

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

JOY MM DELAWARE INC. and)	
JOY TECHNOLOGIES INC.)	
)	
Plaintiffs,)	
)	
v.)	Civil Action No. 09-1415
)	
CINCINNATI MINE MACHINERY CO.,)	
)	
Defendant.)	

MEMORANDUM

Gary L. Lancaster,
Chief Judge

December 5, 2011

This is an action in patent infringement. Plaintiffs, Joy MM Delaware Inc. and Joy Technologies Inc. (collectively, "Joy"), allege that defendant, Cincinnati Mine Machinery Co. ("CMM"), has infringed one of their patents. CMM denies these allegations, and also seeks declaratory judgments of non-infringement, invalidity, and unenforceability of the same patent.

Both parties have filed motions for summary judgment. [doc. nos. 51, 54, 59]. For the reasons set forth below, we enter judgment as a matter of law that Joy's patent is not invalid as anticipated or unenforceable due to inequitable conduct, but that the asserted claim is invalid because the inventor violated the best mode requirement. We also enter judgment as a matter of law that CMM's accused DA-350 model chain and flight conveyor lacks the claim

limitation "two spaced apart indentations," and on that basis alone cannot infringe. As to all other claims, counterclaims, and defenses, we find that there are material facts in dispute that require resolution by the fact-finder.

I. FACTUAL BACKGROUND

The technology in this case relates to mining equipment, specifically, chain and flight conveyors used to move materials from one point in a mine to another. The patent in suit is United States Patent Number 6,662,932 (the "'932 Patent"), which is entitled "Chain and Flight Conveyor with Swivel Links." The '932 Patent consists of only two claims. Joy accuses CMM of infringing Claim 2 of the '932 Patent by manufacturing and selling its DA-350 model chain and flight conveyor. CMM denies that its product infringes Joy's patent, and also alleges that the '932 Patent is invalid for various reasons, and unenforceable.

Claim 2 of the '932 Patent reads:

A chain and flight assembly adapted to travel over a pan, said conveyor chain and flight assembly including
a first link assembly and a second link assembly, each of which includes
two spaced apart drive pins, each of which has a first end and a second end,
two spaced apart side plates, each of which has two spaced apart openings, each opening receiving a different one of said drive pins, and

drive pin retaining means for retaining said drive pins in said side plates,

a swivel assembly connecting said two link assemblies, said swivel assembly including

a swivel pin,

a male connecting lug having a base having a horizontal bore that receives one of said drive pins of said first link assembly, and a tongue connected to said base, and

a female connecting lug having a base having a horizontal bore that receives one of said drive pins of said second link assembly, and spaced apart upper lip and lower lip connected to said base, said male connecting lug tongue extending between said spaced apart lips, each of said lips and said tongue having openings therein that form a bore through the male and female lugs that receives said swivel pin, and

swivel pin retaining means for retaining said swivel pin in said lugs, and

a first flight connected to one of said first and said second link assemblies, said flight having

a flight head having two spaced apart indentations, each of which receives a different one of said first ends of said drive pins, and

first flight securing means retaining said drive pin first ends in said first flight head so that said first flight head is spaced from its respective side plate, and

a second flight connected to said one of said first and said second link assemblies, said flight having

a flight head having two spaced apart indentations, each of which receives a different one of said second ends of said drive pins, and

second flight securing means retaining said drive pin second ends in said second flight head so that said second flight head is spaced from its respective side plate.

CMM has filed a motion for summary judgment arguing that: (1) its DA-350 model chain and flight conveyor does not infringe the '932 Patent; (2) Claim 2 of the '932 Patent is anticipated by U.S. Patent No. 2,756, 867 ("Russell '867"); (3) Claim 2 of the '932 Patent is invalid for failure to comply with the best mode requirement; and (4) Joy cannot obtain enhanced damages.¹ [doc. no. 59]. Joy has likewise filed a motion for summary judgment on two of the same invalidity contentions, i.e., anticipation and the best mode requirement. [doc. no. 51]. Joy has also filed a separate summary judgment motion seeking entry of judgment as a matter of law that the '932 Patent is not unenforceable due to inequitable conduct. [doc. no. 54]. Neither party has sought entry of summary judgment on CMM's final invalidity contention, i.e., obviousness.

II. LEGAL AUTHORITY

The court shall grant summary judgment only "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." FED.R.CIV.P. 56(a). Summary judgment is appropriate in a patent case, as in all other cases, when it is apparent from the entire

¹ We find any discussion of and decision on the issue of enhanced damages to be premature at this point in the proceedings, and therefore summarily deny CMM's motion on this issue, without prejudice to raising it at a later time.

record that there are no genuine issues of material fact in dispute. Celotex Corp. v. Catrett, 477 U.S. 317, 322-24 (1986). When determining whether a genuine issue of material fact exists, the court must view the evidence in the light most favorable to the non-moving party and draw all reasonable inferences in that party's favor. Wishkin v. Potter, 476 F.3d 180, 184 (3d Cir. 2007).

One of the principal purposes of the summary judgment rule is to isolate and dispose of factually unsupported claims or defenses. Celotex, 477 U.S. at 323-24. The summary judgment inquiry asks whether there is a need for trial - "whether, in other words, there are any genuine factual issues that properly can be resolved only by a finder of fact because they may reasonably be resolved in favor of either party." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 250 (1986). In ruling on a motion for summary judgment, the court's function is not to weigh the evidence or to determine the truth of the matter, but only to determine whether the evidence of record is such that a reasonable jury could return a verdict for the non-moving party. Id. at 249-50; Reeves v. Sanderson Plumbing Prods., Inc., 530 U.S. 133, 150-51 (2000) (citing cases).

III. DISCUSSION

A. Infringement

1. Infringement Law

a. Literal Infringement

Patent infringement analysis involves a two-step process: first, the claims are construed, 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 in the accused device. Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1323 (Fed. Cir. 2002); Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998); Markman v. Westview Instruments, Inc., 517 U.S. 370, 374 (1996). Summary judgment is appropriate when there is no genuine dispute of material fact that the asserted claims read on the accused device. Lifescan, Inc. v. Home Diagnostics, Inc., 76 F.3d 358, 359 (Fed. Cir. 1996). There can be no literal infringement if the accused product does not contain each and every limitation of the asserted claim. Revolution Eyewear, Inc. v. Aspex Eyewear, Inc., 563 F.3d 1358, 1369 (Fed. Cir. 2009) (citing Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1370 (Fed. Cir. 2000)).

b. Doctrine of Equivalents Infringement

Even if an accused device does not infringe literally, it may still be found to infringe under the doctrine of equivalents. Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 21 (1997). Infringement under the doctrine of equivalents occurs if the differences between the accused device and the claim limitation are "insubstantial," meaning that "the element performs substantially the same function in substantially the same way to obtain substantially the same result as the claim limitation." Zelinski v. Brunswick Corp., 185 F.3d 1311, 1316-17 (Fed. Cir. 1999) (citing Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U.S. 605, 608 (1950)).

This doctrine prohibits a party from avoiding infringement liability by making only insubstantial changes and substitutions which, though adding nothing, would be enough to make the copy fall outside the claim, and hence outside the reach of law. American Calcar, Inc. v. American Honda Motor Co., Inc., 651 F.3d 1318, 1340 (Fed. Cir. 2011). Where the evidence is such that no reasonable jury could determine that an accused device includes an equivalent of each and every one of the limitations of an asserted claim, it is proper to enter judgment as a matter of law on this infringement theory. DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1017 (Fed. Cir. 2006).

Joy will have the burden of proof on the issue of infringement, under both theories, at trial. Applied Medical Resources Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 (Fed. Cir. 2006).

2. Infringement Facts

CMM contends that its accused DA-350 product lacks four elements required by Claim 2: (1) "two spaced apart indentations"; (2) "two spaced apart side plates"; and "flight securing means retaining said (3) drive pin first[/second] ends in said first[/second] flight head (4) so that said first[/second] flight head is spaced from its respective side plate." CMM is correct that if there is no genuine dispute of material fact that its accused product fails to include any one of these elements, then we must enter judgment as a matter of law in its favor on the issue of infringement. PC Connector Solutions LLC v. SmartDisk Corp., 406 F.3d 1359, 1364 (Fed. Cir. 2005).

