

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MOORE ROD & PIPE, LLC.,  
Petitioner,

v.

WAGON TRAIL VENTURES, INC.,  
Patent Owner.

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Case IPR2013-00418  
Patent RE 36,362

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Before JENNIFER S. BISK, GEORGIANNA W. BRADEN, and  
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

CLEMENTS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

## I. INTRODUCTION

Moore Rod & Pipe, LLC (“Petitioner”) filed an Amended Petition requesting an *inter partes* review of claims 1–20 (“the challenged claims”) of U.S. Patent No. RE 36,362 (Ex. 1001, “the ’362 patent”). Paper 5 (“Pet.”). Wagon Trail Ventures, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). On December 13, 2013, we instituted an *inter partes* review of claims 1–20 on the sole ground of unpatentability alleged in the Petition. Paper 12 (“Dec. to Inst.”). After institution, Patent Owner filed a Patent Owner Response (Paper 18, “PO Resp.”), to which Petitioner filed a Reply (Paper 25).

Additionally, Petitioner filed a Motion to Exclude Evidence (Paper 29), to which Patent Owner responded (Paper 31). Petitioner filed a Reply in Support of its Motion to Exclude. Paper 32.

Oral argument was held on July 24, 2014.<sup>1</sup>

We have jurisdiction under 35 U.S.C. §§ 6(c) and 314. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–20 of the ’362 patent are unpatentable.

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<sup>1</sup> A transcript of the oral hearing (“Tr.”) is included in the record as Paper 37.

*A. Related Proceedings*

Petitioner indicates that the '362 patent was asserted against Petitioner in *Western Falcon, Inc. v. Moore Rod & Pipe, LLC*, 4:13-cv-02963 (S.D. Tex.). Paper 11.

*B. The '362 Patent*

The subject matter of the '362 patent relates to oil field production equipment and, in particular, to the use of polymer liners in production tubing strings used in wells producing oil by rod pumping. Ex. 1001, Abstract. Polymer liners, such as high density polyethylene liners, have a coefficient of friction far superior to the coefficient of friction of steel tubing. *Id.* at col. 1, ll. 36–39. When a polyethylene liner is wetted by produced fluid, susceptibility to abrasion is further reduced. *Id.* at col. 1, ll. 39–41.

The lining of pipe and tubing with polymer liners for corrosion control was practiced prior to the filing of the '362 patent. *Id.* at col. 1, ll. 42–46. For example, the '362 patent states that liners had been installed in pipelines for the transportation of oil, water, gas, and sewage for some time. *Id.* at col. 1, ll. 45–48. Polymer liners also were applied to tubing for oil field tubing strings, but those applications were for the protection of tubing utilized for injection strings, water disposal strings, or production strings that flow or are produced with electric submersible pumps. *Id.* at col. 1, ll. 48–53. In contrast, the '362 patent is directed to the lining of tubing strings in rod-pumped wells *to reduce the abrasion and failure of the tubing joints caused by the reciprocating rods.* *Id.* at col. 1, ll. 42–46.

*C. Illustrative Claim*

Of the challenged claims, claims 1, 2, 6, 7, 11, and 16 are independent claims. Claim 1 is illustrative and is reproduced below:

1. An improved method of producing well fluids from a well being produced by a rod pumping system, said rod pumping system comprising:
  - a plurality of sucker rods disposed within a string of tubing which extends into said well, said string of tubing comprising of a plurality of tubing sections each having a bore and an inside diameter;
  - a down hole pump operably connected to said sucker rods; and
  - means for reciprocating said sucker rods,wherein the improved method comprises using tubing sections having polymer liners disposed within said bore of said tubing sections to eliminate contact between said sucker rods and said tubing string when said sucker rods are being reciprocated.

*D. Prior Art Supporting the Instituted Challenges*

Petitioner relies on the following prior art references, as well as the Declaration of Paul D. Ching (Ex. 1005):

Oster	US 4,182,537	Jan. 8, 1980	Ex. 1004
Lacy	US 5,320,388	June 14, 1994	Ex. 1003

Admitted Prior Art – the background section of the '362 patent (col. 1, l. 14–col. 2, l. 6) (Ex. 1001).

