

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

DR. MARK BARRY,
Plaintiff,

v.

DEPUY SYNTHES PRODUCTS,
INC., *et al.*,
Defendants.

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Civ. No. 17-3003

Diamond, J.

July 31, 2023

MEMORANDUM

On June 26, 2023, after seven days of trial in this patent infringement suit, I granted Defendants’ Motion for Judgment as a Matter of Law. (Doc. No. 253.) That decision turned largely on my earlier exclusion under Daubert of the testimony of Plaintiff’s survey expert Dr. David Neal. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993); Fed. R. Civ. P. 50(a). At that time, I indicated that I would issue Memoranda explaining my decisions more fully. (Doc. Nos. 252, 253.) I issued the Daubert Memorandum on July 28, 2023. (Doc. No. 270.) I issue this Memorandum to explain my Rule 50(a) analysis.

I. BACKGROUND

A. Proving Patent Infringement

A patent infringement analysis involves: (1) claim construction, and (2) the application of the construed claim to the accused method or system. Advanced Med. Optics, Inc. v. Alcon, Inc., 361 F. Supp. 2d 404, 408 (D. Del. 2005) (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff’d, 517 U.S. 370 (1996)); EMC Corp. v. Pure Storage, Inc., 154 F. Supp. 3d 81, 95 (D. Del. 2016).

Claim construction, is “simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” Terlep v. Brinkmann Corp., 418 F.3d 1379, 1382 (Fed. Cir. 2005) (quoting Embrex, Inc., v. Serv. Eng’g Corp., 216 F.3d 1343, 1347 (Fed. Cir. 2000)). “Patent claims are construed from the perspective of one of ordinary skill in the art.” Sundance, Inc. v. DeMonte Fabricating Ltd., 550 F.3d 1356, 1361 n.3 (Fed. Cir. 2008) (citing Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005)). In the instant case—involving systems and methods of correcting spinal deformities—a person of ordinary skill in the art would have: “(1) an undergraduate degree in Mechanical or Biomedical Engineering, or its equivalent, or a medical degree, or its equivalent; and (2) at least two to three years of experience with fixation implants and methods and systems for scoliosis or spinal deformity correction.” (Doc. No. 171-4 at 2.)

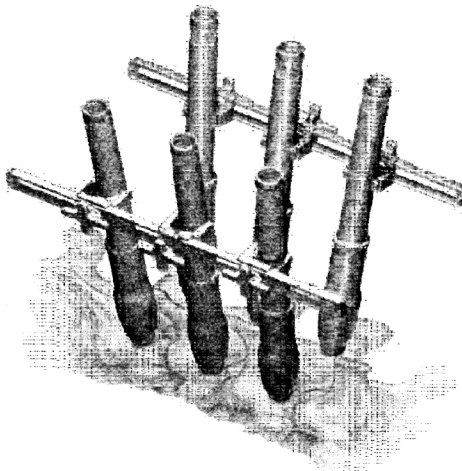
Once a district court has construed the relevant claim terms, “that legal determination governs for purposes of trial. No party may contradict the court’s construction to a jury.” Exergen Corp. v. Wal-Mart Stores, Inc., 575 F.3d 1312, 1321 (Fed. Cir. 2009).

The second step of the infringement analysis involves a determination of whether the accused system or method contains each limitation of the properly construed claims. Freedman Seating Co. v. Am. Seating Co., 420 F.3d 1350, 1357-58 (Fed. Cir. 2005); see Trinity Indus., Inc. v. Road Sys., Inc., 121 F. Supp. 2d 1028, 1033 (E.D. Tex. 2000) (“Claim limitations are the words in a patent claim that delineate the necessary elements of the patented invention.”).

The patent owner has the burden of proving infringement by a preponderance of the evidence. EMC Corp., 154 F. Supp. 3d at 95.

B. Patents at Issue

Plaintiff Dr. Mark Barry is a retired pediatric orthopedic surgeon and “an inventor of the patents in this case.” (Trial Day 1 Tr. at 107:23-25, 110:8-9.) Once again, the Patents-in-suit relate to the correction of spinal deformities. In severe spinal deformity cases, such as scoliosis, the vertebrae twist and rotate out of alignment. (Doc. No. 215 at 5.) Three of Dr. Barry’s patents cover methods or systems to correct such deformities by using sets of *linked* tubes attached to the vertebrae to rotate *en bloc*—more than one tube at the same time—the vertebrae back into alignment (i.e., “derotating” the spine). (*Id.*; Doc. No. 20 ¶¶ 1, 10, 14, 15, 19, 25, 29; *see* Doc. No. 181); U.S. Patent No. 7,670,358; U.S. Patent No. 8,361,121; U.S. Patent No. 9,668,787. Below is an example of a construct that can be used for linked *en bloc* rotation:

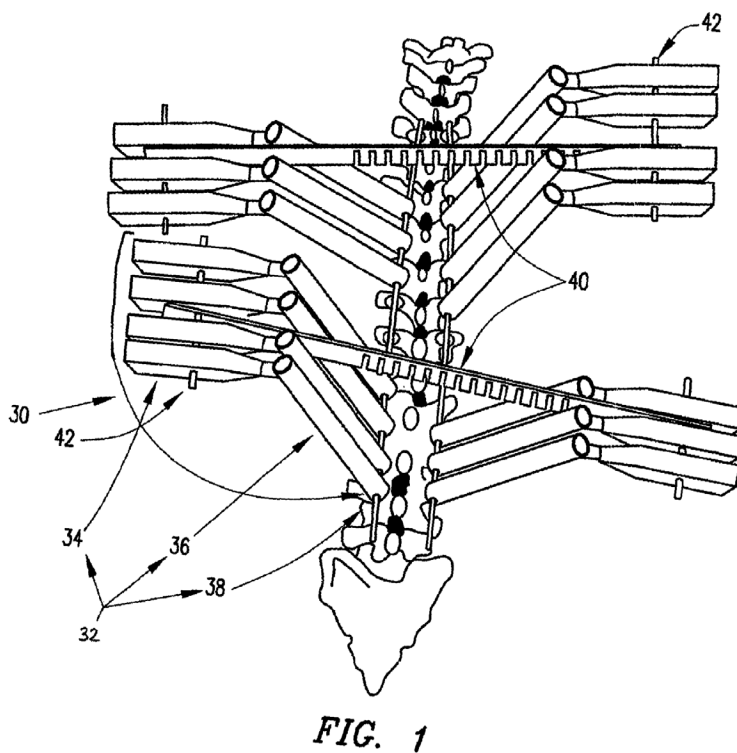


(PTX140 at 58.)

Barry did not invent *unlinked en bloc* derotation: “[e]n bloc derotation worked even prior to [Dr. Barry’s] investigational studies.” (Trial Day 2 Tr. at 96:3-7; *see* Trial Day 4 Tr. at 104:6-7 (when surgeons do not link derotator tubes together, they will not infringe Dr. Barry’s patents).)

In 2017, Barry brought this action against DePuy, alleging infringement of his three patents. The EXPEDIUM® Vertebral Derotation System and the VIPER® 3D MIS Correction Set, which DePuy manufactures and sells, are “used to derotate *en bloc* multiple levels of

vertebrae.” (Doc. No. 20 ¶¶ 47, 49, 54.) Barry alleged that DePuy willfully induced the performance of infringing methods and construction of infringing instruments. (See *id.* ¶ 59; Doc. No. 215 at 4.) In Count I, Barry alleged willful infringement of (method) claims 4 and 5 of the ’358 Patent, both of which depend on claims 1 and 2 of that Patent. (Doc. No. 215-2 at 2, 3); see Barry v. Medtronic, Inc., 914 F.3d 1310, 1317-18 (Fed. Cir. 2019). In Count II, he alleged willful infringement of (system) claim 2 of the ’121 Patent. (Doc. No. 215-2 at 2, 3.) In Count IV, he alleged willful infringement of (method) claim 6 of the ’787 Patent. (*Id.*) Claims 4 and 5 of the ’358 Patent, claim 2 of the ’121 Patent, and claim 6 of the ’787 Patent thus constitute the “Asserted Claims” in this case. Below is a representative figure depicting Dr. Barry’s invention:



(Figure 1 of the ’358 Patent, the ’121 Patent, and the ’787 Patent.)

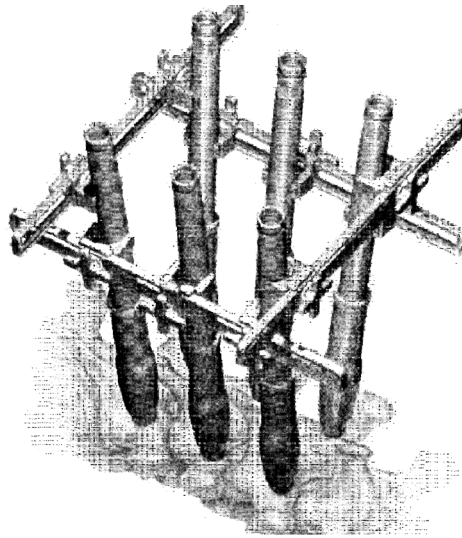
1. “Linking” Requirements

A surgeon who performs linked *en bloc* derotation—i.e., linking levers “vertically” along each side of the spine—could infringe claims 4 and 5 of the ’358 Patent, so long as all other limitations of those claims are also met. (Trial Day 4 Tr. at 189:4-15; see PTX140 at 58); Freedman Seating, 420 F.3d at 1357-58.

Unlike claims 4 and 5 of the ’358 Patent, claim 2 of the ’121 Patent and claim 6 of the ’787 Patent further require linking “horizontally” across the spine. Claim 2 of the ’121 Patent requires a “linking member” (#42 in Fig. 1) and a “cross-linking member” (#40 in Fig. 1). U.S. Patent No. 8,361,121, cols. 7-8.

In 2019, after conducting a Markman hearing, I issued my Claim Construction Order and concluded that the plain and ordinary meanings of “linking member” and “cross-linking member” apply in this case. (Doc. No. 84 at 28-31; see also Doc. No. 171-3); Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996). A person of ordinary skill in the art would understand “cross-linking member” to mean “going from one side of the spine to the other, so one tool to the other tool.” (Trial Day 4 Tr. at 172:17-21.) Claim 6 of the ’787 Patent requires “linking together [four] elongated levers in both a craniocaudal [head-to-tail] direction and a transverse [across the spine] direction.” U.S. Patent No. 9,668,787, col 8; (Trial Day 4 Tr. at 163:18-23.)