3. Infringement Discussion

As summarized immediately above, CMM contends that its DA-350 product lacks four different claim elements found in Claim 2 of the '932 Patent. Because we find that no reasonable juror could conclude that CMM's accused device includes the claim limitation "two spaced apart indentations" under the all-elements rule, we enter judgment as a matter of law in CMM's favor on the issue of infringement.

Although this finding alone is dispositive of Joy's infringement accusations, we nevertheless examine the parties' contentions regarding the other three claim elements in the interest of completeness. Having done so, we conclude for each of the remaining three claim elements, that there are material facts in dispute that would require resolution by a fact-finder. As such, we cannot enter judgment as a matter of law that any one of those three elements is lacking, or present, in CMM's accused product.

We will now discuss each of the four claim elements identified by CMM as missing in its DA-350 product.

a. Two Spaced Apart Indentations

Claim 2 of the '932 Patent claims a structure in which "two spaced apart indentations" in the flight head receive and retain the ends of the drive pins via a weld or press-fit. '932 Patent, Col. 5, ln. 9 to Col. 6, ln. 11. We construed the claim limitation "two spaced apart indentations" to mean "two recessed or concaved areas, that do not touch, into which something can be inserted, but through which it cannot pass." [doc. no. 29 at p. 24]. CMM argues that its DA-350 product does not contain this claim limitation, either literally, or under the doctrine of equivalents, because its drive pins pass all the way through the flight head before they are thereafter secured in place via a weld on the outside of the flight head.

Joy concedes that CMM's DA-350 product does not literally infringe the "two spaced apart indentations" claim limitation. [doc. no. 72 at pp. 2-5]. As such, the only question remaining is whether CMM's accused product includes this limitation under the doctrine of equivalents. According to CMM, Joy cannot prove that CMM uses an equivalent attachment structure between the drive pins and the flight heads due to the disclosure-dedication and all-elements rules. Joy contends that these rules do not apply to the "two spaced apart indentations" claim limitation, from a legal perspective. Also, Joy argues that CMM's practice of burying

the end of the drive pin in a weld after it passes through the flight head makes CMM's structure the same as the claimed indentations, from a factual perspective.

Before we address any of these arguments, we must return briefly to our claim construction. In our prior claim construction opinion, we found that the term openings was used in the '932 Patent to signify that something could pass entirely through. [doc. no. 29 at pp. 21-24]. In that opinion, we also found that the term indentation was used in the '932 Patent to signify a recessed or concave area into which something could be inserted, but could not pass. [Id.]. We further found that the two terms were not interchangeable, but instead described two different structures used in the patented invention; one in which a pin passed all the way through (e.g., pins through side plates), and one in which a pin did not pass all the way through (e.g., pins into flight heads). [Id.].

In the claim construction opinion, we also discussed the aberrant use of the term hole, which appears twice in the patent, both times describing how the drive pins were connected to the flight heads. '932 Patent, Abstract, 4th sent. and Col. 3, lns. 52-53. At that time, we stated our belief that the term holes was used as a substitute, perhaps inadvertently, for the term opening, not as a synonym for the term indentation, as Joy had argued.

[doc. no. 29 at pp. 21, 24]. The parties did not ask the court to construe the term holes during claim construction.

We return now to CMM's arguments concerning the disclosure-dedication rule and the all-elements rule. We find that the first rule does not apply, but that the second rule does.

i. Disclosure-Dedication Rule

According to CMM, Joy has dedicated to the public attaching the drive pins to the flight heads via holes or openings, rather than via indentations, by disclosing the former options, but not claiming them. If Joy has done so, then CMM's DA-350 product, in which the drive pins pass entirely through the flight head via holes or openings, cannot infringe under the doctrine of equivalents due to the disclosure-dedication rule.

Application of the disclosure-dedication rule is a question of law. Toro Co. v. White Consol. Indus., Inc., 383 F.3d 1326, 1331 (Fed. Cir. 2004). Under that rule, where subject matter is disclosed as an alternative to a claim limitation, but is not claimed, that subject matter is dedicated to the public, and cannot be regained upon application of the doctrine of equivalents. Johnson & Johnston Assoc. Inc. v. R.E. Serv. Co., Inc., 285 F.3d 1046, 1054-55 (Fed. Cir. 2002); PSC Computer Prods., Inc. v. Foxconn Int'l, Inc., 355 F.3d 1353, 1357-58 (Fed. Cir. 2004). In

order for the disclosure-dedication rule to apply, the unclaimed subject matter must be understandably disclosed to one of ordinary skill in the art.² PSC Computer, 355 F.3d at 1360. In addition, the disclosure must be clear and precise and must indicate that the disclosed subject matter is a substitute for or alternative to the subject matter that is claimed. Id. at 1358.

The rule is best understood through illustration. For example, where an inventor explained in the specification that "[w]hile aluminum is currently the preferred material for the substrate, other metals, such as stainless steel or nickel alloys may be used," but claimed only aluminum, he had dedicated stainless steel and nickel to the public. Johnson, 285 F.3d at 1055. Similarly, where an inventor only claimed attaching fastening tabs between the inner and outer soles of shoes, but disclosed the option of stitching the tabs into the lining of the shoes, the latter subject matter was dedicated to the public and could not be deemed infringing under the doctrine of equivalents. Maxwell v. J. Baker, Inc., 86 F.3d 1098, 1108 (Fed. Cir. 1996); see also, PSC Computer, 355 F.3d at 1359 (by describing clips with plastic parts in the prior art as being more expensive, inventor dedicated plastic clips to the public when he did not claim them); Zircon

² Although the parties do not agree on the relevant level of ordinary skill in the art, [compare Wright Report at ¶ 9 to Caulfield Report at ¶ 21], this discrepancy has no impact on any of our decisions based on the record before the court and need not be resolved at this time.

Corp. v. Stanley Black & Decker, Inc., 2011 WL 4590392 at *12-13 (Fed. Cir. Oct. 5, 2011) (where specification disclosed subtraction method, as well as division method, but only claimed division method, subtraction method could not be deemed infringing under the doctrine of equivalents).

Returning to this case, CMM contends that Joy dedicated the practice of attaching drive pins to flight heads via openings or holes in the flight head, rather than indentations in the flight head, to the public by disclosing but not claiming that embodiment. Of course, CMM goes on to argue that because it attaches the drive pins to the flight heads in the accused DA-350 product via openings or holes, it cannot be found to infringe under the doctrine of equivalents. However, there is no factual basis on which we could apply the disclosure-dedication rule to this claim element. As such, no reasonable juror could ultimately find in CMM's favor on this question.

Because the factual basis of CMM's argument that openings have been dedicated to the public is different from the factual basis relating to holes, we must discuss each term separately. First, we will discuss CMM's contention that Joy disclosed, but did not claim, attaching the drive pins to the flight head via openings. Although the '932 Patent discusses and discloses the concept of using openings to attach items on several

occasions, doc. no. 29 at pp. 21-22, it never does so in the context of flight heads. To reiterate, the "two spaced apart indentations" claim limitation defines how flight heads are attached to drive pins. The '932 Patent never discusses attaching these two structures via openings. Any argument from CMM to the contrary is without any evidentiary support in the record, and is contradicted by the language of the patent.

As such, no reasonable juror could find that the inventor disclosed openings in the flight head as an alternative or substitute embodiment of the "two spaced apart indentations" claim limitation. It follows that no reasonable juror could find that the inventor had dedicated attachment of the flight head to the drive pin via openings to the public. Therefore, because there is no evidence on which a reasonable juror could apply the disclosure-dedication rule to the term openings, we find that the rule does not apply as a matter of law.³

Next, we will discuss CMM's contention that Joy disclosed, but did not claim, attaching the drive pins to the flight head via holes. Although the '932 Patent never discusses

³ We do not consider the inventor's inexplicable testimony that the term openings was understandably disclosed in the specification of the '932 Patent in reference to flight heads to require a different result. O'Neill (3/1/11) Depo. at p. 45. No reasonable juror could find, based solely on that testimony, that the patent disclosed openings in reference to the flight head-drive pin connection because a review of the patent, which speaks for itself, demonstrates that openings were never discussed in that context.

the term openings in connection with the drive pin-flight head connection, it does twice reference the drive pins as fitting into "indentations or holes in the flights." '932 Patent, Abstract, 4th Sent. and Col. 3, ln. 53. However, we conclude that no reasonable juror could find that these two isolated references are clear and precise enough to describe and disclose an alternative embodiment of Joy's invention to the public such that the disclosure-dedication rule could be applied.

