

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

OXBO INTERNATIONAL CORPORATION,

Plaintiff,

v.

H&S MANUFACTURING COMPANY, INC.,

Defendant.

OPINION & ORDER

15-cv-292-jdp

Plaintiff Oxbo International Corporation owns four patents on windrow mergers, and it accuses its competitor, defendant H&S Manufacturing Company, Inc., of infringing them with its Tri-Flex merger. H&S denies infringement and asserts that some of the asserted claims are invalid. H&S also raises equitable defenses, based primarily on alleged assurances from Oxbo that it would not sue H&S for infringement without warning.

Both sides have moved for summary judgment on infringement and on H&S's equitable defenses. Each side also seeks summary judgment on some more limited validity issues. The parties also present several motions to strike parts of the other side's evidence or to supplement its own. The details of the court's rulings are in the body of the opinion. But, at a high level of summary, the rulings are largely favorable to Oxbo. The court concludes that the undisputed facts show that the Tri-Flex merger infringes all but two of the asserted claims; that the patents-in-suit are not invalid on any ground asserted by H&S; and that H&S's equitable defenses fail. There is a genuine dispute of material fact about whether the Tri-Flex merger infringes claims 28 and 32 of the '929 patent.

BACKGROUND

A windrow merger is an agricultural implement that gathers mown hay into windrows, or merges existing windrows into larger ones, so that the hay can be chopped or baled. Unlike a hay rake, which drags hay into windrows, a windrow merger uses rotating tines to lift the hay onto a conveyor that moves the hay to the windrow. This minimizes damage to the crop and reduces contamination with dirt, rocks, or other debris.

Oxbo's patents-in-suit describe improvements to windrow mergers that purport to make them faster, more flexible, and more effective. Three of the patents-in-suit disclose and claim a windrow merger with three pickup assemblies: U.S. Patent Nos. 7,310,929, 8,166,739, and 8,863,488, all for "Windrow Merging Apparatus" to Paul W. Dow, et al. These patents share a common specification, and the court will refer to them together as the "triple head patents." The other patent-in-suit discloses and claims a windrow merger with a trough configuration and a "rub rail" to facilitate the even flow of hay on the conveyor, which helps create uniform windrows: U.S. Patent No. 8,511,052 for "Windrow Merger" to Steven S. Dow, et al. We will refer to this patent as the "trough patent."

Oxbo and H&S are competitors in the agricultural equipment market, and they both make and sell windrow mergers, including triple head mergers. Oxbo alleges that H&S's triple head merger, the Tri-Flex, infringes the four patents-in-suit. Early in the case, H&S asserted tort counterclaims against Oxbo and another party, but those matters have been resolved. At this point, all that remains are Oxbo's patent infringement claims and H&S's counterclaims and defenses.

One other notable procedural detail: during this litigation, H&S petitioned the Patent Trial and Appeal Board for inter partes review of the validity of the '929 patent and,

separately, the '052 patent. PTAB declined to institute review. Dkt. 199-16 and Dkt. 235-1. Because PTAB did not institute review on any ground for either patent, H&S is not estopped under 35 U.S.C. § 315(e) from asserting any invalidity ground, and the IPR petitions have no direct effect on this case. But the parties may be bound by the positions taken in the PTAB, and the PTAB reasoning may be persuasive on issues now before the court.

The court has subject matter jurisdiction over this case pursuant to 28 U.S.C. § 1338(a) because it arises under United States patent law.

ANALYSIS

A. Motions to strike and to supplement the record

The court begins with the parties' evidentiary motions, which affect the scope of the evidence that the court will consider at summary judgment.

1. H&S's motion to strike Chaplin supplemental report and Langer declaration; Oxbo's motion to supplement the Chaplin report

H&S moves to strike Jonathan Chaplin's August 15, 2016 supplemental report, Dkt. 113, and Jake Langer's related declaration, Dkt. 137. Dkt. 148. Chaplin is an Oxbo expert. H&S contends that Chaplin's August report offers new infringement opinions—based on a new Tri-Flex inspection—disclosed months after the expert disclosure deadline and mere weeks before the dispositive motion deadline. According to H&S, Oxbo could have—and should have—disclosed the opinions in Chaplin's initial report (April 2016), and the late disclosure is not a proper supplementation, is not substantially justified, and is not harmless. Langer's declaration supports Chaplin's report, and the court should strike it for the same reasons.

In response, Oxbo says that H&S did not disclose relevant non-infringement positions until after Oxbo disclosed Chaplin's initial report. Chaplin had every right to reply to the previously undisclosed non-infringement theories. Regardless, Oxbo contends, Chaplin's August report "merely clarifies previous statements and fills minor gaps in his opinion." Dkt. 194, at 7. Oxbo requests, as an alternative to denying H&S's motion to strike, that it be allowed to supplement the Chaplin report. Dkt. 197.

This court allows two rounds of expert reports: proponent reports, where the plaintiff should disclose its infringement opinions; and respondent reports, where the defendant may defend against those opinions and offer its non-infringement opinions. Oxbo is not entitled to a rebuttal report to reply to H&S's non-infringement opinions. Yet that is precisely what Chaplin's August report does. Chaplin went back and inspected the Tri-Flex again to test "the veracity" of H&S's expert's opinions. Dkt. 113, at 2. Such a supplementation would be allowed only with the consent of the other side, or with leave of court.

Oxbo contends that the August supplementation was justified because H&S changed its non-infringement theories after Chaplin disclosed his initial report. The court agrees in part.

Oxbo does not explain why Chaplin could not have offered some of his August opinions earlier. Chaplin knew that H&S had denied that the Tri-Flex provides a continuous line of material pickup when he authored his initial report. And he knew that H&S had proposed to construe the term "continuous line of material pickup" to mean "a pickup face uninterrupted by gaps." Although the only gaps that H&S had expressly cited by the time Chaplin disclosed his initial report were *between* the merger heads, nothing prevented Chaplin

from addressing the five-inch mid-head gaps as well. H&S was not perfectly forthcoming, but Chaplin should have anticipated the mid-head gap issue.

But the “all material” issue was not timely disclosed by H&S. H&S contends that “as long as Oxbo has asserted these claims, H&S has denied infringing them.” Dkt. 221, at 8. But H&S cites nothing to show that it had disclosed to Oxbo its contention that the Tri-Flex does not transport “all material” because of incidental crop loss at any time before it disclosed its report. That is a new non-infringement position that Oxbo should be allowed to address with expert evidence.

Oxbo was also justified in supplementing Chaplin’s opinion regarding whether the Tri-Flex can merge with only its center assembly with both outer assemblies retracted. (The court will discuss this issue in greater detail later in this opinion.) The court will not strike Chaplin’s August opinion regarding center assembly merging because H&S has continued to update the record with new information on that issue. Late-in-the-case developments have caused difficulties for both the parties and the court, because the court cannot decide the issue at summary judgment. *See infra* Section D.3.a.

So H&S’s motion to strike, Dkt. 148, is denied with respect to Chaplin’s supplementation on center assembly merging and the “all material” non-infringement argument. Chaplin’s August opinions regarding the Tri-Flex “gaps” are untimely.

Oxbo’s contingent motion to supplement, Dkt. 197, is moot as to the portions of Chaplin’s August report that the court has allowed. And Oxbo’s contingent motion is denied in all remaining respects, for two reasons. First, as explained, Oxbo has not demonstrated that it should be allowed to supplement Chaplin’s “gap” opinions. Second, the court will not strike H&S’s expert’s “gap” opinions. Although H&S did not explicitly disclose its position

that the five-inch mid-head gaps mean that the Tri-Flex does not provide a continuous line of material pickup, it *did* disclose sufficient information about its infringement position to allow Chaplin to fully opine on the issue when he authored his initial report.

2. Oxbo's motion to strike H&S's "new" non-infringement position

This motion is also related to the center assembly merging issue. After summary judgment briefing closed, H&S acknowledged that four next-gen touchscreen prototype Tri-Flex mergers infringed claims 28 and 32 of the '929 patent as a result of an unintended software glitch. Dkt. 252. H&S contends that these touchscreen prototypes operated differently than all other models in this respect. Oxbo moves to strike H&S's contention, arguing that it constitutes a new non-infringement position. Before the late submission, H&S had never contended or produced any documents showing that the touchscreen and push-button models functioned any differently. And apparently Oxbo had intended to build an infringement case on its testing of the prototypes.

The court is not convinced that H&S's concession qualifies as a new non-infringement position. H&S disclosed new factual information learned in the course of litigation. A party cannot reasonably be held to theories that new facts show to be wrong. But in light of the factual developments, it is appropriate to allow Oxbo to use the February 2017 Chaplin supplement. Dkt. 293. The new report is substantially justified because, as discussed above, the center assembly issue has been a moving target. Before H&S's concession, Oxbo had no reason to think that it would need to separately inspect and analyze the push-button mergers and the touchscreen mergers. It had no reason to believe that the two interfaces operated differently and, as a result, it had no reason to suspect that its videos of and opinions regarding the touchscreen merger were not sufficient to prove infringement by all models.

The court is certainly not inclined to entertain new non-infringement positions or arguments raised for the first time after the summary judgment deadline. But the center assembly issue has presented difficult questions and had muddled the record more than usual. The court will deny the motion to strike but will allow Oxbo to submit the February Chaplin report.

3. Oxbo's motion to strike Foley, Rottier, and Kelber

Oxbo moves to strike David Foley's declaration, Dkt. 126, portions of Kurt Rottier's declaration, Dkt. 128, and portions of Vincent Kelber's declaration, Dkt. 129. Dkt. 163. In short, these declarations offer digital animations that demonstrate operations that the Tri-Flex cannot perform, including certain conveyor movements and center assembly merging. Oxbo argues that the declarations are late-disclosed expert reports. Foley calls himself a retained expert and has created the animations. Dkt. 126, ¶¶ 1, 5 ("I was asked to prepare computer-animated graphics of the Tri-Flex, including depictions of the merger head assemblies when they are moved from the extended use position to the retracted travel position and of certain operations involving the conveyors on these assemblies, which the Tri-Flex is not capable of performing."). Rottier and Kelber purport to confirm that Foley's animations are accurate. Dkt. 128, ¶¶ 5-9 and Dkt. 129, ¶ 10.

The court can consider and decide the relevant conveyor movement issues without referring to these submissions, because the information is elsewhere in the record, including in H&S's expert reports. The court will deny the motion as moot for purposes of summary judgment. The parties should inform the court whether the controversy needs to be resolved before trial.

4. Oxbo's motion to strike portions of H&S's summary judgment briefing regarding equitable defenses

Oxbo moves to strike portions of H&S's summary judgment briefing regarding H&S's equitable defenses. Dkt. 222. Oxbo served H&S with an interrogatory seeking "the factual and legal bases for Defendant's affirmative defenses that Plaintiff's claim is barred by the doctrine of laches, equitable estoppel, acquiescence, implied license, unclean hands, and/or prosecution history estoppel." Dkt. 223-1, at 11. H&S answered the interrogatory and supplemented its answer three times. *See* Dkt. 223-2; Dkt. 223-3; Dkt. 223-4; Dkt. 223-5. Now, according to Oxbo, H&S has argued new facts to support its equitable defenses in its summary judgment briefing. Dkt. 222, at 3-4.

At summary judgment, H&S contends that (1) its decision not to file a declaratory judgment action against Oxbo satisfies the reliance element of equitable estoppel and laches; (2) increased Tri-Flex sales and approximately \$60,000 in patent procurement expenses satisfy the harm element of equitable estoppel and laches; (3) Oxbo's internal discussions regarding potential infringement indicate that Oxbo misled H&S; (4) its equitable estoppel defense applies to all four patents-in-suit; and (5) Oxbo's suit is barred by unclean hands because the litigation is a sham. But H&S did not include these facts in response to Oxbo's contention interrogatory on the affirmative defenses.

These additional bases were untimely disclosed. Oxbo was entitled to learn the bases for H&S's equitable defenses through contention interrogatories, which H&S had a duty to timely supplement. And H&S's failure to fully disclose the factual bases for its equitable defenses inhibits Oxbo's ability to challenge those defenses at summary judgment. It is not

enough to disclose the underlying factual information during discovery (such as during a deposition) without disclosing the intent to use those facts to support an equitable defense.

