

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

COMPONEX CORPORATION,

Plaintiff,

v.

ELECTRONICS FOR IMAGING, INC.,

Defendant.

OPINION & ORDER

13-cv-384-wmc

Plaintiff Componex Corporation alleges that defendant Electronics For Imaging, Inc. (“EFI”), infringes two of its patents for printing technology. This opinion is limited to claims relating to the U.S. Patent No. 6,685,076 (“the ‘076 patent”). As is common in patent cases, the parties have filed cross-motions for summary judgment. Componex seeks summary judgment of infringement. EFI seeks summary judgment of non-infringement and invalidity. As part of these motions, the parties also ask the court to construe various terms expressed in the claims of the ‘076 patent. While largely adopting Componex’s construction of the disputed terms,¹ the court finds the patent itself is invalid on obviousness grounds given the Buysch patent teaches everything but welding “as a means for fixing” when welding was one of the few means for fixing, as evidenced by both common sense and prior art in the field at the time.

¹ The named inventor, Cal Couillard, assigned the ‘076 patent to a company called Engineered Metals Corporation, which then assigned it to Componex. While Componex was not, therefore, the original patentee, it will be referred to as “patentee” for the sake of simplicity.

FACTS²

I. Background

Plaintiff Componex, located in Edgerton, Wisconsin, manufactures printing rollers, also known as “idler rollers.” The President of Componex, Cal Couillard, is the sole named inventor of the ‘076 patent. Couillard assigned the ‘076 patent to Engineered Metals Corporation, which in turn assigned it to Componex.

Defendant EFI is a publicly-traded company that sells digital printers and printing technology, including software. (Declaration of Peter Benoit (“Benoit Decl.”) (dkt.# 51) ¶ 3.) Among the products EFI offers are several different models of its VUTEk Superwide-format printers. (*Id.*) VUTEk printers are used by specialty print shops to create high-quality, large-format banners, posters and displays. The VUTEk family of printers integrate computerized solutions that optimize print production. The printers typically consist of more than 3,000 parts. (*Id.*)

II. Printing Roller Technology

Printing rollers are routinely used for what is known as “web handling,” which is the transportation, shaping, and/or storage of thin materials in a continuous and flexible form, such as paper, foil, or rolled metal. (Declaration of Tim Walker (“Walker Decl.”) (dkt.#56) ¶ 5.) An idler roller is a roller that rotates by traction, typically created by the moving web as it is pulled or pushed under the roller itself. (*Id.* ¶ 6d.) Among other things, idler rollers can be employed in web handling to change web direction, prevent

² Except as noted, the following facts are undisputed for purposes of summary judgment.

droop or flutter, monitor average web tension and provide an applied force to bend the web for guiding.

Rollers can be balanced or unbalanced. Typically, rollers are balanced only in applications requiring high printing speeds. (*Id.* ¶ 15.) When balancing is needed, it can be done either by the addition of mass to the rotor, by the removal of material, or in some cases by relocating the shaft axis (known as “mass centering”). Removal of mass can be accomplished by, among other things, drilling, milling or grinding. (*Id.* ¶ 20.)

Although the use of solid rollers is well established, hollow structures are increasingly used in order to decrease the mass of the roller itself. (*Id.* ¶ 21.) Where a roller is not solid, it is usually necessary to connect the various components of the hollow structure so that it moves together. (*Id.* ¶ 22.) Typically, this is accomplished by using two concentric tubes connected by spokes in much the same manner as a bicycle wheel has a hub and rim connected by spokes, except that a single “spoke” is substantially thicker in height and width and can, and sometimes does, run almost the entire length of the tube itself. (*Id.*) Such hollow structures may be manufactured in various ways. (*Id.* ¶ 24.) The entire roller can be formed as a single unit (known as an “extruded tube”) or it can be created by joining several pieces of the hollow structure together (*e.g.*, through bolts, screws or welding). (*Id.*)

Roller bending is a common problem that occurs in web handling. (*Id.* ¶ 7.) Like any material subject to pressure, how a roller bends will depend on how it is supported and the location and amount of the load, as well as other factors like the location, length

and number of spokes attaching the inner and outer tube. (*Id.* ¶¶ 8-10.) Differences in design can thus alter the way in which these variables result in bending. (*Id.*)

III. Claims of the ‘076 Patent

The ‘076 patent claims a roller and a method of making a roller for use in commercial machinery. (‘076 patent 1:11-12.) The ‘076 patent is directed to “nipped” rollers. (*Id.* at 1:1.) In commercial applications, materials such as paper, plastic or tissue are processed by looping material through two rollers assembled to form a small gap, or “a nip” between the rollers that exerts pressure on the material. (*Id.* at 1:44-50.)³

The specification of the ‘076 patent states that it is desirable to have uniform pressure across the two rollers. (*Id.* at 1:48-50.)

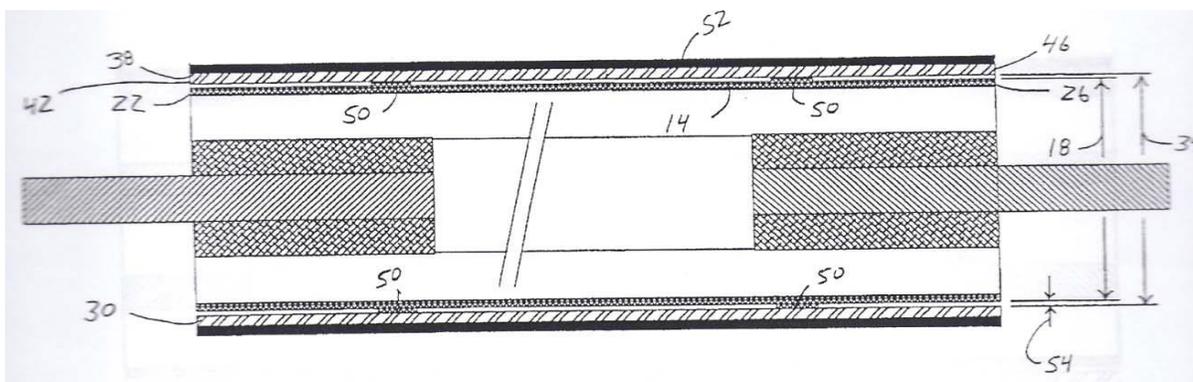


Figure 1: An Embodiment of Invention from the ‘076 patent: first and second welds (50), Radial Gap (54) inner elongate tubing (14) and outer elongate tubing (30)

As illustrated above, the ‘076 patent teaches a welded tubing design with an outer tubing connected to inner tubing. (*Id.* at 2:8-35, and Fig. 1-3.) The ‘076 patent asserts

³ “Nipping” or “nipped processes” refer to the use of two rollers through which the web passes to shape or otherwise modify the web, most commonly by pinching it or by pressing two webs together (a lamination process is a good example). (*Id.* ¶ 6f.)

advantages of the invention which “substantially reduces the need for crowning rollers used in nipped application.”⁴ (*Id.* at 2:8-10.)

The application that matured into the ‘076 patent was filed on March 5, 2002, and, after prosecution, contained three independent claims. The independent apparatus claims (claims 1 & 2) recite a roller created by joining two concentric tubes such that there is a space between the larger tube’s inner diameter and the smaller tube’s outer diameter. (*Id.* claims 1, 2.) These tubes are joined using a “means for fixing” that is a weld at positions some distance from the outer shell’s ends. (*Id.*) The independent method claim (claim 3) includes welding and pivoting limitations. (*Id.* claim 3.)

Componex asserts infringement of all three, independent claims of the ‘076 patent. (Pl.’s Br. for Summ. J. (dkt.# 37) 20-22.) These claims are set forth below with specific claim terms in dispute **bolded**.

Claim 1 of the patented invention states:

[A] A roller comprising:

[B] an **inner elongate tubing** having an outer diameter;

[C] an **outer elongate tubing** having an inner diameter which is larger than the outer diameter of the inner tubing, the outer tubing being **disposed about** the inner tubing;

[D] means for fixing the outer tubing relative to the inner tubing, wherein the means for fixing comprises a **first weld** between the inner tubing and the outer tubing, the first weld being positioned a distance inward from one

⁴ Ordinarily, the “crown” and “crowning” takes “the form of a gradual increase in diameter of the roller toward the midpoint of the roller. When a crowned roller is combined with a straight roller or another crowned roller, and the ends of the opposed rollers are brought together, a uniform pressure can be produced along the entire length of the rollers as the rollers deflect under the applied load. In many machines and systems, many different crowns are needed for various sized rollers. The process of crowning a roller requires extensive, precision machining, thereby resulting in substantial sums associated with labor and manufacturing costs.” (‘076 patent, at 1:52-64.)

end of the inner tubing and the outer tubing, and a **second weld** between the inner tubing and the outer tubing, the second weld being positioned a distance inward from an opposite end of the inner tubing and the outer tubing;

[E] wherein the outer elongate tubing can pivot about the first and second welds, such that the **outer elongate tubing can bow outward**.

