of samples, one sample was made in accordance with the invention, i.e. a "darkly pigmented adhesive" and the other with "a conventional, light colored adhesive."

1. Dark Pigment Adhesives Were Known

The use of dark pigmented adhesives in the manufacture of flocked fabric was well known in the industry many years before Microfibres filed its patent application in 1992 and McCulloch knew it. In addition to its knowledge of Intermark's Frosty product, Mr. William Laird, Director of Engineering for Microfibres, testified that Microfibres had itself been manufacturing and selling flocked fabrics with dark pigmented adhesives, including black, blue and green, as far back as 1981. Microfibres compounded its own adhesives and had facilities specifically dedicated to pigmenting the adhesives in the early 1980's.

Mr. Fulks admitted at his deposition that he was aware Pervel Industries was using such dark pigmented adhesives in 1978. Pervel purchased the pigmented adhesives from American Finish Company. Mr. Steven Rosenthal, formerly of American Finish Company, testified such dark colored adhesives were sold by American Finish to flock manufacturers commencing in the early 1970's. Peter Hadley, formerly of Malden Mills, located in Massachusetts, testified Malden Mills had been using colored adhesives in flocked fabric since 1965.

2. The Patent Office Repeatedly Rejected The Application As Obvious and McCulloch Distinguished the Prior Art on the Basis That Dark Colored Adhesives Were Novel

In an Office Action dated November 3, 1993 and in each of the six office actions that followed during the prosecution of the '021 patent over the course of the next several years, the examiner repeatedly rejected all of the claims in the application as obvious under 35 U.S.C. § 103. In doing so the Examiner cited to the following three patents: (1) United States Patent No. 4, 314,813 to Masaki (hereinafter "Masaki Patent"); (2) United States Patent No. 4,049,374 to Rejito (hereinafter "Rejito Patent"); and United States Patent No. 2,308,429 to Smith, et. al. (hereinafter "Smith Patent").

In each such office action, the examiner opined that it would have been obvious to one skilled in the art to combine the Masaki Patent and the Rejito Patent, which teach transfer printing flocked fabric, with the Smith Patent, which "teaches flocking a textile substrate by adhering the flock to the substrate with a blue pigmented 'cement' which is the adhesive used to adhere the flock to the substrate", to create the flocked fabric claimed by Microfibres.

On December 1, 1993, following the issuance of the November 3, 1993 Office Action, the examiner held an interview with patent counsel for Microfibres. At issue during the interview was the indefinitness of the term "dark" under 35 U.S.C. §112 and how Microfibres could better define that term in the specification of the patent. During the interview on December 1, 1993, in conjunction with discussing the "112 problems", the examiner referenced the Smith Patent and United States Patent No. 4,963,422 to Katz et. al.

On January 24, 1994, following the interview, Microfibres submitted a response to the November 3, 1993 Office Action. Microfibres amended claim 13 of the initial '021 patent application (which is claim 13 of the '021 patent) which claimed only a "pigmented adhesive", by adding the limitation that the pigmented adhesive be a "dark" pigmented adhesive.

In that same response, Microfibres represented that while it is known to use "color adhesives" in the manufacture of flocked fabrics but did not disclose that it was known in the prior art to use dark pigmented adhesives in the manufacture of flocked fabrics. Microfibres then distinguished the Smith Patent by - inconsistent with what McCulloch, Laird, Fulks and Microfibres knew - arguing that it did not teach dark pigmented adhesives as the blue pigment in the cement disclosed in Smith is only one part in 80,000, and therefore the blue pigment "would clearly be insufficient to impart any significant color to the cement."

Microfibres went on to distinguished the Katz Patent by arguing that it "only mentions that colored adhesives ' --- can be used to create further effects thereby varying the ornamental appearance of the product ---"' and that Katz and the prior art generally fail to disclose transfer printed flocked fabric with a dark pigmented adhesive.

In the next office action which was dated April 18, 1994, and in the five office actions thereafter, the examiner stated that McCulloch acknowledged prior use of "pigmented adhesives" but that McCulloch argued that the prior art generally fails to disclose transfer printed flocked fabric with a "dark" pigmented adhesives. In each of those office actions, the examiner also questioned the novelty of pigmenting the adhesive under the invention, as the examiner saw no appreciable difference in the samples submitted by McCulloch on August 17, 1993 and thus saw no evidence of a superior product.