A surgeon who performs derotation using a “box” construct—i.e., linking levers vertically along each side of the spine *and* linking the top levers and bottom levers together horizontally across the spine—could infringe *all* Asserted Claims in this case, provided that all other claim limitations are also met. (Trial Day 4 Tr. at 106:10-15, 189:4-17; see PTX140 at 58; Doc. No. 215-3 at 3); Freedman Seating, 420 F.3d at 1357-58. Below is an example of a “box” construct:



(PTX140 at 58.)

2. “Handle Means” Requirements

Claims 4 and 5 of the ’358 Patent and claim 2 of the ’121 Patent require a “first handle means” and a “second handle means.” U.S. Patent No. 7,670,358, cols. 6-8; U.S. Patent No. 8,361,121, cols. 7-8. I construed “handle means” as “a part that is designed especially to be grasped by the hand”—the construction urged by Dr. Barry. (Doc. No. 84 at 15; see also Doc. No. 171-3.) I also concluded that “handle means” encompasses both: (1) a single handle from which multiple shafts extend; and (2) multiple handles (each attached to individual shafts) linked together. (Doc. No. 84 at 14-15.)

Claim 6 of the ’787 Patent does not include “handle means.” U.S. Patent No. 9,668,787, col 8.

C. Plaintiff’s Case-in-Chief

The gravamen of Barry’s Complaint is that Defendants indirectly infringed the ’358 Patent, the ’121 Patent, and the ’787 Patent by inducing surgeons to directly infringe those Patents through the use of DePuy’s systems. Barry thus alleged as follows:

DePuy induces infringement of Dr. Barry's claimed methods and systems through programs and efforts at instruction and education, with knowledge of Dr. Barry's patents. For example, DePuy uses sales representatives and training programs to detail the benefits and manner of creating surgical constructs that it knows would infringe Dr. Barry's patents.

(Doc. No. 34-1 at 2.) Barry's indirect infringement claims are not viable unless he can prove that they are based on direct infringement by surgeons. See, e.g., Takeda Pharm. USA, Inc. v. West-Ward Pharm. Corp., 785 F.3d 625, 631 (Fed. Cir. 2015) ("The mere existence of direct infringement by physicians, while necessary to find liability for induced infringement, is not sufficient for inducement."); Joy Techs., Inc. v. Flakt, Inc., 6 F.3d 770, 774 (Fed. Cir. 1993) (liability for inducing infringement "is dependent upon the existence of direct infringement").

1. Proving Direct Infringement

Dr. Barry alleged that "[n]umerous surgeons have reported using" the accused DePuy systems in a manner that infringes his patents. (Doc. No. 215 at 14.) To prove infringement of the Asserted Claims, Barry had to prove: (1) that surgeons perform every method step of claims 4 and 5 of the '358 Patent and claim 6 of the '787 Patent; and (2) that an accused DePuy system contains every limitation in claim 2 of the '121 Patent. See Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1211 (Fed. Cir. 1998); Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech., 709 F.3d 1348, 1362 (Fed. Cir. 2013). "If even one limitation is missing or not met as claimed, there is no literal infringement." Mas-Hamilton, 156 F.3d at 1211. Accordingly, JMOL respecting non-infringement is appropriate if no reasonable fact finder could determine that the accused systems or methods meet every limitation of the properly construed claims. Elkay Mfg. v. EBCO Mfg., 192 F.3d 973, 980 (Fed. Cir. 1999).

Here, I found legally insufficient evidence to support a finding that DePuy's accused products met the "handle means" limitation of the '358 Patent and '121 Patents. See Riles v. Shell

Exploration & Prod. Co., 298 F.3d 1302, 1308 (Fed. Cir. 2002). I also found that without Dr. Neal’s survey and testimony, Barry had failed to present legally sufficient evidence to support a finding that the surgeons using the accused DePuy systems actually performed the cross-linking step of claim 6 of the ’787 Patent.

2. Dr. Barry’s Testimony

As I have discussed, Barry “came up with a system of derotating vertebrae with linked levers”—i.e., linked *en bloc* derotation. (Trial Day 1 Tr. at 117:8-9, 125:24-126:3; Trial Day 2 Tr. at 85:13-17.)

Linking

After performing a surgery in December 2002 using *unlinked* derotators on each side of the patient’s spine, Dr. Barry “felt that if [he] could link up these derotation tools, one side then the other, it would work much better.” (Trial Day 1 Tr. at 134:23-135:17, 141:10-13.) Barry sought to modify DePuy derotator tools to achieve that purpose, and so began working with Robert Pfefferkorn, the DePuy equipment representative in Las Vegas, Nevada. (Id. at 141:13-142:18.) Barry felt he could satisfactorily modify DePuy’s rod stabilizer tool (i.e., derotator) “*because it had this composite plastic part* of it that [he] could use to link.” (Id. at 142:19-24 (emphasis added); see also id. at 144:14-17 (Barry: “The handle region. This was the composite plastic area I was talking about . . .”).)