('076 patent, at 6:25-43 (emphasis added).)

Claim 2 of the patented invention states:

[A] A member suitable for a roller, comprising:

[B] a double-walled tube, wherein the tube comprises an **outer elongate tubing** having a first outside surface and a first inside surface; an **inner elongate tubing** having a second outside surface and a second inside surface, wherein the inner elongate tubing is concentrically **disposed within** the outer elongate tubing;

[C] means for fixing the outer tubing relative to the inner tubing, wherein the means for fixing comprises a **first weld** between the second outside surface of the inner elongate tubing and the first inside surface of the outer elongate tubing, the first weld being positioned a distance inward from one end of the inner elongate tubing and the outer elongate tubing, and a **second weld** between the second outside surface of the inner elongate tubing and the first inside surface of the outer elongate tubing, the second weld being positioned a distance inward from an opposite end of the inner elongate tubing and the outer elongate tubing; and

[D] wherein the outer elongate tubing can pivot about the first and second welds, such that the **outer elongate tubing can bow outward**.

('076 patent, at 44-64 (emphasis added).)

Claim 3 of the patented invention states:

[A] A method of assembling a roller, comprising:

[B] positioning an **outer elongate tubing** having opposed ends around an **inner elongate tubing** having opposed ends;

[C] drilling a **plurality of holes** in the outer elongate tubing, the holes being positioned inward from the ends of the outer elongate tubing;

[D] filling the holes with welding material;

[E] welding the welding material to securely fasten the outer tubing to the inner tubing, such that the outer elongate tubing can pivot about the first and second welds, and such that the **outer elongate tubing can bow outward.**

(‘076 patent, at 7:1-7 (emphasis added).)

OPINION

Analysis of patent infringement is a two-step process: “first, the scope of the claims are determined as a matter of law, and second, the properly construed claims are compared to the allegedly infringing device to determine, as a matter of fact, whether all of the limitations of at least one claim are present, either literally or by a substantial equivalent, in the accused device.” *Teleflex, Inc. v. Ficoso N. Am. Corp.*, 299 F.3d 1313, 1323 (Fed. Cir. 2002); *Split Pivot, Inc. v. Trek Bicycle Corp.*, 12-CV-639-WMC, 2013 WL 6564640, at *2-3 (W.D. Wis. Dec. 13, 2013).

I. Claim Construction

Claim terms “are examined through the viewing glass of a person skilled in the art.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). This provides an objective baseline from which to begin the claim analysis. *Innova Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004). Moreover, the analysis is performed based on information and understanding at the time of the invention, with the words of a claim “generally given their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1313.

Because an “ordinary and customary” meaning may not be readily apparent, and

because “patentees frequently use terms idiosyncratically,” courts generally look to the patent specification, the prosecution history, and pertinent extrinsic evidence to construe disputed terms. *Id.* at 1314. Indeed, the specification is typically considered the “best source for discerning the proper context of the claims.” *Phillips*, 415 F.3d at 1315; *see also United States v. Adams*, 383 U.S. 39, 49 (1966) (it is “fundamental that claims are to be construed in the light of the specification”); *Bass Pro Trademarks, L.L.C. v. Cabela's, Inc.*, 485 F.3d 1364, 1369 (Fed. Cir. 2007) (the goal of claim construction is “to implement the invention described in the specification and prosecution history, within the confines of the prior art”); *V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 1307, 1310 (Fed. Cir. 2005) (the intrinsic record “usually provides the technological and temporal context to enable the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of the invention”).

EFI initially requested that the court construe two terms in the ‘076 Patent: (1) the meaning of “an inner/outer elongate tubing”; and (2) the meaning of “disposed about,” “disposed within,” or “position[ed] ... around” with reference to the outer tubes orientation with the inner tube. Initially, Componex also sought construction of the terms “between”⁵ and “means for fixing.” The latter term is defined in claim 1 itself, with the first weld and the second weld providing the means by which the inner tubing and the outer tubing is connected. (‘076 patent, at 6:33-40.) EFI expressed no objection to either definition in its responsive brief. As the case proceeded, however, it became apparent that the parties also disputed the meaning of the terms “a first weld” and “a

⁵ Componex defined the term “between” as: “across the space separating two objects.” (Pl.’s Br. for Summ. J. (dkt.# 37) 19.)

second weld.” These terms will be addressed, along with the phrase “bow outward” -- a phrase that, contrary to EFI’s position, *is* capable of construction and satisfies the requirements stated in 35 U.S.C. § 112, ¶ 2.

A. “An” inner elongate tube/outer elongate tube

Claim 1 requires “an inner elongate tubing” and “an outer elongate tubing.” EFI contends that this language limits the patent to a two-tube invention. Componex counters by contending that the patent can be defined as a multi-tube invention because the word “a” or “an” (following the word “comprising”) is ordinarily interpreted to include one or more. The law and facts here favor Componex’s construction.

The Federal Circuit has repeatedly emphasized that an indefinite article “a” or “an” in “patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising.’” *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000). In *KCJ Corp.*, the Federal Circuit held that “[u]nless the claim is specific as to the number of elements, the article “a” receives a singular interpretation only in rare circumstances when the patentee evinces a clear intent so to limit the article.” *Id.* at 1356; *see Scanner Techs. Corp. v. ICOS Vision Sys. Corp.*, 365 F.3d 1299, 1304 (Fed. Cir. 2004).

On first blush, it is difficult to see how EFI could dislodge application of this default rule. In an attempt to do so, EFI points to repeated figures in the ‘076 patent to demonstrate that the patent was confined to a two-tube invention. Upon review of those embodiments, one of which is depicted in Figure 1, there is no doubt that they support EFI’s proposed construction.

But this construction relies on just one piece of evidence in a larger puzzle that ultimately places claim language -- not the specification -- at the top of the analytical hierarchy for the purposes of construing the claims. *See Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998). While such embodiments are useful in better understanding the invention, they cannot be read into the claims without some clear disavowal of the claim's scope. To adopt EFI's position would mean that if everything in the specification were read into the claims, an applicant would be unable to claim more broadly than their disclosed embodiments (regardless of the prior art). *See 3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315 (Fed. Cir. 2013). Indeed, EFI's argument runs counter to the long-standing *maxim* that "limitations discussed in the specification may not be read into the claims" themselves. *Id.* at 1321. Accordingly, EFI's construction must be rejected. *See Innova/Pure Water*, 381 F.3d at 1117 (district court improperly read limitations from the specification into the claims); *Renishaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (same); *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985).⁶

Still, EFI claims several Federal Circuit cases are inconsistent with a multi-tube claim construction. *See Abtox, Inc. v. Exitron, Corp.*, 122 F.3d 1019, 1023-27 (Fed. Cir.

⁶ Claim construction requires a scalpel, not a sledgehammer. There is a thin line between interpreting the claims in view of the specification and improperly reading limitations from the specification into the claims. *Innova/Pure Water*, 381 F.3d at 1117 (considering the contrasting nature of these axioms to be a "longstanding difficulty"). The court already considered the context and the underlying purpose drawn from the specification with respect to the '059 patent. *See Componex Corp. v. Electronics for Imaging, Inc.*, 13-CV-384-WMC, 2014 WL 3556064, at *4 (W.D. Wis. July 18, 2014). In that instance, the court found conformity between what was stated in the specification and what was stated in the prosecution history, and suggested by the extrinsic evidence. In particular, it was readily apparent that prior art required that the claims be cabined in a functional way. Indeed, the specification itself was cross-referenced in the prosecution history to distance the claims from the prior art and allow for issuance of the patent.

1997) (construing “a metallic gas-confining chamber” as a single such chamber); *Insituform Techs., Inc. v. Cat Contracting, Inc.*, 99 F.3d 1098, 1106 (Fed. Cir. 1996) (construing “a vacuum cup” as “a single vacuum cup”). *See generally* *TiVo, Inc. v. EchoStar Commc’ns Corp.*, 516 F.3d 1290, 1303 (Fed. Cir. 2008). The problem with EFI’s reliance on these cases is that they are all distinguishable. Most importantly, in each case, there *was* a clear intent by the patentee to limit the claim consistent with the patent’s specification. The *Tivo* and *Insituform* cases are illustrative. In *Tivo*, the case involved an audio stream and visual stream that were separated. These streams were then brought back into a single stream (an MPEG stream) once processed. This contrasted with the prior art that had proposed multiple MPEG streams after processing. Not surprisingly, the Federal Circuit found a clear intent for singular meaning based on a combination of the specification and the prosecution history, trumping the default rule. *TiVo*, 516 F.3d at 1303. Similarly, in *Insituform*, the Federal Circuit restricted the claim to singular form because “adding elements eliminated an inherent feature” of the invention: “In light of the language found in the *claims, specification and file history*, we conclude the only correct interpretation of claim 1 limits the scope of that claim to a process using only *one vacuum cup* which inherently creates a discontinuous vacuum.” *Insituform* 99 F.3d at 1105–06 (emphasis added). In light of the above, the court adopts Componex’s preferred construction that the inner/outer tubing encompasses a multi-tube invention.

