

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

EATON CORPORATION)
)
 Plaintiff,)
)
 v.) Civil Action No. 00-751-SLR
)
 PARKER-HANNIFIN CORPORATION,)
)
 Defendant.)

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OPINION

Dated: November 18, 2003
Wilmington, Delaware

ROBINSON, Chief Judge

I. INTRODUCTION

On August 15, 2000, plaintiff Eaton Corporation ("Eaton") filed this action against defendant Parker-Hannifin Corporation ("Parker") alleging willful infringement of claims 7 through 11 of U.S. Patent No. 5,226,682 (the "'682 patent"). (D.I. 1) Parker answered the complaint on January 22, 2001, asserting non-infringement and invalidity of the '682 patent. (D.I. 7) On August 7, 2001, Eaton filed a first amended complaint to add allegations of willful literal infringement of claims 1 through 3, 5 through 7, 27 through 29, 31 through 33, and 43 through 45 of U.S. Patent No. 5,553,895 (the "'895 patent") and claims 1 through 19 of U.S. Patent No. 5,570,910 (the "'910 patent"). (D.I. 16) Parker answered the first amended complaint on August 24, 2001 and again asserted non-infringement and invalidity with respect to both the '895 and '910 patents. (D.I. 18) On April 15, 2002, Eaton filed a second amended complaint to further add allegations of willful literal infringement of claim 8 and claims 17 through 20 of the '895 patent. (D.I. 46) Parker answered the second amended complaint on April 18, 2002 and yet again asserted non-infringement and invalidity arguments of the '895 patent. (D.I. 47) The court has jurisdiction over the parties and subject matter of this action under the provisions of 28 U.S.C. § 1331 and § 1338(a). In February 2003, the parties tried their

claims to a jury. Currently before the court are the parties' post-trial motions.

II. BACKGROUND

A. The Technology

The patents at issue in this suit generally relate to coupling assemblies which permit the flow of fluid therethrough without leakage. These assemblies include two parts: 1) a male member; and 2) a female member. To connect the members, the male member is inserted and locked into the female member. These couplings may connect pipes, hoses, or other tube-shaped objects and are often used in hydraulic, pneumatic, or refrigerant systems. Additionally, some embodiments are utilized in high pressure, extreme temperature, high vibration, or contamination environments. Both the automotive and aerospace industries regularly employ this technology.

B. The Patents in Suit

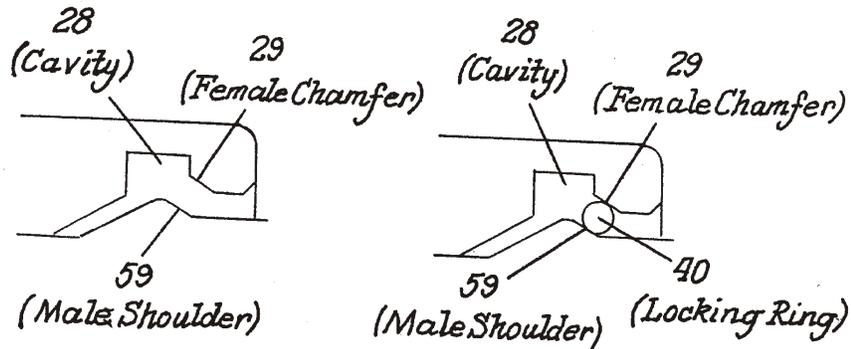
Eaton is an Ohio corporation and the owner by assignment of the '682, '895 and '910 patents. Eaton acquired these patents when it purchased the Aeroquip Corporation ("Aeroquip"). (D.I. 185 at 62) Utilizing the technologies of these patents, Eaton manufactures and sells releasable, push-in coupling assemblies suitable for use in extreme commercial environments. In particular, Eaton produces and markets a line of coupling assemblies called the Type I, Type II, and Type III Snap To

Connect ("STC") couplings based on the inventions of the '682, '895 and '910 patents, respectively.

1. The '682 Patent

The '682 patent, entitled "Coupling Assembly," is directed to a coupling assembly utilizing an annular locking ring for connecting two members together. ('682 patent, col. 1, ll. 17-19) The named inventors are William C. Marrison, Edward C. Lewis, Christopher E. Schadewald, and David S. Densel. This patent describes three separate embodiments and issued on July 13, 1993 with 16 claims. Claim 8 is presently at issue. Claim 8 covers the second embodiment and depends from claim 7. Claim 7 relates to a coupling assembly having an annular locking means that locks a first member (the "male member") to a second member (the "female member"). The male member has a ridge on its exterior surface, consisting of a ramp, an apex, and a shoulder. The female member has a cavity on its interior surface. A chamfer is located adjacent to the cavity. The coupling assembly of claim 7 also contains a release sleeve movably mounted on the exterior surface of the male member to enable disengagement after the male and female members are coupled and locked with a generic locking means. The subject matter of claim 7 is shown in Figures 7 through 9 of the '682 patent. The various parts of the coupling are identified immediately below by reference numbers. The figure on the right shows essentially Figure 7 of the '682

patent with the numbers and several parts removed. The figure on the left is the same as the figure on the right with the locking ring deleted for clarity.



(D.I. 73 at 4)

Claim 7 of the '682 patent recites as follows:

7. A coupling assembly for connecting two members, comprising, in combination:
 - an annular locking means;
 - a first member having an exterior surface, said exterior surface having a ridge consisting of a ramp, an apex, and a shoulder;
 - a second member having a portion for receiving said first member, said second member having an inner surface, said inner surface having a cavity for receiving said locking means, said inner surface further including a chamfer adjacent to said cavity;
 - a release sleeve movably mounted on said exterior surface of said first member, said sleeve having an edge;whereby when said first member is inserted in said second member, said locking means travels up said ramp, over said apex and against said shoulder to engage said

ridge, said cavity and said chamfer on said inner surface to secure said first member to said second member, said members are released when said edge of said release sleeve forces said locking means over said apex of said ridge.

('682 patent, col. 5, ll. 14-36)

Claim 8 narrows the locking means of claim 7 to a ring having two spaced apart ends. Claim 8 reads:

8. The coupling assembly of claim 7, wherein said annular locking means is a ring having two spaced apart ends.

('682 patent, col. 5, ll. 37-39)

The court construed the disputed terms of claim 8 to ascertain both their meaning and scope. (D.I. 114) The most significant constructions for the purposes of resolving the parties' post-trial motions are as follows:

- (1) The term "adjacent to" in the phrase "a chamfer adjacent to said cavity" shall be given its ordinary dictionary meaning consistent with the specification and the claims. "A chamfer adjacent to said cavity" shall, in turn, mean "a chamfer close to, next to, or adjoining said cavity."
- (2) The term "mounted" as used in the phrase "release sleeve movably mounted on said exterior surface of said first member" shall be given its ordinary meaning consistent with the specification and claims. "Release sleeve movably mounted on said exterior surface of said first member" shall mean "release sleeve movably and securely affixed to said exterior surface of said first member."
- (3) The term "engage" contained in the phrase "locking means travels . . . to engage said

ridge, said cavity, and said chamfer" shall be given its ordinary dictionary means "to interlock or cause to interlock."

- (4) The term "cavity" shall be construed with its ordinary meaning, no further construction is necessary.

(D.I. 114)

2. The '895 Patent

The '895 patent, entitled "Coupling Assembly," is directed to a coupling assembly utilizing a split metal locking ring for connecting two members together. ('895 patent, col. 1, ll. 15-23) The named inventors are Terry L. Karl, Gregory J. Gloden, Phillip C. Van Riper, John P. Zainea, and John T. Myers. This patent issued on September 10, 1996 with 45 claims. Claims 5, 6, 19, and 20 are presently at issue.

Claims 5 and 6 are dependent on claim 1. Claim 1 relates to the general structure of a coupling assembly similar to the one disclosed in the '682 patent, but includes a converging angles limitation. Claim 5 narrows the distance that the cylindrical surface must extend. Claim 6 adds specific ranges for the converging angles.

Claim 1 of the '895 patent reads:

1. A coupling assembly for connecting two members comprising in combination:
 - (a) a split locking ring having a first end and a second end, said first and second ends being aligned to permit abutting engagement, said ring being expandable

- to define a gap between said first and second ends;
- (b) a first member extending along an axis from a forward end toward a rearward position and having an exterior surface, a rib extending outwardly from said exterior surface, said rib including
 - (i) a ramp tapering outwardly in a direction away from said forward end and away from said axis at an angle in the range of 10° to 25° relative to said axis,
 - (ii) a cylindrical surface parallel to said axis extending rearwardly from said ramp a distance of at least 0.010 inch; and
 - (iii) a shoulder tapering away from said forward end and inwardly toward said axis, said cylindrical surface connecting said ramp and said shoulder; and
 - (c) a second member extending from a receiving end to a remote end including
 - (i) an inwardly facing cylindrical wall sized to received [sic] said first member including said rib and extending axially from a position closely adjacent said receiving end toward said remote end, and
 - (ii) an inwardly facing annular groove extending outwardly from said inwardly facing cylindrical wall, said split locking ring being receivable in said annular groove, said annular groove having surfaces extending outwardly from said inwardly facing cylindrical wall including a first surface defining one portion of said groove and a second surface positioned between said first surface and said receiving end, said second surface

including a chamfer tapering inwardly toward said axis in a direction toward said receiving end and being disposed at an angle relative to said axis which is smaller than the angle between said shoulder and said axis;

said first member and said second member being sized such that upon insertion of said first member into said second member, said split locking ring travels up said ramp to increase the size of said gap, over said rib cylindrical surface and contracts to reduce the size of said gap and to engage said shoulder becoming trapped between said shoulder and said chamfer.