Without responding to the April 18, 1994 Office Action, on August 22, 1994, Microfibres filed a continuation application under 37 C.F.R. 1.62 of the then patent application filed on July 31, 1992, and on September 30, 1994, Microfibres abandoned the patent application filed on July 31, 1992. Over a period of four years following the continuation application filed on August 22, 1994, Microfibres filed five more continuation applications, four of which Microfibres abandoned without any substantive prosecution.

Before an office action issued in response to the sixth continuation application filed by Microfibres on November 13, 1998, Microfibres filed a Preliminary Amendment that included a Declaration of William Laird under 37 C.F.R. § 1.132 wherein Laird attributed the reason for filing several continuation applications from 1994 through 1998 with no substantive prosecution to scheduling problems:

> The Examiner is no doubt curious as to why a number of continuations have been filed without substantive prosecution. The reason is that applicant had intentions

> to run tests to generate the evidence suggested by the Examiner, but was having difficulty in arranging scheduling of the test.

On May 27, 1999, a Notice of Allowability was issued by the PTO and attached thereto was the Examiner's "Reasons for Allowance." Under the Reasons of Allowance, the examiner opined that the Smith Patent suggests only "the addition of a small amount of pigment to the adhesive" The examiner then opined that Microfibres solved the problem of grin-through:

> Thus there are two statements of the prior art reinforcing applicant's position that a dark adhesive is necessary to reduce grin through. Applicant has solved the same problem in a manner not taught in the prior art; that is by adding a pigment to the adhesive. (emphasis added)

Thus, McCulloch, and the other representatives of Microfibres secured the '021 patent by perpetuating a fraud. The examiner was specifically focused on the use of dark pigmented adhesives in the prior art. McCulloch failed to disclose both the Frosty product and Microfibre's own use of dark pigmented adhesives commencing in the early 1980's. The relevance and materiality of Frosty is easily established by Microfibres' counterclaim, seeking infringement for the sale of Frosty for application in transfer printing.

3. The Fraudulent Representation Concerning the Reduction of Pressure

McCulloch committed another outright fraud during the prosecution of his patent application when he stated to the patent office that the invention was an improvement over the prior art because it allowed one to transfer print on flocked fabric at "lower pressure ranges of 10 to 59 pounds." This was untrue. Microfibres had installed a transfer printing machine in the 1980's and had been transfer printing at such pressures for years.

Specifically, in the patent application, McCulloch represented that conventional pressure ranges for transfer printing flocked fabric prior to the filing of the patent application on July 31,

1992 had been approximately 60 pounds per square inch and that his invention was an improvement because it lowered the pressure needed to transfer print:

> Typically, when using the method of the invention the printing step may include pressing the fabric to transfer print paper at pressures lower that in conventional transfer printing. For example, the pressure may be between about 10 and about 59 pounds. . .
>
> For example, when using a Gessner transfer print machine … pressures on the order of 60 pounds (27.3 kg) are used conventionally. With the invention, the pressure can be reduced to as low as 10 pounds (4.5kg) for some print patterns and still achieve good depth of shade. . .

During the prosecution of the '021 patent, the examiner was focused on the claimed advantage that one manufacturing transfer printed flocked fabric under the invention could do so at pressures lower than conventional transfer printing pressure ranges. On March 17, 1993, the examiner issued the first Office Action wherein he opined that "[i]n essence Applicants' (sic) method (claims 13 – 25) is at low pressure (10-59 pounds per square inch) to transfer print a flock nylon fabric

In rejecting claim 21 in the March 17, 1993 Office Action, which claimed a method of transfer printing flocked fabric "at pressure lower than in conventional transfer printing", the examiner inquired: "What are the "conventional" transfer printing pressures?" (emphasis in original). In the response to the Office action, McCulloch responded that the "specification made it clear that conventional pressures are on the order of 60-pounds."

In the Office Action dated April 18, 1994, and in the five office actions thereafter, the examiner opined that pressure was critical to McCulloch's invention. Microfibres' own expert testified that the ability to reduce the transfer printing pressure is critical to the invention as he opined that it is "the only way you can make the fabric" under the invention.