Although the court will grant Oxbo's motion, the court will also evaluate these new bases on their merits. As explained below, even with the untimely disclosed factual bases, H&S's equitable defenses fail. *See infra* Section C.

With the evidentiary motions decided, the court turns to the merits.

B. Basic legal principles

In patent cases, as in civil cases generally, summary judgment is appropriate if a moving party "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). When, as here, the parties have filed cross-motions for summary judgment, the court "look[s] to the burden of proof that each party would bear on an issue of trial; [and] then require[s] that party to go beyond the pleadings and affirmatively to establish a genuine issue of material fact." *Santaella v. Metro. Life Ins. Co.*, 123 F.3d 456, 461 (7th Cir. 1997). If either party "fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden at trial," summary judgment against that party is appropriate. *Mid Am. Title Co. v. Kirk*, 59 F.3d 719, 721 (7th Cir. 1995) (quoting *Tatalovich v. City of Superior*, 904 F.2d 1135, 1139 (7th Cir. 1990)). "As with any summary judgment motion, this [c]ourt reviews these cross-motions 'construing all facts, and drawing all reasonable inferences from those facts, in favor of . . . the non-moving party.'" *Wis. Cent., Ltd. v. Shannon*, 539 F.3d 751, 756 (7th Cir. 2008) (quoting *Auto. Mechs. Local 701 Welfare & Pension Funds v. Vanguard Car Rental USA, Inc.*, 502 F.3d 740, 748 (7th Cir. 2007)). "Only disputes over facts that might affect the outcome of the suit under the governing law will

properly preclude summary judgment.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986).

The court applies a two-step analysis to evaluate both infringement and invalidity; each begins with claim construction. *See, e.g., Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1359 (Fed. Cir. 2000) (infringement); *Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1353 (Fed. Cir. 1999) (invalidity). In deciding motions for summary judgment in a patent case, the court bears in mind that defendants have the burden to show invalidity by clear and convincing evidence and that plaintiffs have the burden to prove infringement to a preponderance of the evidence. *High Point Design LLC v. Buyer’s Direct, Inc.*, 621 F. App’x 632, 638, 640 (Fed. Cir. 2015).

“The purpose of claim construction is to ‘determin[e] the meaning and scope of the patent claims asserted to be infringed.’” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996)). A patent’s claims define the scope of the invention, and thus the scope of the patentee’s right to exclude others from practicing that invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). Claim language receives its “ordinary and customary meaning,” which “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. Sometimes “the ordinary meaning of claim language . . . may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Id.* at 1314. But sometimes the ordinary and customary meaning of a claim term is not manifestly clear. If that term is

disputed and material to an issue in the case, the court must construe that term to establish its meaning.

When construing a disputed term, the court must start with the claim language itself, which provides substantial guidance. *Id.* at 1314-15. But the court reads the claim language “not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification” and its prosecution history. *Id.* at 1313. The patent and its prosecution history, related patents and their prosecution histories, and the prior art that is cited or incorporated by reference in the patent-in-suit and its prosecution history constitute the patent’s intrinsic evidence. *Id.* at 1314. Of these sources, “the specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

The court may also consider extrinsic evidence, which refers to all other types of evidence, including inventor testimony, expert testimony, documentary evidence of how the patentee and alleged infringer have used the claim terms, dictionaries, treatises, and other similar sources. *Id.* at 1317-18. However, extrinsic evidence is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.* Intrinsic evidence trumps any extrinsic evidence that would contradict it. *Id.* at 1314-16.

For summary judgment purposes, Oxbo accepts H&S’s contention that a person of ordinary skill in the art is “someone with a Bachelor of Science in Mechanical Engineering or an equivalent degree, and having approximately 3 years [sic] experience designing agricultural equipment of associated/equivalent components or systems. Alternatively, a person of ordinary skill may lack the above-referenced engineering bachelor degree but may have at

least five years combined education/experience related to the design, construction, modification and/or fabrication of agricultural equipment or associated/equivalent components or systems.” Dkt. 116, at 11 n.3. The court will also accept it.

C. H&S’s equitable defenses

Oxbo moves for summary judgment on all of the equitable defenses that H&S asserted in its responsive pleading and maintained since then: equitable estoppel, laches, implied license, and unclean hands. Dkt. 119. For its part, H&S moves for summary judgment on only its equitable estoppel defense. H&S contends that disputes of fact preclude summary judgment on its laches and unclean hands defenses. H&S abandons its implied license defense. The facts material to H&S’s equitable defenses are not genuinely disputed, so the equitable defenses are amenable to resolution on the parties’ motions for summary judgment.

1. Material facts

In mid-2011, H&S made prototype Tri-Flex mergers available for demonstration to customers. So DS Farms, one of H&S’s customers, tested one of the Tri-Flex prototypes. Soon after, an Oxbo salesperson, Doug Anderson, visited the farm to try to sell an Oxbo triple head merger. When the owners of DS Farms told Anderson that they intended to buy a Tri-Flex, Anderson said that Oxbo has patent rights and that H&S had copied Oxbo. One of the farm’s owners, Matt Danzinger, relayed Anderson’s comments to H&S. Anderson does not recall any of this, and he does not believe that he said anything about Oxbo’s patent rights. And neither farm owner recalls exactly what Anderson said. But the details are not material: all that matters is that H&S perceived the incident as an accusation of infringement and that it prompted what happened next.

After hearing about the incident, H&S's president at the time, Chris Heikenen, called Paul Dow, an Oxbo vice president and part-owner, sometime in August 2011. Dow recalls that Heikenen told him that an Oxbo salesperson had told someone that Oxbo was going to sue H&S for infringement. Dow apologized for the salesperson's statements, told Heikenen that no one at Oxbo should be making allegations of infringement of Oxbo's patents, and said that he would see that it did not happen again. Dkt. 100 (Dow Dep. 232:13-239:13). Heikenen's recollection is substantially consistent with Dow's, although Heikenen adds two details. First, according to Heikenen, he warned Dow that if allegations of infringement persisted, H&S would file a declaratory judgment action, which would cause both parties to spend a great deal on legal fees. Dkt. 103 (Heikenen Dep. 215:25-216:20). Second, Heikenen says that at the end of the call, they agreed to call each other rather than spending money on attorneys right away. *Id.* at 216:16-25. As Heikenen understood the conversation, Dow said that he would call H&S before filing suit if an infringement issue arose. *Id.* at 215:21-25. (Dow did not recall these details, but on Oxbo's motion for summary judgment, the court views the facts in the light most favorable to H&S.)

Both Dow and Heikenen agree that during the call Dow said nothing—one way or the other—about whether H&S infringed any Oxbo patent. Nor did Dow promise that Oxbo would not sue H&S for patent infringement. Dkt. 176, ¶ 30. After the August 2011 phone conversation, no one from Oxbo contacted H&S about patent infringement concerns before Oxbo filed this suit in 2015.

2. Equitable estoppel

Both sides move for summary judgment on H&S's equitable estoppel defense. To prevail on this defense, H&S must adduce evidence showing that: (1) Oxbo, "through

misleading conduct, led the alleged infringer to reasonably believe that the patentee did not intend to enforce its patent against the infringer;” (2) H&S “relied on that conduct;” and (3) as a result of that reliance, H&S “would be materially prejudiced if [Oxbo] were permitted to proceed with its charge of infringement.” *Aspex Eyewear Inc. v. Clariti Eyewear, Inc.*, 605 F.3d 1305, 1310 (Fed. Cir. 2010). “Misleading ‘conduct’ may include specific statements, action, inaction, or silence when there was an obligation to speak.” *Id.* The court considers all evidence relevant to the equities. *Id.*

H&S contends that Dow’s August 2011 “assurances” followed by four years of silence led H&S to reasonably believe that Oxbo would not enforce its patent rights against it. H&S contends that Oxbo accused H&S of infringement, profusely apologized and promised that it would not happen again, then allowed H&S to divert “the vast majority of its marketing and engineering resources away from its core products to focus on” the Tri-Flex, and “flipped” on H&S after it began experiencing success in the market. Dkt. 158, at 3. But H&S’s characterization is not supported by the evidence.

We’ll start with the first part of the story, the purported accusation. H&S contends that “there is no dispute that Oxbo accused the H&S Tri-Flex of patent infringement in 2011.” *Id.* at 7. But that is nowhere supported in the record. Dow, on behalf of Oxbo, did not make *any* statements about whether H&S infringed. And the comments by Anderson, the Oxbo salesperson (even if those could be established by some admissible evidence), cannot constitute an accusation of infringement because, as Dow made clear to Heikenen, the salesperson was not authorized to speak for Oxbo on such matters.

H&S also points to internal communications between Dow and Oxbo management, including Oxbo’s CEO Gary Stitch, in which Dow indicated that the Tri-Flex was “very

similar” to Oxbo’s models and that it may infringe the ’052 patent. H&S contends that this conduct makes Dow’s August 2011 conduct “particularly misleading.” *Id.* at 8. H&S argues that Oxbo’s refusal to tell H&S that it believed that it infringed—a point which cuts decisively against H&S’s contention that Oxbo *did* accuse H&S of infringement—“certainly gives rise to an inference that any claim against H&S was abandoned.” *Id.* at 9. But both sides agree that Dow made no representations to Heikenen about whether Oxbo thought H&S infringed Oxbo’s patents. And Heikenen was careful *not* to ask that question: Heikenen did not believe that he would get an assurance of non-infringement, and he would be in a “very difficult situation” if Dow had said that yes, H&S infringed. Dkt. 295 (Transcript of hearing on Oxbo’s motion for sanctions, at 19:8-18). So contrary to H&S’s contention, Dow offered no assurances that Oxbo would not enforce its rights. A fairer description of the call would be that Heikenen hectored Dow into an apology with threat of litigation started by H&S, and that both sides studiously avoided discussing Oxbo’s actual view of whether the Tri-Flex infringed. The bottom line is that the call with Dow gave Heikenen no reason to believe that Oxbo had decided not to enforce its patent rights against H&S.

Without a clear statement from Oxbo regarding infringement one way or another, H&S cannot rely on the four years of silence to support its equitable estoppel defense. H&S cites no case in which silence alone, unaccompanied by a clear statement of infringement, was sufficient to establish an equitable estoppel defense. “[I]ntentionally misleading silence arises when a patentee ‘threatened immediate or vigorous enforcement of its patent rights but then did nothing for an unreasonably long time.’” *Aspex*, 605 F.3d at 1310 (quoting *Meyers v. Asics Corp.*, 974 F.2d 1304, 1309 (Fed. Cir. 1992)). Silence alone cannot give rise to estoppel. *Id.* at 1311. In *Aspex*, the court determined that the patentee was equitably estopped from

asserting infringement after: (1) the patentee threatened an infringement suit, (2) the accused infringer responded that its products did not infringe, (3) the patentee did not say anything in response, and (4) three years went by before the patentee filed suit. *Id.* at 1310. Those are not the facts here.

So, at best, H&S might be able to show that Dow broke his promise to call Heikenen before filing suit. But whether Dow actually made such a promise is not material, because the promise is not specific enough to induce H&S's reasonable reliance. Nothing in that promise would have prevented Oxbo from suing when it did, so long as the suit was preceded by a warning telephone call. H&S pressed on with the development and sales of the Tri-Flex without any assurance that Oxbo would not sue for infringement, at a time of Oxbo's own choosing. Based on the undisputed material facts, H&S cannot establish misleading conduct by Oxbo that gave rise to a reasonable belief that Oxbo would not enforce its patent rights. Oxbo is entitled to summary judgment on H&S's equitable estoppel defense.

3. Laches

H&S's laches defense is foreclosed by a U.S. Supreme Court decision issued during this litigation. Because Congress has determined "that a patentee may recover damages for any infringement committed within six years of the filing of the claim," laches cannot be invoked to bar damages incurred within that period. *SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC*, 137 S. Ct. 954, 961, 967 (2017). "Laches cannot be interposed as a defense against damages where the infringement occurred within the period prescribed by [35 U.S.C.] § 286." *Id.* at 967. It is undisputed that the longest possible period of delay at issue here is four years. So H&S's laches defense fails as a matter of law.