In April 2003, Barry had the handles “slimmed out” and ground flat on each side so that he could “line up” and link the handles along the spine. (Id. at 145:10-13, 146:13-19; Trial Day 2 Tr. at 101:20-23, 183:11-21.) In late July 2003, Barry had three “slots” put into the handles of the derotators so that he could link them together. (Trial Day 2 Tr. at 80:9-81:4, 121:19-22.) On August 4, 2003, Barry performed his first surgery with linked handles along the spine. (Id. at

22:24-23:1.) On November 20, 2004, he performed his first surgery with linked handles along the spine *and* a “cross-connector” linking the sets of derotators on each side of the spine. (*Id.* at 41:22-42:20, 44:14-45:5.)

“Handle Means”

Dr. Barry provided inconsistent and confusing lay testimony on the “handle means” requirement of his ’358 and ’121 Patents. He first testified that the derotator “shafts are linked to the handle means.” (Trial Day 2 Tr. at 146:16-147:2.) He then immediately changed his testimony: “actually, the whole thing is a handle means.” (*Id.* (“Q. [DePuy’s counsel:] So you’re saying, for you, the entire construct is a handle means? A. [Barry:] Yes.”).) Barry then changed course again, testifying that “the handle means[,] in anything that acts as a lever[,] is at the top of the [derotator] lever.” (*Id.* at 147:22-24.) He went on to acknowledge that in surgery he “was not grabbing the handles.” (*Id.* at 148:1-3.)

3. Dr. Krishn Sharma’s Expert Testimony

Barry called Dr. Sharma, an orthopedic surgeon, to “give [his] opinion on medical education in the United States, including the role of medical device companies and their medical education of surgeons and the adoption of new techniques and tools.” (Trial Day 3 Tr. at 9:24-10:10, 14:11-15.) Dr. Sharma also testified that he does not use linked *en bloc* derotation. (*Id.* at 22:7-9, 38:24-39:4.) Accordingly, Dr. Sharma does not practice methods that could infringe any of the Asserted Claims.

4. Robert Pfefferkorn’s Testimony

Mr. Pfefferkorn was an independent distributor for DePuy products from 1997 to 2012. (Trial Day 2 Tr. at 162:23-163:4.) He attended about one hundred scoliosis surgeries performed

by Dr. Barry in Las Vegas. (Id. at 164:5-9.) Pfefferkorn has seen only Barry use stabilizers (i.e., derotators) to perform spinal derotation. (Id. at 168:7-17.)

After Pfefferkorn had DePuy stabilizer handles modified for Barry, Pfefferkorn “only saw [Barry use] instruments where the handles were linked”—he did not see instruments where the metal tubes (shafts) themselves were linked together. (Id. at 185:6-10.) Moreover, Pfefferkorn never saw a construct “where the instruments were linked across the spine.” (Id. at 185:11-14.) He thus never saw a surgeon use a construct or method that could infringe claim 2 of the ’121 Patent or claim 6 of the ’787 Patent.

5. Dr. Michael O’Brien’s Testimony

Dr. O’Brien, another surgeon (who has since passed away), testified that when he occasionally “mechanically linked [DePuy] Expedium derotation tubes together longitudinally along the spine, it gave [him] a nice handle that allowed [him] to derotate the spine.” (PTX624 at 41:10-13, 42:09-13; see Doc. No. 251 at 10.)

O’Brien also testified that he does *not* typically use both sides of the spine for derotation, however. (PTX624 at 87:05-20.) When asked if, during surgery, he has built a construct that involved at least three linked Expedium derotators on the right side of the spine, and at least three linked Expedium derotators on the left side of the spine to perform derotation (shown in the figure below), O’Brien replied, “No.” (Id.)



(Doc. No. 20-2 at 13; PTX147 at 8 fig.8.)

Dr. O'Brien testified that he has *not* performed surgery in which he: (1) linked at least two Expedium derotation tubes on the right side of the spine; (2) linked at least two Expedium derotation tubes on the left side of the spine; (3) cross-connected (i.e., cross-linked) those two sets of tubes; and (4) performed derotation. (Id. at 42:17-43:01.) Accordingly, O'Brien never used a construct or method that could infringe claim 2 of the '121 Patent or claim 6 of the '787 Patent.

6. Expert Testimony and Opinions of Drs. Walid Yassir and David Neal

Dr. Yassir, a pediatric orthopedic surgeon, testified as Barry's infringement expert. (Trial Day 4 Tr. at 5:15-21, 80:18-19, 82:15-21.) Dr. Neal testified as Barry's survey expert. (Trial Day 3 Tr. at 44:15-20.)

Dr. Yassir performs linked *en bloc* derotation during his surgical procedures that could infringe claims 4 and 5 of the '358 Patent. (Trial Day 4 Tr. at 87:19-21, 189:14-15.)

The Survey

Barry's counsel, Yassir, and Neal designed a survey in which they asked surgeons about six types of procedures that "mirror" those that could infringe Barry's patents. (Id. at

105:21-106:19.) Dr. Neal testified that the primary goal of this survey was “to calculate how many surgeons are using DuPuy’s equipment in a manner that . . . infringes Dr. Barry’s patents.” (Trial Day 3 Tr. at 54:24-55:3.) Neal offered no opinion on infringement; he relied entirely on Dr. Yassir’s infringement analysis. (Id. at 78:13-19.)