Despite McCulloch's representations to the Patent Office, Microfibres had used such pressures for transfer printing since at least the 1980's. William Laird testified at his deposition:

Q. In 1991, were the conventional pressures between 10 and 60 pounds?
A. Yes.
Q. And they still remain between 10 and 60 pounds?
A. I would imagine so, yes.
. . . .
Q. In the '80's was the conventional pressure still between 10 and 60 pounds?
A. Yes. Normally, it was normal to run at the upper limits . . .

Q. When did. the Hartford office start -- switch to the lower pressure?
A. When we started heat setting the fibre (sic) and coming up with an erect pile on the finished product.
Q. And you testified -- strike that. What was the year that you installed the heat setting unit?
A. Well, they -- we started out -- like I told you before, we started out heat setting in the main oven on the final pass. The -- I'm not sure exactly when we installed the heat set oven. That was, I told you, early '90's sometime.
Q. I think you testified in 1988 you began using the oven to heat set.
A. The main oven.
Q. The main oven?
A. Yes.
Q. That heat setting process that you were using in 1988, were you using, then, a reduced pressure to transfer print?
A. We started to, yes. That's what brought us to reduce the pressure.
Q. Okay. So in 1988, you reduced the pressure --
A. Yes.
Q. -- in transfer printing?
A. Yes.

Therefore, four years prior to filing the '021 patent application, Microfibres had been transfer printing flocked fabric using pressures in the lower portion of the pressure range of between 10 and 59 pounds per square inch, and yet McCulloch represented that his invention allowed such pressures as an advancement.

C. Transfer Printing On Flocked Fabrics With Dark Pigmented Adhesives Was Known

1. Vertiple, Inc. and Bunch Fabrics

According to the testimony of Hemendrah Shah, in 1984, while he was employed by a company called Vertipile, Inc. ("Vertipile"), Mr. Shah became aware of the idea of transfer printing on flocked fabric with dark pigmented adhesives. At that time, Vertipile was

manufacturing and selling flocked fabric with natural flock and dark pigmented adhesives to a third party called Bunch Fabrics. The colors of the adhesive in this flocked fabric product included black, brown, green, red and blue.

According to Charles Bunch, Bunch Fabrics was in the business of transfer printing flocked fabric and in 1984 was, in fact, transfer printing on the flocked fabric with natural flock and dark pigmented adhesives that Vertipile was selling to it. Also during that same time frame in 1984 and in conjunction with the business relationship between Vertipile and Bunch Fabrics, Shah visited Charles Bunch of Bunch Fabrics on more than one occasion to discuss products and observe samples including the flocked fabric with natural flock and dark pigmented adhesives that Vertipile sold to Bunch Fabrics on which Bunch Fabrics was transfer printing.

According to the testimony of Peter Hadley, in 1985, he was the production manager at Vertipile. His job included supervision of the production issues related to transfer printed products. Mr. Hadley had conversations with Mr. Bunch in the mid-1980's regarding the transfer printed flocked fabrics with dark pigmented adhesives that Bunch was manufacturing. Mr. Hadley also observed transfer printed flocked fabrics with dark pigmented adhesives manufactured by Bunch. There was no confidentiality agreement between Bunch Fabrics and Vertipile during this time period.

In 1984 or early 1985, Vertipile itself purchased a transfer print machine. At that time, Shah was Vice President of Research and Development at Vertipile and thus was involved with the technical development of products, including the manufacture of flocked fabric with dark pigmented adhesives. Shah was even able to locate a production record from this early era. In 1985, as disclosed in a document entitled "Experimental Production Run" dated May 16, 1985, Vertipile developed a fabric base that consisted of a flocked fabric with natural flock, a textile

substrate and a dark blue pigmented adhesive for purposes of transfer printing. In making the fabric in 1985, Vertipile understood that pigmenting the adhesive allowed one to decrease the pressure used during transfer printing. In fact, according to Shah, the transfer printed flocked fabric with a textile substrate, natural flock and a dark blue pigmented adhesive created by Vertipile in 1985 could be transferred printed using pressures anywhere between 10 and 60 PSI. According to Peter Hadley, Mr. Hadley was listed on the distribution list of the Experimental Production Run as "PH" and thus was copied.