4. Unclean hands

Finally, H&S asserts the defense of unclean hands, contending that Oxbo's suit is barred because it knowingly asserted invalid or not-infringed patents supported by "ever-changing" claim construction positions. Dkt. 158, at 18. H&S's arguments here—in addition to being untimely disclosed—are the same as its arguments on the merits: the Beougher reference anticipates the '929 patent; Oxbo's understanding of "continuous line of material pickup" is baseless; Oxbo's understanding of "operable in either direction independent of the other[s]" is baseless; and the '052 patent is invalid in view of Oxbo's 310 merger manuals that Oxbo did not submit to the Patent Office during prosecution.

As explained below, Oxbo's claims have more than arguable merit: they are substantially successful. H&S's "sham litigation" theory finds no support in the record, and Oxbo is entitled to summary judgment on H&S's unclean hands defense.

D. The triple head patents

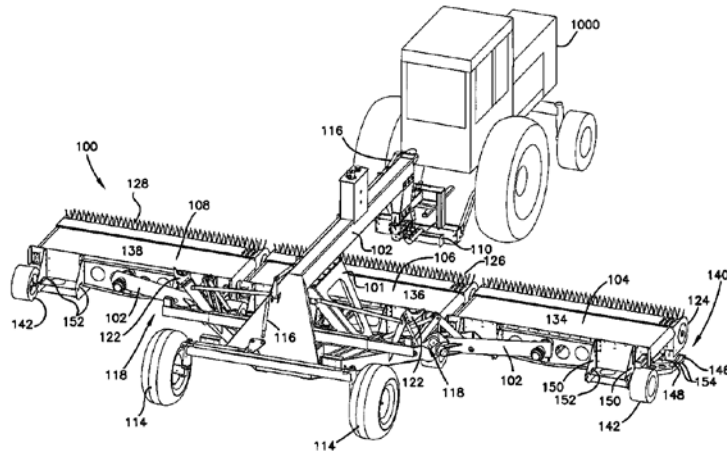
1. Introduction

The triple head patents—the '929 patent, the '739 patent, and the '488 patent—describe and claim a windrow merger apparatus and a method of merging windrows with three independent pickup assemblies arranged side-by-side in a single line. The '739 patent is a continuation of the '929 patent, and the '488 patent is a continuation of the '739 patent. So the three triple head patents at issue here share a common specification, and they can be analyzed together for most purposes.

Each pickup and transfer assembly includes a pickup head with rotating tines, to lift crop material from the field, and an associated conveyor just behind the rotating pickup

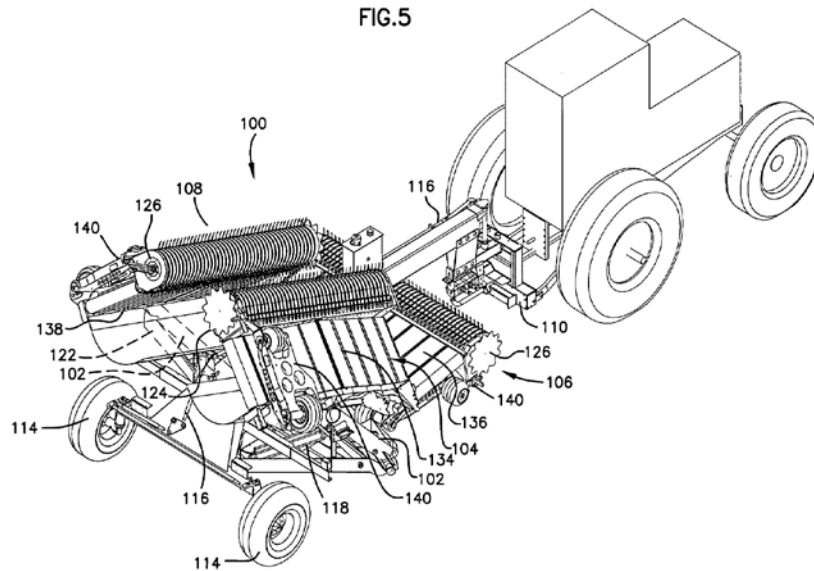
head, to move the crop material to the side of the merger where it is deposited into windrows.

The overall configuration is shown in this drawing:



'929 patent, Figure 1.

One advantage of the triple head design over the prior art is that it allows for merging a wider swath, which means that a large field can be merged quickly. Because the three heads are arranged side-by-side in a line, the merger can produce a single, large windrow, which would not be possible if the heads were overlapping or offset. A second advantage is that the triple head design is flexible. The conveyors on the three heads are independently operable, so that the merger can be configured to produce a single large windrow on either side, or two smaller windrows on each side. The two outer heads are retractable, which allows the merger to travel over public roads:



'929 patent, Figure 5. The outer heads can be retracted independently, and the other heads can operate while one or both of the outer heads are retracted. The various operating configurations provide flexibility “so that multiple merging configurations and operations are possible.” '929 patent, 3:14-15.

Oxbo asserts six independent and nine dependent claims from the triple head patents.¹ Claim 1 of the '488 patent is a representative independent claim:

A windrow merger apparatus configured for travel in a first direction, comprising:

a frame;

a first pickup assembly supported by the frame, the first pickup assembly including a first pickup head configured to pick up and transfer material to an associated first belt conveyor arranged to convey material in a direction transverse to the first direction of travel and driven by a first motor;

¹ Oxbo does not move for summary judgment of infringement of claim 32 of the '929 patent or claim 11 of the '488 patent, but H&S moves for summary judgment of non-infringement of those claims.

a second pickup assembly supported by the frame, the second pickup assembly including a second pickup head configured to pick up and transfer material to an associated second belt conveyor arranged to convey material in a direction transverse to the first direction of travel and driven by a second motor; and

a third pickup assembly supported by the frame, the third pickup assembly including a third pickup head configured to pick up and transfer material to an associated third belt conveyor arranged to convey material in a direction transverse to the first direction of travel and driven by a third motor;

wherein at least two of the pickup assemblies are foldable between an extended position and a retracted position, each of the first, second, and third pickup assemblies being aligned side by side when each of the pickup assemblies is positioned in the extended position such that the first, second, and third pickup assemblies provide a laterally aligned unobstructed continuous line of material pickup able to provide transport of all material transferred to the conveyors to either end of the aligned conveyors; and wherein the first pickup assembly and the third pickup assembly are raised in the retracted position.

'488 patent, 10:32-64.

2. Claim construction

The parties identify three claim construction issues that arise from the triple head patents.²

a. “conveyor”

The parties dispute the meaning of the term “conveyor,” which appears throughout the asserted claims of the triple head patents, although often the claims specify that the conveyor is a belt. The parties dispute the term as it appears in claim 44 of the '929 patent. Oxbo contends that a conveyor is “an apparatus having a flexible, continuous loop of

² The parties initially presented a fourth claim construction issue: “each of the first, second and third belt conveyors is independently driven.” But H&S appears to have abandoned that issue. Accordingly, the court will not construe the term and will give it its plain and ordinary meaning.

material.” H&S presses a broader construction: “an apparatus that moves material.” The dispute is not material to infringement because the Tri-Flex has belt-type conveyors that would meet either definition. But the point matters for H&S’s validity case. H&S contends that the Beougher reference anticipates claim 44 of the ’929 patent. But it would do so only if “conveyor” includes an auger, which is what moves the material in Beougher.

The court will begin by rejecting H&S’s proposed definition as overly broad because it would include any device for moving material, even a shovel or a wheelbarrow. H&S relies primarily on the opinion of its expert, Ralph Shirley, who opines that H&S’s definition is how one of ordinary skill in the art would understand the term. But Shirley’s one-sentence analysis of “conveyor” is merely conclusory, Dkt. 106-3, ¶ 33, as PTAB also concluded, Dkt. 235-1, at 9-10. The court gives no credit to Shirley’s ipse dixit that augers are conveyors simply because they move something.

But the court is not entirely persuaded by Oxbo’s argument either. Oxbo’s expert, Chaplin, opines that a person of ordinary skill in the art would understand that the ’929 patent relates to a windrow merger and that, consequently, one would understand that a “conveyor” as used in the ’929 patent must be a mechanism capable of moving grass or hay into windrows. Dkt. 109, ¶ 53. So far so good. But then the argument takes a questionable step. Chaplin contends that a “conveyor” must be able to move forage without damaging it and without clogging. *Id.* Chaplin says that “[a] continuous loop of flexible material as described in the patent will move alfalfa with minimal damage. That would not be true for any ‘apparatus that moves material.’” *Id.* And, he concludes, because an auger would damage alfalfa and would clog if it attempted to move wet forage, one would not understand “conveyor” to include augers. *Id.* It may well be that a belt-type conveyor is best suited to this

application, whereas an auger would pose problems. But claim terms are not limited to those mechanisms that work best in the context of the invention. Chaplin here commits a variation on a basic claim construction error: importing the features of the preferred embodiments into the claims as additional limitations. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004) (“[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.”).

Although the court is not fully persuaded by Chaplin’s analysis, there are other reasons to conclude that “conveyor” as used in the ’929 patent does not include auger. Nowhere does the specification offer a special definition of conveyor. And the specification does not identify the belt conveyor as a preferred embodiment. Rather, virtually every reference to conveyor in the specification assumes that the conveyor is a belt-type conveyor. The patents disclose and claim improvements to the “material transport system,” which is part of the pickup assembly. One example is the belt-tensioning system that uses a tensioning pulley mounted below and between the end pulleys on the belt. ’929 patent, 7:61-68, and claims 6, 17. The advantage over the usual technique of putting the tensioning pulley at the end of the conveyor is that having a “fixed end” allows the conveyor on one pickup assembly to be placed closer to the conveyor on the adjacent assembly. ’929 patent, 8:46-50. The point is that all of the proposed improvements to the material transport system would be utterly inapplicable to a system that used augers. The claims directed to those improvements, claims 6 and 17, would be meaningless as applied to an auger. One of skill in the art reading the specification would not interpret the term “conveyor” to include augers, because too much of

the patent would be rendered meaningless. The court will construe conveyor as Oxbo proposes.

One last point: as explained below, there are multiple reasons why Beougher does not anticipate claim 44 of the '929 patent. So even if “conveyer” were construed to include augers, H&S’s challenge to the validity of claim 44 would fail.

b. “continuous line of material pickup”

The parties dispute the meaning of the term “continuous line of material pickup,” which appears in claim 44 of the '929 patent, claim 1 of the '739 patent, and claims 1 and 9-11 of the '488 patent. Oxbo contends that the term does not require judicial construction because the term itself is unambiguous. H&S contends that the court must construe the term to mean “a pickup face uninterrupted by gaps.” As H&S’s expert explains it, this limitation requires that the tines on the pickup heads be evenly spaced across the full width of the merger. The dispute is material to infringement, because H&S contends that the Tri-Flex has gaps between its pickup assemblies and between the tines on the pickup heads where the motors are recessed.

The court begins with the claim language. The disputed term appears in this clause of claim 1 of the '488 patent:

wherein at least two of the pickup assemblies are foldable between an extended position and a retracted position, each of the first, second, and third pickup assemblies being aligned side by side when each of the pickup assemblies is positioned in the extended position such that *the first, second, and third pickup assemblies provide a laterally aligned unobstructed continuous line of material pickup* able to provide transport of all material transferred to the conveyors to either end of the aligned conveyors; and wherein the first pickup assembly and the third pickup assembly are raised in the retracted position.

(emphasis added). Similar language appears in other claims of the other triple head patents.

The triple head specification makes clear that one objective of the invention was to keep the pickup assemblies close together so that the “face of the merger is unobstructed and continuous.” ’929 patent, 7:28. The purpose was to “provide[] improved pickup while achieving a greater width per pass than has been seen heretofore.” ’929 patent, 7:29-30. As Oxbo explains, the claim limitation was added during prosecution to overcome a prior art rejection based on U.S. Patent No. 6,205,757 to Dow, U.S. Patent No. 4,658,572 to Honey, and U.S. Patent No. 4,184,314 to Hobbs. These references disclose folding multiple head implements. But these references also have substantial spaces between heads, and the patentee overcame the rejection by adding the *unobstructed continuous line of material pickup* limitation. Dkt. 206, ¶¶ 233-240.