('895 patent, col. 8, ll. 30-67; col. 9, ll. 1-9)

Claims 5 and 6 recite as follows:

5. The coupling assembly according to claim 1 wherein said cylindrical surface extends rearwardly from said ramp a distance of at least 0.030 inch.
6. The coupling assembly according to claim 1 wherein said shoulder tapers at an angle in the range of 35° to 55° relative to said axis and said chamfer tapers at an angle in the range of 20° to 40° relative to said axis.

('895 patent, col. 9, ll. 28-34)

Claims 19 and 20 depend on claim 17, and claim 17 depends, in turn, on claim 11. Claim 11 recites a coupling assembly also similar to the one disclosed in the '682 patent. It, however, requires the release sleeve to be movably mounted on the exterior surface of the male member.

Claims 17, 19, and 20 relate to various release sleeve details. These claims read:

11. A coupling assembly for connecting two members comprising in combination:
 - (a) a split locking ring having a first end and a second end, said first and second ends being aligned to permit abutting engagement and defining a gap;
 - (b) a first member extending along an axis from a forward end toward a rearward portion and having an exterior surface, a rib extending outwardly from said exterior surface, said rib including
 - (i) a ramp tapering outwardly in a direction away from said forward end and away from said axis at an angle in the range of 10° to 25° relative to said axis,
 - (ii) a cylindrical surface parallel to said axis extending rearwardly from said ramp a distance of at least 0.010 inch; and
 - (iii) a shoulder tapering away from said forward end and inwardly toward said axis, said cylindrical surface connecting said ramp and said shoulder;
 - (c) a second member having a receiving end and a leading portion extending therefrom, said leading portion having
 - (i) an inwardly facing cylindrical wall sized to receive said first member including said rib and
 - (ii) an inwardly facing annular groove, said annular groove including first and second spaced apart surfaces extending outwardly from said inwardly facing cylindrical wall, said second surface being positioned between said receiving end and said first

surface and including a chamfer tapering toward said axis and said receiving end at an angle relative to said axis smaller than the angle between said shoulder and said axis, said split locking ring being receivable in said annular groove; and

- (d) a release sleeve movably mounted on said exterior surface of said first member for movement from a rearward position to a forward position, said sleeve having an edge facing toward said shoulder and having a leading portion extending from said edge, said leading portion having at least one slot;

said first member end [sic] said second member being sized such that upon insertion of said first member into said second member, said split locking ring travels up said ramp to increase the size of said gap, over said rib cylindrical surface and contracts to reduce the size of said gap and to engage said shoulder and said chamfer and said first and second members are released from each other upon movement of said release sleeve from a rearward position to a forward position forcing said split ring up said shoulder into said annular groove and over said rib cylindrical surface.

- 17. The coupling assembly according to claim 11 wherein said release sleeve includes an outwardly extending flange and an annular wall extending therefrom spaced radially outwardly of said leading portion, said annular wall including an interior surface sized to receive said second member in contacting engagement.
- 18. The coupling assembly according to claim 17 wherein said release sleeve further includes a sealing fin extending inwardly from said flange in sealing engagement with said first member.

19. The coupling assembly according to claim 17 wherein said annular wall is resilient and has a bead extending inwardly from said interior surface and said second member leading portion has an exterior surface and an annular groove formed in said exterior surface, said annular groove being position[ed] [sic] to receive said bead upon engagement of said first member to said second member.
20. The coupling assembly according to claim 17 wherein said first member has a radially extending collar in the vicinity of said release sleeve outwardly extending flange, said collar having a radial extent at least as great as the radial extent of said flange.

('895 patent, col. 9 , ll. 61-67; col. 10, ll. 1-43; col. 11, ll. 8-29)

The court construed the disputed terms of these asserted claims to ascertain both their meaning and scope. (D.I. 114)
The most significant terms pertinent to the parties' post-trial motions were defined as follows:

- (1) The term "mounted" as used in the phrase "release sleeve movably mounted on said exterior surface of said first member" shall be given its ordinary meaning consistent with the specification and claims. "Release sleeve movably mounted on said exterior surface of said first member" shall mean "release sleeve movably and securely affixed to said exterior surface of said first member."
- (2) The term "engage" shall be given its ordinary dictionary meaning "to interlock or cause to interlock."
- (3) The term "collar" shall be construed with its ordinary dictionary meaning, therefore, "collar" shall mean "any of various ringlike

devices used to limit, guide, or secure a machine part.

(D.I. 114)

3. The '910 Patent

The '910 patent, entitled "Coupling Assembly," is directed to a coupling assembly utilizing a locking ring retaining groove for connecting two members together. ('910 patent, col. 1, ll. 5-10) The '910 patent issued with John L. Highlen as the sole inventor on November 5, 1996. It contains 19 claims. Currently, claim 13 is in issue. It is an independent claim and includes a split locking ring to lock the male member and female member together. The male member includes a ramp, cylindrical surface, and shoulder on its exterior surface. The female member has a locking ring retaining groove adjoining a locking ring receiving groove on its inner surface. The coupling assembly of claim 13 also includes a release sleeve movably mounted on the male member to permit disengagement.

Claim 13 reads:

13. A coupling assembly for connecting two members comprising:
 - a split locking ring having a first end and a second end, said first and second ends being aligned to permit abutting engagement;
 - a first member extending along an axis from a forward end toward a rearward portion and having an exterior surface;
 - a rib extending outwardly from said exterior surface of said first member, said rib including a ramp tapering in a direction away from said forward end and away from said axis, said rib further including a

cylindrical surface substantially parallel to said axis extending rearwardly from said ramp, said rib further including a shoulder tapering away from said forward end and inwardly toward said axis;

- a second member having a leading end and a leading portion extending therefrom for receiving said first member, said leading portion having an inner surface;
- a locking ring receiving groove defined by said inner surface of said second member;
- a locking ring retaining groove defined by said inner surface of said second member, said retaining groove adjoining said receiving groove;
- a release sleeve movably mounted adjacent said exterior surface of said first member for movement from a rearward position to a forward position, said sleeve having a leading edge facing toward said shoulder;

whereby upon insertion of said first member into said second member, said split locking ring travels up said ramp into said locking ring receiving groove, over said cylindrical surface and contracts to engage said shoulder and said locking ring retaining groove, said first and second members being released upon movement of said release sleeve from a rearward position to a forward position to engage said leading edge with said split locking ring to urge said locking ring up said shoulder and over said cylindrical surface.

('910 patent, col. 6, ll. 48-67; col. 7, ll. 1-19)

The court construed the disputed terms of asserted claim 8 to ascertain both their meaning and scope. (D.I. 114) The most significant constructions for the purposes of resolving the parties' post-trial motions are as follows:

- (1) The term "adjoining" in the phrase "said retaining groove adjoining said receiving groove" shall be given its ordinary dictionary meaning consistent with the specification and the claims. "Adjoin"

shall, therefore, mean "to be next to; be contiguous to."

- (2) The term "mounted" as used in the phrase "release sleeve movably mounted on said exterior surface of said first member" shall be given its ordinary meaning consistent with the specification and claims. "Release sleeve movably mounted on said exterior surface of said first member" shall mean "release sleeve movably and securely affixed to said exterior surface of said first member."
- (3) The term "engage" contained in the phrase "locking means travels . . . to engage said ridge, said cavity, and said chamfer" shall be given its ordinary dictionary means "to interlock or cause to interlock."

(D.I. 114)

C. The Accused Products

Parker is an Ohio corporation that manufactures and sells a diversified range of motion and control technologies and systems including fasteners and coupling assemblies. The accused infringing devices are a line of coupling assemblies called the Generation I, Generation II, and Generation III Perma-Push couplings.