B. “A first weld” and “a second weld...”

The legal issue relating to these terms is much the same. *See KCJ Corp.*, 223 F.3d at 1356. In this context, EFI’s primary position is that patentee’s use of the language

“first” and “second” should cabin the welds to *one and only one* “first weld” and *one and only one* “second weld.” This language, EFI contends, bars any argument that the claimed invention extends to inner and outer tubes connected by a third weld or fourth weld (or more). For the reasons that follow, the court again finds no basis to depart from the default rule.

First, EFI cites no case law for the proposition that the patentee had limited its the claims to a two-weld invention merely by numbering its welds “first” and “second.” Instead, during oral argument, EFI argued that *if* the words “first” and “second” meant more than one, it would do “violence” to the terms and distort claim meaning. (Hr’g Tr. (dkt. # 122) at 55-56.) The problem with this argument is that it takes the use of the words “first” and “second” out of their claim context. Tellingly, the claim language “first/second” is here wedged between the indefinite article “a” and the noun “weld.” When read in this context, the use of an indefinite article would ordinarily trigger the default rule, something readily appreciated by the skilled addressee. *See KCJ Corp.*, 223 F.3d at 1356.

Even if one *could* read in a limit of no more than one “first weld” *or* one “second weld,” EFI is effectively inviting the court to carve out a new exception to the default rule in doing so -- *i.e.*, that when numbering notation is used by a patentee (such as first and second), claim language must be singular, not plural. The creation of such a sweeping exception is no small step, and the court declines to create a new exception here absent some further direction from the Federal Circuit.

Second, the case law that does exist suggests that a numbering notation, like that

stated in claims of the '076 patent, has *no bearing* on the default rule. See *Hyperphrase Techs., LLC v. Google, Inc.*, 260 F. App'x 274, 279 (Fed. Cir. 2007) (non-precedential); *Lodsys, LLC v. Brother Int'l Corp.*, 2:11-CV-00090-JRG, 2013 WL 2949959 (E.D. Tex. June 14, 2013) (same). In *Hyperphrase*, the relevant part of the claim stated: “a computer system comprising . . . means for parsing said *first data record* to identify a reference to a *second data record*.” 260 F. App'x at 279-80. The district court construed this language narrowly (*i.e.*, to the singular) despite the existence of an indefinite article prefaced with the transitional language. On appeal, the Federal Circuit found this constituted error, holding instead that the default rule is difficult to dislodge when there is little (if any) express language to suggest otherwise. The following passage from the *Hyperphrase* decision is instructive:

The district court's error . . . was in going beyond this explicit definition to hold that a data reference may only refer to one and only one possible record. We first reject the district court's reading of the language of the asserted claims, which the court held supported its narrow construction . . . Neither the phrase “*one and only one*” nor any equivalent language appears in the claim. Although the claim recites “a” second record instead of “one or more” records, we have held that the use of the singular form “a” in conjunction with “comprising” and without narrowing language, such as “one and only one,” typically encompasses both singular and plural possibilities . . . Claim language such as “references to the first record,” and “the referenced record,” similarly do not support the district court's narrow claim construction.

Id. (citations omitted) (emphasis added).

As did the alleged infringer in *Hyperphrase*, EFI seeks to read into the claims the phrase *one and only one* when no such language exists. As *Hyperphrase* holds, claim language that references “a” first and “a” second does not by itself lead to a narrow singular construction.

Third and finally, EFI points out that the specification only speaks of a two-weld invention. In turning to the specification itself, however, the court finds no evidence of a clear intent to support a narrower construction. For example, even where the specification refers to a first and second weld (without a third or fourth), there is no indication that the patentee intended to limit the claims to the singular for the first and second welds. *See Phillips*, 415 F.3d at 1312 (“It is a bedrock principle of claim construction . . . that the claims of a patent define the invention to which the patentee is entitled the right to exclude”).

At most, the specification is inconclusive as to whether the invention claims a two-weld *versus* a multi-weld device. In particular, Figure 3 of the ‘076 patent appears to contemplate a three-weld embodiment of the invention when compared to Figures 1 and 2. (*See* ‘076 patent, at 4:39.) (“FIG. 3 depicts yet another roller 10.”) Admittedly, since Figure 3 is accompanied by no other description and contains no numbering system to indicate the precise location of the purported welds as does Figure 1, even one skilled in the art may have trouble discerning multiple welds. On the other hand, these depictions do nothing to limit the claim to no more than two welds, leaving the default rule as controlling.

Given that the claim language and specifications both lead the skilled addressee to a claim for a multi-weld invention, and that EFI has done nothing to dislodge application of the default rule, Componex’s preferred construction of one or more welds is adopted. *See Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1350 (Fed. Cir. 2005); *Abtox*, 122 F.3d at 1024 (“[w]here an open “comprising” claim includes the article “a” or

“an,” and the specification is at best inconclusive on the patentee's intent to limit that article to a single element or step, we do not find a “clear intent” to so limit the claims”); *City of Aurora v. PS Sys., Inc.*, No. 07-CV-02371-PAB-BNB, 2010 WL 2232352 (D. Colo. June 2, 2010).

C. Disposed “about,” “within” or “around”

Each claim requires the outer tubing to be “disposed about,” “disposed within,” or “position[ed] ... around” the inner tubing. The meaning of these terms was not heavily contested at oral argument.⁷ Nevertheless, in briefing, EFI contends that even if the court concludes (as it has) that the ‘076 patent includes rollers with more than one inner tube or more than one outer tube, the meaning of the terms “disposed about,” “disposed within,” or “position[ed] . . . around” still requires that the tubes be *wholly disposed about or within each other*.

The court finds that there is nothing in the patent to support EFI’s construction. Certainly, no such limitation exists in the intrinsic or extrinsic evidence. Moreover, because the claims have been construed to mean *one or more*, a broader construction of these other terms is also warranted: (1) that “disposed about” means one or more outer tubes encircle one or more inner tubes; (2) “disposed within” means one or more inner elongate tubes are disposed within one or more outer elongate tubes such that the inner tube(s) and the outer tube(s) share the same center; and (3) “position[ed] . . . around” means positioning one or more outer elongate tubes so as to encircle one or more inner

⁷ EFI made little mention of these claim terms in oral argument. The main battle lines were drawn over: (1) multiple tubing; (2) multiple welds; and (3) outward bowing.

elongate tubes.

D. “Bow Outward”

A final term in dispute centers on the meaning of “bow outward.” Componex contends that the court should simply afford this term its plain and ordinary meaning -- “away from the center of the axis” -- while EFI contends that the term cannot be construed with any reasonable certainty by the skilled addressee. In *Nautilus, Inc. v. Biosig Instruments, Inc.*, — U.S. —, 134 S.Ct. 2120, 2129, (2014), the Supreme Court considered a claim of indefiniteness as an invalidity challenge, but the decision bears on claim construction as well, because courts have been instructed to construe claims, if possible, to avoid invalidity. See *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1367 (Fed. Cir. 2002); *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345, 51 USPQ2d 1377, 1379 (Fed. Cir. 1999) (“[I]f the only claim construction that is consistent with the claim's language and the written description renders the claim invalid, then the axiom does not apply and the claim is simply invalid.”). Indefiniteness must also be proven by clear and convincing evidence. See *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2242 (2011); *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363, 1368 (Fed. Cir. 2013).

A patent’s specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” 35 U.S.C. § 112, ¶ 2. The Federal Circuit previously interpreted this requirement to mean that claims are indefinite when they are “not amenable to construction or insolubly ambiguous.” *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d

1342, 1347 (Fed. Cir. 2005).

In *Nautilus*, however, the Supreme Court announced a new test, stating that “a patent's claims, viewed in light of the specification and prosecution history, [need only] inform those skilled in the art about the scope of the invention with *reasonable certainty*.” 134 S.Ct. at 2129 (emphasis added). The Supreme Court explained that indefiniteness requires a “delicate” balance:

On the one hand, the definiteness requirement must take into account the inherent limitations of language and that [s]ome modicum of uncertainty is the price of ensuring the appropriate incentives for innovation. At the same time, a patent must be precise enough to afford clear notice of what is claimed, thereby ‘appris[ing] the public of what is still open to [invent].’ Accordingly, the definiteness requirement mandates clarity, while recognizing that absolute precision is unattainable.