These two passing references to holes appear in the Abstract of the '932 Patent and in the summary paragraph of the Preferred Embodiment section of the patent. Both times, the term holes appears as part of the phrase "indentations or holes in the flights." The inventor never defines the term holes. The inventor never recognizes the benefits or drawbacks of using holes as compared to indentations. Nor does he explain or describe how the drive pins will become secured in the flight head if holes are used. As such, we conclude that no reasonable juror could find that these two haphazard phrases sufficiently disclose holes as an alternative embodiment of the claim limitation "two spaced apart indentations." Instead, we find that this disclosure is "oblique and incidental". PSC Computer, 355 F.3d at 1358. Therefore, because there is no evidence on which a reasonable juror could

apply the disclosure-dedication rule to the term holes, we find that the rule does not apply as a matter of law.

In summary, there is no factual basis in this record on which to apply the disclosure-dedication rule to the practice of attaching drive pins to flight heads via either holes or openings, rather than via indentations. As a result, CMM cannot rely on that rule to defend against Joy's infringement allegations.

ii. All-Elements Rule

CMM also contends that Joy cannot prove infringement under the doctrine of equivalents because to do so would read the "two spaced apart indentations" limitation out of the claim, thus violating the all-elements rule. Application of the all-elements rule is also a question of law. Seachange Int'l, Inc. v. C-COR Inc., 413 F.3d 1361, 1378 (Fed. Cir. 2005). Under that rule, the doctrine of equivalents cannot be applied if to do so would vitiate an entire claim limitation. Asyst Technologies, Inc. v. Emtrak, Inc., 402 F.3d 1188, 1195 (Fed. Cir. 2005). As recognized by cases cited by Joy itself in opposition to CMM's motion, the rule stands for the proposition that the doctrine of equivalents cannot be used to recapture subject matter that is the antithesis, or opposite, of what is claimed. Viskase Companies, Inc. v. World PAC Int'l USA,

731 F.Supp.2d 764, 774-75 (N.D. Ill. 2010); Alwin Mfg. Co. v. Global Plastics, 629 F.Supp.2d 869, 877-78 (E.D. Wis. 2009).

There is no set standard for deciding when the all-elements rule applies. Rather, we are directed to consider the totality of the circumstances and determine whether the alleged equivalent would read a limitation completely out of the claim. Freedman Seating Co. v. Am. Seating Co., 420 F.3d 1350, 1359 (Fed. Cir. 2005). We conclude that no reasonable juror could find that CMM's DA-350 model chain and flight conveyor includes an equivalent of the claim element "two spaced apart indentations" under this rule. Therefore, we enter judgment as a matter of law in CMM's favor on the issue of infringement on this basis alone.

We must consider the all-elements rule in the context of the entire '932 Patent, as well as our prior claim construction ruling. Although, as a general matter, indentations and openings/holes need not be binary concepts, in the context of the patent-in-suit, they are. This is because our claim construction opinion defined the terms indentations and openings/holes to be the converse of each other. In that opinion, we stated explicitly that "...an opening[/hole] allows something to pass through it, while an indentation does not." [doc. no. 29 at p. 22]. In doing so, we rejected Joy's argument that the terms indentation and opening were interchangeable and ruled instead that the terms were distinct, and

mutually exclusive, structures in the context of the '932 Patent. [Id. at p. 21 ("...an opening is a hole through which something can pass, while an indentation is a recess or concave area into which something can be inserted, but not pass.")].

Again, Joy claimed in the '932 Patent that the drive pins were attached to the flight head via indentations. '932 Patent, Col. 5 lns. 9-13, Col. 6 lns. 4-7. Given our claim construction, openings/holes in the flight head are the antithesis of what Joy claimed, i.e., indentations in the flight head. In the accused DA-350 product, CMM attaches the flight head to the drive pins by allowing the pins to pass entirely through the flight head, and then welding them on the outside after they have passed through. Joy's contention that this pass through configuration infringes the "two spaced apart indentations" claim limitation under the doctrine of equivalents entirely vitiates the "two spaced apart indentations" claim limitation under our claim construction. As such, Joy cannot prove that CMM's accused product includes this claim limitation under the doctrine of equivalents without running afoul of the all-elements rule, and we must enter judgment as a matter of law in CMM's favor on the issue of infringement. Warner-Jenkinson, 520 U.S. at 39 n.8.

In reaching this decision, we conclude that no reasonable juror could find that CMM's practice of passing the drive pins through the flight head, and then burying the end of the pin in welding is factually the same as an indentation based on the record before the court. Upon viewing CMM's accused device, there is no genuine dispute that the drive pin is not entirely buried in weld after it passes through the flight head, as Joy alleges. Instead, the drive pin is only surrounded by a ring of weld at the point where it exits the flight head, with the remaining portion of the drive pin extending past that weld ring. As such, Joy's factual contention is contradicted by the record, and therefore, this alternative theory need not be submitted to a fact-finder for its consideration.

Although the absence of this one claim element is enough to warrant entry of judgment as a matter of law in favor of CMM on the issue of infringement, we will briefly address the remaining claim limitations that CMM alleges are absent from its DA-350 product in the interest of completeness.

b. Two Spaced Apart Side Plates

CMM argues that its DA-350 product also lacks the claim element "two spaced apart side plates." We find that CMM's contention would have to be presented to a fact-finder for resolution under both theories of infringement.

CMM contends that because its flight assemblies are unitary structures, resulting from a single forging that molds the side plate and the flight into one piece, its product does not have side plates on those link assemblies that have flights attached. Notably, CMM concedes that side plates are present on those link assemblies that do not have flights. However, according to CMM, on those link assemblies that have flights, as a result of the unitary forging process, the side plates become flight heads, based on how we defined those terms during claim construction.

We cannot render a decision on this issue as a matter of law. As an initial matter, we believe that the parties have inadequately briefed the legal ramifications of CMM's use of a unitary forge, making a legal ruling on this ground inappropriate at this time. Based on the legal authority presented to the court thus far, there are material facts in dispute as to whether CMM's structure reads on the claim limitation "two spaced apart side plates" either literally, or under the doctrine of equivalents. It would be for a jury to decide whether CMM's DA-350 model chain and

flight conveyor includes side plates on those assemblies that have flights. A reasonable juror could decide that CMM's product does have side plates, or does not; which is precisely why the court cannot dispose of this question as a matter of law. This issue is not ripe for resolution by summary judgment.

- c. "flight securing means retaining said drive pin first ends in said first flight head so that said first flight head is spaced from its respective side plate."

CMM next argues that its accused DA-350 product lacks the claim limitation that the "drive pin...ends" be retained in the flight head and does not use a press-fit or a weld to secure the drive pin in the flight head "so that said...flight head is spaced from its respective side plate." We discuss each of these separate, but related, claim limitations in turn below, beginning with the latter. We find that whether the accused product contains either of these claim limitations is not amenable to disposition through summary judgment.

First, CMM argues that the DA-350 product does not meet the means-plus-function claim element of "retaining said drive pins first ends in said first flight head so that said first flight head is spaced from its respective side plate" via a press-fit or weld. According to CMM, in its product, press-fits or welds are not what cause the flight head to be spaced from the side plate. Rather,

CMM contends that the single forging process, which molds the side plate to the flight, is what causes a space to be created between the side plate and flight head. As a result, CMM maintains that there can be no infringement.

Literal infringement of a means-plus-function claim element requires only that the structure in the accused device be equivalent to the structure identified in the patent, and perform the identical function recited in the claim. Lockheed Martin Corp. v. Space Sys./Loral, Inc., 324 F.3d 1308, 1320 (Fed. Cir. 2003). A patentee may prove that a structure is equivalent to the disclosed structure by showing that the two perform the identical function in substantially the same way, with substantially the same result. Kemco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1364 (Fed. Cir. 2000).