In 1985, Vertipile began transfer printing internally and began manufacturing and selling a transfer printed flocked fabric with dark pigmented adhesives. In 1985, Vertipile was selling, through a subsidiary called Quaker Fabrics, transfer printed flocked fabric with black pigmented adhesives to furniture manufacturers. Specifically, in 1985, Vertipile was selling transfer printed flocked fabric with black pigmented adhesives to La-Z-Boy. Also in the 1980's, Vertipile was also manufacturing and selling air texturized transfer printed flocked fabrics with a textile substrate and dark pigmented adhesives. Vertipile was also selling air texturized flocked fabric with a dark pigmented adhesives to third parties for transfer printing.

2. Spectro Coating and Culp

In 1988, Shah, through a company called Spectro Coating Corporation ("Spectro"), purchased a flock coating line from Culp, Inc. ("Culp") for purposes of manufacturing flocked fabric. In 1989, Spectro was manufacturing flocked fabrics with natural flock and dark pigmented adhesives. Spectro was also heat setting its flocked fabric with dark pigmented adhesives in 1989. In 1990 or 1991, Spectro began manufacturing and selling a product called Cadillac which consisted of a flocked fabric with a textile substrate, natural flock and a black adhesive.

Spectro was selling the Cadillac product with a black adhesive to a company called Anabel in Belgium in 1990 or 1991. In 1991, Annabel was a transfer printing outfit and was transfer printing on Spectro's Cadillac product with a black adhesive. According to the testimony of Boyd Madren, an employee of Culp, and Shah, in 1991, Spectro was also selling the Cadillac product with a black adhesive to Culp. At that time, Culp was Spectro's largest customer. At that time, Culp was in the business of transfer printing on flocked fabric. In 1991, Culp was transfer printing on Spectro's Cadillac product that contained a black adhesive. Throughout the relationship between Spectro and Culp in 1990 through 1992, representatives from Culp visited Spectro in Massachusetts and Shah visited Culp's facility in North Carolina. During these meetings the parties, among other things, reviewed and discussed products including products consisting of transfer printed flocked fabric with dark pigmented adhesives. At the time, in fact, Shah would visit Culp's facility approximately every four to six weeks to discuss the business, quality issues and new products.

In October of 1991, Spectro sent a correspondence to Culp requesting that Culp transfer print on the samples enclosed therein. The samples enclosed with the October 1991 correspondence consisted of flocked fabric with a textile substrate, natural flock and black pigmented adhesive and were manufactured by a lab technician at Spectro prior to the October 1991 correspondence.

In December of 1991 and in January of 1992, Culp sent to Spectro samples of transfer printed flocked fabric with a black pigmented adhesive. In at least December of 1991, Culp was transfer printing on Spectro's Cadillac product which, again, consisted of flocked fabric with a textile substrate, natural flock and back pigmented adhesive. Also in at least December of 1991, Culp was in production of and selling transfer printed flocked fabric with back pigmented

adhesives. There was no confidentiality agreement between Culp and Spectro during the time period relevant hereto and thus all disclosures made between the two companies were public disclosures. A sample of this product has been produced.

3. Spectro Coating and Leathertex

In approximately 1990, Leathertex became a customer of Spectro. In 1991, Leathertex was in the business of buying flocked fabric and transfer printing on the flocked fabric for use on upholstery in the furniture industry. In July of 1991, Spectro shipped 3,500 yards of flocked fabric with natural flock and beige and black adhesive to Leathertex so that Leathertex could transfer print onto the flocked fabric.

On August 11, 1991, Leathertex sent a facsimile to Spectro indicating that Leathertex desired to purchase from Spectro flocked fabric with a natural flock and a dark adhesive and indicated that a sample would be sent via Federal Express. The sample sent by Leathertex as referred to in the August 11, 1991 facsimile comprised a transfer printed flocked fabric with natural flock and a black pigmented adhesive. The sample sent by Leathertex comprising a transfer printed flocked fabric with natural flock and a black pigmented adhesive was received by Spectro sometime after August 11, 1991 but nevertheless in or around August 1991. The sample has been produced.

4. The Squires Patent

An anticipatory reference can also be found in United States Patent No. 4,894,748 to Squires (the "Squires Patent"). The Squires Patent issued on January 23, 1990. The Squires Patent discloses transfer printing on a flocked fabric with a textile substrate and an adhesive with a "solid color". The Squires Patent further teaches the manufacture of flocked fabric with a type 66 nylon flock.