Id. at 2128–29. Moreover, § 112, ¶ 2 requires a reasonable certainty to inform those skilled in the art about the scope of the invention. *Id.* at 2129. One skilled in the art is assumed to be “a person of ordinary creativity” and “common sense,” familiar with the prior art and capable of researching accessible resources. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007); *see also In re Nilssen*, 847 F.2d 841, 1988 WL 32917, at *2 (Fed. Cir. Apr. 14, 1988) (unpublished) (the skilled addressee is a person presumed to know the relevant prior art and also knows how to “find information in the art by researching accessible source, including patent literature”); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

To determine whether the words “bow outward” are indefinite, the court first turns to the specification, which states simply that:

According to the principles of the present invention, in a nipped application, the outer tubing is designed to pivot about the weldments. In

this way, as the ends of opposing rollers are brought together, the portion of the outer tubing between the weldments will tend to bow outward, thereby minimizing the need for crowning the roller.

‘076 patent, at 4:28-34. One skilled in the art would readily appreciate that the rollers are “brought together” in nipped applications. (‘076 patent, at 4:28-34.) When this occurs, one skilled in the art would also understand that the outer elongate tubes may “bow outward” between the weldments based on physical forces. For this reason, Componex persuasively argues, the skilled addressee would appreciate that the term “bow outward” means, in the context of the claim, “away from the center.” (Dkt. #67 at 37.)

In rebuttal, EFI contends that this construction creates uncertainty because there is no frame of reference to which the definition is tethered. More specifically, EFI argues that the ‘076 patent does not inform the skilled addressee what the term means because “outward” provides no information about what direction the tube is supposed to bow. EFI further contends that when there is outward bowing on one part of the tube, there is necessarily inward bowing of the outer elongated tube, which leaves the skilled addressee uncertain as to whether outward bowing has occurred overall.

In the § 112, ¶ 2 context, however, EFI must provide clear and convincing evidence that the claims do not provide reasonable certainty as to the scope of the patent. *Microsoft Corp.*, 131 S. Ct. at 2242. That threshold has not been satisfied here, particularly in light of what is stated in the specification and by Componex’s own expert. By using commonsense, the skilled addressee would understand that the direction of the bowing is outward “away from the axis” (dkt. #67 at 37) for the simple reason that rollers rotate on an axis and bowing is intended to provide the benefit of crowning.

This is also how Componex framed the definition at oral argument, where the court had an opportunity to handle three-dimensional, cutaway demonstratives from rollers. Having handled these demonstratives, and using the lens of the skilled addressee, the court finds that the definition proffered by Componex is sensible both for its simplicity and ordinary meaning, as well as its consistency with the invention's stated purpose of providing crowning without the cost or inconvenience of having to add material to the outside of the outer tube. This is sufficient both to inform the skilled addressee with reasonable certainty of the scope of the patent and preserve its validity. *See Tate Access Floors*, 279 F.3d at 1367.

The court also finds other extrinsic evidence useful in understanding the ordinary meaning of the term "pivot about" and its relationship to the term "bow outward." The *New Oxford American Dictionary* (3d ed. 2010) defines the word "pivot" as "the central point, pin or shaft on which a mechanism turns or oscillates . . . [for *e.g.*] a sail pivots around the axis of a virtually static mask." *Id.* at 1335. The court finds this plain dictionary meaning is consistent with the claims themselves. *See Terlep v. Brinkmann Corp.*, 418 F.3d 1379, 1382 (Fed. Cir. 2005) (dictionaries are useful, "provided the court 'attach[es] the appropriate weight'"). Contrary to EFI's reading, this definition does not imply, much less limit or require, a claim to movement of the tubing on both sides of the weld.⁸

⁸ In turning to a dictionary definition, the court is mindful of the Federal Circuit's admonition about the use of dictionaries in *Phillips*, 415 F.3d at 1322. Even so, *Phillips* does not preclude the use of dictionaries altogether; rather "[d]ictionaries . . . are often useful to assist in understanding the commonly understood meaning of words." *Id.* at 1322 (quoting *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996)). Of course, one must ensure that such meaning

EFI raises two more arguments that at least deserve mention. *First*, it argues the claims are indefinite because Mr. Couillard, the inventor, misunderstood what was meant by “bow outward” at his deposition years after the invention and patent issued. While EFI placed heavy emphasis on this point, the Federal Circuit has long recognized that an inventor, represented by counsel during the application process, may not understand the precise claims in a patent as issued:

[C]ommonly the claims are drafted by the inventor's patent solicitor and they may even be drafted by the patent examiner in an examiner's amendment (subject to the approval of the inventor's solicitor). While presumably the inventor has approved any changes to the claim scope that have occurred via amendment during the prosecution process, it is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims is after allowance by the PTO.

Markman v. Westview Instruments, Inc., 52 F.3d 967, 985–86 (Fed. Cir. 1995); *see also* *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1380 (Fed. Cir. 2000). This proposition has as much application here as it did in *Markman* (and similar cases).

Second, EFI argues that “the bowing ‘outward’ is supposed to occur *between* the first and second welds.” (Def.’s Br. for Summ. J. (dkt.# 42) 25.) Specifically, EFI argues that to make sense of the term “pivot about” (a term that is in close proximity to the related term “bow outward”), the so-called bowing of the outer tube can *only* occur “between” the weldments. The court rejects this unnecessary narrowing of the claims.

As an initial matter, EFI’s argument that the outer tube must bow *between* the welds is *not* what the claims themselves say. Indeed, the word “between” appears nowhere in the claim language. For example, integer [D] in claim 1 states: “wherein the

accords with the intrinsic evidence itself, but this principle applies to all extrinsic evidence irrespective of its source. *Id.* at 1314.

outer elongate tubing can pivot about the first and second welds, such that the outer elongate tubing can bow outward.” (’076 patent, at 4:28-34.) If the patentee had sought to narrow the claim as EFI contends by using the word “between,” the patentee would have said as much in the claim itself. The absence of that word leads to a plain reading of the claim beyond what EFI suggests.

EFI next relies on the specification to show that the term “pivot about” requires “outward bowing” *between* the “first” and “second” weldments. EFI points to the following passage from the ’076 patent in support:

According to the principles of the present invention, in a nipped application, the outer tubing is designed to pivot about the weldments. In this way, as the ends of opposing rollers are brought together, the portion of the outer tubing between the weldments will *tend* to bow outward, thereby minimizing the need for crowning the roller.

(’076 patent, at 4:28-34 (emphasis added).) This passage is also of no support to EFI’s position: it simply provides that the “outer tubing between the weldments will *tend* to bow outward.” *Id.* (emphasis added). At least in a nipping situation, when two tubes come together to compress the web, this tendency may be supposed, at least at the point of greatest pressure, but this does not mean the tendency of one or more tubes to bow outward did not have the intended effect on the web. More importantly, there is nothing in the specification to suggest that outward bowing *cannot* occur elsewhere in the outer tubing. The absence of this cannot be used to limit the claims because it would improperly import a limitation from the specification into the claims themselves. *See Innova/Pure Water*, 381 F.3d at 1117; *Renishaw*, 158 F.3d at 1248.

Regardless of the direction of bowing at different parts of the tube, EFI’s argument

concedes there is “outward bowing” in the sense of intended bowing away from the center between the welds. Because of this, among other reasons, § 112 is satisfied. As it turns out, the issue is not whether the claims can be meaningfully construed by one skilled in the art, but whether EFI’s alleged infringing rollers fall within the scope of those claims. That issue is addressed in the context of infringement below.

II. Infringement of the ‘076 Patent

Componex bears the burden of proving infringement by a preponderance of the evidence. *Laitram Corp. v. Rexnord Inc.*, 939 F.2d 1533, 1535 (Fed. Cir. 1991). As a moving party, EFI may put Componex to its proof of infringement, but will only be granted summary judgment when no disputed issues of material fact remain and when the movant is clearly entitled to prevail as a matter of law. Fed. R. Civ. P. 56; *Celotex Corp. v. Catrett*, 477 U.S. 317, 322–23 (1986). Material facts are those under the applicable substantive law that “might affect the outcome of the suit.” *Anderson*, 477 U.S. at 248.

Certainly, Componex faces an uphill battle in proving infringement, particularly with respect to whether EFI’s multi-weld design “bows outward.” EFI’s expert opines plausibly that EFI’s accused device does not “bow outward” because its multiple welds constrain such movement. (Declaration of John Moskwa (“Moskwa Decl.”) (dkt.#54) ¶¶ 28, 32.) However, Componex’s expert disagrees, opining just as plausibly that additional welds do not prevent outward bowing; they just reduce it. (Initial Expert

Report Jerald Brown (“Initial Brown Report”) (dkt.#46-5) 32-33).⁹

Given the divergent views expressed by the parties’ experts, the court finds disputed issues of material fact. Componex’s motion for summary judgment for infringement will, therefore, be denied, as is EFI’s cross-motion for non-infringement, with respect to claims 1 through 3 of the ‘076 patent.