D. Procedural History

In November 2002, the parties filed multiple motions for partial summary judgment. The court heard oral argument regarding these motions on December 19, 2002 and issued a memorandum opinion and order on January 15, 2003. (D.I. 123, 124) In pertinent part, the court granted Parker's motion for partial summary judgment that claims 7 through 11 of the '682 patent are

invalid and denied Eaton's motion for partial summary judgment of literal infringement of the patents in suit. (D.I. 124)

During oral argument, the court also heard the parties' positions with respect to the disputed claim language of the '682, '895, and '910 patents in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996). The court issued a claim construction memorandum order on January 10, 2003. (D.I. 114)

E. The Trial

A jury trial commenced on February 3, 2003 and continued for ten days thereafter, concluding on February 19, 2003. Before submitting the case to the jury, the court issued a directed verdict in open court in favor of Eaton and against Parker on infringement of claims 5 and 6 of the '895 patent through the manufacture and sale of its Generation II Perma-Push product and infringement of claims 5, 6, and 19 of the '895 patent through the manufacture and sale of its Generation III Perma-Push product. (D.I. 194) The jury, consequently, was asked only to decide whether the infringement of these claims was willful. The jury did not, however, respond to this issue. (D.I. 181)

Concerning the remaining causes of action, the jury found that Parker's Generation I, II, and III Perma Push products do not infringe claim 8 of the '682 patent; that Parker's Generation III Perma Push product do not infringe claim 20 of the '895

patent; and that Parker's Generation I, II, and III Perma Push products do not infringe claim 13 of the '910 patent. (D.I. 181) The jury also found that claim 8 of the '682 patent, claims 5, 6, 19, and 20 of the '895 patent, and claim 13 of the '910 patent are not invalid as obvious over the prior art. (D.I. 181) Additionally, the jury determined that the '682 patent is not invalid for failure to disclose the best mode contemplated by the inventor at the time of filing. (D.I. 181) Lastly, the jury did not find the '895 patent invalid due to the omission of a co-inventor or the '910 patent invalid for the improper inclusion of a co-inventor. (D.I. 181)

III. STANDARDS OF REVIEW

A. Motion for Judgment as a Matter of Law

To prevail on a renewed motion for judgment as a matter of law following a jury trial, the moving party "must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusions implied [by] the jury's verdict cannot in law be supported by those findings.'" Pannu v. Iolab Corp., 155 F.3d 1344, 1348 (Fed. Cir. 1998) (quoting Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984)). "Substantial' evidence is such relevant evidence from the record taken as a whole as might be acceptable by a reasonable mind as adequate to support the finding under review." Perkin-Elmer Corp., 732 F.2d

at 893. In assessing the sufficiency of the evidence, the court must give the non-moving party, "as [the] verdict winner, the benefit of all logical inferences that could be drawn from the evidence presented, resolve all conflicts in the evidence in his favor, and in general, view the record in the light most favorable to him." Williamson v. Consol. Rail Corp., 926 F.2d 1344, 1348 (3d Cir. 1991); Perkin-Elmer Corp., 732 F.2d at 893. The court may not determine the credibility of the witnesses nor "substitute its choice for that of the jury between conflicting elements of the evidence." Id. In summary, the court must determine whether the evidence reasonably supports the jury's verdict. See Dawn Equip. Co. v. Kentucky Farms Inc., 140 F.3d 1009, 1014 (Fed. Cir. 1998).

B. Motion for a New Trial

The decision to grant or deny a new trial is within the sound discretion of the trial court and, unlike the standard for determining judgment as a matter of law, the court need not view the evidence in the light most favorable to the verdict winner. See Allied Chem. Corp. v. Darflon, Inc., 449 U.S. 33, 36 (1980). Federal Rule of Civil Procedure 59(a) provides, in pertinent part:

A new trial may be granted to all or any of the parties and on all or part of the issues in an action in which there has been a trial by jury, for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States.

Fed. R. Civ. P. 59(a). New trials are commonly granted in the following situations: (1) where the jury's verdict is against the clear weight of the evidence, and a new trial must be granted to prevent a miscarriage of justice; (2) where newly-discovered evidence surfaces that would likely alter the outcome of the trial; (3) where improper conduct by an attorney or the court unfairly influenced the verdict; or (4) where the jury's verdict was facially inconsistent. See Zarow-Smith v. N.J. Transit Rail Operations, 953 F. Supp. 581, 584 (D. N.J. 1997) (citations omitted). The court, however, must proceed cautiously and not substitute its own judgment of the facts and assessment of the witnesses' credibility for the jury's independent evaluation.

IV. DISCUSSION

A. Eaton's Motion to Strike the Trial Testimony of Parker's Expert Mr. James Shepherd

Eaton moves to strike in its entirety the expert testimony of Mr. James Shepherd, Parker's technical expert, pursuant to Rule 50(b) of the Federal Rules of Civil Procedure. (D.I. 205) Expert opinion may be used to provide conclusions or inferences from facts that a lay person is unqualified to make. To introduce expert testimony before a court, the Federal Rules of Evidence define three requirements that must be satisfied.

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience,

training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702. Based upon this rule, there are no particular requirements for the qualification of an expert. The rules do require, however, that the trial judge be persuaded that the purported expert has knowledge or training in an area of specialized knowledge that is beyond the abilities of an ordinary juror. Additionally, trial judges must act as gatekeepers to exclude unreliable expert testimony whether on scientific or non-scientific matters. See Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 589 (1993). Consistent with Federal Rule of Evidence 104(a), the proponent of the expert testimony does not have to prove to the judge that the proffered expert testimony is correct, but the proponent must prove by a preponderance of the evidence that the testimony is reliable. See In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 744 (3d Cir. 1994).

Eaton argues that Mr. Shepherd was not qualified to testify as an expert concerning either quick connect hydraulic couplings or infringement. Eaton also claims that Mr. Shepherd offered testimony contrary to the court's claim construction. Specifically, Eaton contends that Mr. Shepherd applied his own definitions for the terms "engage," "adjacent," "movably mounted," and "cavity." Eaton further alleges that Mr. Shepherd

rendered his infringement opinions based on comparisons of drawings from the asserted patents with drawings of the accused infringing products rather than on comparisons of the claim language of the asserted patents with the accused infringing products.

Following a complete review of Mr. Shepherd's entire testimony, the court does not find that Mr. Shepherd was unqualified as an expert. Mr. Shepherd holds a bachelor of science degree in mechanical engineering and was employed at Gates Rubber Company for thirty-four years in various engineering capacities, including chief engineer. His specialized technical education coupled with his lengthy practical experience as an applications engineer at Gates certainly suggests that his understanding of hydraulic couplings far exceeds the knowledge of an ordinary juror. Moreover, given his familiarity with such couplings both from an academic standpoint and from on-the-job exposure, the court has no basis to doubt the reliability of his testimony.

Considering Mr. Shepherd's compliance with the court's claim construction, the court disagrees with Eaton's assertion that Mr. Shepherd applied improper definitions. The court notes that Mr. Shepherd, on occasion, varied his word choices from those precisely announced in the claim construction order. See D.I. 191 at 1644. Nevertheless, the court believes that Mr. Shepherd

sought to testify in compliance with the spirit of the claim construction and did not intentionally substitute his definitions for those of the court. See D.I. 192 at 1809-10.

As to the process that Mr. Shepherd used in reaching his infringement opinions, the court again disagrees with Eaton's assertions. Mr. Shepherd testified that he studied the claims and compared the claim language to physical samples of the alleged infringing products. See D.I. 191 at 1633. Mr. Shepherd did not say that he studied the figures shown in the patents and compared them with physical samples of the alleged infringing products. As well, the court appreciates that figures form part of the specification and may be used to exemplify the metes and bounds of a claimed invention. The court finds that it was acceptable for Mr. Shepherd to view the figures contained in the '682, '895, and '910 patents in conjunction with the respective claims to gain a full appreciation of the complete scope of Eaton's multiple inventions. For all of these reasons, the court denies Eaton's motion to strike the testimony of Mr. Shepherd.

B. Infringement and Willfulness

Pursuant to Rule 50(b)(1) of the Federal Rules of Civil Procedure, Eaton moves for judgment as a matter of law that Parker's Generation I, II, and III Perma-Push couplings literally infringe claim 8 of the '682 patent and claim 13 of the '910

patent and that Generation III infringes claim 20 of the '895 patent. (D.I. 207) Eaton also moves for judgment as a matter of law that this literal infringement was willful based on Rule 50(b)(1) of the Federal Rules of Civil Procedure. (D.I. 207) Separately, Eaton moves under Rule 50(b)(2) of the Federal Rules of Civil Procedure for judgment as a matter of law or, in the alternative, for a new trial on the grounds that Parker's literal infringement of claims 5 and 6 of the '895 by its Generation II Perma Push coupling and claims 5, 6, and 19 of the '895 patent by its Generation III Perma Push coupling was willful. (D.I. 206)

At the same time, Parker moves pursuant to Rules 50(b)(2) and 59 of the Federal Rules of Civil Procedure for judgment as a matter of law or, in the alternative, a new trial that its Generation II and III Perma-Push couplings do not literally infringe claims 5, 6, and 19 of the '895 patent. (D.I. 208) Parker further moves for judgment as a matter of law or, in the alternative, for a new trial under Rules 50(b)(2) and 59 of the Federal Rules of Civil Procedure that it did not willfully infringe the '895 patent. (D.I. 210)

The court recognizes that the parties' motions regarding literal infringement and willfulness overlap and often involve the same legal arguments. The court, therefore, addresses these motions in a collective fashion below.

1. Legal Standard

A patent is infringed when a person "without authority makes, uses or sells any patented invention, within the United States . . . during the term of the patent." 35 U.S.C. § 271(a) (2002). A court should employ a two-step analysis in making an infringement determination. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). First, the court must construe the asserted claims to ascertain their meaning and scope. See id. Construction of the claims is a question of law subject to de novo review. See Cybor Corp. v. FAS Techs., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc). The trier of fact must then compare the properly construed claims with the accused infringing product. See id. This second step is a question of fact. See Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998).

Infringement may be shown under either of two theories: (1) literal infringement or (2) the doctrine of equivalents. Literal infringement occurs where each limitation of at least one claim of the patent is found exactly in the alleged infringer's product. See Panduit Corp. v. Dennison Mfg. Co., 836 F.2d 1329, 1330 n. 1 (Fed. Cir. 1987). For there to be infringement under the doctrine of equivalents, the accused product or process must embody every limitation of a claim, either literally or by an equivalent. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.,

520 U.S. 17, 41 (1997). The mere showing that an accused device is equivalent overall to the claimed invention is insufficient to establish infringement under the doctrine of equivalents. Under either theory, the patent owner has the burden of proof and must meet its burden by a preponderance of the evidence. See SmithKline Diagnostics, Inc. v. Helena Lab. Corp., 859 F.2d 878, 889 (Fed. Cir. 1988) (citations omitted).