In the '932 Patent, the function is "retaining said drive pins first ends in said first flight head so that said first flight head is spaced from its respective side plate" and the structure is a press-fit or weld. Based on the above legal standards, the absence of a press-fit or weld to perform the claimed function is not dispositive of Joy's infringement allegations. If Joy could prove that CMM's single forging structure is the equivalent of a press-fit or weld, then Joy could still prevail on infringement of this mean-plus-function claim

element. Joy has submitted sufficient evidence to warrant submitting its theory to the fact-finder for resolution. As such, summary judgment of non-infringement on the basis of this allegedly missing claim limitation is inappropriate.

Next, CMM contends that its accused DA-350 product lacks the claim element that the "drive pin...ends" be retained in the flight head. According to CMM, because the pins in its accused product pass through the flight head, the "ends of the pins are not in said first flight head." [doc. no. 60 at p. 18 (emphasis added)]. CMM's argument is based on the theory that the ends of the drive pins are limited to only the outermost tips. Although CMM's argument has some logical appeal, and some incidental support in our claim construction opinion, doc. no. 29 at p. 22, we find that it is not supported by the text of the '932 Patent itself, now that the issue has been properly framed.

The '932 Patent does not define the ends of the drive pins to be the outermost tips only, as CMM now contends. To the contrary, in the Preferred Embodiment section of the Patent, the inventor identifies Items 38 and 42 of Figure 3 as the "first end" and "second end" of the drive pins. '932 Patent, Col. 2, lns. 53-54. Items 38 and 42 do not even show the outermost tips of the drive pins. Instead, those tips have been cut away in the Figure. No reasonable juror could define the ends of the drive pins to be

limited to only the outer tip of the drive pin in light of the Patent's specification.

Although we can summarily reject CMM's argument regarding the proper interpretation to be given to the phrase "drive pin...ends," we nevertheless cannot resolve the ultimate question of whether CMM's accused product contains the "retaining said drive pin first ends" claim limitation as a matter of law. Based on this record, whether the portion of the drive pins that are in the flight head of the accused DA-350 product qualify as the ends of the drive pins is a factual question. As such, the issue cannot be resolved on summary judgment.

4. Infringement Summary

Of the four claim limitations that CMM contends are absent in its DA-350 product, we find as a matter of law that the accused device does not have "two spaced apart indentations." We defined indentations and openings/holes to be binary concepts: one allows something to pass through, while the other cannot allow something to pass through. As such, Joy cannot argue to a jury that CMM's practice of allowing the drive pins to pass through the flight head is the legal equivalent of its claim limitation which does not allow the drive pin to pass through the flight head, without violating the all-elements rule. Therefore, we enter

judgment as a matter of law in CMM's favor on the issue of infringement.

Although not critical to our infringement decision given our above conclusion, which is dispositive, we have considered whether CMM's accused device includes the remaining three claim limitations. As to each, we find that the ultimate infringement question would have to be submitted to the fact-finder based on the record before us.

B. Invalidity

A patent is presumed valid. 35 U.S.C. § 282. To overcome the presumption of validity the party challenging the patent must prove invalidity by clear and convincing evidence. Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1315 (Fed. Cir. 2002) (citing cases); U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1563 (Fed. Cir. 1997) (citing Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984)). "When evaluating a motion for summary judgment, the court views the record evidence through the prism of the evidentiary standard of proof that would pertain at a trial on the merits." Univ. of Rochester v. G.D. Searle & Co., Inc., 358 F.3d 916, 920 (Fed. Cir. 2004) (quoting Eli Lilly & Co. v. Barr Labs., Inc., 251 F.3d 955, 962 (Fed. Cir. 2001)); see also Anderson, 477 U.S. at 252-55. Accordingly, a

party seeking to invalidate a patent at summary judgment must submit clear and convincing evidence of invalidity. Searle, 358 F.3d at 920 (citing Eli Lilly, 251 F.3d at 962).

Based on these standards we enter judgment as a matter of law that Claim 2 of the '932 Patent is not anticipated by any of the prior art references cited by CMM, but is invalid because the inventor violated the best mode requirement.

1. Anticipation

a. Anticipation Law

Invalidity by anticipation requires that the four corners of a single prior art reference describe every limitation in a claim, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.⁴ Nystrom v. TREX Co., 424 F.3d 1136, 1149 (Fed. Cir. 2005); Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citing cases). While anticipation is a question of fact, it may be decided on summary judgment if there are no genuine disputes of material fact or if, even when all factual inferences are drawn in favor of the non-movant, there is no reasonable basis on which the non-movant can prevail. Leggett & Platt, Inc. v. VUTEk, Inc., 537 F.3d 1349, 1352

⁴ See, supra, n.2.

(Fed. Cir. 2008) (citing Golden Bridge Tech., Inc. v. Nokia, Inc., 527 F.3d 1318, 1321 (Fed. Cir. 2008)).

The standard of proof that would have to be met at trial must be considered, and the party bearing the burden of proof at trial must present sufficient evidence on each element in order to avoid summary judgment. Celotex, 477 U.S. at 322; Anderson, 477 U.S. at 257. To reiterate, CMM will have the burden of proving anticipation at trial by clear and convincing evidence. Schumer, 308 F.3d at 1315; U.S. Surgical Corp., 103 F.3d at 1563.

b. Anticipation Facts

CMM alleges that five patents anticipate the '932 Patent, invalidating the same.⁵ These five patents are: U.S. Patent No. 2,756,867 ("Russell '867"); U.S. Patent No. 2,756,868 ("Russell '868"); U.S. Patent No. 3,103,275 ("Rollins '275"); U.S. Patent No. 3,324,990 ("Karlovsky '990"); and U.S. Patent No. 2,756,869 ("Merck '869"). CMM has filed a motion seeking judgment as a matter of law that the Russell '867 Patent anticipates Claim 2 of the '932 Patent. Joy has filed a motion seeking judgment as a matter of law that none of the five patents identified by CMM can

⁵ CMM also contends that each of these references, among others, renders Claim 2 of the '932 Patent obvious. However, neither party has moved for summary judgment on that invalidity contention.

anticipate Claim 2 of the '932 Patent. We grant Joy's motion for summary judgment on the issue of anticipation.

c. Anticipation Discussion

We must compare the asserted claim of the '932 Patent to the cited prior art references to determine whether the claim is anticipated. Here, the parties have focused their anticipation arguments on two distinct claim elements: first, "two...drive pins"; and second, "flight head...spaced from its respective side plate." According to CMM, each of the prior art references includes both of these claim limitations. According to Joy, none of the prior art references include either of these claim limitations. We agree with Joy.

Based on our claim construction, and as set forth in more detail below, we find that no reasonable juror could conclude that any of the five asserted prior art patents anticipates Claim 2 of the '932 Patent. This is because there is no reasonable basis on which to conclude that any of the five patents have "two...drive pins" in each link assembly. Further, and alternatively, there is no reasonable basis on which to conclude that any of the five cited references include flight heads spaced from their corresponding side plates.

Before discussing these two claim limitations in detail, we must address CMM's persistent argument that Joy is improperly importing a claim element from Claim 1, namely, "a sprocket drive," into Claim 2. The '932 Patent consists of only two claims. Although Claim 1 claims three structures, i.e., a pan, a conveyor chain and flight assembly, and a sprocket drive, Claim 2 is comprised of only one of them, i.e., a conveyor chain and flight assembly. Therefore, CMM is correct that Claim 2 does include a sprocket drive. CMM is also correct that a sprocket drive need not be present in order to infringe, or anticipate, Claim 2. However, CMM is incorrect that it follows that a sprocket drive is inconsequential and irrelevant to the invention claimed in Claim 2.

According to CMM, while Claim 1 may require that a dual sprocket drive engage the drive pins and that the flight head be spaced from the side plate on both sides of the link assembly to provide room for the sprocket drive teeth to do so, Claim 2 does not. CMM goes on to argue that, as a result, the conveyor chain and flight assembly claimed in Claim 2 does not have to be structured to accommodate a dual sprocket drive. It follows, under CMM's theory, that the conveyor chain and flight assembly claimed in Claim 1 could look, function, and be completely different from the conveyor chain and flight assembly claimed in Claim 2. CMM is wrong.

Even though Claim 2 does not claim a dual sprocket drive, that structure is nevertheless still part of the invention that is disclosed and enabled by the '932 Patent. Claims 1 and 2 are found in the same Patent. They are enabled by the same specification. The language of Claim 2 is identical to that portion of Claim 1 that claims the conveyor chain and flight assembly. CMM's attempts to transform the invention claimed in Claim 2 into something entirely unrelated to the invention claimed in Claim 1 are unfounded, illogical, and contrary to the law.