III. Validity of the ‘076 Patent

EFI bears the burden of proving that the ‘076 patent is invalid. Because issued patents are presumed valid, EFI “must submit such clear and convincing evidence of facts underlying invalidity that no reasonable jury could find otherwise.” *TriMed, Inc. v. Stryker Corp.*, 608 F.3d 1333, 1340 (Fed. Cir. 2010); *see also Cent. Admixture Pharmacy Servs., Inc. v. Advanced Cardiac Solutions, P.C.*, 482 F.3d 1347, 1357–58 (Fed. Cir. 2007). “Although not susceptible to precise definition, ‘clear and convincing’ evidence has been described as evidence which produces in the mind of the trier of fact an abiding conviction that the truth of the factual contentions are highly probable.” *Id.*

In moving for summary judgment on invalidity, EFI contends that the patent lacks novelty and is obvious in light of the prior art. It also seeks to invalidate the patent based on a theory of prior sales. Since patents are presumed valid, “the burden of persuasion to the contrary” remains with EFI on each of these asserted grounds.

⁹ More specifically, Brown opines that the degree of “flexing” in the outer tube will be reduced when additional sets of welds are placed between the first weld and the second weld. (Initial Brown Report (dkt. #46-5) at 32-33.) By the term “flexing,” the court understands Brown to mean “outward bow[ing]” because his report indicates elsewhere that crowning (a claimed by-product of the weldments) will be reduced when additional welds are included in the roller itself. (*Id.*) This conclusion, however subject it may be to dispute, is enough in the context of summary judgment to create a material issue of disputed fact.

PowerOasis, Inc. v. T-Mobile USA, Inc., 522 F.3d 1299, 1303 (Fed. Cir. 2008).

A. Novelty

“A patent is invalid for anticipation if a single prior art reference discloses each and every limitation of the claimed invention.” *Schering Corp. v. Geneva Pharm.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003). While “the teaching in the prior reference need not be *ipsissimis verbis*” or identically worded, *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716 (Fed. Cir. 1984), “[t]he elements must be arranged or combined in the same way as [stated] in the claim.” *Whitserve, LLC v. Comp. Packages, Inc.*, 694 F.3d 10, 21 (Fed. Cir. 2012) (*quoting In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009)).

EFI contends that all three claims have been anticipated by U.S. Patent No. 3,389,448 (“Buysch”). EFI’s expert identified the teachings in the Buysch patent as a roller comprised of an outer shell connected to a concentric inner base cylinder. (Expert Report of Tim Walker (“Walker Report”) (dkt. #68) 48.) More specifically, he opines that the Buysch patent discloses “(1) a roller created by joining two concentric tubes such that there is a space between the larger tube’s inner diameter and the smaller tube’s outer diameter; (2) two tubes joined in position some distance from the outer shell’s ends; and (3) a roller with deflection different from an end-support beam, either minimizing the total deflection or allowing bowing in the opposite direction from an end-support roller.” (*Id.*) The following figure is an embodiment of the Buysch patent:

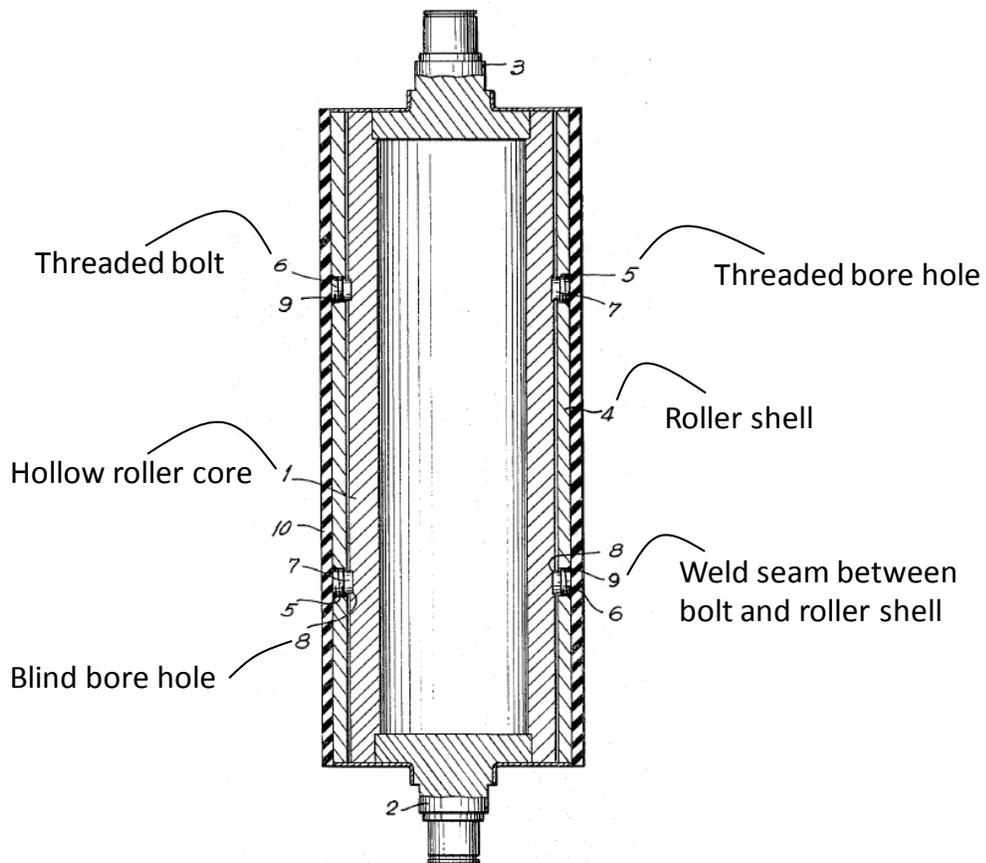


Figure 2: An embodiment of U.S. Patent No. 3,389,448 (“Buysch”): hollow roller core (1); roller shell (4); threaded bore hole (5); threaded bolt (6); blind bore hole (8); weld seam between bolt and roller shell (9).

There is no dispute that many of the limitations found in the ‘076 patent are also found in the teachings of Buysch. What is in dispute is the claim element that requires welding as a “means for fixing the outer tubing relative to the inner tubing.” (‘076 patent 6:33-34). Comonex contends that the main point of difference between the ‘076 patent and Buysch is that Buysch does not teach the welding together of the outer tube to the inner tube. With respect to claims 1 and 2, the court is inclined to agree. EFI cannot succeed in challenging ‘076 patent for lack of novelty. While the teachings in the Buysch

patent need not be literally the same as the claimed invention, “[t]he elements must be arranged or combined in the same way.” *Whitserve*, 694 F.3d at 21. It is undisputed that the combination of the bolt and the weld is arranged in a different way to claims 1 and 2 in the ‘076 patent: Buysch requires threaded bolts to join the inner tube to the outer tube, and once machined in place, the end surface of the bolt is then welded so it sits “flush with the service of the roller shell” itself. (‘448 at 4:13-14). Because of this small (yet not insubstantial) difference, the court must deny EFI’s motion on novelty grounds as applied to claims 1 and 2.

EFI’s novelty challenge fares no better with respect to claim 3. Although the claim represents a method claim, the method applied to make the roller requires a “welding material to securely fasten the outer tubing to the inner tubing.” (‘076 patent at 4:11-15.) In effect, weldments are applied to join the tubing instead of securing bolts (which are then welded flush with the outer tube). As with the apparatus claims, the court finds that claim 3 is not anticipated in light of Buysch. *See Schering Corp.*, 339 F.3d at 1377.

EFI also relies on several further references for the purposes of its § 102 challenge. But contrary to EFI’s position, the Frankland (U.S. Patent No. 5,567,448), Shraud (DE 1400941) and Tuomaala (U.S. Patent No. 3,941,435) references do not invalidate the ‘076 patent. Although EFI makes reference to each, the analysis is bare-boned. The court finds that none of these patents anticipate the ‘076 patent for much the same reason as the Buysch patent: none teach welds between the inner tube and outer tube. Reinforcing this view is that by the time EFI’s reply had been filed, it was treating the Buysch patent as its primary reference for novelty purposes (as well as obviousness).

Because of this, the court infers that the Frankland, Shraud and Tuomaala references do not advance EFI's novelty challenge any further than Buysch.

B. Obviousness

For the very reason that EFI's novelty argument tips against it, its obviousness argument falls in its favor: the obviousness analysis permits the skilled addressee to use one or more sources to assess whether a patent is obvious. Indeed, in this context -- and ever mindful of hindsight bias -- the skilled addressee is permitted to play a more creative role and apply common sense when assessing whether a patent is invalid under 35 USC § 103(a). *See KSR*, 550 U.S. at 417-18; *see also Perfect Web Technologies, Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009) (the "use of common sense does not require a specific hint or suggestion in a particular reference, only a reasoned explanation that avoids conclusory generalizations").