In order to find willful infringement, there must be clear and convincing evidence in view of the totality of the circumstances that the infringer acted in disregard of the patent, and that the infringer had no reasonable basis for believing it had a right to engage in the infringing acts. See WMS Gaming Inc. v. Int'l Game Techs., 184 F.3d 1339, 1354 (Fed. Cir. 1999). In other words, "the primary consideration is whether the infringer, acting in good faith and upon due inquiry, had sound reason to believe that it had the right to act in the manner that was found to be infringing." SRI Int'l v. Advanced Tech. Lab., 127 F.3d 1462, 1464-65 (Fed. Cir. 1997). The law requires not merely "minimally tolerable behavior," but rather "prudent, and ethical, legal and commercial actions." Id.

Willful infringement is a question of fact and is often accompanied by questions of intent, belief, and credibility. See American Med. SYS. v. Medical Eng'g Corp., 6 F.3d 1523, 1530-31 (Fed. Cir. 1993). When an infringer has actual notice of a

patent, he has an affirmative due of due care to avoid infringement. See Ortho Pharm. Corp. v. Smith, 959 F.2d 936, 944 (Fed. Cir. 1992) (citations omitted). This duty includes the obligation to seek and obtain competent advice from legal counsel regarding the potential infringement. See id. An opinion of counsel, however, does not guarantee against a finding of willfulness. See Ryco, Inc. v. Ad-Bag Corp., 857 F.2d 1418, 1428 (Fed. Cir. 1988). "When this defense is raised the court may consider the nature of the advice, the thoroughness and competence of the legal opinion presented, and its objectivity." SRI Int'l, 127 F.3d at 1465. Oral opinions are not favored. See Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics Inc., 976 F.2d 1559, 1580 (Fed. Cir. 1992). In fact, the Federal Circuit has cautioned that such opinions carry less weight because they must be proved after the event based only on testimony which may be affected by faded memories and the forces of contemporaneous litigation. See id. With respect to opinions from in-house counsel, the Fourth Circuit has commented that "[j]ust because an attorney is in-house counsel does not mean that his opinions are necessarily suspect." Western Electric Co. v. Stewart-Warner Corp., 631 F.2d. 333, 337 (4th Cir. 1980). Rather, reliance on an in-house counsel opinion is merely one factor to be weighed along with all the other evidence to determine whether the infringer acted in good faith. See id.

Apart from an opinion of counsel as a defense, the Federal Circuit has concluded that copying the designs or ideas of another is also a factor to consider in deciding the issue of willfulness. See Bott v. Four Star Corp., 807 F.2d 1567, 1572 (Fed. Cir. 1986) (citations omitted); see also In re Hayes Microcomputer Products Inc., 982 F.2d 1527, 1543 (Fed. Cir. 1992). Nevertheless, the Federal Circuit has reasoned that the fact finder need not find "slavish copying" to conclude that the infringer copied the patentee's invention. See Stryker Corp. v. Intermedics Orthopedics, 96 F.3d 1409, 1414 (Fed. Cir. 1999) (citing State Industries, Inc., v. A.O. Smith Corp., 751 F.2d 1226 (Fed. Cir. 1995)). "'Slavish copying' occurs when the infringing product is virtually an exact copy of the patentee's product or is made using the patentee's product as a template." Id.

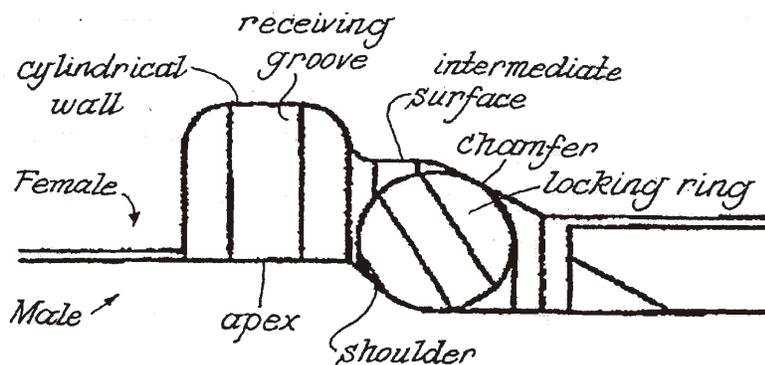
2. Infringement

a. The '682 Patent

The jury found that Parker's Generation I, II, and III Perma Push couplings do not literally infringe claim 8 of the '682 patent. To overturn this verdict, Eaton must show that no substantial evidence existed upon which a reasonable jury could have reached a finding of non-infringement. Eaton argues that each limitation of claim 8 of the '682 patent is found literally within Parker's Perma-Push Generations I, II, and III under the

court's claim construction. In particular, Eaton asserts that each of Parker's three generations of couplings includes 1) a chamfer that is "adjacent" to the receiving cavity; and 2) a release sleeve that is "movably mounted" on the first member and that "engages said ridge, said cavity and said chamfer."

The court finds that Eaton has not met its burden with this argument. Mr. Shepherd testified that Parker's products vary in size, shape, and functionality from the '682 invention. First, Mr. Shepherd testified that the chamfer is not adjacent to the receiving cavity as asserted in claim 8 due to the presence of an intermediate space of 0.040 inches between the chamfer and the receiving cavity. See D.I. 191 at 1642-45. This intermediate space is shown immediately below.



Parker Perma Push Coupling

(D.I. 82 at 2)

Mr. Shepherd also explained that this space is proportionally significant because the parts of a coupling are measured in terms of thousandths of an inch. See D.I. 192 at 1798-99. Second, Mr. Shepherd explained that the release sleeve used on Parker's couplings is not affixed either before or during the period when the couplings are in use. Rather, he testified that it is only affixed for a short time just to disconnect the coupling. See D.I. 192 at 1812-14. Finally, Mr. Shepherd offered testimony using the court's definition for the term "engage" to explain that the locking ring on Parker's couplings does not "engage" the receiving cavity. See D.I. 192 at 1809-10. Based upon Mr. Shepherd's testimony, the jury could have found that elements of Parker's product are different than the limitations described in claim 8 of the '682 patent. As such, the court concludes that the jury had a sufficient evidentiary basis for their verdict of non-infringement. The court, therefore, denies Eaton's motion for judgment as a matter of law on infringement of claim 8 of the '682 patent.

b. The '910 Patent

The jury found that Parker's Generation I, II, and III Perma Push couplings do not literally infringe claim 13 of the '910 patent. Eaton, nonetheless, maintains that all three generations of the Perma-Push products utilize a "receiving groove adjoining a retaining groove" as required by claim 13 of the '910 patent.

Eaton claims that the portion of coupling identified by Mr. Shepherd as an intermediate surface qualifies as a retaining groove because the language of claim 13 does not require the retaining groove to take a particular configuration or dimension.

In the face of this argument, the court finds that Eaton has not established that the evidence was insufficient for a jury verdict of non-infringement. Mr. Shepherd testified that the Parker products do not utilize a retaining groove to lock the male member inside the female member, but instead utilize the chamfer and the shoulder. See D.I. 191 at 1664-65. Mr. Highlen, the sole inventor identified on the '910 patent, also testified that the '910 invention and Parker's products employ different locking mechanisms. He explained that the '910 invention locks by holding the locking ring between the male shoulder and the groove **without a chamfer**, whereas Parker's products lock by gripping the locking ring between the male shoulder and **the chamfer itself**. See D.I. 186 at 443-44 (emphasis added). Based upon this testimony, the court finds that a reasonable jury could have concluded that Parker's products do not literally infringe claim 13 of the '910 patent. Accordingly, the court denies Eaton's motion for judgment as a matter of law on infringement of claim 13 of the '910 patent.

c. The '895 Patent

i. Claims 5, 6, and 19

Although Parker conceded literal infringement of claims 5, 6, and 19 of the '895 patent as to its Generation II and III Perma Push products, Parker argues that it was not able to present an infringement defense because the court revised its claim construction for the term "second surface" on the seventh day of trial and because the revision is in error. The clause in contention from claim 1 of the '895 patent relating to the second surface reads in pertinent portion as follows:

"(ii) an inwardly facing annular groove extending outwardly from said inwardly facing cylindrical wall, said split locking ring being receivable in said annular groove, **said annular groove have surfaces extending outwardly from said inwardly facing cylindrical wall** including a first surface defining one portion of said groove and a second surface positioned between said first surface and said receiving end, **said second surface including a chamfer tapering inwardly toward said axis** in a direction toward said receiving end and being disposed at an angle relative to said axis which is smaller than the angle between said shoulder and said axis."

('895 patent, col. 8, ll. 57-67; col. 9, ll. 1-2) (emphasis added) Claim 11 of the '895 patent contains a clause with similar language regarding the second surface.

Parker contends that the court issued its "first claim construction" on January 15, 2003 when it ruled on the parties'

motions for summary judgment.¹ At that time, Parker states that the court noted "that nowhere in claim 1 is there a limitation requiring the entire length of the second surface to extend outwardly from the cylindrical wall." (D.I. 123 at 24) The court described the orientation of the "second surface" in a footnote.