Based primarily on the survey results, Yassir opined that surgeons used the accused DePuy systems to infringe Barry’s patents. (Trial Day 4 Tr. at 90:24-91:4, 117:9-12, 123:4-8, 154:22-24, 162:1-4, 175:1-8, 180:17-23, 193:24-194:9.)

“Handle Means”

Yassir began his testimony respecting the “handle means” limitation by reciting my claim construction: “a part that is designed especially to be grasped by the hand.” (Id. at 122:19-20; see Doc. No. 84 at 15.) He then omitted “especially,” however, and proceeded to equate something “designed to be grasped by the hand” with something “that has to be done with your hand”—thus contradicting my construction. (Trial Day 4 Tr. at 131:12-132:3 (“[Yassir:] The [DePuy] Quick Stick derotation frame also is *designed to be grasped by the hand*. You clip it onto those tubes, and then you have to tighten those little nuts with your finger to get them to engage, and *so that has to be done with your hand*.” (emphasis added)); see also id. at 197:4-8 (“Q. [DePuy’s counsel:] The cross-linker is designed especially to be grasped by the hand? A. [Yassir:] Yes. There is no other way to put it into the patient, *so the surgeon has to grab it by their hand* to put it in.” (emphasis added)).)

Yassir explained that once a surgeon links derotator tubes together, “the upper portion becomes a handle means because each one of those . . . upper portions becomes a handle and the whole thing is a handle means.” (Id. at 133:9-16.) He thus further contradicted my construction by testifying (quite confusingly) that: (1) something is a “handle means” simply because it

“becomes a handle”; and (2) “the whole thing” is the “handle means.” (*Id.*; see also *id.* at 195:17-19 (“Q. [DePuy counsel:] And so everything is a handle means in Figure 1 [of the ’358 Patent], in your opinion? A. [Yassir:] Yeah.”), 204:9-25.)

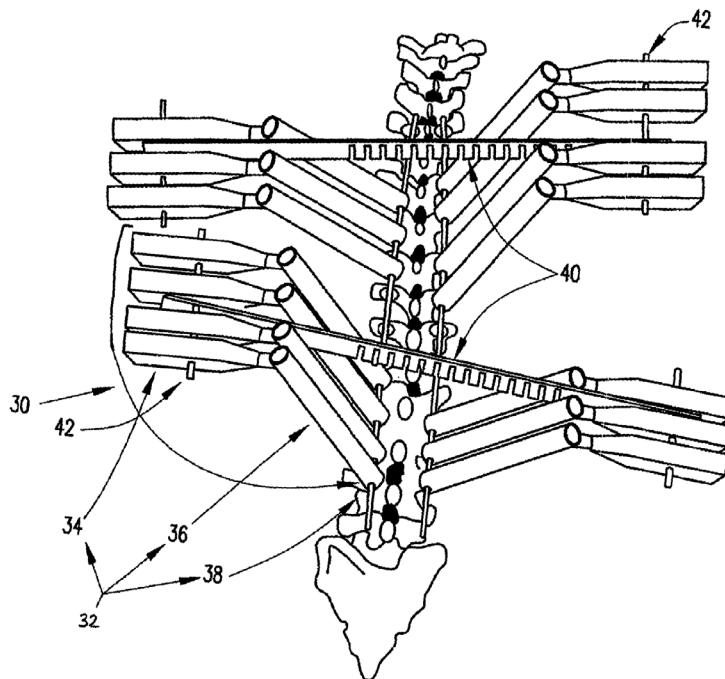


FIG. 1

Further, Yassir acknowledged that in conducting his infringement analysis *he* defined “handle means” as “parts that cannot be assembled without grasping them by the hand.” (*Id.* at 198:14-24.) Once again, that was not my construction.

II. PROCEDURAL HISTORY

Well before trial, DePuy moved to exclude: (1) opinions and testimony of Dr. Yassir that contradicted my Claim Construction Order; and (2) opinions and testimony of Dr. Neal, due to both his reliance on Yassir’s inadmissible opinions and (invoking Daubert) significant methodological flaws in Neal’s survey analysis. (See Doc. Nos. 84, 133, 135, 172.) Following my usual practice, I denied DePuy’s Motions without prejudice, noting that my pre-trial

evidentiary decisions were made in an evidentiary vacuum and so necessarily were tentative, and that I was prepared to revisit them during trial. (Doc. Nos. 185, 187.)

Trial by jury began on June 13, 2023. On the third day (June 15), when Dr. Barry tendered Dr. Neal as an expert in survey methodology, DePuy renewed its Daubert Motion, which I took under advisement. (Trial Day 3 Tr. at 49:21-51:11, 144:1-7; Trial Day 4 Tr. at 74:8-20; Trial Day 5 Tr. at 74:15-17, 149:16-23.) I asked the Parties to submit additional briefing on the Daubert issue. (Trial Day 4 Tr. at 222:11-223:17; see Doc. Nos. 235, 241.)

On the fifth day of trial (June 20), Barry rested, and DePuy orally moved for Judgment as a Matter of Law, which Barry opposed. (Trial Day 5 Tr. at 147:17-150:9.) I also took the oral JMOL Motion under advisement (without objection from Barry). (Id.) That evening, DePuy filed its written 50(a) Motion. Fed. R. Civ. P. 50(a); (Doc. No. 239.) I then asked Barry to submit a written response. (See Trial Day 6 Tr. at 6:15-8:21, 189:23-190:5.) Dr. Barry requested a response deadline of Friday, June 23, which I granted. (Id. at 8:16-21, 189:23-190:5.) After Barry filed that response, I ordered DePuy to reply by the morning of June 24. (Doc. Nos. 248, 249, 250, 251.) The matter was thus fully briefed.