There are two problems with H&S’s proposed construction. First, H&S construes the term as a description of a structure rather than a function. H&S’s expert Shirley summarily opines that the term refers to the pickup heads and not to the crop material. Dkt. 106-3, ¶¶ 35-37. According to Shirley, “material pickup” clearly refers to a structure, where “pickup material” would refer to the crop. *Id.* ¶ 36. But he does not explain the rationale for this distinction or cite evidence to support it. Shirley’s opinion is hard to square with the claim language itself. Taking claim 1 of the ’488 patent as a representative example, the claim describes the arrangement of the three pickup assemblies as “aligned side by side” such that they “*provide* a laterally aligned unobstructed continuous line of material pickup.” Aligned side by side is a structural description, and the verb “provide” suggests that the laterally aligned unobstructed continuous line of material pickup is the result. There is no “continuous line” that is part of the merger’s structure; it is the function served by the arrangement of the pickup heads.

The second and more fundamental problem with H&S's proposed construction is that the '929 patent contemplates that there will be some gaps between the pickup heads, and that the tines will not be evenly spaced across the full width of the merger. As the specification explains the importance of having the pickup heads close together:

With the hydraulic motor recessed, the ends of the heads are positioned substantially to abut one another. No obstruction due to drive mechanisms, support wheels or other mechanisms inserted intermediate the adjacent heads is required as was typical with previous merger devices. Therefore, the end tines of one head are close to the tines of another head so that there are *no large gaps between the heads* as occur with previous merger devices, which had motors and other equipment between heads.

'929 patent, 6:63-7:5 (emphasis added) (reference numbers omitted). All of the figures that show the pickup assemblies extended show some gap between the pickup heads. *See, e.g.*, '929 patent, Figure 14. So H&S's proposed construction—which essentially requires that the tines of the pickup heads be evenly spaced across the full width of the merger—would exclude the embodiments depicted and discussed in the specification. Such a construction is rarely, if ever, correct. *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007).

“A patent applicant is free to recite features of an apparatus either structurally or functionally.” *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997); *see also* MPEP § 2173.05(g) (9th ed. Nov. 2015) (“There is nothing inherently wrong with defining some part of an invention in functional terms,” and “[f]unctional language may also be employed to limit the claims without using the means-plus-function format.”). Here, it is plain that Oxbo has chosen the functional approach. Rather than claim an unobstructed pickup *face*, Oxbo claimed laterally aligned pickup assemblies that *provide* continuous material pickup. The language is not dissimilar from the claim language at issue in *Schreiber*; there, the claims

were directed to a spout (the structure) that “allow[ed] several kernels of popped popcorn to pass through at the same time.” 128 F.3d at 1478.

The extrinsic evidence, particularly the Chaplin report, also supports giving the term its plain and ordinary functional meaning. Dkt. 109, ¶ 56. The specification explains that the prior art did *not* provide a continuous line of material pickup because previous mergers left strips of material behind as it traveled. Chaplin explains that the ’929 patent addresses that problem because the claimed pickup face “engages the material to be windrowed” without obstruction. *Id.* An “unobstructed pickup face” is not necessarily one “free of space between the pickup assemblies,” so long as it provides for a continuous line of material pickup. “When considering the whole claim term, it would be evident to a POSA that the claim term addresses the capability of the pickup assemblies to provide a continuous line of material pickup regardless of whether there are any gaps between the heads.” *Id.* ¶ 57. The court credits Chaplin’s analysis. Shirley’s conclusory report adopts a poorly explained structural construction that, for reasons explained above, will go uncredited. So it cannot create a genuine dispute of fact that would be material to the court’s claim construction decision. “Conclusory expert assertions cannot raise triable issues of material fact on summary judgment.” *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 1001 (Fed. Cir. 2008).

H&S has not convinced the court that the term requires judicial construction.³ The claim language itself is sufficiently clear to convey the term’s meaning. The court is “not (and

³ The term “continuous line of material pickup” is not a term of art in the agriculture industry. H&S argues that because the inventors had not heard the phrase “continuous line of material pickup” before filing for the ’929 patent, it cannot have a plain and ordinary meaning. *See* Dkt. 206, ¶ 218. This argument is underdeveloped and thus waived. But it is not at all persuasive anyway: an inventor can use plain English to describe his invention, even if in doing so he uses phrases that do not have specialized meaning in his art.

should not be) required to construe *every* limitation present in a patent's asserted claims." *O2 Micro*, 521 F.3d at 1362. It construes a claim only where doing so would clarify the meaning and scope of the term. *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."). Accordingly, the court will decline to provide further judicial construction of the term "continuous line of material pickup."

c. "each of the first, second and third belt conveyors being operable in either direction independently of the other belt conveyors"

Finally, the parties dispute the meaning of the term "each of the first, second and third belt conveyors being operable in either direction independently of the other belt conveyors." The term appears in claim 1 of the '739 patent. Oxbo advocates for the term's plain and ordinary meaning; H&S proposes that it means "movement of each conveyor in either direction is not influenced by movement of the other two conveyors." H&S's proposed construction is relevant to its non-infringement position, which is that the movement of the conveyors on the Tri-Flex is not fully independent. For example, the Tri-Flex is programmed so that an outer conveyor cannot be moving material toward the center if the center conveyor is either off or set to move material out toward that outer conveyor. Such configurations would cause hay to pile up between those two pickup assemblies.

The '739 patent claims a windrow merger apparatus comprising three pickup assemblies, each of which includes a belt conveyor that moves material "in a direction transverse to the first direction of travel." '739 patent, 10:41-42. Each belt conveyor is driven

by its own motor. And each belt conveyor is “operable in either direction independently of the other belt conveyors.” ’739 patent, 10:60-61. By its plain terms, three separate motors drive three separate belt conveyors, one on each of the three merger heads. And each motor drives its belt conveyor independent of the other two, either to the left or to the right.

The specification provides additional guidance: the belt conveyors are operable in both directions, independently of one another, “so that multiple merging configurations and operations are possible.” ’929 patent, 3:13-15. The invention is designed to offer “flexibility with respect to conveyor travel direction as well as with respect to the number of heads operating, so that multiple configurations for different merging needs and operation are possible.” ’929 patent, 5:7-10. The conveyors are reversible, to transport material in either direction. ’929 patent, 5:34-35.

With such flexibility, it is possible to direct material to the outer ends of the pickup and transport assemblies or to either of the ends of transport assembly depending on the configuration of the merger and the needs of the merging apparatus.

’929 patent, 5:38-42 (reference numbers omitted). For example, an operator can drive two conveyors in one direction and the third conveyor in the opposite direction, as depicted in Figure 24. ’929 patent, 9:65-67.

Both sides seem to agree that one of skill in the art would readily understand this term. Chaplin opines that a person of ordinary skill in the art would afford the term its plain and ordinary meaning: “[t]he claim simply requires that each of the three belt conveyors is operable in either direction independent of the other belt conveyors.” Dkt. 109, ¶ 83. Chaplin explains that the specification is clear that each conveyor is operable in both directions, and that each conveyor may operate in either direction when one of the outer

assemblies is retracted. Shirley concedes that the term “would be readily understood by a person of ordinary skill in the art.” Dkt. 321-4, ¶¶ 31-38.

The claim language, informed by the specification, requires that each of the three conveyors can be operated or not, and in either direction. But the claim language does not require that the conveyors be operable in every possible configuration, even those that would cause material to pile up between conveyors so that the machine would fail produce a windrow. The term is readily understandable and the court will decline to construe it.

3. Infringement

At step two of the infringement analysis, the court must compare the properly construed claims to the accused device, to determine as a matter of fact whether every claim element is present, either literally or by a substantial equivalent, in the accused device. When the relevant structure and operation of the accused device is not genuinely disputed, the question of infringement turns on claim construction and is amenable to resolution on summary judgment. *Gen. Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 983 (Fed. Cir. 1997).

H&S concedes that the Tri-Flex meets many of the limitations of the asserted claims: it is a windrow merger apparatus; it has a frame that supports three pickup and transfer assemblies; the outer assemblies fold between an extended use position and a retracted travel position; the pickup assemblies are aligned side by side when extended. And regardless of how the court construes “conveyor,” H&S concedes that the Tri-Flex has one on each of its three pickup assemblies. H&S contests only four claim elements. The court will address each of these disputed claim elements and then summarize its rulings on the motions for summary judgment on the triple head patents.

a. Merging when the left and right assemblies are retracted

H&S contends that the Tri-Flex cannot merge with both outer pickup assemblies retracted and that, as a result, it does not infringe claim 28 or dependent claim 32 of the '929 patent. These claims require that the accused product be able to accomplish merger operations "when the left and right assemblies are positioned in the retracted travel position." '929 patent, 12:45-46.

This issue is disputed. H&S's expert, Shirley, initially opined that the Tri-Flex cannot merge with both outer assemblies retracted, "based upon [his] review and understanding of materials pertaining to the Tri-Flex Mergers, inspection of the Tri-Flex Mergers and discussions with H&S engineers regarding the Tri-Flex Mergers." Dkt. 107, at 17. When the outer assemblies move into their retracted travel position, the center assembly automatically lifts up off the ground (its retracted travel position), preventing it from merging. "[W]hen the center assembly is raised off the ground, the tines are not capable of picking up a cut swath of material, such as alfalfa, for the merger to accomplish merger operations." *Id.* at 19-20.

Oxbo responded that the operator can lower the center assembly and return it to its extended use position after it automatically raises, thus allowing it to merge while the outer assemblies remain retracted. Oxbo appears to have performed a field test that proves just that. *See* Dkt. 120-47; Dkt. 120-48; Dkt. 199-14 (videos showing the center assembly merging while the outer assemblies are fully retracted and showing the center assembly being raised and lowered while the outer assemblies are retracted).

But after the initial expert work, there was a further development: four new prototype Tri-Flex mergers with touchscreen controls allowed merging with the outer assemblies retracted as a result of a software glitch. Dkt. 252. Software updates in the new models were

intended to allow operators to move the center head up and down while all three heads are extended to avoid obstacles while merging. But that software change “inadvertently” allowed the operator to move the center head up and down while the outer heads are *retracted*. H&S concedes that with that software, the Tri-Flex infringes the '929 patent. But H&S assures the court and Oxbo that it has reprogrammed the offending machines to avoid infringement by any Tri-Flex models. H&S contends that Oxbo’s video evidence is of these malfunctioning prototypes, not the properly programmed production model Tri-Flex mergers. H&S maintains that the other Tri-Flex mergers (the “push-button” models) are *not* able to operate this way.

As discussed above, Oxbo moved to strike H&S’s “new non-infringement position” that its touchscreen models and push-button models do not operate identically. Dkt. 291. H&S representatives had previously testified that the touchscreen interface does not affect the way that the Tri-Flex operates. Dkt. 102 (Heikenen Dep. 80:2-4, 82:6-10) and Dkt. 105 (Rottier Dep. 39:22-40:1). The court denied that motion.

At this point, there is a genuine factual dispute over which Tri-Flex models, if any, can merge with the outer pickup assemblies retracted.

b. “continuous line of material pickup”

H&S concedes that when all three pickup assemblies are extended and merging, the Tri-Flex “gathers most of the material in the field within the width of the merger.” Dkt. 176, ¶ 373. And Oxbo has adduced videos that show that the Tri-Flex does not leave strips of material in its wake. Dkt. 120-41 and Dkt. 199-5. Another video shows that the Tri-Flex picks up material across the entire width of its pickup heads. Dkt. 199-4. Thus, under the

court's analysis of the term "continuous line of material pickup," Oxbo has shown that the Tri-Flex meets that limitation.

To rebut Oxbo's showing, H&S offers Shirley's opinions on the issue, but they are speculative at best. Shirley states that each of the Tri-Flex pickup assemblies has a gap at the center of its head (where the motors are recessed), and the Tri-Flex does not have star wheels between its pickup assemblies. He states that the gaps are "not insignificant." Dkt. 107, at 25. Shirley reasons that because the pickup tines are spaced between two and two-and-a-quarter inches apart, a five-inch gap at the center of each merger head and a three-inch gap between each merger head will likely pose a problem. *Id.* at 28 ("If a gap of about 5 inches provided adequate efficiency to be considered a continuous line of material pickup, then manufacturers would save the cost and complexity by providing spacing of tines at about 5 inches instead of providing pickup tines with spacing of 2 to 2 ¼ inches as has been common among manufacturers for several decades."). But he opines only that the Tri-Flex "may leave a stripe of crop in the field after the merger passes, which is the very problem that the '929 Patent and its star wheel purport to solve." *Id.* at 26 (emphasis added). He does not state that the Tri-Flex actually leaves material behind.