While the plain language allows for there to be more than two surfaces, the claim language means what it says, i.e., the first and second surfaces **must** extend outwardly from the cylindrical wall. If plaintiff's argument were correct, claim construction would be reduced to determining how much of a surface has to extend outwardly to literally satisfy the claim. The court declines to proceed down this path.

(Id.) (emphasis added) Parker maintains that the court adhered to this claim construction throughout Eaton's case-in-chief, during which time Eaton's technical expert, Dr. Caulfield, admitted that Parker did not infringe the '895 patent.

Parker charges that the court introduced a "revised claim construction" on February 12, 2003 after Parker raised two additional limitations to the '895 claim language through its proposed jury instructions. The court stated in its final jury instructions the following: "Consistent with the specification and claims, the phrase surface extending outwardly does not

¹The court did not issue a construction for the term "second surface" in its claim construction memorandum opinion of January 10, 2003. (D.I. 114)

require that the entire surface continuously extend outwardly.”
(D.I. 180 at 24)

As a result of Parker's concession, the court entered a directed verdict against Parker for infringement of claims 5, 6, and 19 of the '895 patent. The court did not construe the "extending outwardly" language in its January 15th opinion, contrary to Parker's argument. That opinion, as Parker's counsel should have appreciated, was directed only toward Eaton's motion for summary judgment. The court construed the disputed language for the first time when it issued its final jury instructions.

Additionally, the court finds Parker's argument regarding the court's construction entirely misplaced. Looking at the plain language of claim 1, the court finds that the second surface must satisfy only three requirements: (1) it must extend outwardly from the inwardly facing cylindrical wall; (2) be positioned between the first surface and the receiving end; and (3) include a chamfer. The court does not note any language that requires the entire second surface to continuously extend outwardly. Accordingly, the court denies Parker's motion for judgment as a matter of law as to infringement of claims 5, 6, and 19 of the '895 patent.

As to a new trial, the court finds that none of the reasons for which new trials have heretofore been granted exist in the instant case. The court concludes that a miscarriage of justice

will not result if the directed verdict of infringement stands because this verdict arose from a logical cascade of events.² Therefore, the court denies Parker's motion for a new trial to re-litigate the issue of infringement under another claim construction.

ii. Claim 20

The jury found that Parker's Generation III Perma Push coupling does not infringe claim 20. To overturn this verdict, Eaton must show that no substantial evidence existed upon which a reasonable jury could have reached this finding of non-infringement. Eaton attempts to do so by arguing that Parker's Perma Push Generation III product contains a collar that extends outside the radius of the release sleeve, exactly as recited in claim 20 of the '895 patent.³ Eaton points out that an actual

²The court notes that claim construction is not final until judgment is entered. The parties developed their initial claim construction proposals with a focus on obtaining summary judgment of infringement or invalidity. The court, in turn, issued its original claim construction in view of the parties' summary judgment motions. The court may re-construe the claims if it finds the original claim construction to be in error based upon a more developed record. Additionally, the court may add claim constructions for terms that become disputed through the course of trial.

³Parker conceded infringement of claim 19. Claim 19 depends from claim 17. Therefore, Parker indirectly conceded infringement of claim 17. Since Claim 20 also depends from claim 17, the sole issue is whether the Perma Push Generation III product meets the limitations recited in claim 20.

Generation III model coupling as well as two drawings of this coupling (i.e., PTX 64 and PTX 145) show a "collar" limitation.

The court concludes that Eaton has not met its burden with this argument. Mr. Shepherd testified that Parker's Generation III coupling does not include a collar that extends outside the radius of the release sleeve. See D.I. 192 at 1836-40. Mr. Shepherd explained that the part of the coupling assembly Eaton attempts to classify as a "collar" is actually a ferrule. Moreover, Mr. Shepherd stated that Parker's Generation III does not need a collar because this part operates as a safety precaution to prevent inadvertent disconnection. See D.I. 191 at 1657. In contrast, Parker's Generation III disconnects only with the aid of a separate tool. The court finds that this evidence sufficiently supports the jury's verdict and, on this basis, denies Parker's motion for judgment as a matter of law on infringement of claim 20 of the '895 patent.

3. Willful Infringement of the '682, '895, and '910 Patents⁴

⁴The jury did not address the issue of willfulness for the '682 or '910 patents because it found that Parker did not infringe either patent. As explained above, the court denies Eaton's currently pending motion for judgment as a matter of law regarding this verdict of non-infringement in the instant opinion. Accordingly, the court need not consider the issue of Parker's willfulness for the '682 or '910 patents and denies Parker's motion for judgment as a matter of law as to willful infringement of these patents as moot.

As discussed above, the court issued a directed verdict in favor of Eaton and against Parker based on Parker's concession of infringement of claims 5, 6, and 19 of the '895 patent through the manufacture and sale of the Generation II and III Perma Push products. The court directed the issue of willful infringement of these claims to the jury. The jury, however, failed to complete the portion of the verdict form related to this issue. Accordingly, the jury did not render a verdict with respect to the willful infringement of claims 5, 6, and 19 of the '895 patent.

As a result of the post-trial motions, the court is in the unusual position of having before it motions from both Eaton and Parker for judgment as a matter of law or, in the alternative, a new trial on willfulness. In a situation where the jury does not return a verdict, the court may direct entry of judgment as a matter of law or order a new trial under Rule 50(b) of the Federal Rules of Civil Procedure. The court believes that a jury would have had substantial evidence to conclude that Parker did not willfully practice Eaton's patented inventions in light of the totality of the circumstances. Although Eaton argues that Parker disregarded its affirmative duty to avoid infringement by failing to obtain any competent legal opinion concerning the '895 patent, Parker has operated under a general corporate "no infringement" policy since at least 1993. See D.I. 190 at 1312-

13. Complying with the provisions of this policy, Parker actively sought the legal advice of well-qualified counsel. Indeed, Parker offered twenty-seven written legal opinions refuting Eaton's willful infringement charge. In addition, the record reveals no evidence to suggest that Parker did not honestly rely upon these opinions in deciding both the design and commercialization details for each iteration of its Perma Push line.

The court further notes that the record is void of evidence suggesting that Parker's in-house counsel fabricated conclusions to satisfy a managerial directive or corporate goal, despite Eaton's argument that these opinions fail to analyze the claim language and prior art. In fact, Parker's Vice President and Deputy General Patent Counsel, Mr. James A. Baker, testified that there was no pressure on its in-house attorneys to reach pre-ordained results. See D.I. 190 at 1313. Additionally, the court recognizes that some, though not all, of the opinions considered the prior art in relation to Eaton's claimed invention. For example, PTX 82 discusses the claims of the '682 patent in relation to the U.S. Patent Nos. 4,055,359 and 2,805,089.

Furthermore, Mr. Giesler, Parker's Business Unit Manager, testified about the process Parker followed to design around Eaton's patented couplings, contrary to Eaton's allegations that Parker deliberately copied its products. He specifically

explained that Parker did not want to produce "me-too" versions of Eaton's couplers. See D.I. 189 at 1060-61. As such, the court finds that the evidence supports a jury verdict against Eaton on the issue of willfulness. For these reasons, the court denies both the parties' cross motions for judgment as a matter of law and their cross motions for a new trial on willfulness as to the '895 patent.

C. Parker's Motion for Judgment as a Matter of Law, or in the Alternative a New Trial, on Best Mode

Parker argues that the '682 patent is invalid for failure to comply with the best mode requirement of 35 U.S.C. § 112, ¶ 1.

(D.I. 209) This paragraph states:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and **shall set forth the best mode contemplated by the inventor of carrying out his invention.**

35 U.S.C. § 112 (2002) (emphasis added).

"The purpose of the best mode requirement is to ensure that the public, in exchange for the rights given the inventor under the patent laws, obtains from the inventor a full disclosure of the preferred embodiment of the invention." Dana Corp. v. IPC Ltd. P'ship, 860 F.2d 415, 418 (Fed. Cir. 1988). The best mode requirement of § 112, consequently, "requires an inventor to

disclose the best mode contemplated by him, as of the time he executes the application, of carrying out the invention.” Bayer AG & Bayer Corp. v. Schein Pharms., Inc., 301 F.3d 1306, 1314 (Fed. Cir. 2002) (citation omitted). “The existence of a best mode is a purely subjective matter depending upon what the inventor actually believed at the time the application was filed.” Id. Because of this subjectivity, § 112 demands actual disclosure, regardless of whether practicing that mode would be within the knowledge of one of ordinary skill in the art. See id. Nevertheless, the extend of this actual disclosure is limited to the invention defined by the claims alone. See id. at 1315.

In determining whether an inventor has disclosed the best mode, the Federal Circuit adopted a two-step inquiry. First, the invention must be defined by construing the claims. See id. at 1320 (citing Northern Telecom Ltd. v. Samsung Elec. Co., 215 F.3d 1281, 1286-87 (Fed. Cir. 2000)). The Federal Circuit noted that “[d]efinition of the invention ‘is a legal exercise, wherein the ordinary principles of claim construction apply.’” Id. It also commented such definition “is a crucial predicate to the factual portions of the best mode inquiry because it ensures that the finder of fact looks only for preferences pertaining to carrying out the claimed invention.” Id.