With that clarification in mind, we consider whether any of the five cited prior art references anticipate Claim 2 of the '932 Patent. To reiterate, we find that they do not.

i. "two...drive pins"

Claim 2 requires that each link assembly contain two drive pins. We construed drive pins to mean "A pin that is structured and positioned for driving purposes." [doc. no. 29 at p. 27]. In reaching this construction, we rejected Joy's proposed construction ("a pin that is driven"), as well as CMM's proposed construction ("pins engaging a sprocket for driving purposes"). [doc. no. 26]. Therefore, our claim construction purposefully and explicitly did not require that the drive pin actually be driven or actually be engaged with a driving mechanism. Instead, we required

only that the drive pin be "structured and positioned" for driving purposes. [doc. no. 29 at p. 27]. No reasonable juror could find that any of the five patents identified by CMM as being anticipatory include two pins that are structured and positioned for driving purposes. For this reason alone, judgment as a matter of law must be entered in favor of Joy on the issue of anticipation.

Both of the Russell patents, the Rollins patent, and the Merck patent are single sprocket chains with swivel assemblies positioned on the center of the chain, where the sprocket is located. Although each link assembly contains structures that can be referred to as pins, each link assembly does not contain two drive pins because the pin hosting the swivel assembly is not structured and positioned for driving purposes. This is because the solid nature of the swivel mechanism makes it impossible for the pin housed within it to be structured and positioned for driving purposes. As such, no reasonable juror could find that any of these four prior art references anticipates Claim 2 of the '932 Patent.

Although the Karlovsky reference is a chain driven by a dual sprocket, unlike the previously discussed four references, no reasonable juror could find that it contains two drive pins on each link assembly. The link assemblies in this reference are solid

structures, reminiscent of barrels. Both pins are enclosed within that structure. Assuming for the sake of argument that the second pin is structured and positioned for driving purposes by the dual sprocket, even though it is encased within the solid barrel structure and not directly engaged by the sprocket, the lead pin is not. That lead pin can be described as being driven, after all the lead pin is moved along as the chain itself moves. However, no reasonable juror could find that the lead pin, being encased inside the solid barrel structure and positioned away from any contact, direct or indirect, with the driving mechanism, is structured and positioned for driving purposes. As such, no reasonable juror could find that Karlovsky anticipates Claim 2 of the '932 Patent.

The expert testimony and report of John Wright does nothing to advance CMM's position to the contrary, and is an insufficient evidentiary basis on which to present CMM's anticipation contentions to a jury. In his deposition testimony, Wright characterized various structures in the above cited references as drive pins. Wright Depo. at pp. 18-56. He then testified that the direct receipt or transfer of sprocket drive forces is what causes a pin to be positioned and structured for driving purposes. Id. at pp. 80-81. This testimony would be without consequence to a jury deciding the issue of anticipation under our claim construction.

The concept of receiving or transferring sprocket drive forces appears nowhere in our claim construction. To the extent that the concepts of propulsion and sprocket drive forces were raised at all during claim construction, Joy was the party to make passing reference to them. [doc. nos. 21 at pp. 9-10, 27 at pp. 3-4 (drive pins described as connecting structures that were driven, by engaging the sprocket, either directly or indirectly, or by some other form of propulsion)]. However, we rejected these limitations and refused to define the term drive pins by reference to the fact that they were driven, propelled, or moved. Instead, based on the specification of the '932 Patent, we defined drive pins in reference to how the pins were structured and positioned. As such, Wright's deposition testimony regarding the transfer of sprocket drive forces is irrelevant under this court's claim construction, making it insufficient as a basis on which to avoid summary judgment.

Wright's expert report suffers from the same deficiencies. The report goes no further than to identify structures that he labels drive pins in the allegedly anticipatory references, and describe how they are connected to various other parts of the chain. There is absolutely no discussion, generally, of how the pins qualify as being structured and positioned for driving purposes, or more specifically, how a pin within a solid

swivel assembly could possibly be structured and positioned for driving purposes, or how a pin completely enclosed within a solid barrel-like structure that is removed from any driving mechanism could possibly be structured and positioned for driving purposes. As such, Wright's expert report provides no evidence from which a reasonable juror could conclude that any of the five cited references include the "two...drive pins" claim element. Thus, it too, is insufficient as an evidentiary basis on which to avoid summary judgment.

In summary, CMM has failed to produce any evidence on which a reasonable fact-finder could rely to conclude that the cited references contain the required "two...drive pins," as we construed that term. As such, no reasonable juror could find in CMM's favor on the issue of anticipation on this basis alone. Therefore, judgment as a matter of law in Joy's favor on this defense and counterclaim is appropriate.

Although the absence of this one claim element in the prior art references is enough to warrant entry of judgment as a matter of law in favor of Joy on the issue of anticipation, we will briefly address the remaining "flight head...spaced from respective side plate" claim limitation in the interest of completeness.

ii. Flight Head Spaced From Side Plate

Claim 2 also requires that each link assembly contain a "flight head...spaced from its respective side plate." In construing this claim element, we concluded only "...that the side plate cannot touch the corresponding flight head to which it is most closely attached via the drive pin." [doc. no. 29 at pp. 19-20]. We specifically rejected Joy's proposal that we further define the space between the flight head and the side plate to be "sufficient...to allow a sprocket to be inserted between the flight head and side plate." [doc. no. 26 at pp. 55-56]. However, we recognized that additional detail regarding this particular space, as well as others, would have to be considered outside claim construction. [doc. no. 29 at p. 20]. Because no reasonable juror could find that any of the five cited patents include side plates that do not touch their respective flight heads, judgment as a matter of law in Joy's favor on the issue of anticipation would be appropriate on this alternative basis.

As an initial matter, although the parties devoted significant attention both during claim construction and summary judgment briefing to defining the amount of space between the flight heads and the side plates, as well as the function of that space, this issue is largely immaterial in light of our claim construction. We defined spaced from to mean that the two relevant

structures could not touch. In three of the five cited prior art references, there is no genuine dispute that the side plates touch the flight heads. In the remaining references, no reasonable juror could determine that the prior art reads on Claim 2 of the '932 Patent. As such, we would enter judgment as a matter of law on this alternative basis.

To the extent the space between the side plate and the flight head must be defined, we find that although neither our claim construction, nor the language of Claim 2 requires the presence of a sprocket drive, as does Claim 1, the space must still be sufficient to allow for placement of a driving mechanism. By reaching this conclusion, we are not importing the limitation of "a sprocket drive" from Claim 1 into Claim 2. Rather, we are giving meaning to Claim 2 based on the specification of the '932 Patent.

The '932 Patent discloses and enables a dual sprocket, swivel link conveyor chain, with flights, that can be driven on every pitch. The space between the side plates and the flight heads serves a purpose vital to the invention; it allows each pitch of the chain to be driven. As such, the space must be sufficient to perform that function. Inconsequential spaces do not read on Claim 2, as a matter of law. Again, we recognize that the asserted claim does not require that the driving mechanism be physically present, or actually engaged. However, the '932 Patent

nevertheless requires that the space serve a function and, therefore, that it be more than a trivial or inconsequential space.

As referred to immediately above, three of the cited patents can be summarily eliminated as being anticipatory on the sole basis that the flight heads and the side plates touch. CMM's own expert witness acknowledges that the two equivalent structures touch in both of the Russell patents and the Merck patent. Wright Depo. at pp. 47-48 (Russell '867 - recognizing that the structures touch each other "in two areas") and pp. 53-54 (Merck '869 - structures "touch[]"); Wright Report at ¶ 43 (Russell '868 - structures are "held against" each other). As such, no reasonable juror could conclude that any of these three references anticipate Claim 2.