Turning to the language of the statute, a claim is deemed obvious "if the differences between the claimed invention and the prior art are such that the subject matter as a whole would have been obvious before the effective filing date to a person having ordinary skill in the art." 35 U.S.C. § 103(a). Specifically, obviousness is a question of law that is predicated on several factual inquiries, which include: (1) the level of ordinary skill in the art; (2) the scope and content of the prior art; (3) the differences between the claimed subject matter and the prior art; and (4) secondary considerations of

non-obviousness, such as commercial success, long-felt need, and unexpected results. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18, 86 (1966); *see also Sciele Pharma Inc. v. Lupin Ltd.*, 684 F.3d 1253, 1259 (Fed. Cir. 2012).

The obviousness analysis entails “an expansive and flexible approach” assessed by the skilled addressee. *Graham*, 383 U.S. at 418. To this end, there need not be “precise teachings [in the art] directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418. For situations “when the question is whether a patent claiming the combination of elements of prior art is obvious,” the Supreme Court has distilled certain “principles” as “instructive,” *id.* at 417:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.... [A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id. at 417.

In light of this directive, it is necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art. *Id.* All of these so-called “*Graham* factors” impact whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. *Id.* To assist in this process, a court may look to whether the prior art teaches

toward or away from the claimed invention. See *United States v. Adams*, 383 U.S. 39, 52 (1966) (addressing factors that would deter any investigation into combining the prior art); *In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012) (a reference teaches away “when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant”); *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (same); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983) (same).

Finally, in placing obviousness in the context of summary judgment, the court must first determine whether the record raises any genuine disputed issues of fact as to the *Graham* factors and then weigh the materiality of the dispute (“*i.e.*, whether resolution of the dispute one way or the other makes a difference to the final determination of obviousness.” *Rockwell Int’l Corp. v. United States*, 147 F.3d 1358, 1362 (Fed. Cir. 1998), see also *Wallhonde Tools, Inc. v. Wilson Works, Inc.*, 1:09CV48, 2012 WL 1965628, at *7 (N.D. W. Va. May 31, 2012); *B & G Plastics, Inc. v. E. Creative Indus., Inc.*, 269 F. Supp. 2d 450, 460 (S.D.N.Y. 2003). Summary judgment on the basis of obviousness may be granted to invalidate patent claims when the subject matter of the invention and the prior art are so readily understandable as to eliminate any genuine issue of fact. See *Union Carbide Corp. v. American Can Co.*, 724 F.2d 1567, 1573 (Fed. Cir. 1984).

In answering this question, the court will turn first to the level of ordinary skill in the art and then assess (1) the scope of the prior art, and (2) the differences between the

claimed subject matter and the prior art. Because there is substantial overlap between the latter two factors, and Buysch covers all but one of the limitations in claims 1 through 3 of the '076 patent, the court will address those two factors together. With respect to secondary considerations of non-obviousness, Componex does not put this factor squarely before the court in the context of EFI's motion for summary judgment, and so there is little (if any) reference to these considerations by this court as well.

i. The Level Of Ordinary Skill In The Art

This *Graham* factor is not in dispute. EFI characterizes the skilled addressee at the time of the invention as “someone with either an undergraduate engineering degree, two years of technical college training or equivalent years of applied experience in lieu of formal education.” (Walker Report (dkt.# 68) 12.) In addition, EFI's expert opines that the skilled addressee would have “at least five years of applying their technical aptitudes to web-handling processes.” *Id.*

This characterization of the skilled addressee seems sensible. Nothing in Componex's materials would alter this viewpoint and, relevantly, the characterization is consistent with the field of the art applicable to the invention, as previously addressed.

ii. The Scope And Content Of The Prior Art And The Differences Between The Claimed Subject Matter And The Prior Art

EFI pinpoints the key difference between the claimed invention and EFI's primary reference for the purposes of obviousness as follows: even if Buysch did not teach using welds *between* the tubes instead of bolts welded at the top, it would have been obvious to skilled addressee to use welds instead of bolts as a means for fixing the multiple tubes

together. This assertion has much to commend it.

As an initial matter, the Buysch reference contains all but one limitation in the '076 patent -- *i.e.*, welding *between* the tubes. More to the point, EFI contends that this missing limitation is found in any one of the following references: Komuro (U.S. Patent No. 5,732,319), Frankland (U.S. Patent No. 5,567,448), Krippelz (U.S. Patent No. 6,280,371), Smith (U.S. Patent No. 6,164,862), and Hackman (U.S. Patent No. 6,282,923). (Walker Report (dkt.# 68) 50-51.) Before assessing whether Buysch combined with any of these references invalidate the '076 patent, the court will address the scope and relevant teachings of two of the more pertinent ones to which EFI expressly refers: Komuro and Frankland.

Turning first to Komuro, EFI's expert reads this reference as disclosing a roller design comprised of an inner solid metal shaft and outer hollow cylinder, connected at either of two points spaced inward from the cylinder end to create a substantially uniform deflection load of nipping to another roller of standard end support design. (*Id.* at 50.) The patent expressly states: "The backup roller 22B employs a solid metal shaft 52 having a central large-diameter portion 52a. The central large-diameter portion 52a of the solid metal shaft 52 is fixed to a hollow cylinder 24 by welding, for example." ('319 patent at 6:10-14.) The specification further states that "[t]he fixing of the large-diameter portion 52a to the hollow cylinder 24 may be effected by any other methods such as screwing or pinning like the first preferred embodiment, instead of welding." (*Id.* at 6:14-17).

An embodiment of the Komuro reference is depicted below:

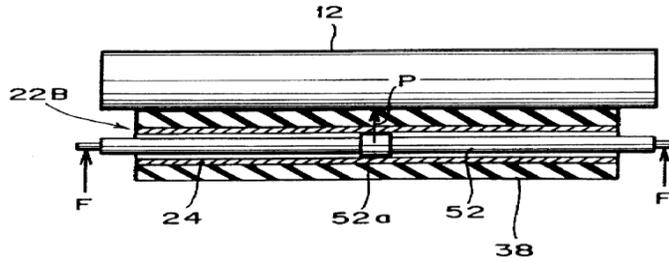


Figure 3: An Embodiment of Invention from U.S. Patent No. 5732319 (“Komuro”).

Componex’s expert opines that the weld in Komuro differs from the type of weld that is featured in the ‘076 patent. (Brown Expert Report., dkt.# 67 at 33). In particular, Brown opines that there is “nothing to indicate [in Komuro] that the weld penetrates from the exterior of the outer shell to the inner core.” (*Id.* at 32.) Brown states that this would be relevant to claim 3 of the ‘076 patent, which requires “drilling a plurality of holes in the outer elongate tubing.”¹⁰ (*Id.*) But given that the skilled addressee may take into account creative steps, and even if the weld does not penetrate all the way through¹¹ -- the drilling of a hole from the exterior to the inner core is fairly basic -- and the court rejects Componex’s notion that there are any reasonably disputed facts with respect to Komuro, let alone gaps in the prior art relative to the claimed subject matter of the ‘076 patent. Indeed, Buysch itself teaches the drilling of holes from

¹⁰ It is not entirely clear, however, whether this same analysis is relevant to claims 1-2.

¹¹ Contrary to Brown’s opinion, there is also nothing in the specification to indicate that the welds *do not* penetrate from the exterior of the outer shell to the inner core. Given that Buysch teaches holes all the way through, and it was an earlier technology than Komuro, there would seem no reason why Komuro would not also have adopted these aspects of the Buysch invention. In any event, as the court indicates above, the drilling of such holes are in Buysch and would have been assimilated into the consciousness of the skilled addressee well before the filing date of the ‘076 patent, thereby making this aspect of invention common general knowledge. *See generally KSR.*, 550 U.S. at 417-18.

the exterior to the inner core, albeit filling the bored holes with screws rather than welding material. This, too, would be fairly rudimentary for the skilled addressee, who has an undergraduate degree in engineering, coupled with five years in the web handling process. (Walker Report (dkt.# 68) 12.) Thus, both Buysch and the common general knowledge of the skilled addressee serve to minimize any arguable differences between the scope of the patent and the prior art.

The next reference, Frankland, also describes the use of welding instead of screws.

The following passage is instructive:

As can also be seen in FIGS. 5 and 6, inner shell members (44) are preferably welded to the center segment (26) and corresponding intermediate segments (28) by welds (45). However, cylindrical shell members 44 may be attached by a myriad of other known mechanical fastener, such as for example, appropriately sized countersunk screws provided that a hermetic seal can be established and maintained between the shell members 44 and the center segment 26.

'448 at 5:15-25.