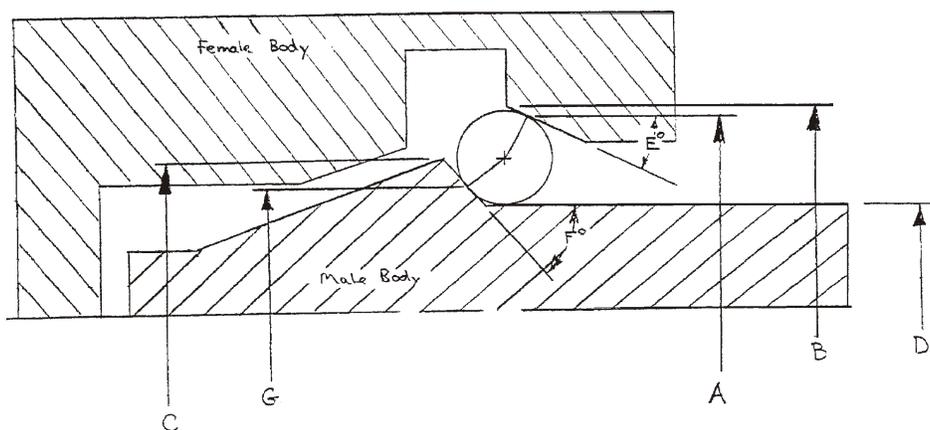
Once the claim analysis is complete, the finder of fact may proceed to the second step and apply the classic two-prong test. That is, the fact-finder must determine whether, at the time of filing the application, the inventor possessed a best mode for practicing the claimed invention. See id. at 1320. If so, then the fact-finder must evaluate whether the inventor's disclosure is objectively adequate to enable one of ordinary skill in the art to practice the best mode of the claimed invention. See id.

The Federal Circuit further delineated that "if the best mode for carrying out the claimed invention involves novel subject matter, then an inventor must disclose a method for obtaining that subject matter even if it is unclaimed." Id. at 1322 (quoting Eli Lilly & Co. v. Barr Labs., Inc., 251 F.3d 955, 965 (Fed. Cir. 2001)). In other words, when the subject matter is unclaimed, but both novel and essential for carrying out the best mode of the claimed invention, disclosure is required. Id. With regard to unclaimed subject matter unrelated to the properties of the claimed invention, the Federal Circuit acknowledged that an inventor need not disclose a mode for obtaining it. Id. (citing Eli Lilly, 251 F.3d at 963).

The jury at bar ruled that the '682 patent was not invalid for failure to disclose best mode. In reviewing this decision, Parker must show that the jury's findings are not supported by

substantial evidence. A jury's determination, therefore, is entitled to substantial deference under this standard.

Turning to the instant facts, claims 7 and 8 of the '682 patent relate to the second of three disclosed coupling embodiments. In this embodiment, the exterior of the male member contains a ridge consisting of a ramp, an apex, and a shoulder. The female member has an interior surface with a cavity and a chamfer to receive a locking means. An angular relationship consequently exists between the male shoulder and the female chamfer. This converging angle relationship is shown in the figure immediately below. Angle E is the female body angle and angle F is the male body angle.



(DTX 1023 at 9037911)

Parker argues that Mr. David Densel, one of the inventors named on the '682 patent, contemplated converging angles as the

best mode for practicing claims 7 and 8. Parker also contends that claim 7 embraces within its scope coupling assemblies that include converging angles. Parker further maintains that the '682 patent does not describe the alleged converging angles best mode.

Under the two-step best mode analysis set forth by the Federal Circuit, the initial inquiry is whether the converging angles limitation is claimed in the '682 patent. The court appreciates that this inquiry is premised on the definition of the invention as interpreted by the principles of claim construction. To this end, the court defined various terms used in the '682 patent claims and provided this claim construction to the jury. As neither party raised the issue whether the converging angles limitation was included within the claim scope, the court did not specifically address this question in its claim construction order. Mr. Shepherd, Parker's expert, testified that the converging angle limitation is not covered or discussed in the '682 patent. See D.I. 192 at 1766. Mr. Densel, the inventor himself, likewise testified that the patent does not claim diverging angles. See D.I. 186 at 287-288. Based upon the court's construed terms coupled together with witness testimony, the court finds that a jury reasonably could have concluded that the converging angle limitation was not claimed.

As to the second step, the court reasons that the jury reasonably could have found substantial evidence to conclude that the unclaimed converging angle limitation was not novel or essential to the best mode. First, U.S. Patent No. 2,805,089 issued in 1957 and discloses the use of a "wedging effect" to lock a ring in a coupling assembly. Second, Mr. Densel testified that the "wedge effect" was within the common knowledge of an engineer and that couplings with parallel angles would work. See D.I. 185 at 191. Third, Mr. Shepherd testified that both parallel and diverging angles were within the scope of claim 7. See D.I. 192 at 1787. Finally, Parker's own Generation I Perma Push coupling contains parallel, not converging, angles to secure the locking ring in place. Accordingly, the court denies Parker's renewed motion for judgment as a matter of law on the best mode issue.

Concerning a new trial, the court finds that the verdict is not against the weight of the evidence or that a miscarriage of justice will result if the jury's verdict stands. The court finds that Parker has not presented evidence that overwhelmingly favors its position such that the jury erred in upholding the validity of the '682 patent. Additionally, the court does not find that any of the other reasons for granting a new trial, such as new evidence or improper attorney conduct, exist. The court denies Parker's motion for a new trial on the issue of best mode.

D. Parker's Motion for Judgment as a Matter of Law, or in the Alternative a New Trial, on Obviousness⁵

Parker asserts that the '682, '895, and '910 patents in suit are all invalid as obvious within the meaning of 35 U.S.C. § 103. (D.I. 211) In particular, Parker challenges the validity of claim 8 of the '682 patent, claims 5, 6, 19, and 20 of the '895 patent, and claim 13 of the '910 patent. To establish that a patent claim is obvious, clear and convincing evidence must exist to show that "the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103 (2002). That is, "[t]he test is whether the subject matter of the claimed inventions would have been obvious to one skilled in the art at the time the inventions were made, not what would be obvious to a judge after reading the patents in suit and hearing the testimony." Panduit Corp. v. Dennison Mfg. Co., 774 F.2d 1082, 1092 (Fed. Cir. 1985). The question of obviousness, therefore, turns on four factual inquiries: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) any objective indicators of non-obviousness, more commonly

⁵The court instructed the jury that the level of ordinary skill in the art for purposes of the case at bar is someone with a Bachelor of Mechanical Engineering degree and three to five years of experience designing couplings or related devices or the equivalent of this degree and experience. (See D.I. 180)

termed secondary considerations. See Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966); B.F. Goodrich Co. v. Aircraft Braking Sys. Corp., 72 F.3d 1577, 1582 (Fed. Cir. 1996).

The existence of each limitation of a claim in the prior art does not, by itself, demonstrate obviousness. Instead, there must be a "reason, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the references, and that would also suggest a reasonable likelihood of success." Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc., 183 F.3d 1347, 1353 (Fed. Cir. 1999). "Such a suggestion or motivation may come from the references themselves, from knowledge by those skilled in the art that certain references are of special interest in a field, or even from the nature of the problem to be solved." Id. at 1356.

To rebut a prima facie case of obviousness based on prior art, objective evidence of nonobviousness may be used. Tec Air, Inc. v. Denso Mfg. Mich, Inc., 192 F.3d 1353, 1360 (Fed. Cir. 1999). This objective evidence includes: (1) a long-felt and unmet need in the art for the invention; (2) failure of others to achieve the results of the invention; (3) commercial success of the invention; (4) copying of the invention by others in the field; (5) whether the invention was contrary to accepted wisdom of the prior art; (6) expression of disbelief or skepticism by those skilled in the art upon learning of the invention; (7)

unexpected results; (8) praise of the invention by those in the field; and (9) independent invention by others. See Graham, 383 U.S. at 17-19. "The objective evidence of nonobviousness . . . should when present always be considered as an integral part of the analysis." Demaco Corp. v. F. Von Langsdorff Licensing Ltd., 851 F.2d 1387, 1393 (Fed. Cir. 1988) (quoting W.L. Gore & Assoc. Inc. V. Garlock, Inc., 721 F.2d 1540, 1555 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). In this analysis, secondary considerations require a finding of nonobviousness "if the matter be otherwise doubtful." In re Howard Sernaker, 702 F.2d 989, 996 (Fed. Cir. 1983).

"When a patentee asserts that commercial success supports its contention of nonobviousness, there must of course be a sufficient relationship between the commercial success and the patented invention." Demaco, 851 F.2d at 1392. The term "nexus" is often used to designate a legally and factually sufficient connection between the proven success and the patented invention. See id. "A prima facie case of nexus is generally made out when the patentee shows both that there is commercial success, and that the thing (product or method) that is commercially successful is the invention disclosed and claimed in the patent." Id. A patentee, however, is not required to prove that the commercial success of the patented invention is not due to

factors other than the patented invention as part of its prima facie case. See id. at 1394.