In the Rollins patent, the two structures that CMM identifies as the side plates and flight heads, i.e., Items 6 and 11 (slide plates) and Item 30 (flight head) touch. Rollins '275 at Fig. 2. To the extent CMM relies on the nearly imperceptible space between the two structures, Item C, to meet the "flight head..spaced from its respective side plate" claim limitation, we find that no reasonable juror could find in CMM's favor on that issue. As explained above, the space between the flight head and the side plate must be functional in the context of the invention that is disclosed and enabled in the specification of the '932 Patent. The

space indicated in Item C of the Rollins patent, to the extent it even qualifies as a space at all, could not perform the function disclosed in the '932 Patent. As such, no reasonable juror could conclude that the Rollins patent anticipates Claim 2 of the '932 Patent.

The remaining reference, Karlovsky, does not have any structures that could be reasonably construed as being side plates and flight heads, as those terms have been construed and are used in the '932 Patent. Instead, the links of the Karlovsky reference are solid, integral structures, referred to above as resembling barrels. Wright Depo. at pp. 40-41. To the extent a reasonable juror could locate any structures in the Karlovsky patent that are the equivalent of side plates and flight heads, which we doubt, there is nevertheless no functional space between them. As such, no reasonable juror could conclude that the Karlovsky patent anticipates Claim 2 of the '932 Patent.

In summary, no reasonable juror could conclude that any of the cited references contain the required "flight head...spaced from its respective side plate" claim limitation. Although the absence of the "two...drive pins" claim limitation is independently sufficient to warrant entry of judgment as a matter of law on the issue of anticipation, the absence of this limitation would provide

an alternative basis on which to rule in Joy's favor on this defense and counterclaim.

2. Best Mode

a. Best Mode Law

A patent specification "shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112 ¶ 1. "The best mode requirement creates a statutory bargained-for-exchange by which a patentee obtains the right to exclude others from practicing the claimed invention for a certain time period, and the public receives knowledge of the preferred embodiments for practicing the claimed invention." Eli Lilly, 251 F.3d at 963.

A violation of the best mode requirement occurs when an inventor fails to disclose the best mode known to him as of the date the application for a patent is filed. Pfizer, Inc. v. Teva Pharms. USA, Inc., 518 F.3d 1353, 1364 (Fed. Cir. 2008). Where an accused infringer proves a best mode violation those claims affected by the failure to disclose are invalidated. AllVoice Computing PLC v. Nuance Communications, Inc., 504 F.3d 1236, 1240 (Fed. Cir. 2007). As with all challenges to the validity of a patent, a violation of the best mode requirement must be proven by clear and convincing evidence. U.S. Gypsum Co. v. Nat'l Gypsum Co.,

74 F.3d 1209, 1212 (Fed. Cir. 1996).

Compliance with the best mode requirement is a question of fact. Ajinomoto Co. v. Int'l Trade Comm'n, 597 F.3d 1267, 1272 (Fed. Cir. 2010). To grant summary judgment on a factual question, all disputed material facts must be resolved in favor of the non-movant. High Concrete Structures, Inc. v. New Enterprise Stone and Lime Co., Inc., 377 F.3d 1379, 1382 (Fed. Cir. 2004).

The first step in examining a best mode challenge is to define the invention by construing the claims. Ajinomoto, 597 F.3d at 1273 (citing cases). Determining the scope of the claims is a threshold step in a best mode inquiry because "[s]ubject matter outside the scope of the claims falls outside of the best mode requirement." Id. If subject matter is claimed, then the best mode requirement applies; if subject matter is not claimed, then the best mode requirement does not apply.⁶ Bayer AG v. Schein Pharmaceuticals, Inc., 301 F.3d 1306, 1315-16 (Fed. Cir. 2002); Ajinomoto, 597 F.3d at 1275-76 (applying best mode requirement to host strain because it was claimed subject matter, and citing cases demonstrating that the best mode requirement applies to claimed subject matter); Engel Industries, Inc. v. Lockformer Co., 946 F.2d

⁶ There is one exception to this rule. Where subject matter is unclaimed, but is necessary to practice the claimed invention, then the inventor must satisfy the best mode requirement even though the subject matter is not claimed. See e.g., Bayer AG, 301 F.3d at 1316-19 (citing cases); Eli Lilly, 251 F.3d at 963. However, the exception does not apply in this case because the allegedly undisclosed subject matter was claimed.

1528, 1531 (Fed. Cir. 1991) ("unclaimed subject matter is not subject to the disclosure requirements of § 112"); compare, Zygo Corp. v. Wyko Corp., 79 F.3d 1563, 1567 (Fed. Cir. 1996) (no best mode violation for failing to disclose packaging for invention because "the claims simply do not require packaging of any sort").

Although the best mode requirement is limited to what the inventor has claimed, it is not further limited to only those aspects of the invention that are innovative. Ajinomoto, 597 F.3d at 1274-75 (just as infringement requires all claim limitations to be present in an accused device, not just those that distinguish the claim from the prior art, so too does the best mode requirement necessitate disclosure of all aspects of the invention, not just the novel ones). The important inquiry in assessing a best mode challenge is whether the subject matter is claimed, not whether it is novel. Id.

Once we have determined the features to which the best mode requirement applies, we must ask two questions to determine whether the best mode requirement has been violated. Wellman, Inc. v. Eastman Chemical Comp., 642 F.3d 1355, 1360 (Fed. Cir. 2011) (citing cases). The first question is subjective and the second question is objective. Id. First, we ask whether, at the time the patent application was filed, the inventor had a personal preference as to the best mode of practicing the claimed invention.

Id. Second, if the inventor has a preference for one mode over all others, we must then determine, objectively, whether the inventor concealed the preferred mode from the public or made a sufficient disclosure of it. Id.; see also, Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, 620 F.3d 1287, 1296 (Fed. Cir. 2010).

If the inventor contemplated a best mode, he must actually disclose it and cannot meet the requirements of the statute "... by mute reference to the knowledge of one of skill in the art." Bayer AG, 301 F.3d at 1314. "Rather, because the existence of a best mode of carrying out the invention is by definition known only to the inventor, section 112 demands actual disclosure regardless of whether, as an abstract matter, practicing that mode would be within the knowledge of one of ordinary skill in the art." Id.

There are two oft-cited exceptions to the best mode requirement, both of which Joy relies on in this case: the production details exception and the routine details exception. Production details are considerations that do not concern the quality or nature of the claimed invention, but instead relate to commercial and manufacturing considerations, such as available equipment and materials, cost, and volume. See e.g., TeleFlex, 299 F.3d at 1329-1330 (applying production details exception to the material, hardness, and thickness of a clip, which features were

not claimed). Although routine details can implicate the quality and nature of the invention, the best mode requirement does not necessitate their disclosure because they are unclaimed subject matter that is readily apparent to one of ordinary skill in the art. See, e.g., Eli Lilly, 251 F.3d at 963-67 (choice of preferred solvent to complete recrystallization process, in a patent that did not claim a recrystallization solvent, was a routine detail that fell outside best mode requirement); Young Dental Mfg. Co., Inc. v. Q3 Special Products, Inc., 112 F.3d 1139, 1144-45 (Fed. Cir. 1997) (unclaimed features, i.e., gear ratios and plastic grades, were routine details to which best mode did not apply).

b. Best Mode Facts

CMM contends that Joy violated the best mode requirement by failing to disclose the best "drive pin retaining means for retaining said drive pins in said side plates." '932 Patent, Col. 4, lns. 57-58. In the Preferred Embodiment section of the patent's specification, the inventor identifies welding as the drive pin retaining means. Id. at col. 2, lns. 60-61. However, the inventor admitted at his deposition that the "best drive pin retaining means" was "press-fits." O'Neill (3/1/11) Depo. at pp. 16, 25-26. As such, CMM argues that Joy has violated the best mode requirement, making Claim 2 of the '932 Patent invalid.

Joy argues in opposition to CMM's motion and in support of its own motion for summary judgment on the best mode requirement, that the inventor's failure to disclose press-fits as the best drive pin retaining means cannot invalidate Claim 2 of the '932 Patent, as a matter of law, because welding and press-fitting are well-known, routine, and interchangeable attachment techniques in the industry. [doc. nos. 52 at pp. 22-23 and 72 at pp. 22-25]. According to Joy, because the best mode requirement does not apply to "production details and routine matters", and because drive pin retaining means are such details, there can be no best mode violation in this case.