An embodiment of the Frankland reference is depicted below:

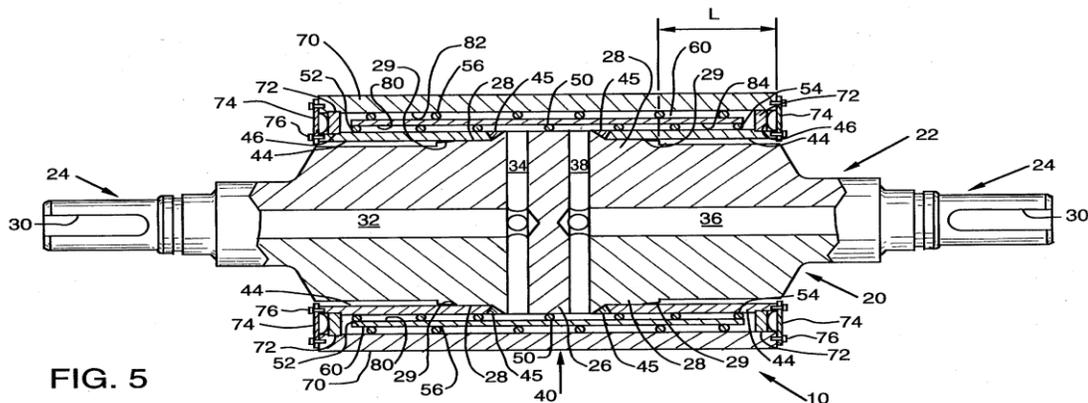


Figure 4: An Embodiment of Invention from U.S. Patent No. 5567448 (“Frankland”).

EFI’s expert states that the Frankland reference teaches the interchangeability of welds with screws, opining that this would be a predictable variation. (Walker Report

(dkt. #68) 51.) Unsurprisingly, Componex's expert disagrees. He questions again whether the weld in Frankland is the same type as that in the '076 patent. (Brown Expert Report (dkt.# 67) 33.) Brown's focus is on claim 3, but he notes that the other claims would be immune from a § 103 challenge in light of the prior art. (*Id.*)

For the same reason as Komuro, Brown also seeks to create a disputed fact in the case of Frankland, when none exists. In particular, Brown offers no credible basis for a trier of fact to find that the type of weld used would preclude one skilled in the art from making the obvious connection of fixing the inner and outer tubes by use of welds, rather than by use of screws. With respect to both pieces of prior art, Brown's efforts to identify some difference in the welds falls well short of that necessary to find a material factual difference. *See Anderson*, 477 U.S. at 248 (material facts are those under the applicable substantive law that "might affect the outcome of the suit"); *see also Rockwell*, 147 F.3d at 1362.

iii. Secondary Considerations

Rebuttal evidence may include evidence of "secondary considerations," such as "commercial success, long felt but unsolved needs, [and] failure of others." *Graham*, 383 U.S. at 17. As discussed earlier, Componex did not put any of these considerations squarely before the court in the context of EFI's motion for summary judgment. Accordingly, while the court might surmise the possible importance here, this factor has no bearing on EFI's motion for invalidity.

iv. Reasons for Combining References

Even with the essentially undisputed issues of material fact with respect to the *Graham* factors discussed above, the question remains whether obviousness can be concluded as a matter of law. This requires the court to assess whether there is enough in the hypothetical skilled addressee's background knowledge and understanding of the references as a whole to allow the court to conclude that the '076 patent is invalid as matter of law. See *KSR*, 550 U.S. at 418–19 (“whether there [is] an apparent reason to combine known elements in the fashion claimed by the patent at issue,” there need not be “*precise* teachings [in the art] directed to the *specific* subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”).

The Supreme Court's directive in *KSR* did much to loosen the rigidity of the traditional teaching, suggestion or motivation test (“TSM”). At the same time, the Federal Circuit has subsequently stated:

While the *KSR* Court rejected a rigid application of the teaching, suggestion, or motivation test in an obviousness inquiry, the Court acknowledged the importance of identifying 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 in an obviousness determination.

Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd., 492 F.3d 1350, 1356–57 (Fed. Cir. 2007); see also *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”).

Here, EFI placed a heavy emphasis on Buysch as its primary reference for the §

103 challenge. When combined with secondary references (such as Komuro), and with the background knowledge of the person of ordinary skill in the art, EFI contends that this would lead any reasonable trier of fact to the conclusion that the claimed invention is obvious. Componex counters, arguing that there are teachings that cut against the combination being made or, at minimum, there are disputed questions of fact to preclude summary judgment.

Considering initially the reasons that favor a combination, the court *first* looks to the fact that the Buysch reference uses welds to secure the bolts between the inner and outer tubes. While welding is not used between the tubes (as in the '076 patent), welds are used in the threaded bore holes of Buysch to fix the bolts flush with the outer shell. Given that the purpose of using welds in bore holds is not too dissimilar to the use of welds between the inner and outer tubing of the '076 patent (*i.e.*, to fix the tubes in place permanently), it is not far-fetched for the skilled addressee to combine the Buysch reference with the Komuro reference -- the latter of which provides welding between two tubes. *See, e.g., Miles Lab., Inc. v. Shandon, Inc.*, 997 F.2d 870, 878, 27 U.S.P.Q.2d 1123, 1128-29 (Fed. Cir. 1993) (“The differences between the prior art and [the patent claim] were minor and achievable by simple modification.”).

Second, even if the Komuro reference does not teach the *precise* weld that the '076 patent exhibits, it does teach at a more general level the use of welds in roller technology. When Komuro is viewed in this light, combining the Komuro reference with Buysch seems obvious -- especially when there are only a finite number of options to choose from to secure the inner and outer tubing of the '076 patent (*e.g.*, screws, bolts, welds).

Compare KSR, 550 U.S. at 421 (where there are "finite number of identified predictable solutions, a person of ordinary skill has good reason to pursue the known options"), *with Takeda Chem.*, 492 F.3d 1350 (Fed Cir. 2007) (rejecting argument that selecting "compound b" and altering it to arrive at the claimed invention were obvious steps when compound b was one of hundreds of millions of compounds disclosed in the art).

Notwithstanding the cogent reasons in favor of combination, and to be fair, there are arguably reasons that point the other way. For example, Componex's expert opines that welds and screws are *not* interchangeable. He states: "To be clear, welding and screwing are not equivalent means for fixation . . . [because] welds are a permanent means for fixing parts together. Screws or bolts are a temporary, reversible means for fixing parts together. In situations where access is required (say, for repairing or replacing a part) screws or bolts are preferred as compared to permanent welds." (Brown Expert Report (dkt. #67) 31.) Given that welding *is* used in the Buysch reference to secure screws permanently as well, this distinction seems theoretical at best. Put simply, he does not contextualize his opinion at 31 in light of the patent or the Buysch reference.

Brown's second distinction has a little more substance: "welding requires high heat, which may cause unwanted and detrimental annealing of the metal surrounding the weld itself." (*Id.*) Brown points out that the "use of a screw or bolt does not bring with it the *possibility* of annealing the surrounding metal" and because of this he concludes that "screws and welds are not interchangeable means for fixing." (*Id.*) But again, Brown's opinion does not squarely relate this issue to the patent in suit.¹² On balance,

¹² Brown also makes no reference to the annealing problem with respect to the Buysch, Komuro

Componex's arguments are more predicated on speculation than fact. This, combined with the experts' lack of detail explaining why the references would not have been combined, is telling. More compelling is the fact that the experts do not counter EFI's experts suggesting that there are only a finite number of options to secure the inner and outer tubing. Because of this, and because the purpose of using a weld serves much the same purpose as a screw, the court has little hesitation in finding that the skilled addressee would find the '076 patent obvious. Accordingly, since the subject matter of the invention and the prior art are so readily understandable as to eliminate any genuine issue of fact, the court grants summary judgment on obviousness in favor of EFI. *See Union Carbide*, 724 F.2d at 1573.¹³

C. Prior Sales¹⁴

EFI also moves for summary judgment of invalidity under the "on-sale bar." Pursuant to that provision, "A person shall be entitled to a patent *unless* . . . (b) the invention was . . . on sale in this country, more than one year prior to the date of the application for patent in the United States." 35 U.S.C. § 102(b). In *Pfaff v. Wells Elecs.*, 525 U.S. 55 (1998), the Supreme Court established a two-pronged test for its application of the on-sale bar. First, the invention "must be the subject of a commercial offer for

and Frankland patents. Had annealing been a problem in the art, or deterred the skilled addressee from using welds in the construction of rollers, why didn't Brown make reference to this relative to other patents that are relevant to the obviousness analysis.

¹³ What reinforces a finding of invalidity is the fact that the court must take into account the "inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418. The Supreme Court's emphasis on these aspects regarding obviousness would seem to help EFI's position because it loosened the rigidity of the *TSM* test.