1. Claim 8 of the '682 Patent

The jury found that the '682 patent was not invalid on obviousness grounds. For the court to overturn the jury's verdict, Parker must show that the jury's findings are not supported by substantial evidence. At the same time, the court must view the record in the light most favorable to Eaton. Parker argues that both the release sleeve and the split ring locking means limitations of claim 8 are obvious in view of U.S. Patent Nos. 5,005,877 (the "Hayman patent"), 5,080,405 (the "Sasa patent"); 3,177,018 (the "Goodwin patent"); 5,022,687 (the "Ariga patent"); and 4,186,916 (the "Snow patent").

Four key differences exist between the invention disclosed in the Hayman patent and the invention claimed in the '682 patent. First, the female coupling half in the Hayman patent does not include a chamfer as required by claim 8 of the '682 patent. Second, the Hayman patent uses a substantially closed locking ring while the '682 patent uses a split locking ring. Third, the release sleeve in the Hayman patent, unlike in the '682 patent, touches the outer surface of the female member and includes a leg portion with an angled surface/edge for contacting the locking bodies. Finally, the release sleeve in the Hayman

patent does not force the locking bodies over the apex of a ridge on the male member to disengage the coupling assembly like the release sleeve of the '682 patent. Since the Hayman patent does not teach the use of a split ring, Parker failed to present evidence showing a suggestion or motivation to combine it with the Sasa, Goodwin, Ariga, or Snow patents to derive the additional limitations of claim 8. Moreover, the Sasa, Goodwin, Ariga, and Snow patents recite inventions unrelated to a quick release coupling useful in high pressure applications. The Sasa patent discloses a coupling, but not a quick-connect or quick-release model. The Goodwin invention is inapplicable in high pressure applications. The Ariga invention has a completely different locking mechanism.⁶ The Snow patent discloses permanent couplings and these couplings do not have either a ridge consisting of a ramp, apex, and shoulder on the male member or a self locking split ring of the type claimed in the '682 patent. Based upon this evidence, the court finds that a jury reasonably could have concluded that the '682 invention was not obvious over the prior art.

Even if the jury found the '682 invention to be prima facie obvious, it may have ruled in favor of Eaton on secondary consideration grounds. Despite Parker's contention that the '682

⁶The United States patent examiner expressly considered the Ariga patent during his examination. This patent, consequently, is cited as a reference on the face of the '682 patent.

invention was not commercially successful or designed in response to a long-felt need, Eaton showed that the STC product line earned more than twenty million dollars in sales per year. See D.I. 185 at 108. Likewise, Eaton established industry recognition specifically for the STC line among automakers and racing groups. See D.I. 186 at 310-11. The court reasons these indicia of nonobviousness are sufficient evidence to support the jury's verdict. As such, the court denies Parker's motion for judgment as a matter of law on obviousness grounds as to the '682 patent.

Separate from its motion for judgment as a matter of law, Parker also moved for a new trial on obviousness grounds. The court finds that a new trial is not necessary. The court does not believe that any of the reasons for granting a new trial exist in the instant case. That is, the court does not view the jury's verdict to be against the weight of the evidence. Rather, both sides presented evidence to support their argument. Additionally, the court does not see that a miscarriage of justice will result by upholding the jury's verdict. For these reasons, the court denies Parker's motion for a new trial on obviousness grounds for the '682 patent.

2. Claims 5, 6, 19, and 20 of the '895 Patent

The jury concluded that the '895 patent was not invalid on obviousness grounds. Parker challenges this verdict based on the prior art and principles of basic engineering. Parker alleges that independent claim 1 is obvious in view of the '682 patent⁷ and Eaton's aluminum High Performance STC Type I and Drylock STC Type I couplers. As to those claims dependent on claim 1, Parker acknowledges that claim 5 adds the requirement that the flat apex be at least 0.030 inches wide and that claim 6 specifies a numerical range for the angles. Parker contends that the limitation of claim 5 only enhances the sheer strength of the male member and is obvious given engineering design principles. Additionally, Parker points out that the angles used in the aluminum High Performance STC Type I coupler were 45° and 30°, respectively. As such, it maintains these angles fall precisely within the angle limitations of claim 6.

Turning to independent claim 11, Parker argues that it is obvious in view of Eaton's aluminum High Performance STC Type I coupling. Parker notes that claim 17, which depends from claim 11, adds certain release sleeve details. It argues that these details are essentially the same as those used in Eaton's aluminum High Performance STC Type I coupling and are also

⁷The United States patent examiner expressly considered the '682 patent during his examination. This patent, consequently, is cited as a reference on the face of the '895 patent.

disclosed in the Hayman patent, the Goodwin patent,⁸ and U.S. Patent No. 4,991,627 (the "Nix patent").

Concerning claims which depend from claim 17, Parker recognizes that claim 19 adds two limitations to the annular outer wall: (1) it must be resilient; and (2) it must contain a bead that extends into a groove in the exterior surface of the female member when the male and female members are engaged. Parker argues that figure 4 of the Hayman patent shows these exact limitations, thereby rendering claim 19 obvious. Parker also acknowledges that claim 20 further limits claim 17 by providing a collar in the vicinity of the release sleeve that extends from the male member outward as far as the radial extent of the flange. Parker maintains that this collar limitation was specifically disclosed in U.S. Patent No. 3,398,977 (the "Yonda patent")⁹ and, therefore, is an obvious modification of the coupling.

Parker may succeed on its motion for judgment as a matter of law only by showing that the jury's finding is not supported by substantial evidence. The court finds that Parker has not

⁸The United States patent examiner expressly considered the Goodwin patent during his examination. This patent, consequently, is cited as a reference on the face of the '895 patent.

⁹The United States patent examiner expressly considered the Yonda patent during his examination. This patent, consequently, is cited as a reference on the face of the '895 patent.

satisfied its burden. Eaton identified numerous differences between asserted claims 5, 6, 19, and 20 and the various prior art references raised by Parker. Mr. Terry Karl, one of the inventors named on the '895 patent, testified that the invention of the '895 patent is different from Eaton's aluminum STC Type I coupler in four major ways. First, he explained that he added more material to the '895 invention to create a flat area between the forward ramp and the shoulder area to facilitate use in higher pressure applications. See D.I. 186 at 314-15. Second, he testified that he refined the ramp of the ridge on the male to enable easier connection. See D.I. 186 at 318-320. Third, Mr. Karl stated that he converted the release sleeve from a plastic material to a stainless steel metal and added a dust boot to block contaminants. See D.I. 186 at 324-26. Finally, he discussed incorporating specified ranges of angles for the shoulder on the male member and the chamfer on the female member to optimize the resultant forces on the latch ring. See D.I. 186 at 334-36.

Besides these differences, Eaton established that each asserted claim contains limitations not found in the prior art. Claim 5, by virtue of its dependency on claim 1, requires (1) the chamfer angle to be smaller than the shoulder angle, (2) the ramp to taper at an angle between 10° and 25°, and (3) the cylindrical surface to extend rearward from the ramp for a distance of at

least 0.030 inches. Claim 6, by virtue of its dependency on claim 1, requires (1) the chamfer angle to fall in the range of 20° to 40° and the shoulder angle to fall in the range of 35° to 55°, (2) the ramp to taper at an angle of between 10° and 25°, and (3) the cylindrical surface to extend rearward from the ramp for a distance of at least 0.010 inches. Claims 19 and 20, by virtue of their dependency on claims 11 and 17, require (1) the ramp to taper at an angle of between 10° and 25°, (2) the cylindrical surface to extend rearward from the ramp for a distance of at least 0.010 inches, and (3) the release sleeve to include an outwardly extending flange and an annular wall extending from the flange spaced radially outwardly of the leading portion, the annular wall including an interior surface sized to receive the female member when the male and female members are engaged. Claim 19 also requires the annular wall to be resilient and to include a bead that extends into a groove in the exterior surface of the female member when the male and female members are engaged. Claim 20 requires the male member to have a radially extending collar in the vicinity of the release sleeve outwardly extending flange, the collar having a radial extent at least as great as the radial extent of the flange. For these reasons, the court finds that a reasonable juror could have determined the '895 patent was nonobvious.

In the event that the jury found the '895 patent prima facie obvious, the court reasons that Eaton introduced multiple secondary considerations upon which the jury may have reached its verdict of nonobviousness. Mr. Gregory J. Gloden, Global Sales Manager for Eaton, testified about the commercial success of its STC Type II couplers. He explained that Eaton projects selling in excess of \$28 million dollars to Navistar alone in 2003. Mr. Gloden also shared that other customers, including General Motors, Volvo, Workhorse Custom Chassis, Caterpillar, and Ingersol-Rand, use STC Type II couplers. See D.I. 188 at 880-81. Additionally, Mr. Karl explained that the International Race of Champions ("IROC") racing teams highly regard Eaton's STC couplers. See D.I. 187 at 601-2. To that end, the president of IROC and various IROC racing teams explicitly praised STC products in a video. Furthermore, the Specialty Equipment Manufacturers Association awarded the STC series the award of "Product of the Year." Therefore, the court denies Parker's motion for judgment as a matter of law on obviousness grounds as to the '895 patent.

With respect to a new trial, the court finds that the weight of the evidence does not favor Parker's position such that a new trial is necessary to avoid a miscarriage of injustice. Rather, the court believes that Eaton offered sufficient evidence for a jury to conclude that the '895 invention was nonobvious.

Additionally, the court does not find that any of the other common reasons for granting a new trial exist under the instant facts. Therefore, the court denies Parker's motion for a new trial on obviousness grounds for the '895 patent.