As an initial matter, it is important to clarify that the relevant structural connection at issue here is between the side plates and the drive pins. Although the '932 Patent also claims "swivel pin retaining means" ("a weld") and "flight securing means" ("press-fitted or welded"), these structural connections are not germane to CMM's best mode challenge. Therefore, evidence related to how drive pins should be attached to flights, or even how side plates could be attached directly to flights is immaterial. See, e.g., doc. no. 72 at p. 23; O'Neill (3/1/11) Depo. at pp. 24-25. Again, the only relevant attachment configuration is the connection

between the side plated and the drive pins. As such, the court has disregarded any evidence and argument regarding other attachment configurations.

c. Best Mode Discussion

There is no dispute that the '932 Patent expressly discloses only welding as the "drive pin retaining means." '932 Patent, Col. 2, lns. 60-61. Joy concedes that the inventor testified at his deposition that press-fitting was his preferred way to retain the drive pins in the side plates. [doc. no. 72 at p. 23; O'Neill (3/1/11) Depo. at p. 41]. In fact, Joy confirms this testimony by submitting an unverified declaration from the inventor stating that "...the way I envisioned manufacturing the chain in 2002 was to use a press-fit." O'Neill Dec. at ¶ 5.⁷ Finally, in a stunning admission, Joy chides CMM for attempting "to transform a trivial drafting omission into an invalidating transgression." [doc. no. 52 at p. 21].

⁷ To the extent this declaration goes on to state that "...I cannot say whether that is a better way of making the chain" we reject Joy's attempt to contradict the inventor's prior deposition testimony in order to avoid summary judgment. Jiminez v. All American Rathskeller, Inc., 503, 247, 253-55 (3d Cir. 2007).

Instead of attacking the factual basis of CMM's validity challenge, Joy argues that any failure to disclose press-fitting as the best way to attach drive pins to side plates is without legal consequence. According to Joy, the best mode requirement does not apply because press-fitting was well-known, routine, and readily substitutable for welding.

However, Joy's legal arguments fail because "drive pin retaining means for retaining said drive pins in said side plates" is a claimed, means-plus-function element of Claim 2. Because the retaining means is specifically claimed, the best mode requirement applies to it. As a result, that press-fitting was well-known, routine, or readily substitutable for welding is immaterial. "...[T]he best mode requirement...cannot be met by mere reference to the knowledge of one of skill in the art." Bayer AG, 301 F.3d at 1314.

Although Joy is correct in stating the well-accepted rule that production details and routine details fall outside the best mode requirement, controlling precedent teaches that these exceptions are applied in practice only to unclaimed subject matter that is not necessary to practice the invention.⁸ See e.g., Liquid Dynamics Corp. v. Vaughan Comp., Inc., 449 F.3d 1209, 1223-24 (Fed. Cir. 2006) (no best mode violation for failure to disclose the use

⁸ See, supra, n.6.

of reducers on tank nozzles where reducers were not claimed and were a routine detail in the industry); TeleFlex, 299 F.3d at 1329-1330 (similar); Eli-Lilly, 251 F.3d at 963-67 (similar); Young Dental, 112 F.3d at 1144-45 (similar); compare, Wellman, 642 F.3d at 1362 (best mode requirement violated by failure to disclose preferred recipe, including preferred heat-up rate additive and its particle size, in patent claiming a slow-crystallizing resin even though recipe and additive were not claimed because they were necessary to practice the invention that was claimed); Great Northern, 94 F.3d 1569 (although the use of diamonds was unclaimed, production details exception did not apply because the use of diamonds was necessary to practice the claimed invention; best mode violated by failing to disclose diamonds). The Court of Appeals for the Federal Circuit has never applied the production details or routine details exceptions to excuse an inventor from disclosing the best mode of practicing features of his invention that he specifically claimed.

Even the cases relied upon by Joy to support its conclusory contention that the omission of press-fitting cannot constitute a best mode violation do not apply the production detail or routine detail exception to subject matter that is specifically claimed. Instead, they reinforce the basic principle that the best mode requirement applies to all elements that are claimed by the

inventor. See, Ajinomoto, 597 F.3d at 1272-76 (inventors who claimed the cultivation of a bacteria containing a particular mutation violated best mode requirement by failing to identify the only host strain of bacteria they used to practice that cultivation); TeleFlex, 299 F.3d at 1329-1330 (best mode requirement does not apply to unclaimed subject matter relating to production details that were dictated by customer requirements); Eli Lilly, 251 F.3d at 963-67 (applying production detail and routine detail exceptions to unclaimed chemicals, methods, and processes).

Joy has claimed, and has been given a monopoly to exclude others from practicing, welding as the "drive pin retaining means."⁹ [doc. no. 29 at p. 15]. Joy has presented the court with no legal authority supporting its contention that it need not disclose the best mode of retaining the drive pins in the side plates because Joy now deems it unimportant, inconsequential, substitutable, and routine. The fact that Joy specifically claimed a "drive pin retaining means" itself belies that position. We have been unable to independently locate any legal authority that

⁹ Although our claim construction of "drive pin retaining means" included the language "...and structures equivalent thereto," this was no more than a recognition of the infringement standard applicable to a means-plus-function element. [doc. no. 29 at p. 15]. That language did not frame the proper inquiry under a best mode challenge, and contrary to the inventor's belief, did not expand the scope of the '932 Patent's disclosure. O'Neill Decl. at ¶ 4. There is no dispute that the '932 Patent identifies welding as the only drive pin retaining means. '932 Patent, Col. 2, lns. 60-61.

excuses the disclosure of a specifically claimed means-plus-function element on the ground that it is a routine detail or a production detail.

Joy has made no further arguments on the best mode issue, even in the alternative. Because Joy's lack of disclosure relates to a claimed element of its invention, we can fashion no such argument on its behalf that would survive summary judgment. As such, as a legal matter, we conclude that Joy is not exempted from the best mode requirement for its claim limitation of a "drive pin retaining means" under the production details exception, the routine details exception, or any other legal theory.

Given the undisputed facts summarized above, a reasonable juror would have no choice but to find that CMM has satisfied, by clear and convincing evidence, both elements of a best mode violation. No reasonable juror could find that O'Neill did not have a personal preference for press-fiting over welding - he has admitted as much, and Joy has conceded the same in its briefing. Nor could a reasonable juror find that the '932 Patent sufficiently disclosed press-fits - O'Neill has stated that press-fits as a drive pin retaining means are not disclosed in the '932 Patent. O'Neill (3/1/11) Depo. at p. 41. A reading of the '932 Patent

confirms the same. Therefore, we enter judgment as a matter of law in CMM's favor on the best mode issue. Accordingly, Claim 2 of the '932 Patent is invalid.

C. Unenforceability

1. Inequitable Conduct Law

Inequitable conduct is an equitable defense to patent infringement that bars enforcement of a patent. Therasense, Inc. v. Becton, Dickinson & Co., et al., 649 F.3d 1276, 1285 (Fed. Cir. 2011). In order to prevail on the defense, an accused infringer must prove both intent to deceive and materiality by clear and convincing evidence. Id. at 1287 (citing Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., et al., 537 F.3d 1357, 1365 (Fed. Cir. 2008)). The Court of Appeals for the Federal Circuit recently redefined the contours of this doctrine in an attempt to reign in a defense that it referred to as both an "atomic bomb" and a "plague." Id. at 1288-89.

In order to prove intent to deceive in withholding a prior art reference from the Patent and Trademark Office, the accused infringer must prove by clear and convincing evidence that the applicant knew of the reference, knew that it was material, and made a deliberate decision not to disclose it. Id. at 1290. Negligence, gross negligence, or a should have know standard are

insufficient. Id. Although intent to deceive may be inferred from circumstantial evidence, in order to do so, specific intent must be the single most reasonable inference that can be drawn from the evidence. Id. Where multiple inferences can be reasonably drawn, there is no intent to deceive. Id. at 1291.

After Therasense, in order to satisfy the second element of an inequitable conduct attack in the context of a withheld prior art reference, an accused infringer must prove that the withheld reference was "but-for" material. In other words, where an applicant fails to disclose prior art to the PTO, the accused infringer must prove by clear and convincing evidence that the PTO would not have allowed a claim had it been aware of that undisclosed prior art. Id. at 1291-92.¹⁰ Hence, in assessing the materiality of a withheld reference, we must determine, applying a preponderance of the evidence standard, whether the PTO would have disallowed a claim had it been aware of the reference. Id.