*E. The Instituted Challenge of Unpatentability*

We instituted the instant trial on the ground that Petitioner had demonstrated a reasonable likelihood of showing claims 1–20 are

unpatentable under 35 U.S.C. § 103 over Oster, Lacy, and Admitted Prior Art.

## II. ANALYSIS

### A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the Specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Also, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In our Decision to Institute, we declined to provide an express construction for “to eliminate contact between said sucker rods and said tubing string.” Dec. to Inst. 7–8. During the course of the proceeding, neither party further addressed the construction of “to eliminate contact between said sucker rods and said tubing string.” We discern no reason to change our previous determination that “to eliminate contact between said sucker rods and said tubing string” does not require express construction.

### B. Claims 1–20 - Obviousness over Lacy, Oster, and Admitted Prior Art

Petitioner alleges that claims 1–20 are unpatentable under 35 U.S.C. § 103(a) as obvious over Lacy, Oster, and the Admitted Prior Art. Pet. 7–56 (citing Ex. 1005 ¶¶ 28–51). Patent Owner counters that (1) a person of

ordinary skill in the art would not have been motivated to combine Lacy with Oster; and (2) there is objective evidence of non-obviousness. PO Resp. 8–44.

Upon consideration of the parties’ contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1–20 would have been obvious over Lacy, Oster, and the Admitted Prior Art. Pet. 7–56. In our discussion below, we address arguments made in post-institution briefing.

*Admitted Prior Art*

The ’362 patent describes the prior art as including “a typical rod pumping system,” as depicted in Figure 1. Ex. 1001, col. 2, l. 36, col. 2, l. 46. As depicted in Figure 1, a rod pumping system includes a string of sucker rods 20 connected together by couplings 22. *Id.* at col. 2, ll. 52–54. The string hangs from polished rod 14 within tubing string 24 located in casing 26. *Id.* at col. 2, ll. 53–54. Sucker rods 20 are connected to subsurface pump 28. *Id.* at col. 2, ll. 54–55. As the motor moves horsehead 12, polished rod 14, and sucker rods 20 up and down, well fluids are lifted on the upstroke. *Id.* at col. 2, ll. 55–48.

*Lacy (Exhibit 1003)*

Lacy describes a system for applying a plastic liner to tubing used with oil wells, such as well tubing, and describes a joint formed by such tubing incorporating the plastic liner. Ex. 1003, col. 1, ll. 10–13. According to Lacy, “it is well known to provide tubes with a liner in order to minimize the abrasion and the deterioration of the tube.” *Id.* at col. 1, ll. 25–27. “The

liner may take the form of a layer of cement or a plastic coating applied to the interior surface of the tube.” *Id.* at col. 1, ll. 27–29. Lacy further describes:

a system for applying a rigid, self-supporting plastic liner to the interior of a well tubing such that the liner is in contact with the interior surface of the tube and flanges attached to either end of the liner are in abutting, sealing contact with the ends of the tube.

*Id.* at col. 3, ll. 59–64. “An ultrahigh molecular weight, high density polyethylene (UHMWHDPE) manufactured by Philips Driscopipe, Inc. under the trademark Driscopipe 9100, has been found to yield satisfactory results.” *Id.* at col. 4, ll. 25–28. “The liner preferably is passed through a reducing device, which may be a reducing roll, a die, or the like, so as to elastically deform the liner and reduce the outside diameter to a dimension less than the inside diameter of the tube.” *Id.* at col. 2, ll. 16–20. “The reduced diameter liner, preferably having plain ends, is then inserted into the tube section.” *Id.* at col. 2, ll. 20–21.

*Oster (Exhibit 1004)*

Oster describes a sucker rod coupling and guide intended to reduce the friction caused by the contact between a long string of sucker rods and the production tubing string within which they are moving up and down. Ex. 1004, col. 1, ll. 15–18; col. 2, ll. 28–30. According to Oster, “many oil wells have crooked holes so that on the up and down strokes of the sucker rod, the sucker rod, and particularly the sucker rod couplings are caused to rub against the well tubing.” *Id.* at col. 1, ll. 25–29. To address this

problem, Oster describes the rod coupling and guide depicted in Figures 1 and 2, reproduced below:

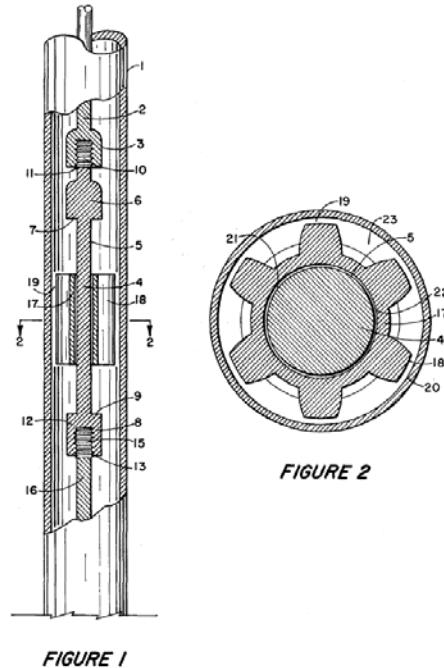


Figure 1 of Oster depicts a longitudinal section of a sucker rod coupling and guide. Figure 2 of Oster depicts a cross sectional view taken along the line 2–2 of Fig. 1.

Figure 1 depicts the anti-friction sucker rod coupling and guide apparatus of the invention within tubing string 1. “The critical feature is that the anti-friction surface of the rod member reciprocates along the anti-friction surface of the rod guide.” *Id.* at col. 5, ll. 1–3.

Petitioner’s Contentions

With respect to claim 1, Petitioner contends that (1) the preamble (preceding “wherein the improved method comprises”) is taught in the background section of the ’362 patent itself and in Oster (Pet. 9–10); (2) Lacy teaches “using tubing sections having polymer liners disposed within



said bore of said tubing sections to eliminate contact” (Pet. 7–8, 10); and (3) Oster teaches “eliminat[ing] contact between said sucker rods and said tubing string when said sucker rods are being reciprocated” (Pet. 8, 10).

Petitioner’s arguments are persuasive.

Petitioner also contends that a person of ordinary skill in the art would have been motivated to combine Lacy and Oster in order to “reduc[e] wear of the sucker rods and tubing string, improving their durability and thereby increasing oil production from the reciprocating well.” Pet. 8–9 (citing Ex. 1005 ¶¶ 50, 51). Mr. Ching testifies to the same. Ex. 1051 ¶¶ 50, 51.

Petitioner’s arguments are persuasive.

*Sufficiency of Petitioner’s Reason to Combine*

Patent Owner contends that a person of ordinary skill in the art would not have been motivated to combine Lacy and Oster because the problem addressed by Lacy is different than the problem addressed by Oster. PO Resp. 8–10. Specifically, Patent Owner argues that Lacy is not directed to sucker rods or a rod-pump system, and therefore, does not address wear caused by metal-to-metal contact. *Id.* at 10. Petitioner counters that (1) Patent Owner fails to address the motivation articulated by Petitioner (Reply 2); and (2) Patent Owner improperly focuses on metal-to-metal contact, rather than wear generally (Reply 2–4).

Patent Owner’s arguments are not persuasive because (1) Patent Owner improperly focuses on metal-to-metal contact rather than wear generally; and (2) the problems addressed in Lacy and Oster are not that different. First, Patent Owner’s argument that Lacy does not address wear caused by metal-to-metal contact is misplaced because the reason to

combine articulated by Petitioner does not depend upon Lacy addressing metal-to-metal contact. Second, we are persuaded that a “skilled artisan would have been motivated by the prospect of reducing wear of the sucker rods and tubing string, improving their durability and thereby increasing oil production from the reciprocating well.” Pet. 9 (citing Ex. 1005 ¶¶ 50–51).

We also are not persuaded by Patent Owner’s argument that a person of ordinary skill in the art would not have been motivated to combine Lacy and Oster because Oster’s teaching effectively solves the problem of metal-on-metal contact causing tubing wear. PO Resp. 10–14. Petitioner counters that Patent Owner’s argument contradicts Patent Owner’s other argument that Oster is evidence of a long-felt, but unsolved need in the art. Reply 4–6. Patent Owner appears to define the “problem” as metal-on-metal contact for purposes of this argument, while defining the “problem” as tubing wear generally for purposes of its “long-felt but unsolved need in the art” argument. The reason to combine articulated by Petitioner is not limited to the problem of “reduc[ing] metal wear,” but extends to reducing tubing wear generally. Pet. 9; Reply 2–4. Even assuming that Oster is effective to “reduce metal wear” (PO Resp. 13), Petitioner has shown sufficiently that a person of ordinary skill in the art would have combined Oster with Lacy to reduce wear generally.