To rebut Oxbo's direct video evidence of the Tri-Flex in operation, H&S argues that Oxbo's videos are "blurry and not close enough for a determination of the alleged fact." Dkt. 206, ¶ 146. But the court has reviewed the videos, and they show that the Tri-Flex does not leave strips of material in its wake.

H&S also adduces a couple of Tri-Flex engineering documents that note "gap increases between heads causing missed material due to tank pressure variations from tractor," Dkt. 231-1, and "[n]eed to try to bridge gap between cross conveyor belts ([t]o [sic]

much light crop falls to the ground and leaves two nice trails),” Dkt. 231-2. But these documents list observed problems *to be fixed*, and H&S successfully fixed them. H&S employees testified that H&S fixed the listed issues—identified in prototypes—before the Tri-Flex was commercially available and sold to customers. Dkt. 245 (Kappel Dep. 52:20-54:15); Dkt. 246 (Kappelman Dep. 129:13-135:20); Dkt. 247 (Landon Dep. 107:11-14, 114:20-117:19, 121:15-122:7).

On the evidence of record, no reasonable jury could find that the Tri-Flex does not meet the “continuous line of material pickup” limitation.

c. “operable in either direction independently of the other belt conveyors”

H&S does not dispute that each of the Tri-Flex’s three conveyors can operate in either direction. And video evidence shows that the Tri-Flex belt conveyors can operate in the following configurations:

Left conveyor moving to the left; center and right conveyors moving to the right. Dkt. 120-50.

Left conveyor moving to the left; center and right conveyors moving to the right as the right pickup assembly moves into the retracted travel position and the right conveyor stops moving part way through the retraction process. *Id.*

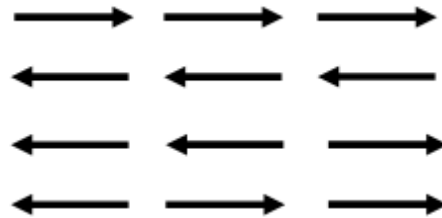
Center conveyor moving when the outer conveyors have moved into their retracted position and are stopped and fully retracted. Dkt. 120-46; Dkt. 120-49; Dkt. 120-51.

All three conveyors moving to the right. Dkt. 120-49.

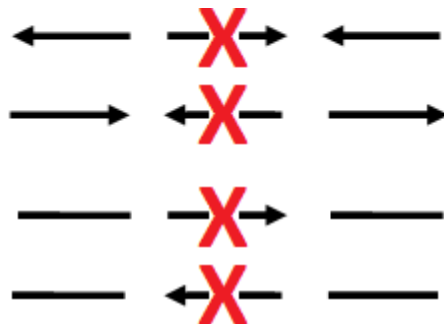
All three conveyors moving to the right and then the left conveyor switching and moving to the left. *Id.*

The left conveyor moving to the left as the center and right conveyors move to the right, the center and right conveyors switching and moving to the left, and the right switching and moving to the right as the other two conveyors continue to move to the left. *Id.*

In short, the record shows that the Tri-Flex's three, separate conveyors can operate in both directions; that the center conveyor can continue to operate as the outer assemblies retract and their conveyors stop; that the center conveyor and an outer conveyor may move together or in opposite directions when the second outer assembly is retracted and its conveyor is stopped; and that all three conveyors may operate in the same direction or an outer conveyor may operate in the opposition direction as the other two conveyors when all three assemblies are extended. The available configurations for when all three assemblies are extended can be diagrammed⁴ as follows:



The Tri-Flex is programmed so that certain belt direction combinations are disabled. If the center conveyor is off, the outer conveyors cannot move material toward it. If the center conveyor is moving material to the right, the outer right conveyor cannot move material toward the center conveyor. Those disabled configurations can be diagrammed as follows:



⁴ In these diagrams, an arrow represents a conveyor operating in a particular direction. A bar represents a conveyor not operating. A red X indicates a disabled operation.

These configurations are plainly non-functional, because they would cause material to pile up between conveyors. The Tri-Flex is also programmed so that an outer conveyor will not work if the other outer conveyor is extended but off:



Although these two configurations would not cause material to pile up between conveyors, they are impractical because there would be no reason to have an outer pickup assembly extended for pickup without the conveyor operating.

H&S contends that the disabled configurations show that the Tri-Flex conveyors are not independently operable because the center conveyor “influences operation” of the outer conveyors, and vice versa. Dkt. 157, at 14. The fact that the Tri-Flex has disabled non-functional configurations does not save it from infringement. The claim language does not require that the belt conveyors be operable in all possible configurations without regard for how the other conveyors are operating. It simply requires that each conveyor be able to operate in both directions and, if desired, in a direction different than the others. The Tri-Flex meets this claim limitation.

d. “transport of all material transferred to the conveyors to either end of the aligned conveyors”

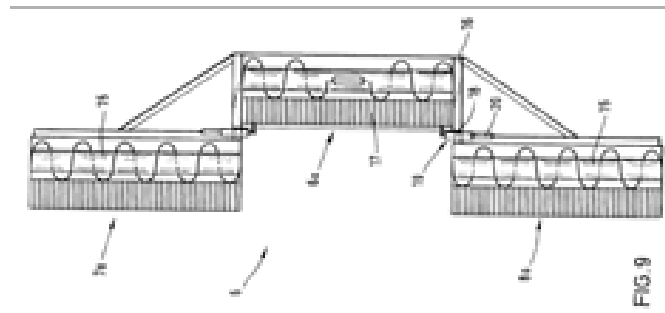
H&S’s remaining non-infringement position is that the Tri-Flex does not “provide transport of all material transferred to the conveyors to either end of the aligned conveyors.” ’488 patent, 10:60-62. H&S argues that the Tri-Flex does not move “all material” the pickup heads transfer to the conveyors because some material clings to the combs on the back of the pickup assembly, gets caught between the conveyors and the shrouds, is lost between the gaps

between the merger heads, is taken by the wind, is thrown over the shrouds, etc. *See* Dkt. 107, at 44. The parties present the issue as a question of infringement. But the issue is really one of claim construction: does the “all material” limitation require the elimination of the incidental crop loss that H&S describes?

The court begins with the claim language. The ’488 patent claims a windrow merger apparatus with three pickup assemblies. When fully extended and laterally aligned side by side, the three pickup assemblies are “able to provide transport of all material transferred to the conveyors to either end of the aligned conveyors.” ’488 patent, 10:60-62. The phrase also appears in independent claim 8, which provides that the laterally aligned conveyors “are able to provide transport of all material transferred to the conveyors to either end of the aligned conveyors.” ’488 patent, 11:42-12:2. This language, combined with what we know about the specification (which the court has already discussed at length), indicates that the conveyors are able to operate in the same direction, either to the left or the right, and that they are able to transfer their respective loads down the line and into a windrow. Conveyor one is able to transfer its material to conveyor two, which transfers the material to conveyor three, because the conveyors are aligned side by side. In that sense, the conveyors can transfer “all” crop material—as opposed to only crop material picked up by one pickup assembly—to either end of the merger. Nothing about the claim language requires the complete elimination of incidental crop loss in the process.

The prosecution history supports this understanding. The applicant amended the application that would eventually issue as the ’488 patent in November 2013; proposed claim 5 (which would eventually issue as claim 8) was amended to include the underlined language: “the first conveyor belt, the second conveyor belt and the third conveyor belt are

able to provide transport of all material transferred to the conveyors to either end of the aligned conveyors.” Dkt. 206, ¶ 256. This amendment marked the first time that that language appeared in the application. The applicant added the language after the Office Action rejected proposed claim 5 over references that included U.S. Patent No. 5,911,625 to von Allworden. *Id.* ¶ 257. The applicant traversed the rejection, remarking that von Allworden “has the outer sections offset and forward from the middle section,” and that, as a result, it “is not able to provide transport of all material transferred to the conveyors to either end of [the] aligned conveyors.” Dkt. 120-35, at 17-18. Laterally aligned pickup assemblies, as claimed in amended proposed claim 5, allowed for transport of material “from each of the pickup assemblies” to either end of the aligned conveyors. *Id.* at 19. Because von Allworden’s outer sections are offset and forward from the middle section, it cannot transfer all material to either end:



The applicant also amended proposed claim 7 (which would eventually issue as claim 10) to include the underlined language: “the belt conveyors are configured to provide transport of material from the first pick up assembly, to the second pick up assembly and the third pick up assembly to either end of the aligned assemblies.” Dkt. 206, ¶ 262. The examiner withdrew her obviousness rejection and allowed the claims.⁵

⁵ The examiner also allowed claim 1 following an examiner amendment to include identical

The “all material” limitation was added to distinguish prior art that included three pickup assemblies in an offset configuration. Nothing in the prosecution history, the specification, or the claim language indicates that “all material” precludes incidental crop loss of the sort that appears to be inevitable. As used in the triple head patents, the requirement that the merger “transport of all material transferred to the conveyors to either end of the aligned conveyors” means that that the merger must be able to transfer material from each pickup assembly to either end side of the conveyors. Incidental crop loss does not establish a non-infringement position for H&S.

e. Summary of infringement rulings

There is a genuine dispute as to which Tri-Flex models, if any, can merge with the outer pickup assemblies retracted. Accordingly, the court will deny both parties’ motions for summary judgment concerning infringement of claims 28 and 32 of the ’929 patent.

Under the court’s claim construction decisions, there is no genuine dispute of material fact that the Tri-Flex merger infringes the following claims:

- Claim 44 of the ’929 patent;
- Claim 1 of the ’739 patent; and
- Claims 1-10 of the ’488 patent.

4. Invalidity

H&S moves for summary judgment that claim 44 of the ’929 patent is anticipated by U.S. Patent No. 4,409,780 to Beougher, et al. (Beougher). In short, Beougher discloses a multi-head combine harvester with a folding three-head assembly. Dkt. 106-4 (Beougher patent).

“all material” language.

The '929 patent is presumed valid, and H&S can overcome this presumption only by establishing invalidity through clear and convincing evidence. 35 U.S.C. § 282; *Novo Nordisk A/S v. Caraco Pharm. Labs. Ltd.*, 719 F.3d 1346, 1352 (Fed. Cir. 2013). Anticipation is a question of fact that may be decided on summary judgment if no genuine dispute of material fact exists. *OSRAM Sylvania, Inc. v. Am. Induction Techs., Inc.*, 701 F.3d 698, 704 (Fed. Cir. 2012). “Under 35 U.S.C. § 102(b), a prior art reference will anticipate if it ‘disclose[s] each and every element of the claimed invention . . . arranged or combined in the same way as in the claim.’” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 (Fed. Cir. 2016) (footnote omitted) (quoting *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009)).⁶ Although a prior reference must arrange or combine the elements of the claimed invention in the same way as the claim, the reference need not disclose the elements in precisely the same language. *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 21 (Fed. Cir. 2012).

H&S has not shown that Beougher anticipates claim 44 of the '929 patent because it does not disclose three corresponding conveyors. As discussed above, “conveyor” as that term is used in the '929 patent means a belt-type conveyor. The Beougher reference, which discloses three header sections with an *auger*, does not disclose a conveyor as that term is used in the '929 patent. Dkt. 175, ¶ 151; *see also* Beougher patent, 5:10-11 (“As shown most clearly in FIG. 1, each of the header sections carries an auger section.”). H&S’s entire anticipation claim depends on an overly broad construction of “conveyor” that includes auger.

⁶ Because the claims at issue have effective filing dates prior to March 16, 2013, the court applies the pre-AIA § 102(b). *See Blue Calypso*, 815 F.3d at 1341 n.4.

And even if Beougher did disclose a type of conveyor that could be used in a windrow merger, it does not disclose *three* of them. Claim 44 claims three pickup assemblies, each with a corresponding conveyor. The Beougher reference discloses *one* auger that breaks into three sections for transport. To operate, each of the three sections must be *connected* to operate as one. During operation, the three sections are aligned and the two outer sections—the “wings”—“are hingedly connected to the center section.” Dkt. 175, ¶ 143 (citing Beougher patent, 4:7-20). The auger sections “automatically couple and uncouple” as the sections are lowered and raised, “so that power applied to the outer auger sections will be transmitted to the inner section (or vice versa).” Beougher patent, 2:45-50. The augers are coupled for operation. Beougher patent, 6:30-31. This is consistent with PTAB’s conclusion: H&S “has not sufficiently shown that Beougher discloses the three conveyors of claim 44, as opposed to a single auger ‘that can be separated into sections when the combine harvester header is retracted.’” Dkt. 235-1, at 12.