DePuy moved for JMOL on the following grounds:

- (1) Invalidity of the asserted patent claims in the '358 patent under (a) the on-sale bar of 35 U.S.C. § 102(a)(1), or (b) the written-description and enablement requirements of 35 U.S.C. § 112(a);
- (2) No induced infringement;
- (3) No direct infringement;
- (4) No willful infringement;
- (5) Failure to prove the quantity of any alleged infringement; and

(6) Defendant Medical Device Business Services, Inc. has nothing to do with this case.

(Doc. No. 239 at 1-2.) The Parties agreed to “drop Medical Device Business Services, Inc. from the case as it has no impact on Dr. Barry’s inducement claims or direct infringement claims.” (Trial Day 7 Tr. at 143:3-9.) Accordingly, I deemed DePuy’s sixth JMOL ground as withdrawn. (Doc. No. 253.)

On June 26, I granted Defendants’ renewed Daubert Motion and excluded Dr. Neal’s survey and expert testimony. (Doc. No. 252.) I then excluded Dr. Yassir’s opinion and testimony respecting the “handle means” limitation, and granted DePuy’s Motion for JMOL. (Doc. No. 253.)

III. LEGAL STANDARDS

Rule 50(a)(1) provides—

If a party has been fully heard on an issue during a jury trial and the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue, the court may:

- (A) resolve the issue against the party; and
- (B) grant a motion for judgment as a matter of law against the party on a claim or defense that, under the controlling law, can be maintained or defeated only with a favorable finding on that issue.

Fed. R. Civ. P. 50(a)(1). The Rule allows a party to challenge the sufficiency of the evidence before submission of the case to the jury. Medisim Ltd. v. BestMed, LLC, 758 F.3d 1352, 1355 (Fed. Cir. 2014); Fed. R. Civ. P. 50(a).

I apply Third Circuit law in deciding whether to grant or deny a motion for JMOL. See ClearValue, Inc. v. Pearl River Polymers, Inc., 668 F.3d 1340, 1343 (Fed. Cir. 2012). In the Third Circuit, when deciding whether to grant JMOL, “[t]he question is not whether there is literally no evidence supporting the party against whom the motion is directed but whether there is evidence upon which the jury could properly find a verdict for that party.” Becton, Dickinson & Co. v.

Tyco Healthcare Grp., LP, 616 F.3d 1249, 1253 (Fed. Cir. 2010) (quoting Lightning Lube, Inc. v. Witco Corp., 4 F.3d 1153, 1166 (3d Cir. 1993)). “As a general matter, a party has been ‘fully heard’ for purposes of Rule 50(a) when the party has submitted all of its evidence on the relevant claim or issue.” Teneyck v. Omni Shoreham Hotel, 365 F.3d 1139, 1149 (D.C. Cir. 2004) (“[A] defendant may move for judgment as a matter of law at the close of the plaintiff’s evidence.”); see also Marinelli v. City of Erie, 216 F.3d 354, 364 n.7 (3d Cir. 2000) (because the plaintiff did not offer doctor’s deposition testimony as a part of his case-in-chief, he was not entitled to use that testimony to oppose JMOL).

In granting judgment as a matter of law after the plaintiff rests, “the plaintiff’s facts must be accepted as established and all reasonable inferences from those facts must be drawn in the plaintiff’s favor.” Allied Colloids Inc. v. Am. Cyanamid Co., 64 F.3d 1570, 1572 (Fed. Cir. 1995). The “verdict may be directed after the plaintiff’s case is presented, when it is clear that completion of the trial is unnecessary in that the only sustainable verdict could be in favor of the defendant.” Nobelpharma AB v. Implant Innovations, Inc., 141 F.3d 1059, 1064 (Fed. Cir. 1998) (quoting Allied Colloids, 64 F.3d at 1573).

IV. DISCUSSION

A. Absent Dr. Yassir’s “Handle Means” Testimony, There Could Be No Finding of Infringement of the ’358 or ’121 Patent

Expert testimony “may not be used to vary or contradict the claim language.” Genuine Enabling Tech. LLC v. Nintendo Co., 29 F.4th 1365, 1373 (Fed. Cir. 2022); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996); Ravo v. Covidien LP, 55 F. Supp. 3d 766, 769 (W.D. Pa. 2014). Accordingly, “[n]o party may contradict the court’s construction to a jury.” Exergen, 575 F.3d at 1321. “As expert testimony inconsistent with the Court’s claim construction is unreliable and unhelpful to the finder of fact,” it should be excluded under Daubert.

EMC Corp., 154 F. Supp. 3d at 109; see also Liquid Dynamics Corp. v. Vaughan Co., 449 F.3d 1209, 1224 n.2 (Fed. Cir. 2006); Viva Healthcare Packaging USA Inc. v. CTL Packaging USA Inc., 197 F. Supp. 3d 837, 852 (W.D.N.C. 2016) (“District courts routinely exclude expert opinions that are inconsistent with claim construction.”).