In view of the foregoing, we conclude that Petitioner has shown sufficiently “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l v. Teleflex, Inc.*, 550

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U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Secondary Considerations

Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the '362 patent's invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the challenged claims would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). Secondary considerations may include any of the following: long-felt but unsolved needs, failure of others, unexpected results, commercial success, copying, licensing, and praise. *See Graham*, 383 U.S. at 17; *Leapfrog Enters., Inc. v. Fisher–Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

To be relevant, evidence of nonobviousness must be commensurate in scope with the claimed invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (citing *In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971)); *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998). In that regard, in order to be accorded substantial weight, there must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995). “Nexus” is a legally and factually sufficient connection between the objective evidence and the

claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). The burden of showing that there is a nexus lies with the patent owner. *Id.*; see *In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994).

Patent Owner alleges long felt need, failure of others, commercial success, and copying as objective evidence of non-obviousness. PO Resp. 14–44. As discussed below, Patent Owner fails to provide sufficient credible evidence to support its allegation.

Patent Owner contends that the '362 patent fulfilled the long-felt but unresolved need “to more effectively reduce wear and failure of the metal tubing, sucker rods, and rod couplings in a rod-pumped well.” PO Resp. 14–22. As evidence of the long-felt need, Patent Owner cites the background section of the '362 patent (*id.* at 15–17), earlier patents (*id.* at 17–21), and the Declaration of Robert H. Davis (*id.* at 21–22 (citing Ex. 2009 ¶¶ 15–22)). Patent Owner, however, has defined “need” in relative, rather than absolute, terms (i.e., “to more effectively reduce”). Satisfying the need identified by Patent Owner requires only that a method or system “more effectively reduce wear” than its predecessors. Patent Owner has not presented sufficient credible evidence that the inventions claimed in the earlier patents did not “more effectively reduce wear” than their predecessors. Moreover, Patent Owner argues elsewhere that Oster effectively solved the problem of metal-on-metal contact causing tubing

wear. PO Resp. 11. As a result, we are not persuaded that the alleged need (i.e., “to more effectively reduce wear”) was unmet.

Patent Owner also contends that the non-obviousness of the ’362 patent is evident from the failures of others. PO Resp. 22–26. As support, Patent Owner identifies Oster and U.S. Patent No. 4,938,285 (“Edwards”). *Id.* Petitioner, however, contends that Oster is not evidence of failure simply because it is listed as prior art on the face of Edwards. Reply 8–9. Patent Owner presents insufficient evidence for us to determine whether others had attempted and failed in developing the subject matter of the challenged claims. Patent Owner does not submit evidence of any company’s attempt to produce or use tubing sections that would infringe independent claims 1, 6, 7, 11, or 16, nor does Patent Owner submit evidence of how any company failed in such an attempt.

Patent Owner also contends that the invention claimed in the ’362 patent has enjoyed commercial success. PO Resp. 26–40 (citing Ex. 2009 ¶¶ 28–34). Specifically, Mr. Davis, declarant for Patent Owner, testifies that certain products had sales of over \$1.4 million in the United States, that 50% of those products went into rod-pumping wells and thereby embody the claims of the ’362 patent, and that Western Falcon<sup>2</sup> has “roughly 100% market share.” Ex. 2009 ¶ 30. Petitioner counters that Patent Owner fails to establish any nexus between the claimed invention and the commercial success. Reply 9–11. We agree with Petitioner. First, the fact that

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<sup>2</sup> Western Falcon is the exclusive licensee of the ’362 patent. Ex. 2009 ¶ 28.

consumers buy certain products from Western Falcon is the alleged commercial success itself, not a connection between such success and any claimed features. If all that was necessary to prove a nexus was to show that customers bought more of the identified product than other products, a nexus would exist for every product that exhibits success in the marketplace.

Rather, a patent owner must show proof that the success is “the direct result of the unique characteristics of the claimed invention.” *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996).