And Beougher does not disclose a windrow merger. The preamble to Claim 44 states: “[a] windrow merger apparatus configured for travel in a first direction” ’929 patent, 15:9-10. A preamble is limiting if it is “necessary to give life, meaning, and vitality” to the claim. *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). A preamble is not limiting if the claim body otherwise defines a complete structure, and the preamble only describes the invention’s purpose or intended use. *Id.* Claim 44’s preamble is limiting. Without acknowledging that the claim is directed to a windrow merger, the claim language does not make sense. It claims abstract “pickup assemblies” and a “frame” that would mean nothing outside the context of a windrow merger. The preamble is necessary to

understand the claimed structure. Beougher does not disclose a windrow merger and, as a result, it does not anticipate claim 44.

Not only has H&S failed to show that it is entitled to summary judgment on this issue, but, in light of the court's construction of "conveyor" and the other reasons given here, no reasonable jury could find that Beougher anticipates claim 44. H&S will have to show good cause why the court should not enter judgment in Oxbo's favor on this issue.

E. The trough patent

1. Introduction

The '052 patent—the trough patent—discloses and claims further improvements to windrow mergers. Like the triple head specification, the specification discusses the value of increasing merging rates and the benefits of folding assemblies. (The specification incorporates the '929 patent by reference. '052 patent, 3:47-48.) The improvements specific to the '052 patent include various mechanisms to accommodate changes in terrain while providing optimum pickup capability. The improvements at issue here are a "trough" and a "rub rail," intended to reduce material clumping and catching to produce more uniform windrows. One prior art problem identified in the '052 patent is that hay on the conveyor can catch on projections on the back of the pickup assembly, such as the slots through which the tines pass, which can cause the hay to swirl or clump, producing uneven windrows. '052 patent, 1:44-48. The solution posed by the '052 patent is the "rub rail," which provides a rounded, smooth surface toward the rear of the pickup assembly to facilitate the smooth flow of hay on the conveyor. '052 patent, 9:35-37.

Oxbo asserts claims 1-4 and 6-8 of the '052 patent. Independent claim 1 of the '052 patent is the sole independent claim:

A windrow merger configured for moving along a forward direction of travel, comprising:

a) a pickup and transfer unit defining a *trough in which material is conveyed*, the unit including a merger head and a belt conveyor, the merger head including a plurality of tines that rotate during operation; a comb at least partially defining slots through which the tines pass during rotation; and

b) a rub rail *mounted* on the pickup and transfer unit intermediate the comb and the belt conveyor and within the trough, the rub rail having a tube portion including an upper surface forming a continuous unobstructed rounded surface arcing rearward and downward toward the belt conveyor.

'052 patent, 10:17-30 (disputed claim terms emphasized).

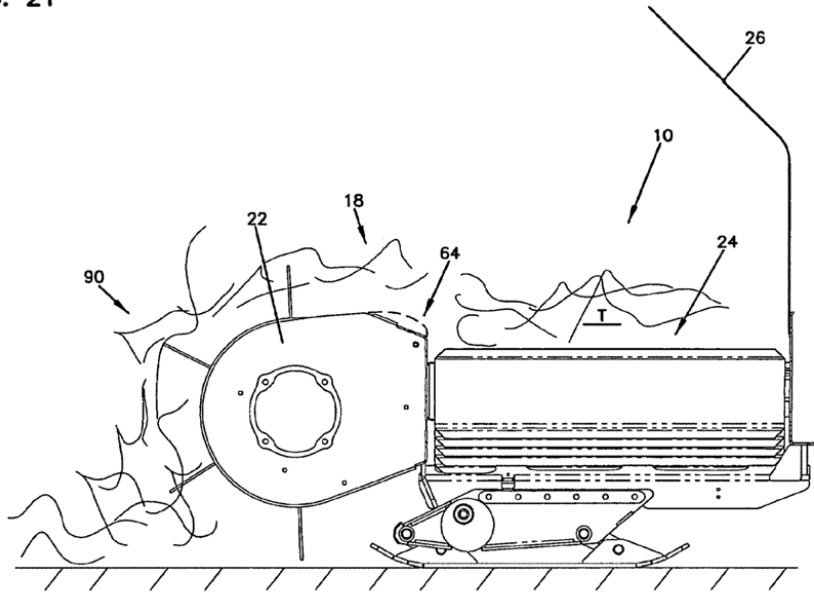
2. Claim construction

a. “trough in which material is conveyed”

The parties dispute the meaning of the term “trough in which material is conveyed,” as it appears in claim 1. Oxbo contends that the court should give the term its plain and ordinary meaning; H&S contends that the court should construe the term to mean “channel located between the back of the merger head and the front of the shroud.” The dispute is material to infringement: under H&S’s interpretation, which puts the boundary of the trough at the back of the pickup head, the rub rail would be adjacent to—but not within—the trough as required by claim 1.

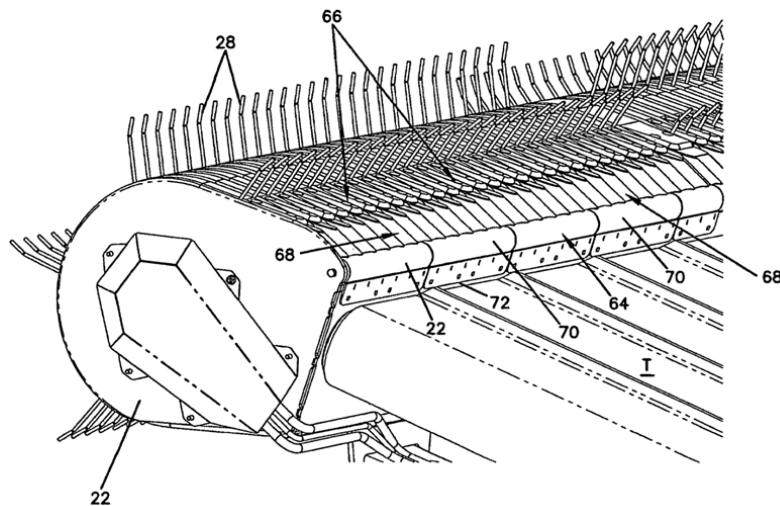
The trough patent claims a windrow merger comprising “a pickup and transfer unit defining a trough in which material is conveyed.” ’052 patent, 10:19-20. The specification says the same: the merger head, the shroud, and the conveyor “generally define a trough . . . into which material . . . flows during merger operations.” ’052 patent, 8:62-65; *see also* ’052 patent, Figure 21. The trough is represented with reference letter “T” in Figure 21:

FIG. 21



In Figure 22, the rub rail with reference number 64 is curved or rounded and “faces inward toward the trough.” ’052 patent, 9:32-34.

FIG. 22



The patent makes clear that the trough is the space between the merger head and the shroud, and that it is above the conveyor and below the top of the pickup head. Material travels from the pickup head, over the rub rail, and into the trough. ’052 patent, 9:31-37.

The purpose of the trough and the rub rail is to prevent clumping or swirling. '052 patent, 8:52-61; *see also* Dkt. 109, ¶ 144.

The parties do not really dispute the meaning of the term “trough”; both agree that a trough necessarily requires some depth. And H&S’s proposal that the court construe the trough to be a “channel” adds nothing of substance. “Channel” is basically a synonym for “trough.” One of the standard unabridged dictionaries defines “trough” as “a long and narrow or shallow channel or depression.” *Trough*, Webster’s Third New International Dictionary (unabridged) (3d ed. 1971).

The real issue is whether the forward boundary of the trough is precisely at the “back of the merger head.” H&S’s strategy here is apparent: define the trough so that the rub rail necessarily falls outside of it. For reasons explained in the infringement analysis below, H&S’s proposed construction cannot be squared with the patent’s depictions of the rub rail. As shown in, for example, Figure 22, the rub rail is located at the rear of the pickup assembly. If anything attached to the pickup assembly were, by definition, outside the trough, then claim 1 would not cover any of the embodiments shown. Such a claim construction is almost certainly wrong. *See MBO Labs.*, 474 F.3d at 1333. A more natural reading of this requirement is that the top of the trough is defined by the top of the pickup assembly. And the rub rail is within the trough if it is below the top of the trough.

The court will decline to adopt H&S’s construction and will afford the term its plain and ordinary meaning.⁷

⁷ The court’s approach is consistent with that of the PTAB. PTAB determined that H&S did not adequately explain its proposed construction and that the term was clear. Dkt. 199-16, at 9-10 (“We decline to adopt Petitioner’s proposed construction, apply the ordinary and customary meaning of claim terms, and determine that no express construction is necessary for ‘a pickup and transfer unit defining a trough in which material is conveyed.’”).

b. “mounted”

The parties dispute the meaning of the term “mounted.” Again, Oxbo advocates for the term’s plain and ordinary meaning. H&S proposes “fastened to.” The import of the dispute is apparent only in light of H&S’s non-infringement argument, which makes clear that as H&S views the concept, “fastened to” implies that the rub rail must be a separate component attached to the pickup assembly.

No one really disputes what “mounted” means. By its plain terms, mounted means attached or secured to. *Mount*, Webster’s Third New International Dictionary (unabridged) (3d ed. 1971) (“to attach to a support or assemble for use”). The real dispute is about whether “mounted” requires that the rub rail be a separate component that is attached to the pickup head, or whether the rub rail might be integrated into another assembly so that it is only indirectly “mounted” to the pickup head.

The specification contemplates both a rub rail that is separately mounted and one that is integrated into a comb assembly and thus indirectly mounted to the pickup assembly. Claim 1 claims “a rub rail mounted on the pickup and transfer unit intermediate the comb and the belt conveyor and within the trough.” ’052 patent, 10:25-27. The trough and the rub rail are discussed in columns 8 through 10 and are depicted in Figures 22-28. Figures 24 and 25 show a rub rail integrated into the comb assembly. Figures 26 and 27 show a similar embodiment made of plastic. As the specification makes clear, “in each of the disclosed embodiments of FIGS. 22 and 28, the rub rail 64, 164 is incorporated into the construction of the comb 68, 168.” ’052 patent, 10:1-3. But the specification continues: “It is contemplated, however, that a rub rail separate from the comb or comb segments can also be used.” ’052 patent, 10:3-5.

H&S contends that the patent is clear that the rub rail must be separate from the comb segments and directly fastened to the merger head. But again, H&S's proposed construction cannot be squared with the illustrated embodiments. Nothing in the claim language or the specification indicates that the trough patent claims *only* a separate rub rail, simply because it employs the term "mounted." The court declines to adopt H&S's proposed construction and gives the term mounted its ordinary meaning.

3. Infringement

H&S disputes infringement of the trough patent on the ground that the Tri-Flex does not have a rub rail as claimed. Oxbo has identified a tubular structure toward the rear of the pickup head on the Tri-Flex that it contends is the rub rail. H&S makes three arguments why this tubular structure is not the required rub rail: the tubular structure is not within the trough; the tubular structure is not mounted to the pickup assembly; and the tubular structure does not function as a rub rail.

a. Whether the Tri-Flex tubular structure is "within the trough"

The trough patent claims a "rub rail . . . within the trough." '052 patent, 10:25-27. H&S contends that the Tri-Flex's purported rub rail is *adjacent* to the trough, not within it. There is no dispute about the structure of the Tri-Flex; the issue thus turns on the court's ruling on the scope of the claim. As the court has already determined, the rub rail shown in Figure 22 is "within the trough" as that term is used in the '052 patent. The Tri-Flex's tubular structure is in the identical location:



The tubular structure is positioned precisely as described in the trough patent. “As material is conveyed through the trough T toward the end of the merger, the material encounters the smooth surface of the rub rail” ’052 patent, 9:38-40 (reference numbers omitted). Material encounters the rub rail as it travels along the conveyors *in the trough*, and that is the case in the Tri-Flex. Tellingly, H&S’s president has described the Tri-Flex trough as being eight inches deep. Dkt. 102 (Heikenen Dep. 117:4-15). H&S measures its trough from the top height of the pickup head. The Tri-Flex rub rail is certainly within that eight inches.