¹⁴ While in theory the court need not address the merits of the EFI's remaining defenses, exposition of prior sales and inequitable conduct are addressed for completeness.

sale” before the critical date (*i.e.*, more than one year before the filing date of the patent-in-suit). *Id.* at 67. Second, “the invention must be ready for patenting.” *Id.*

The ‘076 patent claims priority to a patent application that was filed on March 5, 2001. Accordingly, the critical date of the ‘076 patent is March 5, 2000. EFI contends that the first prong of *Pfaff* is met because prior to this critical date, Componex offered to sell to VUTEk (now EFI) a cantilever roll embodying the claims of the ‘076 Patent. (Declaration of Dan Smith (“Smith Decl.”) (dkt. #53) ¶¶ 4-8 & Ex. A.).¹⁵ More specifically, EFI contends that Cal Couillard (president of Componex) made an offer of sale to VUTEk when he engaged in conversations with Dan Smith (a former VUTEk employee) between 1999 and 2000. During those conversations it is alleged that Couillard suggested to Smith that he could manufacture a cantilever roller design that would meet Smith’s needs. (*Id.*) Sketches were purportedly produced. Smith avers that he dated one of these sketches on February 21, 2000 -- approximately two weeks before

¹⁵ Componex begins its opposition to the on-sale defense by a variety of technical defects in motions to strike, which are almost wholly meritless. While the patent has been held invalid on obviousness grounds, disposition of the motions goes to costs. And should this case proceed to trial on the ‘059 patent, the court trusts that going forward, counsel for Componex will dispense with any more “gotcha” motions absent some real demonstration of prejudice. Specifically, Componex has filed two motions: (1) a Motion to Strike Declaration of Daniel Smith Under Rule 37(c) (dkt. #88); and (2) a Motion to Strike EFI’s Opposition to Plaintiff’s Motion to Strike the Declaration of Daniel Smith (dkt. #116). With respect to the first, Componex seeks to strike the declaration because Daniel Smith was not named as a witness in EFI’s initial Rule 26(a) disclosures. Having been named in *Componex*’s initial disclosures as a possible witness, *and* incorporated by reference in EFI’s supplemental disclosures without objection, the court is at a loss as to a basis for excluding Smith’s declaration. With respect to the second, Componex seeks to strike EFI’s opposition to its motion to strike Daniel Smith’s declaration, because its opposition was filed three days late. While EFI is living on the edge in filing any document after a deadline without motion for leave and showing cause, particularly if some prejudice could be demonstrated, that is not the case here. On the contrary, there is no prejudice and a few days difference in briefing is immaterial, particularly since Componex had no right to a reply. Componex’s second motion (dkt. #116) is, therefore, denied as well.

the critical date, March 5, 2000. (*Id.* & Ex. A.)

To determine whether this first prong is satisfied, the court must assess whether there is a “communication or [a] series of communications” that rise to the level of a commercial offer for sale. *Grp. One, Ltd. v. Hallmark Cards, Inc.*, 254 F.3d 1041, 1046 (Fed. Cir. 2001). Here, notwithstanding the conversations between Smith and Couillard, there is limited evidence (if any) of the price or quantity at which Componex was offering the rollers at issue to VUTEk, nor is there evidence of an offered delivery date. This apparent absence of important indicia of a viable commercial offer raises, at minimum, a disputed issue of fact as to the existence of such an offer. Had this patent gone to trial, testimony from Smith would have been required to confirm not only the nature and terms of the offer, but whether an actual offer was made that pre-dates the critical date of March 5, 2000. On this incomplete factual record, EFI’s motion for summary judgment fails to satisfy the first prong.

To satisfy the second prong, an invention is “ready for patenting” when evidence shows that the invention was (a) reduced to practice; or (b) described in a written description sufficient to permit one of ordinary skill in the art to practice the invention without undue experimentation. *See Pfaff, Inc.*, 525 U.S. 55, 67-68 (1998). EFI places emphasis on the latter, arguing that a skilled addressee could practice the invention based on the Componex sketch dated February 21, 2000. However, EFI fares no better under the second prong than it does the first.

In briefing, EFI states that the relevant sketch “shows all the limitations of the claims of the ‘076 Patent, *except for a means for fixing the tubes together.*” (Def.’s Br. for

Summ. J. (dkt.# 42) 24.) The court finds that the *italicized* concession creates an evidentiary gap for EFI (at least in the form of direct evidence), if not a fundamental defect in EFI's attempt to rely on this sketch. EFI's motion as to this ground of invalidity is denied.

D. Inequitable Conduct

“Inequitable conduct is an equitable defense to patent infringement that, if proved, bars enforcement of a patent.” *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1285 (Fed. Cir. 2011). The Federal Circuit recently “tighten[ed] the standard for finding [inequitable conduct] in order to redirect a doctrine that has been overused to the detriment of the public.” *Id.* at 1290. Indeed, the Federal Circuit noted that “[t]he habit of charging inequitable conduct . . . has become an absolute plague on [the patent system].” *Id.* at 1289.

As a result, an accused infringer now faces a very high bar in proving a defense for inequitable conduct. To prevail, the accused infringer must prove by clear and convincing evidence that the applicant: (1) misrepresented or omitted material information; and (2) did so with the specific intent to deceive the PTO. *Id.* at 1287, 1290; *see also Star Scientific Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1365 (Fed. Cir. 2008). If the accused infringer meets its burden, then the court must weigh the equities to determine whether the applicant's conduct before the PTO warrants rendering the entire patent unenforceable. *Id.* at 1287.

i. Material Misrepresentation

EFI alleges that Componex made a misrepresentation to the Patent Office when it applied for the '076 patent. In particular, EFI's expert asserts that Componex misrepresented that the Buysch reference does not anticipate claims 1 or 2 of the '076 patent because it does not disclose "weldments". EFI further asserts that this misrepresentation to the Patent Office was material because it led to the grant of the '076 patent.

In fact, EFI's characterization of what was said at the Patent Office is inaccurate.

Below is complete passage of what was actually said to the Patent Office:

The Buysch reference is directed towards a hollow core roller wherein an outer shell surrounds a roller core, where the shell is connected to the core by screwed bolts which are fed through threaded bore holes in the outer roller core. The Buysch reference contains no disclosure of the outer shell being connected to the inner shell by use of weldments.

(Declaration of Joseph T. Leone ("Leone Decl.") Ex. 4 (dkt. #46-4) ECF 21.)

In this passage, Componex did not argue that the Buysch reference did *not* include any weldments, as EFI's expert says. Rather, Componex argued that the Buysch reference does not describe a roller in *which the outer shell is connected to the inner core via weldments*. (*Id.* (emphasis added).) This is not a misrepresentation. If it were, it has the possibility to open the floodgates to all sorts of nuanced claims against patentees. As such, the court is unprepared to find that Componex's interpretation of the Buysch reference rises to the level of an inequitable conduct claim under the first prong, particularly after *Therasense*.

ii. Intent to Deceive

As previously discussed, the Federal Circuit also sets a heavy burden to prove

knowledge and intent. “Because direct evidence of deceptive intent is rare, a district court may infer intent from indirect and circumstantial evidence.” *Therasence*, 649 F.3d at 1290 (citing *Larson Mfg. Co. of S.D., Inc. v. Aluminart Prods. Ltd.*, 559 F.3d 1317, 1340 (Fed. Cir. 2009)). The court need not make any inferences with regard to this second prong, since it has found that EFI’s argument is predicated on the flawed assumption that EFI mischaracterized the Buysch reference. Even if that prong had been met, the court finds that EFI has wholly failed to come forward with any evidence, circumstantial or otherwise, that EFI’s purported misrepresentation of the Buysch reference was intended to deceive the Patent Office.¹⁶

ORDER

IT IS ORDERED that:

1. Plaintiff Componex’s construction of the disputed terms, as described in this opinion, is adopted by the court.
2. Defendant EFI’s motion for summary judgment of invalidity and no willful infringement (dkt. #41) is GRANTED.

¹⁶ Having found that EFI’s obviousness defense was not only reasonable, but meritorious as a matter of law, Componex obviously cannot “show by clear and convincing evidence that the [EFI] acted despite an objectively high likelihood that its actions constituted infringement of a valid patent.” *In re Seagate Tech., LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007). EFI also argued in briefing that damages (if any) should be reduced because Componex has not adequately complied with the notice requirements under 35 U.S.C. § 287(a). Although it need not reach this issue, the court is not convinced that Componex gave actual notice on December 26, 2007. The email Componex sent to EFI on this date is hardly the kind that would trigger the notice requirements of the statute. Certainly it cannot be said that it reflects an “affirmative communication of a specific charge of infringement by a specific accused product or device.” *Amsted Indus., Inc. v. Buckeye Steel Castings Co.*, 24 F.3d 178, 187 (Fed. Cir. 1994); *see also Minks v. Polaris Industries, Inc.*, 546 F.3d 1364, 1376 (Fed. Cir. 2008).

3. Componex's motion for summary judgment for infringement (dkt. #36) is DENIED.
4. Componex's motion for summary judgment dismissing the inequitable conduct claim (dkt. #36) is GRANTED.
5. Componex's Motion to Strike (dkt. #88) is DENIED and reasonable costs incurred in responding are awarded to EFI.
6. Componex's Motion to Strike (dkt. #116) is DENIED.

Entered this 21st day of October, 2014.

BY THE COURT:

/s/

WILLIAM M. CONLEY
District Judge