1. My Construction of “Handle Means”

Once again, I construed the term “handle means” as “a part that is designed especially to be grasped by the hand.” (Doc. No. 84 at 15; see also Doc. No. 171-3.) Once again, that was the construction urged by Dr. Barry. (See, e.g., Doc. No. 84 at 15.)

At the Markman hearing, Barry’s counsel explained that the “handle means is made up of a handle and a linking member.” (Markman Hr’g Tr. at 81:20-21, 82:7-13, 83:6-8, 83:18-19, 84:25-85:2, 85:22-24.) In my Claim Construction Order, I noted that “handle means” encompasses a handle within it, and that the shaft and handle are not required to be separate objects. (Doc. No. 84 at 13.) I also concluded that “handle means” encompasses both: (1) a single handle from which multiple shafts extend; and (2) multiple handles (each attached to individual shafts) linked together, contemplated by the preferred embodiment shown in Figure 1. (Id. at 14-15.)

2. Dr. Yassir’s Testimony Regarding “Handle Means” Was Inadmissible

Although Yassir paid lip service to testifying in accordance with my Claim Construction Order, in fact, he contradicted it. As I have discussed, Yassir improperly based his opinion and trial testimony respecting direct infringement of “handle means” on *his* construction: “parts that cannot be assembled without grasping them by the hand.” (Trial Day 4 Tr. at 198:14-24.) I did not construe—and Dr. Barry did not ask me to construe—“handle means” as a part that “can” or “must” be grasped by the hand. The “handle means,” which includes a handle, is a part *especially designed* to be grasped by the hand.

Yassir repeatedly varied from and contradicted my Claim Construction Order during his trial testimony. (See Trial Day 4 Tr. at 131:12-132:3, 133:9-16, 195:17-19, 197:4-8, 204:9-25.) For example, he testified that *everything* in Figure 1 is a handle means—even the cross-linking member. (Trial Day 4 Tr. at 195:17-19, 197:4-8). There are several problems with this testimony: (1) his rationale was “the surgeon has to grab [the cross-linking member] by their hand”—thus contradicting my construction; (2) Yassir did not explain how a cross-linking member encompasses a handle, as required for a “handle means”; and (3) Yassir did not explain which *part* of Figure 1 has a *special design* for grasping by the hand. (*Id.* at 197:4-8.) Moreover, Yassir had already testified that the cross-linking member *connects the first handle means to the second handle means*. (*Id.* at 169:9-11, 178:13-15.) In these circumstances, I excluded Yassir’s contradictory, unhelpful, and unreliable testimony respecting “handle means.” (Doc. No. 253); see, e.g., Barry v. Medtronic, Inc., 230 F. Supp. 3d 630, 643 n.10 (E.D. Tex. 2017) (opinion of the defendant’s expert excluded at trial because it conflicted with the court’s claim construction), aff’d, 914 F.3d 1310 (Fed. Cir. 2019).

3. Expert Testimony Was Required

In some patent cases, expert testimony is not necessary because the technology will be “easily understandable without the need for expert explanatory testimony.” Centricut, LLC v. Esab Group, Inc., 390 F.3d 1361, 1369 (Fed. Cir. 2004) (quoting Union Carbide Corp. v. Am. Can Co., 724 F.2d 1567, 1573 (Fed. Cir. 1984)). This is not such a case.

Expert testimony is typically necessary in cases involving complex technology, such as methods and systems for correcting spinal deformity by derotating the spine. See *id.*; see also Aspex Eyewear, Inc. v. Concepts in Optics, Inc., 111 F. App’x 582, 583, 588 (Fed. Cir. 2004) (case involving patent directed to magnetically attachable lens for eyeglasses was “not one of those

rare cases where the invention is so simple that expert testimony is not required”); Automated Irrigation Controls, LLC v. Watt Stopper, Inc., 407 F. Supp. 3d 274, 294 (S.D.N.Y. 2019) (a multi-functional medical device is beyond a layperson’s understanding without expert testimony); Manuli Stretch USA, Inc. v. Pinnacle Films, Inc., 749 F. Supp. 2d 764, 768, 771 (E.D. Tenn. 2010) (expert testimony required because “multi-layer stretch film” used for commercial packaging involved complex technology); cf. Perfect Web Techs., Inc. v. InfoUSA, Inc., 587 F.3d 1324, 1330 (Fed. Cir. 2009) (no expert required where ordinary skill in the art “required only a high school education and limited marketing and computer experience”). Moreover, expert testimony is more reliable than the inventor’s testimony. Lincoln Nat’l Life Ins. Co. v. Transamerica Fin. Life Ins. Co., No. 4-396 TS, 2007 WL 710119, at *7 (N.D. Ind. Mar. 6, 2007).

Dr. Barry and DePuy both offered expert witnesses on infringement. (See Doc. Nos. 215, 216.) They also agreed that a person with “ordinary skill in the art”—needed to construe Barry’s patents—had to have: (1) a medical degree or an undergraduate degree in Mechanical or Biomedical Engineering; and (2) at least two to three years of experience with implants and methods and systems for scoliosis or spinal deformity correction. (Doc. No. 171-4 at 2); Sundance, 550 F.3d at 1361 n.3.