3. Claim 13 of the '910 Patent

The jury concluded that the '910 patent was not invalid on obviousness grounds. Parker argues against this verdict and maintains that claim 13 is obvious in view of U.S. Patent No. 3,637,239 (the "Daniel patent"), the '682 patent,¹⁰ and Eaton's aluminum High Performance STC Type I and Drylock STC Type I couplers. The court notes, however, that differences exist between the '910 invention and this prior art. The Daniel invention is a pipe sleeve intended to be permanently assembled. In contrast, the '910 invention is a coupling assembly intended to be easily released into a male member and a female member with a release sleeve. The aluminum High Performance STC Type I and Drylock STC Type I couplers, unlike the '910 invention, do not include a cylindrical surface substantially parallel to the axis that extends rearward from the ramp. In addition, neither teaches or suggests a retaining groove adjoining the receiving groove as claimed in claim 13 of the '910 patent. Based on these

¹⁰The United States patent examiner expressly considered the '682 patent during his examination. This patent, consequently, is cited as a reference on the face of the '910 patent.

distinctions, the court concludes that substantial evidence exists in the record upon which the jury reasonably could have reached its verdict of nonobviousness.

Alternatively, even if the jury did not find sufficient evidence to defeat a prima facie obviousness challenge, the court believes that it could have reached its verdict on secondary consideration grounds. Mr. Gloden testified that the '910 invention may be commercialized if needed, but that the need has not yet arisen due to the robustness of the STC Type II coupling assembly. See 189 at 933-34. A reasonable juror may have accepted this explanation on its face without further scrutiny. Moreover, a reasonable juror may have realized that commercial success is only one factor among the secondary considerations to consider and that lack of commercial success is insufficient to establish the obviousness of an invention. Therefore, this court denies Parker's motion for judgment as a matter of law on obviousness grounds as to the '910 patent.

The court also denies Parker's motion for a new trial on obviousness grounds. The court does not find that the verdict is against the clear weight of the evidence presented by Eaton to counter Parker's obviousness allegations. The trial afforded both parties with the fair opportunity to present their strongest cases, and no new evidence has since surfaced to justify setting the verdict aside.

E. Eaton's Motion for a Permanent Injunction

Eaton moves for an order granting a permanent injunction pursuant to Rule 65(d) of the Federal Rules of Civil Procedure and 35 U.S.C. § 283. (D.I. 195) The framers of the Constitution of the United States recognized that a patentee has the right to exclude others from practicing a patented invention. As a result of this belief, the framers adopted Clause 8 of Section 8, Article I which states: "The Congress shall have power . . . to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." U.S. Const. art. I, § 8. Congress used its power to enact 35 U.S.C. § 283. This provision of law authorizes a court to "grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the [c]ourt deems reasonable." 35 U.S.C. § 283 (2003).

In a patent infringement suit, a district court may grant a preliminary injunction pending trial or a permanent injunction "after a full determination on the merits." High Tech. Med. Instr., Inc. v. New Image Indus., Inc., 49 F.3d 1551, 1554 (Fed. Cir. 1995). Indeed, the Federal Circuit has indicated that once a finding of infringement has been made, an injunction should issue absent a sufficient reason for denying it. Richardson v. Suzuki Motor Co., Ltd., 868 F.2d 1226, 1247 (Fed. Cir. 1989).

Courts, therefore, are given wide latitude in framing injunctive relief. KSM Fastening Sys., Inc. v. H.A. Jones Co., 776 F.2d 1522, 1527 (Fed. Cir. 1985). Nonetheless, consistent with the equitable nature of a permanent injunction, the court "must consider all circumstances, including the adequacy of the legal remedy, irreparable injury, whether the public interest would be served, and the hardship on the parties and third parties." E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 659 F. Supp. 92, 94 (D. Del. 1987). Additionally, Rule 65(d) of the Federal Rules of Civil Procedure requires an injunction to "set forth the reasons for its issuance, be specific in its terms, and shall describe in reasonable detail, and not by reference to the complaint or other document, the act or acts sought to be restrained; and is binding only upon the parties to the action." Fed. R. Civ. P. 65(d).

The court directed a verdict in favor of Eaton and against Parker for infringement of claims 5, 6, and 19 of the '895 patent. Consequently, the court holds that a permanent injunction is necessary to prevent Parker from further infringing the '895 patent. The court is unpersuaded by Parker's argument that the injunction should be stayed until the Federal Circuit has reviewed this case on appeal. The court does not believe that the possibility of appellate de novo review of its claim

construction constitutes an extraordinary circumstance to merit a stay.

The court, instead, believes that all of the relevant criteria warrant injunctive relief at this time. The court finds that Eaton will suffer irreparable harm without a permanent injunction to prevent Parker from practicing Eaton's patented invention. The Federal Circuit stated that irreparable harm may be presumed when the evidence clearly shows patent validity and infringement. See H.H. Robertson Co. v. United Steel Deck, Inc., 820, F.2d 384, 390 (Fed. Cir. 1987). As well, the Federal Circuit recognized that "[t]he nature of the patent grant thus weighs against holding that monetary damages will always suffice to make the patentee whole, for the principal value of a patent is its statutory right to exclude." Id.

Furthermore, public interest in preserving incentives to advance science and the useful arts favors entry of an injunction to bar any further infringement by Parker. The court recognizes that intellectual property law is premised on the desire to give inventors an incentive to invent and to reap the benefits of their labor. To this end, the Federal Circuit has previously noted that

[o]ne of those benefits is the right to prevent others from practicing what they have invented. Otherwise, if inventors cannot depend on their patents to exclude others, we fear that research and development budgets in the science and technology based industries would

shrink, resulting in the public no longer benefitting from the labors of these talented people.

E.I. Dupont de Numbers v. Polaroid Graphics Imaging, Inc., 706 F. Supp. 1135, 1146 (D. Del.), *aff'd* 887 F.2d 1095 (Fed. Cir. 1989).

Finally, the court notes that the infringing couplings at issue are not necessary items such that their removal from the stream of commerce would harm the public. Similarly, the court is unaware of any hardship that removal would cause to the public. The fact that Parker may suffer a loss in revenue is not of concern. Indeed, the Federal Circuit commented that just because an injunction might put an infringer out of business does not justify denying it. See Windsurfing Int'l, Inc. v. AMF, Inc., 782 F.2d 995, 1003 (Fed. Cir. 1986). "One who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected." Id. Accordingly, the court grants Eaton's motion for a permanent injunction.

V. CONCLUSION

For the reasons provided above, Eaton's motion to strike the testimony of Mr. James Shepherd and motion for judgment as a matter of law on infringement of claim 8 of the '682 patent, claim 20 of the '895 patent, and claim 13 of the '910 patent are denied. Eaton's motion for judgment as a matter of law with respect to willful infringement of the '682 and '910 patents is

denied as moot. Parker's motion for judgment as a matter of law as to infringement of claims 5, 6, and 19 of the '895 patent; motion for a new trial as to infringement of claims 5, 6, and 19 of the '895 patent; motion for judgment as a matter of law with respect to best mode; motion for a new trial on best mode; motion for judgment as a matter of law concerning obviousness of the '682, '895, and '910 patents; and motion for a new trial on obviousness grounds for the '682, '895, and '910 patent are all denied. Eaton's motion and Parker's cross motion for judgment as a matter of law as to willful infringement of the '895 patent are denied. Similarly, Eaton's motion and Parker's cross motion for a new trial regarding wilful infringement of the '895 patent are denied. Finally, Eaton's motion for a permanent injunction to prevent Parker from infringing the '895 patent is granted. The court will issue an order to this effect in conjunction with this opinion.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

EATON CORPORATION)
)
 Plaintiff,)
)
 v.) Civil Action No. 00-751-SLR
)
 PARKER-HANNIFIN CORPORATION,)
)
 Defendant.)

O R D E R

At Wilmington this 18th day of November, 2003, having reviewed papers submitted in connection therewith, for the reasons stated;

IT IS ORDERED that:

1. Eaton's motion to strike the trial testimony of Mr. James Shepherd (D.I. 205) is denied.
2. Eaton's motion for judgment as a matter of law on infringement of claim 8 of the '682 patent, claim 20 of the '895 patent, and claim 13 of the '910 patent (D.I. 207) is denied.
3. Eaton's motion for judgment as a matter of law with respect to willful infringement of the '682 and '910 patents (D.I. 207) is denied as moot.
4. Parker's motion for judgment as a matter of law

on infringement on of claims 5, 6, and 19 of the '895 patent and alternative motion for a new trial (D.I. 208) is denied.

5. Eaton's motion for judgment as a matter of law and Parker's cross motion for judgment as a matter of law on willful infringement of claims 5, 6, and 19 of the '895 patent (D.I. 206, 210) is denied.

6. Eaton's motion for a new trial and Parker's cross motion for a new trial on willful infringement of claims 5, 6, and 19 (D.I. 206, 210) is denied.

7. Parker's motion for judgment as a matter of law and alternative motion for a new trial regarding best mode (D.I. 209) is denied.

8. Parker's motion for judgment as a matter of law on obviousness for the '682, '895, and '910 patents and alternative motion for a new trial (D.I. 211) is denied.

9. Eaton's motion for a permanent injunction to prevent Parker from practicing the '895 patent (D.I. 195) is granted.

Sue L. Robinson
United States District Judge