The Squires Patent not only discloses but actually claims a transfer printed flocked fabric with a colored adhesive. Claim 10 discloses a heat set flocked fabric with a textile substrate. Claim 15, which depends from Claim 10, teaches transfer printing the flocked fabric disclosed and claimed in Claim 10. Claim 17, which depends from Claim 15, teaches using an adhesive that has a "solid color" which could be black, blue or any color. Moreover, the product made using the invention disclosed in the Squires Patent is a textile.

5. Design with Flock In Mind

Yet another anticipatory reference can be found in the printed publication entitled "Design with Flock in Mind" which was published in 1990. According to the testimony of Steven Rosenthal, the editor of the Design with Flock in Mind publication and early member of the American Flock Association, this publication was the culmination of a project that was started at the American Flocking Association in or around 1985 or 1986. The publication was prepared as a group effort by members of the American Flock Association, including but not limited to Hemedrah Shah and Peter Hadley.

The publication came in two forms: a high quality color version that had the title "Design with Flock In Mind" logo in red across the front cover which was distributed to the AFA members and a less expensive black and white copy of the brochure entitled "Flocking".

According to Mr. Rosenthal, Design with Flock in Mind[2] was published in October of 1990 and was initially distributed to members of the AFA. Initially, each member of the AFA was given five copies of the formal Design with Flock in Mind version of the publication and additional copies could be purchased for two dollars.

Design with Flock in Mind describes each facet of flocked fabric under individual headings from "Flocking Substrates" through "Finishing Flocked Fabrics." Under the heading "Flocking Substrates", the publication discloses a flocked fabric with a substrate, including a textile substrate. Under the heading "Flock Adhesives", the publication discloses pigmenting adhesives in the manufacture of flocked fabrics. Under the heading "Finishing Flocked Fabrics", the publication discloses transfer printing flocked fabrics.

Figure 2 of Design with Flock in Mind teaches one skilled in the art to combine the elements included in manufacturing flocked fabrics. Figure 2 discloses a block diagram of the complete manufacturing process of flocked fabric from "Substrate Preparation" to "Flocked Fabric Finishing." In Figure 2, the block entitled "Adhesive Preparation" refers to the adhesives described under the corresponding heading "Flock Adhesives" which teaches pigmenting the adhesive. The block entitled "Flocked Fabric Finishing" refers to the finishing techniques under the corresponding heading of "Finishing Flocked Fabric" which teaches transfer printing of flocked fabric. Thus, the publication teaches a transfer printed flocked fabric with a pigmented adhesive.

It should be noted this publication corroborates the testimony of Hadley and Shah that Vertiple, Spectro Coatings, Culp and others were transfer printing on a flocked fabric with a dark pigmented adhesive in the 1980's. Shah and Hadley were the authors of this publication, begun

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[2] Following the deposition of Steven Rosenthal, Intermark was able to obtain a copy of the color version of "Design with Flock in Mind" from the American Flock Association via a subpoena duces tecum.

in the 1980's and distributed to the membership of the American Flock Association in October of 1990. It should be noted that Microfibres is presently a board member of the American Flock Association, and has been a member for many years.

6. Van Heel Publication

Another anticipatory reference can be found in the printed publication entitled "The Flocking Process" authored by G.P. Van Heel. Van Heel was published by Rohm & Haas in the late 1970's. Van Heel discloses a flocked fabric comprising textile substrate, raised thermoplastic flock fibers, including but not limited to nylon fibers, and adhesive adhering the fibers to the substrate. Van Heel also discloses pigmenting the adhesive. More specifically, under the heading "Finishing of Flocked Fabrics," Van Heel states: "Besides pigmenting the adhesive formulation, there are different ways to dye the resin which is normally not affected by dyes used on cellulose flock." On the next page and under that same heading, Van Heel discloses transfer printing on flocked fabric: "Printing of flocked surfaces is also possible, either by rotary screen printing methods of (sic) by the transfer printing process."

7. Malden Mills

In the mid-1980's a company called Malden Mills was manufacturing and selling transfer printed flocked fabrics with dark pigmented adhesives. According to the deposition testimony of Moustafa Nour, Malden Mills was using dark pigmented adhesives in the early 1970's in the construction of flock fabrics for wet printing. In approximately 1987, Malden Mills purchased a transfer printing machine and used the same flocked fabric materials have a pigmented adhesive in Malden's transfer printing operation. Mr. Nour was frequently consulted on methods of improving the production.