¹⁰ The Court of Appeals recognized an exception to but-for materiality where an applicant engages in affirmative egregious acts of misconduct. However, there is no evidence that the exception applies in this case.

2. Inequitable Conduct Facts

CMM alleges that Joy engaged in inequitable conduct by failing to disclose to the PTO a photograph of a prior model of its conveyor chain and flight assembly - the DA-450. According to CMM, intent to deceive can be inferred due to the inconsistencies, "flip-flopping", and "cover ups" in the testimony of the inventor and Mr. Lowe, Joy's patent attorney. CMM argues that the DA-450 product is material because it demonstrates the combination of a dual sprocket, the capability of driving every pitch, and flights. Wright Report at ¶ 196. Because we conclude that CMM has failed to produce clear and convincing evidence on either inequitable conduct element, we grant Joy's motion for summary judgment on this defense and counterclaim.

3. Inequitable Conduct Discussion

First, we discuss the intent to deceive element. CMM's evidence on this point is circumstantial, as it typically is. This is not fatal to CMM's case, but we must follow the Court of Appeals' direction that we can infer an intent to deceive only when that conclusion is the only reasonable one that can be drawn from the evidence. CMM contends that we must infer an intent to deceive because the inventor and the patent attorney have presented

inconsistent stories regarding the picture they received, via e-mail, of CMM's DA-450 product. However, upon review of the entire record, we find no such inference to be required under the applicable legal standards.

As an initial matter, we note that many of the alleged inconsistencies in Joy's testimony are not, in fact, inconsistent. The court has reviewed CMM's citations to the record throughout its briefing, and time and again, has found that the record does not always reflect the principle for which CMM has cited it, and that when the testimony is read in context, there is no inconsistency. For instance, and only by way of example, CMM accuses Mr. Lowe of attempting to remedy his "inconsistencies" by way of a post-deposition declaration stating that he reviewed the e-mailed picture of the DA-450 product and found that it was not of interest, when "no more than two weeks earlier" he could not recollect any references to which he compared the DA-450 product. [doc. no. 62 at p. 10].

The mischaracterizations abound. The deposition testimony from "two weeks earlier" to which CMM cites was not discussing the picture of the DA-450 product at all, but was addressing what prior art patents Mr. Lowe reviewed when he reopened the patent application file after it had been closed for four years. Moreover, upon review of Mr. Lowe's testimony, it is

clear that he testified at his deposition that he reviewed the picture of the DA-450 product the day that the inventor sent it to him, and did not review it thereafter. Lowe Depo. at pp. 53-54. Mr. Lowe's declaration does not contradict that testimony, but simply adds the names of two patents which he considered to be more relevant than the DA-450 product. In short, we cannot take, and have not taken, CMM's repeated allegations that Joy's witnesses "flip-flop" or are trying to engage in a "cover up" at face value.

Instead, the record as a whole reflects that when the inventor received the picture of the DA-450 product, he e-mailed it to his patent attorney, with his commentary. The record further reflects that when the patent attorney received that e-mail from his client, he reviewed it, determined that it was no more relevant *to the claims that he would draft* than any of the prior art patents he had already reviewed, and knew he would have to draft around. CMM's generalized statements regarding the "importance" and "relevance" of the DA-450 to "the invention," the shared benefits of the DA-450 product and Joy's "invention," Joy's inability to apply for a patent in 1998, and the subsequent misfiling of the e-mail are without consequence. There can be no intent to deceive when the undisputed facts are that the inventor and the patent attorney reviewed the piece of prior art at the time it was disclosed to them, considered it to be no more relevant *to the*

claims that they would submit to the PTO for examination than any of the other pieces of prior art they had already reviewed, and decided not to disclose it on that basis.

This record does not compel us to reach as the only reasonable conclusion, that Joy had a specific intent to deceive the PTO. As such, based on the Court of Appeals' direction, we cannot infer that the inventor or the patent attorney had a specific intent to deceive the PTO.

Next, we discuss the materiality element. Notably, CMM's expert, Wright, did not supplement his report after the Court of Appeals issued its decision in Therasense. Although another of CMM's experts, Mr. Godici, did supplement his report, his assessment of the materiality of the DA-450 product to the PTO relies entirely on the legal opinions that Wright issued in his original report. First Godici Report at ¶ 59; Supplemental Godici Report at ¶ 12. As such, CMM's only evidence of but-for materiality is found in Wright's original expert report. The only statement of materiality in that report is paragraph 196: "None of the references cited to the USPTO demonstrate the combination of a dual sprocket, the capability of driving every pitch, and flights. For this reason, it [is] my opinion that the DA-450 is material to the patentability of the claims of the '932 patent, and non-cumulative to the references cited to the USPTO."

Wright's statement is insufficient to prove materiality under any legal standard. As an initial matter, Wright fails to compare the DA-450 product to the claims of the '932 Patent. General similarities between the claimed invention and the DA-450 product, or common benefits provided by them, are insufficient to prove that had the PTO known about the DA-450 product, it would not have allowed Claim 2 of the '932 Patent. Moreover, Wright fails to assess how the DA-450 product differed from any of the other prior art that was disclosed to the PTO by Joy, such that a different result would have obtained before that agency had it been disclosed. CMM has the obligation under Therasense to prove that had the DA-450 product been shown to the PTO, the asserted claim of the '932 Patent would have been disallowed. CMM has made no such showing. Its expert reports apply the wrong legal standards, fail to compare the allegedly withheld reference to the actual claims of the asserted Patent, and are simply insufficient to avoid summary judgment.

Based on our independent review of the record, we find that the DA-450 product lacks many of the limitations claimed in the '932 Patent such as, for example, two drive pins in every link assembly. As such, we find that no reasonable juror could conclude that the DA-450 reference would have caused the PTO to disallow any claim of the '932 Patent. CMM has produced no

evidence that would compel a reasonable fact-finder to reach a contrary result.

In summary, because CMM has failed to satisfy its burden to come forth with sufficient evidence to prove both an intent to deceive and but-for materiality by clear and convincing evidence, we enter judgment as a matter of law in favor of Joy on CMM's inequitable conduct defense and counterclaim.

IV. CONCLUSION

For the foregoing reasons, we enter judgment as a matter of law that Joy's patent is not invalid as anticipated or unenforceable due to inequitable conduct, but that the asserted claim is invalid because the inventor violated the best mode requirement. We also enter judgment as a matter of law that CMM's accused DA-350 product lacks the claim limitation "two spaced apart indentations," and on that basis alone cannot infringe. As to all other claims, counterclaims, and defenses, we find that there are material facts in dispute that require resolution by the fact-finder.

An appropriate order will be filed contemporaneously with this opinion.

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

JOY MM DELAWARE INC. and)
JOY TECHNOLOGIES INC.)
)
Plaintiffs,)
)
v.) Civil Action No. 09-1415
)
CINCINNATI MINE MACHINERY CO.,)
)
Defendant.)

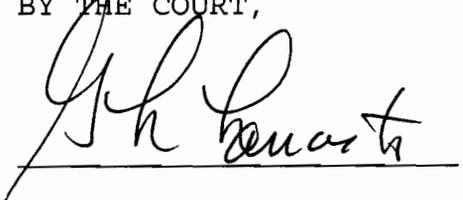
ORDER

AND NOW, this 5th day of December, 2011, IT IS HEREBY ORDERED that CMM's motion for motion for summary judgment [doc. no. 59] is GRANTED, in that we enter judgment as a matter of law that Claim 2 of the '932 Patent is invalid due to a violation of the best mode requirement, and in that we enter judgment as a matter of law that CMM's DA-350 conveyor chain and flight assembly does not infringe Claim 2 of the '932 Patent; and is DENIED, with prejudice, in that we enter judgment as a matter of law that Russell '867 does not anticipate Claim 2 of the '932 Patent; and is DENIED, without prejudice, as to the ability of Joy to collect enhanced damages;

IT IS FURTHERED ORDERED that Joy's motion for summary judgment on the issue of inequitable conduct [doc. no. 54] is GRANTED; and

IT IS FURTHER ORDERED that Joy's motion for summary judgment [doc. no. 51] is GRANTED on the issue of invalidity due to anticipation, but is DENIED as to the best mode requirement.

BY THE COURT,

 , C.J.

cc: All Counsel of Record