The Tri-Flex’s tubular structure is “within the trough” as the court has construed that term.

b. Whether the Tri-Flex tubular structure is “mounted on the pickup and transfer unit intermediate the comb and the belt conveyor”

H&S contends that the Tri-Flex’s tubular structure is not “mounted” on the pickup and transfer unit. Rather, according to H&S, the tube is a structural component integrated into pickup assembly. As H&S describes it, the tubular structure is welded to comb fingers and a plate, to form a “channel section,” as shown here:



The channel sections are bolted to the merger head, and the plates serve as the pickup unit's rearward wall. So the tubular structure "is not a separate component mounted onto the pickup and transfer unit, it is integral as part of the pickup and transfer unit assembly." Dkt. 156, at 17. Thus, according to H&S, it cannot infringe.

There is no dispute about the underlying facts, so once again, the matter turns on the court's construction of the claim term. The channel sections of the Tri-Flex are not materially different from the comb sections shown in Figures 24-27 of the '052 patent. The '052 patent contemplates a rub rail that is either a separate structure attached to the pickup assembly, or a structure integrated into the comb assembly. The Tri-Flex uses the integrated assembly, just as in each of the embodiments depicted in the patent. The tubular structure is mounted to the pickup assembly, and the Tri-Flex satisfies this claim element.

c. Whether the tubular structure on the Tri-Flex functions as "rub rail"

H&S argues that the tubular structure is not a rub rail because it does not perform the function of the rub rail, i.e., preventing the hay from clumping and swirling as it moves along the conveyor. According to H&S, the Tri-Flex does not need a rub rail to perform this

function, because it uses its own patented cam technology to flick the hay over the combs and slots that might clump or swirl the hay. There are two reasons why this argument fails.

First, H&S's cam technology is irrelevant. Because the claim is written in open form using the term "comprising," it does not matter if the Tri-Flex has other mechanisms in addition to the elements claimed. The claim covers devices with additional features beyond those claimed. *MagSil Corp. v. Hitachi Glob. Storage Techs., Inc.*, 687 F.3d 1377, 1383 (Fed. Cir. 2012). If the Tri-Flex has a rub rail, it does not matter if it also uses H&S's cam technology to prevent clumping and swirling.

Second, and more important, the rub rail of claim 1 is claimed in purely structural terms. To be sure, the disclosed function of the rub rail is to facilitate the smooth flow of hay into and along the conveyor. But the rub rail is not claimed in functional terms. Rather, the rub rail is defined in the claim itself by its structure:

the rub rail having a tube portion including an upper surface forming a continuous unobstructed rounded surface arcing rearward and downward toward the belt conveyor.

'052 patent, 10:26-30. H&S has not proposed any construction specifically for "rub rail," presumably because claim 1 provides it. There is no genuine dispute that Tri-Flex has the structure defined as the rub rail in claim 1, and thus the Tri-Flex has a rub rail.

H&S's infringement defense based on the rub rail fails, and Oxbo is entitled to summary judgment that H&S infringes the asserted claims of the '052 patent.

4. Invalidity

Oxbo moves for summary judgment that the trough patent is neither anticipated nor obvious. H&S opposes, arguing that fact issues preclude summary judgment. H&S relies on the following prior art references:

the '929 patent;

Oxbo's 310 Windrow Merger Parts & Operator's Manual (2004 Oxbo Manual);

Oxbo's 310 Windrow Merger Repair Parts Manual (2006 Oxbo Manual);

International PCT Patent Application PCT/EP2006/070097 published as WO 2007/082624 A1 (Pourchet); and

U.S. Patent Application Publication No. US 2003/0110752 A1 bearing application serial no. 10/027,930 (the '752 application).

The court will assume, for summary judgment purposes, that the identified references are indeed prior art, as neither party argues this point.

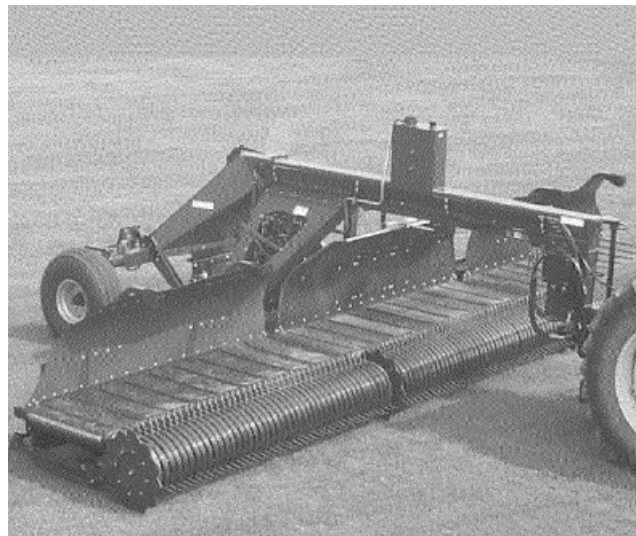
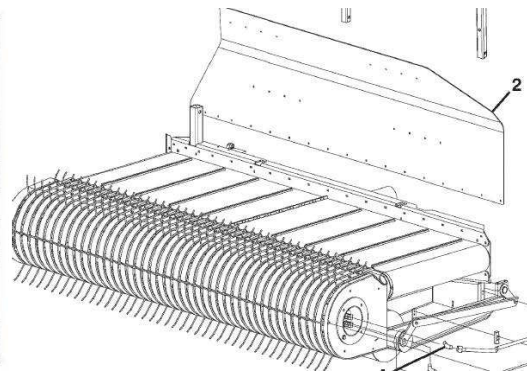
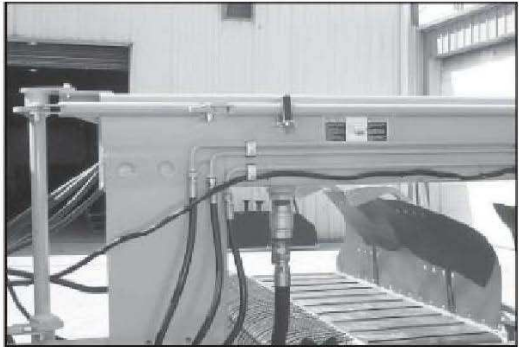
Again, the trough patent is presumed valid, and H&S can overcome this presumption only by establishing invalidity through clear and convincing evidence. 35 U.S.C. § 282; *Novo Nordisk A/S*, 719 F.3d at 1352.

a. Anticipation

Oxbo contends that it is entitled to summary judgment of no anticipation because H&S cannot identify a single prior art reference that discloses both a trough in which material is conveyed and a rub rail. H&S contends that the 2004 Oxbo Manual anticipates claims 1, 4, 6, and 8 because it discloses both.

To create a genuine dispute of material fact for trial on this issue, H&S adduces opinion evidence from Shirley, who opines that “the 2004 Oxbo Manual discloses to a person of ordinary skill in the art all of the limitations of claims 1, 4, 6 and 8 of the '052 Patent.” Dkt. 120-31, ¶ 35. Shirley states that the 2004 Oxbo Manual discloses a pickup and transfer unit that “defines a trough in which material is conveyed.” *Id.* ¶ 37. But he does not get any more specific than that; he simply points to components near the conveyor and states that

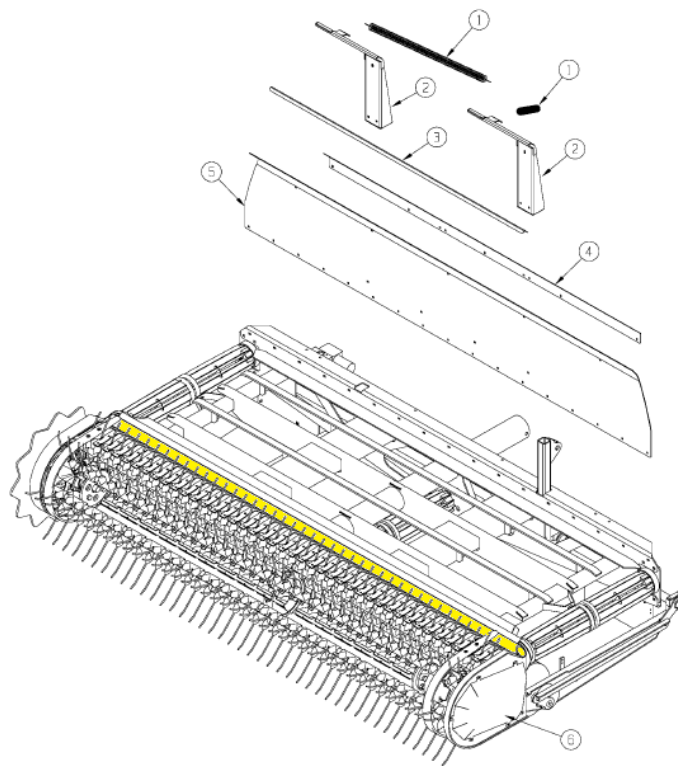
together they form a trough. Shirley points to three pictures that purportedly show the trough:



In its briefing, H&S contends that the pictures show that the conveyor sits lower than the pickup head, creating the requisite “trough in which material is conveyed.” But the pictures show no such thing. As PTAB pointed out when it declined to institute review of the trough patent, neither H&S “nor Mr. Shirley further explains why the photo shows the trough feature, as claimed.” Dkt. 199-16, at 14. PTAB ultimately held that H&S had “not sufficiently identified any structure in the 2004 Oxbo Manual corresponding to the trough feature.” *Id.* at 14-15. The diagrams and photographs that H&S points to show that the conveyor and the pickup head are substantially level with one another; “the conveyor belt is

horizontally flush with the pickup head.” *Id.* at 15. The court is not bound by the PTAB decision, but its reasoning is persuasive. Because the trough implicitly requires some depth, the pictures from the manual do not disclose a trough. Shirley’s conclusory opinion to the contrary does not create a genuine dispute of material fact. “Conclusory expert assertions cannot raise triable issues of material fact on summary judgment.” *Sitrick*, 516 F.3d at 1001.

The lack of a trough dooms H&S’s anticipation case. But H&S also fails to show that the 2004 Oxbo Manual discloses a rub rail. Shirley opines that the 2004 Oxbo Manual “discloses a rub rail mounted on the pickup and transfer unit intermediate the comb and the belt conveyor and within the trough.” Dkt. 120-31, ¶ 39. His reasoning? The manual’s diagrams show one: “[t]he manual shows a tubular structure that is mounted on the back of the pick-up head that runs alongside the conveyor”:



Id. Once again, Shirley’s opinion is conclusory. The diagram shows an *internal* feature that is neither *within* the trough (because there isn’t one) nor between the combs and the conveyor. In fact, it appears that the highlighted structure is *beneath* the conveyor.

H&S has not adduced evidence that would allow a reasonable jury to find that the 2004 Oxbo Manual discloses both a trough and a rub rail. Its anticipation claim fails as a matter of law.

b. Obviousness

Oxbo contends that it is also entitled to summary judgment of nonobviousness because no combination of prior art teaches both a trough and a rub rail.

To survive summary judgment, H&S must adduce evidence that would allow a reasonable jury to find “by clear and convincing evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so.” *Bristol-Myers Squibb Co. v. Teva Pharm. USA, Inc.*, 752 F.3d 967, 973 (Fed. Cir. 2014) (quoting *Procter & Gamble Co. v. Teva Pharm. USA, Inc.*, 566 F.3d 989, 994 (Fed. Cir. 2009)). Obviousness “is a legal conclusion based on underlying facts,” including “the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, and any relevant secondary considerations.” *Allergan, Inc. v. Sandoz Inc.*, 726 F.3d 1286, 1290-91 (Fed. Cir. 2013).