Mr. Nour's testimony is supported by the testimony of Peter Hadley, who worked for Malden Mills from 1965 through 1983. In 1983, Mr. Hadley left Malden Mills and went to work for Vertipile. However, after leaving Malden Mills, Mr. Hadley kept in close contact with several employees of Malden Mills and often played cards with them. In 1986 or 1987, Malden Mills received several customer complaints regarding the transfer printed flocked fabric with the dark pigmented adhesive. Mr. Hadley played cards with several of his former colleagues at Malden Mills and was contacted to give assistance. Although employed by Vertipile at that time, in response to this request for assistance, Mr. Hadley provided Malden Mills with several suggestions to address the customer complaints and over a period of several months discussed the quality issues with Malden Mills until it was solved. In offering his assistance, Mr. Hadley observed, evaluated and tested samples of transfer printed flocked fabrics with a textile substrate and dark pigmented adhesives that were manufactured by Malden Mills.

Following the issuance of the '021 patent in 1999, knowing that the '021 patent was invalid, Microfibres sent out several letters to companies within the upholstery industry, including Intermark, placing them on notice of the existence of the '021 patent and informing each recipient that the purported invention covered under the '021 patent is protected intellectual property owned by Microfibres and that said invention claimed therein cannot be used or reproduced without Microfibres' authorization.

Knowing that the '021 patent is invalid, Microfibres sent a cease and desist letter to Spandauer Velours GmbH & Co. ("Spandauer") claiming that Spandauer was infringing the European counterpart to the '021 patent, i.e. European Patent No. 0.581.614 B1 entitled Transfer Printing of Flocked Fabric (the '614 patent"). Spandauer was a long standing customer of Intermark. The relationship between Spandauer and Intermark was known to Microfibres. In

response to the cease and desist letter, Spandauer sent Microfibres a document entitled "The Flocking Process" authored by G.P. van Heel of Rohm and Haas.

James Fulks and William Laird reviewed portions of the document entitled "The Flocking Process" that suggested the manufacture of transfer printed flocked fabric with a pigmented adhesive. Intermark and Microfibres directly competed in the upholstery industry for the sale of flocked fabric. Microfibres holds a dominant position in that market. Damages have been bi-furcated by the Court.

D. The '021 Patent is Unenforceable under 35 U.S.C. §112, ¶1

In accordance with his duty of candor and under 35 U.S.C. §112, ¶1, McCulloch was required to disclose in the specification of the '021 patent the best mode contemplated by him of carrying out the invention. As admitted by McCulloch himself, the best mode of achieving transfer printed flocked fabric under the claimed invention is by employing a specialized heat setting process developed at Microfibres. Heat setting is a process that exposes the flocked fabric with fibers in a raised state to high temperatures for a sustained period of time which allows the fibers to "remember" the state in which they were in during that exposure. The pile of a transfer printed flocked fabric that is not heat set "comes out flat."

McCulloch described the specialized heat setting process as comprising the use of infrared lights in the heat setting equipment and the ability to control the temperature exposure thereby allowing one to obtain a more uniform heat dispersion of the flocked fabric. McCulloch admitted not only that Microfibres developed this heat setting process before the filing of the initial patent application but also that, before filing the application, he contemplated that this heat setting process was the this best mode of carrying out the invention.