Absent Dr. Yassir’s testimony, the jury heard only insufficient lay evidence during Barry’s case-in-chief regarding the “handle means” claim limitation.

4. Unreliable Lay Testimony on “Handle Means”

As I have discussed, Barry provided shifting definitions of “handle means” during his non-expert trial testimony. (See Doc. No. 248 at 26.) He first said that the derotator “shafts are linked to the handle means”; then he testified that the *entire construct* is the handle means. (Trial Day 2 Tr. at 146:16-147:2.) Having earlier testified that an example of a handle is “the composite

plastic area,” Barry failed to explain how *any part* of the “entire construct” was designed especially to be grasped by the hand. (Trial Day 1 Tr. at 144:14-17.) Once again, just because “[t]he entire derotator” can be or “is grasped” does not mean it is a part *especially designed* to be grasped. (Trial Day 2 Tr. at 147:15-16.) Moreover, where a surgeon *might want* to place her hands has nothing to do with my construction of “handle means.” (*Id.* at 148:1-3 (Barry: “I was grabbing the top and using the entire top as the handle means. I was not grabbing the handles . . .”).) Barry did not apply my claim construction; instead he offered inconsistent testimony. This kind of lay evidence is legally insufficient to support a finding that DePuy’s accused products met the “handle means” limitation. See Riles, 298 F.3d at 1308; see also Lincoln Nat’l, 2007 WL 710119, at *7 (“[B]ecause of the inherent bias, the court should be careful to assign too much weight to the inventor’s testimony.”).

Barry also sought to rely on a passing comment by Dr. O’Brien (another non-expert witness) that linking derotators along the spine “gives you a nice handle.” (See Doc. No. 248 at 27 (citing PTX624 at 41:14-18; 42:09-16); Doc. No. 215 at 19.) Yet, Dr. O’Brien’s lay testimony had no bearing on the existence of a part *especially designed* to be grasped by the hand. Once again, I did not construe “handle means” as a part that “can” be grasped by the hand.

In sum, without Dr. Yassir’s testimony, Dr. Barry failed to prove direct infringement of claims 4 and 5 of the ’358 Patent and claim 2 of the ’121 Patent, all of which require “handle means.” See Mas-Hamilton, 156 F.3d at 1211. I thus granted JMOL of non-infringement with respect to the ’358 Patent and the ’121 Patent. See Elkay Mfg., 192 F.3d at 980.

B. Absent Dr. Neal’s Survey, There Could Be No Finding of Infringement of the ’787 Patent

Because claim 6 of the ’787 Patent does not include “handle means,” the exclusion of Dr. Yassir’s testimony does not bear on direct infringement of this claim. See U.S. Patent No.

9,668,787, col 8. As I have discussed, claim 6 requires linking together levers in both a head-to-tail direction and an across-the-spine direction. U.S. Patent No. 9,668,787, col 8; (Trial Day 4 Tr. at 163:18-23.)

Yassir testified that a “Type 3 assembly” and a “Type 4 assembly” from the Neal survey would infringe claim 6 of the ’787 Patent. (Trial Day 4 Tr. at 106:12-19, 158:10-19.) As explained in my earlier Memorandum, however, I excluded Dr. Neal’s survey under Daubert. Barry provided no other evidence that surgeons perform the cross-linking step of this claim. (See Doc. No. 252.)

Remarkably, Plaintiff’s other evidence shows *non-infringement* of claim 6 of the ’787 Patent. Pfefferkorn never saw a construct “where the instruments were linked across the spine.” (Trial Day 2 Tr. at 185:11-14.) Dr. Sharma testified that he does not use linked *en bloc* derotation. (Trial Day 3 Tr. at 22:7-9.) Dr. O’Brien also testified that he has *not* performed surgery in which he: (1) linked at least two Expedium derotation tubes on the right side of the spine; (2) linked at least two Expedium derotation tubes on the left side of the spine; (3) cross-linked those two sets of tubes; and (4) performed derotation. (PTX624 at 42:17-43:01.)

Because Barry thus failed to prove direct infringement of claim 6 of the ’787 Patent, I granted JMOL. See Mas-Hamilton, 156 F.3d at 1211; Elkay Mfg., 192 F.3d at 980.

C. Judgment as a Matter of Law on Direct Infringement

Once again, absent proof of direct infringement, Dr. Barry could not show indirect infringement. See, e.g., Dynacore Holdings Corp. v. U.S. Philips Corp., 363 F.3d 1263, 1272 (Fed. Cir. 2004) (indirect infringement “can only arise in the presence of direct infringement”). As there was not a sufficient evidentiary basis for a reasonable jury to find for Barry on direct infringement, I granted Defendants’ Motion for Judgment as a Matter of Law on Barry’s indirect infringement claims.

V. CONCLUSION

Without Dr. Neal's survey to prove direct infringement, and with Dr. Yassir's contradictions of my Claim Construction Order, there was insufficient "evidence upon which the jury could properly find" for Barry. Becton, Dickinson & Co., 616 F.3d at 1253. Accordingly, I granted DePuy's Motion for Judgment as a Matter of Law.

Although DePuy's other grounds for JMOL appear to be quite substantial, in light of my determination that Plaintiff did not make out direct infringement, I will not discuss them further.

BY THE COURT:

/s/ Paul S. Diamond

Paul S. Diamond, J.