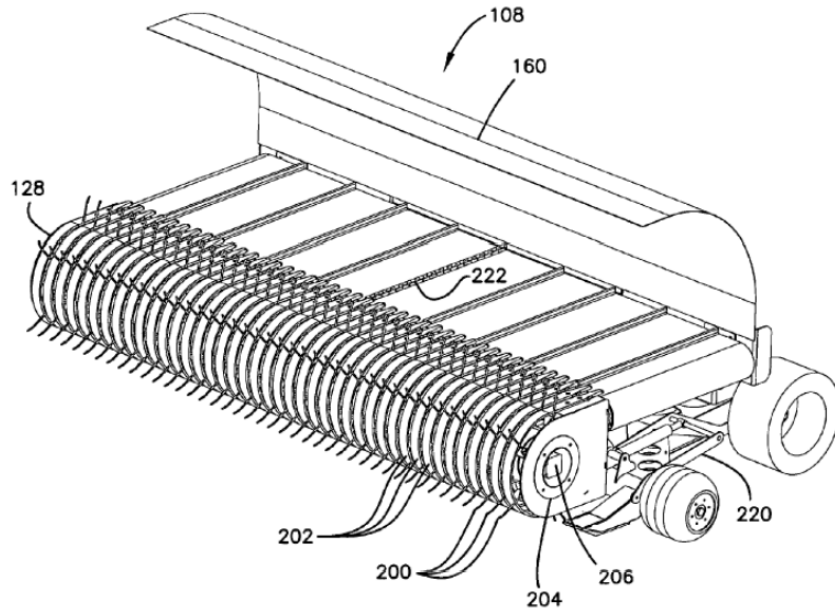
In response to Oxbo’s motion, H&S points to several different prior art combinations. But all attempts fail because H&S has not identified *any* prior art reference that discloses a trough in which material is conveyed, nor does H&S explain how or why a trough would otherwise have been obvious.

The court has already determined that the 2004 Oxbo Manual does not disclose a trough or a rub rail. And H&S does not identify any material difference between the 2004 Oxbo Manual and the 2006 Oxbo Manual, so neither does the 2006 Manual. *See* Dkt. 206, ¶ 485 (H&S does not dispute that “[t]he photograph and diagrams relied upon by H&S from the 2004 and 2006 Oxbo Manuals are the same in all pertinent respects.”).

H&S makes a last attempt to identify a trough in the prior art with the ’929 patent. The ’929 patent was disclosed to the Patent Office during the prosecution of the ’052 patent. H&S makes no argument that the Patent Office did not have full information about the ’929 patent, or was somehow misled about the ’929 patent, during examination of the ’052 patent. Thus, it will be more difficult for H&S to sustain its burden to show the obviousness of the ’052 patent on the basis of the ’929 patent, given that the Patent Office already had the opportunity to evaluate it. *See Sciele Pharma Inc. v. Lupin Ltd.*, 684 F.3d 1253, 1260 (Fed. Cir. 2012).

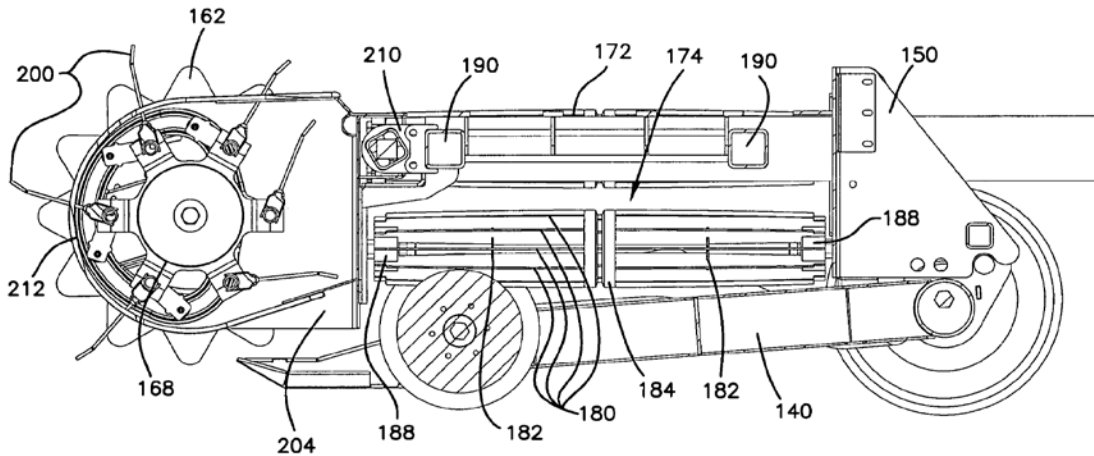
And once again, H&S offers only Shirley’s conclusory opinions. Shirley opines that the ’929 patent discloses a pickup and transfer unit that “defines a trough in which material is conveyed.” Dkt. 120-31, ¶ 69. Citing Figure 15 of the ’929 patent, Shirley summarily states that “the shroud together with the back side of the pickup head and conveyor comprise a trough to convey the gathered crop along the length of the conveyor.” *Id.*

FIG.15



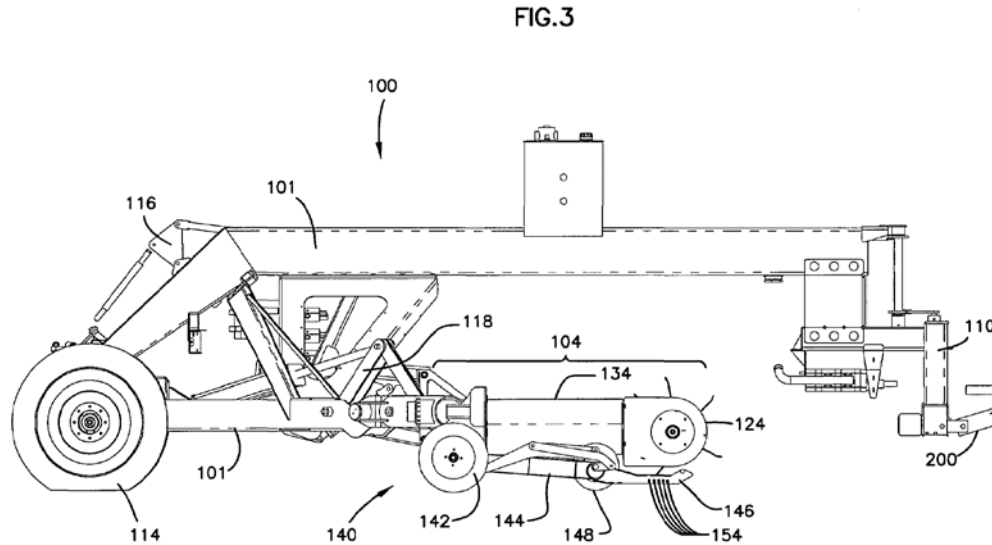
Like the 2004 Oxbo Manual pictures, Figure 15 simply does not show a trough; the conveyor and the pickup head are plainly the same height and do not provide the requisite depth in which material is conveyed. H&S also points to Figure 17:

FIG.17



But the problem with Figure 17 is that the conveyor is not depicted (reference numbers 134, 136, 138), creating a false impression that the top of the pickup head is higher than the

conveyor. The court’s conclusion is again consistent with PTAB, which determined that the ’929 patent does not disclose a trough. PTAB cited Figure 3 as showing that the pickup head is on the “same horizontal plane” as the conveyor. Dkt. 199-16, at 17.



In fact, H&S concedes that Figure 3 “appears to show the pickup head and conveyor being generally level.” Dkt. 206, ¶ 415.

H&S does not contend that either Pourchet or the ’752 application disclose a trough in which material is conveyed. Because H&S fails to show a trough in the prior art, and it does not show that the trough would otherwise be obvious to one of skill in the art, Oxbo is entitled to summary judgment of nonobviousness.

One final note: Oxbo moved for summary judgment on all of the invalidity contentions that H&S disclosed during discovery with respect to the trough patent. H&S offered no argument regarding (1) anticipation by the 2006 Oxbo Manual, any other Oxbo manuals, Oxbo’s 310 merger, or the ’929 patent; or (2) obviousness or anticipation by Oxbo’s 310 merger, any other Oxbo manuals, Zhavoronkin, Praktijk, Phiber, or Orr. Thus, the court

will grant summary judgment to Oxbo that the '052 patent is neither anticipated nor obvious on the basis of any ground asserted by H&S.

F. Remaining infringement issues

Oxbo did not move for summary judgment of infringement as to claim 32 of the '929 patent. H&S moved for summary judgment of non-infringement of that claim, but for reasons already discussed the court concludes that genuine disputes of fact prevent the court from granting summary judgment to either party.

Oxbo did not move for summary judgment of infringement as to claim 11 of the '488 patent. H&S moved for summary judgment of non-infringement of that claim, but the court rejected H&S's non-infringement positions. Claim 11 of the '488 patent is thus in limbo: summary judgment for Oxbo would be warranted, but Oxbo did not move for it. Oxbo should inform the court whether it still intends to assert that claim.

That leaves H&S's motion for summary judgment of non-infringement under the doctrine of equivalents. H&S contends that Oxbo has not adequately disclosed an infringement position under the doctrine of equivalents or adduced adequate expert testimony on the subject. In response, Oxbo states that it asserted infringement under the doctrine of equivalents in its infringement contentions and that Chaplin has offered opinions sufficient to establish as much, as least with respect to "continuous line of material pickup."

Because the court has already determined that the Tri-Flex literally meets this claim element, this issue might be dismissed as moot. But the court has reviewed Oxbo's evidence and argument under the doctrine of equivalents and concludes that summary judgment for H&S is appropriate. "A patentee must establish 'equivalency on a limitation-by-limitation basis' by 'particularized testimony and linking argument' as to the insubstantiality of the

differences between the claimed invention and the accused device or process.” *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1342 (Fed. Cir. 2016) (quoting *Tex. Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1566 (Fed. Cir. 1996)). “Broad and scant” expert testimony on the subject will not suffice. *Id.* at 1343. The analysis by Oxbo’s expert is simply too “broad and scant” to sustain an infringement case under the doctrine of equivalents.

G. Remaining invalidity issues

Oxbo moves for summary judgment that none of the asserted claims are invalid under 35 U.S.C. § 112 for indefiniteness, lack of enablement, or lack of written description. Dkt. 118. Oxbo contends that H&S has not adduced any evidence—expert or otherwise—sufficient to prove indefiniteness, lack of enablement, or lack of written description. H&S filed no opposition to Oxbo’s motion on § 112 defenses, so the court will grant Oxbo’s motion as unopposed.

ORDER

IT IS ORDERED that:

1. Plaintiff Oxbo International Corporation’s motion for summary judgment, Dkt. 115, is GRANTED in part and DENIED in part:
 - a. H&S’s Tri-Flex Merger infringes claim 44 of the ’929 patent.
 - b. H&S’s Tri-Flex Merger infringes claim 1 of the ’739 patent.
 - c. H&S’s Tri-Flex Merger infringes claims 1-10 of the ’488 patent.
 - d. H&S’s Tri-Flex Merger infringes claims 1-4 and 6-8 of the ’052 patent.
 - e. Oxbo’s motion is denied with respect to infringement of claim 28 of the ’929 patent.

- f. The asserted claims of the '052 patent are not anticipated or obvious on any ground asserted by H&S.
 - g. The asserted claims of the patents-in-suit are not invalid for indefiniteness, lack of enablement, or lack of written description under 35 U.S.C. § 112.
 - h. H&S's equitable defenses are dismissed.
2. Defendant H&S Manufacturing Company, Inc.'s motion for summary judgment, Dkt. 122, is GRANTED in part and DENIED in part:
- a. H&S is not entitled to summary judgment as to literal infringement of the patents-in-suit.
 - b. H&S is entitled to summary judgment as to infringement under the doctrine of equivalents of the patents-in-suit.
 - c. H&S's motion for summary judgment on its equitable estoppel defense is denied.
 - d. H&S is not entitled to summary judgment that claim 44 of the '929 patent is anticipated by the Beougher reference. The court will give H&S the opportunity to show cause why the court should not enter summary judgment for Oxbo on this issue.
3. H&S's motion to strike the supplemental expert report of Jonathan Chaplin, PhD, and the declaration of Jake Langer, Dkt. 148, is GRANTED in part and DENIED in part. Oxbo may present Chaplin's supplemental opinions (and Langer's evidence in support) related to the operation of the central pickup assembly and the "all material" issue. Chaplin's supplemental opinions about the "gap" issue are excluded as untimely.
4. Oxbo's motion to strike the declarations of Foley, Rottier, and Kelber, Dkt. 163, is DENIED as moot for purposes of summary judgment. If the parties so advise, the court will revisit the motion to strike as a pretrial motion in limine.
5. Oxbo's motion to supplement, Dkt. 197, is DENIED.
6. Oxbo's motion to strike portions of defendant's summary judgment briefing on its equitable defenses, Dkt. 222, is GRANTED.

7. Oxbo's motion to strike H&S's non-infringement argument based on the operation of the central pickup assembly, Dkt. 291, is DENIED.

Entered May 23, 2017.

BY THE COURT:

/s/

JAMES D. PETERSON
District Judge