Specifically, during his deposition on April 17, 2003, James McCulloch made the following admissions under oath with respect to the modified heat setting system that Laird developed and installed in April of 1992: **(1)** prior to filing the initial '021 patent application on July 31, 1992, William Laird developed a unique heat setting system; **(2)** prior to filing the initial '021 patent application, there were conventional methods of heat setting flocked fabric and there was Laird's new method; **(3)** the initial infrared ovens installed by Microfibres in 1991 did not provide uniform heat dispersion over the flocked fabric; **(4)** Laird's modifications to the infrared ovens improved the quality of the product under the invention; **(5)** in developing his heat setting system, Laird developed specific instrumentation or machinery to heat set in a different way than had been done before; **(6)** Laird's heat setting system was unique due to the "location of the equipment" and the "type of controls [Microfibres] used"; **(7)** Laird's heat setting system involved modifying the existing equipment; **(8)** Laird's heat setting system gave Microfibres more control over heat setting the flocked fabric and ensured more uniform heat dispersion over the flocked fabric; **(9)** Laird's heat setting process reduced the time that the flocked fabric was exposed to heat and thus reduced yellowing the flocked fabric; **(10)** Laird's heat setting process allowed one to achieve deep dark colors under the invention and improved color uniformity across the face of the flocked fabric; **(11)** after it was installed in 1992, Laird's heat setting system was the system used by Microfibres to heat set its flocked fabric; **(12)** it was Laird's modifications to the infrared ovens that were trade secret; **(13)** prior to filing the initial '021 patent application, McCulloch knew about Laird's heat setting system; **(14)** prior to filing the initial '021 patent application, McCulloch contemplated that Laird's heat setting system was the "best way" to make products under the invention; **(15)** the '021 patent does not disclose Laird's heat setting system; and **(16)** Microfibres considered and still considers Laird's heat setting

system a trade secret. Since making the above admissions, McCulloch has attempted to change his testimony.

The specialized heat setting process is not disclosed in the specification of the '021 patent. Instead, prior to filing the initial patent application and even to this day, McCulloch and Microfibres consider the specialized heat setting process to be a trade secret.

In order to address problems of uneven heat setting that it was experiencing with its prior heat setting system, in the Fall of 1991 Microfibres purchased electric infrared heaters from Glenro, Inc. ("Glenro heaters") to be used to heat set its flocked fabrics. The Glenro heaters were installed in 1991 at the exit end of one of the gas ovens on the flocked fabric production line. The installation of the Glenro heaters in the Fall of 1991 did not fully resolve the problems that Microfibres was experiencing with uneven heat setting. To address this continued problem, in April of 1992, William Laird modified the Glenro heaters by installing two infrared sensors and thermometers (purchased from Glenro) on the outside edges of the Glenro heaters. The infrared sensors and thermometers monitored the temperature of the fabric at the edges "to ensure a uniform heat set." Specifically, the additional sensors and thermometers provided temperature data to employees who would then manually adjust the temperature at the edges of the fabric accordingly to maintain an even heat set across the fabric. Therefore, the modifications made and installed by Laird in April of 1992 solved the uneven heat setting problem as they allowed Microfibres to establish the "side-center-side" control it needed. In 1993, Microfibres replaced the two sensors and thermometers installed by Laird in 1992 with new controls that performed the exact same function as the 1992 sensors and thermometers which did nothing more than adjust the temperature at the edges of the fabric automatically.

Internal documentary evidence of the contemplated best mode also exists. In an internal document entitled Project Trial Request dated April 29, 1992 (three months before the filing of the initial '021 patent application) Microfibres began to run tests of the transfer printed flocked fabrics with dark pigmented adhesives covered under the '021 patent. In that document, McCulloch requested that samples consisting of heat set transfer printed flocked fabrics with dark pigmented adhesives be prepared for purposes of research and development. Additionally, a memorandum dated December 2, 1992 prepared by Michael Czarnecki, current Vice President of Sales and Marketing at Microfibres, shows that the new transfer printed flocked fabrics with dark pigmented adhesives that Microfibres was interested in selling in 1992 were heat set.

E. The '021 Patent is Invalid under 35 U.S.C. § 102(f).

In support of changing his testimony as to the conception of the invention from Spring of 1992 to March of 1991, McCulloch sole documentary support is an internal memorandum from March of 1991 which makes is clear that Laird - not McCulloch - had already made a flocked fabric with a pigmented adhesive. Therefore, McCulloch, if an inventor at all, is certainly not the sole inventor as he has represented to the Patent Office.

F. CUTPA and Tortious Interference.

For many years prior to Microfibres' assertion of its claims of infringement, Intermark and Spandauer enjoyed a long relationship wherein Spandauer was one of Intermark's major customers. The relationship continued and Spandauer obtained an interest in Intermark. As a result of the commencement of Microfibres' claims of infringement in 2002, Intermark's sales to Spandauer drastically fell in 2003 and 2004 and eventually were negligible in 2005. The large drop in sales in this short period of time contributed to the demise of Intermark.