Second, even assuming Patent Owner’s sales and market share numbers are correct, Patent Owner submits no factual evidence that demonstrates the nexus between the sales and the claimed invention—e.g., an affidavit from a purchaser explaining that the product was purchased due to the claimed features. In that regard, we have only Mr. Davis’s testimony that “[i]n my opinion, the merits of the patented invention are largely responsible for the commercial success of the four Western Falcon products, and of the Shur-Flo product.” Ex. 2009 ¶ 34. Moreover, Mr. Davis’s testimony that the president of MPI (maker of the Shur-Flo product) “possessed the information on how to make the liner products” (Ex. 2009 ¶ 33, n.2), suggests that the commercial success depended upon something more—e.g., “the composition and molecular weight of the polyethylene used to make the liner” (Ex. 2009 ¶ 37), the dimensions of the liners (*id.*), or the specifics of “the formulation, the manufacture, the installation” (Ex. 1027, 126:21–127:2)—than the products being “tubing sections having polymer liners disposed within,” as recited in the independent claims. “[I]f the

commercial success is due to an unclaimed feature of the device, the commercial success is irrelevant.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006). Accordingly, we are not persuaded that Patent Owner has met its burden of establishing a *prima facie* case of nexus between commercial success and the merits of the patented invention.

Finally, Patent Owner contends that the non-obviousness of the ’362 patent is evident from copying by Petitioners and by a license agreement. PO Resp. 40–44. Specifically, Patent Owner alleges that Petitioner’s product, Shur-Flo, is a copy of the product of the exclusive licensee of the ’362 patent, which Petitioner was taught how to make pursuant to a license agreement. *Id.* at 42. Petitioner counters that Patent Owner (1) fails even to allege copying by more than one entity; and (2) provides no evidence of a patent license. Reply 11. As Petitioner points out, the license relied upon by Patent Owner was a know-how, not a patent, license (*id.* (citing Ex. 1027, 127:9–12)), and is therefore, an unreliable indicator of the value of the ’362 patent. Patent Owner’s only support for copying is Mr. Davis’s testimony that the Shur-Flo product embodies the claims of the ’362 patent (Ex. 2009 ¶ 33) and that “it is believed that [MPI] possessed the information on how to make [Western Falcon’s product]” (*id.* at ¶ 33, n.2). Patent Owner provides no evidence, however, to corroborate Mr. Davis’s testimony. We do not determine infringement in *inter partes* review, and the evidence presented by Patent Owner is insufficient to show that Petitioner copied Patent Owner’s products.

After weighing the evidence of obviousness based on the combination of Lacy, Oster, and the Admitted Prior Art, as well as the evidence of secondary considerations regarding long-felt but unsolved need, failure of others, commercial success, and copying, we conclude that weak evidence of non-obviousness does not overcome Petitioner's strong evidence of obviousness.

Conclusion

For the foregoing reasons, we determine that Petitioner has established by a preponderance of the evidence that claims 1–20 are unpatentable under 35 U.S.C. § 103(a) as obvious over Lacy, Oster, and the Admitted Prior Art.

*C. Petitioner's Motion to Exclude*

The party moving to exclude evidence bears the burden of proof to establish that it is entitled to the relief requested—namely, that the material sought to be excluded is inadmissible under the Federal Rules of Evidence. *See* 37 C.F.R. §§ 42.20(c), 42.62(a). For the reasons discussed below, Petitioner's Motion to Exclude is dismissed.

Petitioner's Motion to Exclude seeks to exclude (1) the Declaration of Robert H. Davis (Ex. 2009); (2) a compilation of case history (Ex. 2011); and (3) claim charts (Exs. 2013, 2017). Paper 29. Patent Owner filed an Opposition to Petitioner's Motion to Exclude. Paper 31. Petitioner filed a Reply to Patent Owner's Opposition to its Motion to Exclude. Paper 32.

We decline to assess the merits of Petitioner's Motion to Exclude. As discussed above, even without excluding the identified evidence, we have



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concluded that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims are unpatentable. Accordingly, Petitioner's Motion to Exclude is *dismissed* as moot.

### III. CONCLUSION

Petitioner has met its burden of proof by a preponderance of the evidence in showing that claims 1–20 of the '362 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Lacy, Oster, and the Admitted Prior Art.

### IV. ORDER

Accordingly, it is

ORDERED that claims 1–20 of the '362 patent are held unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is *dismissed*; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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