

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JOHN CRANE, INC.,
JOHN CRANE PRODUCTION SOLUTIONS, INC. &
JOHN CRANE GROUP CORP.,
Petitioner,

v.

FINALROD IP, LLC,
Patent Owner.

Case IPR2016-01786
Patent 9,045,951 B2

Before SALLY C. MEDLEY, LYNNE E. PETTIGREW, and
AMANDA F. WIEKER, *Administrative Patent Judges*.

WIEKER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

John Crane, Inc., John Crane Production Solutions, Inc., and John Crane Group Corp. (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 4, 6–8, 14, 15, 17, 21, 22, 35, 47, 50, 52, 57, 59, and 65–68 of U.S. Patent No. 9,045,951 B2 (Ex. 1001, “the ’951 patent”). Paper 2 (“Pet.”). In response, Patent Owner, Finalrod IP, LLC, filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

For the reasons set forth below, we deny institution of an *inter partes* review of the ’951 patent.

A. Related Matter

According to the parties, the ’951 patent is involved in the following lawsuit: *Finalrod IP, LLC v. John Crane, Inc., et al.*, Case No. 7-15-cv-00097 (W.D. Tex. 2015). Pet. 1; Paper 5, 2. The ’951 patent is also the subject of PTAB proceeding IPR2016-01827. Pet. 1; Paper 5, 3.

The ’951 patent claims benefit to issued U.S. Patent No. 8,851,162 B2, which was the subject of PTAB proceeding IPR2016-00521 (terminated). Pet. 1 (misstating proceeding number); Paper 5, 2–3.

B. The ’951 Patent

The ’951 patent relates to end fitting connectors for oil well sucker rods. Ex. 1001, 1:15–20. Specifically, the ’951 patent discloses that fiberglass sucker rods may be connected together with end fittings to form a

string that connects a down hole pump to an above-ground pump drive, which is used to extract oil from a well. *Id.* at 1:15–20, 25:7–35, Fig. 12.

Figure 1 of the '951 patent is reproduced below.

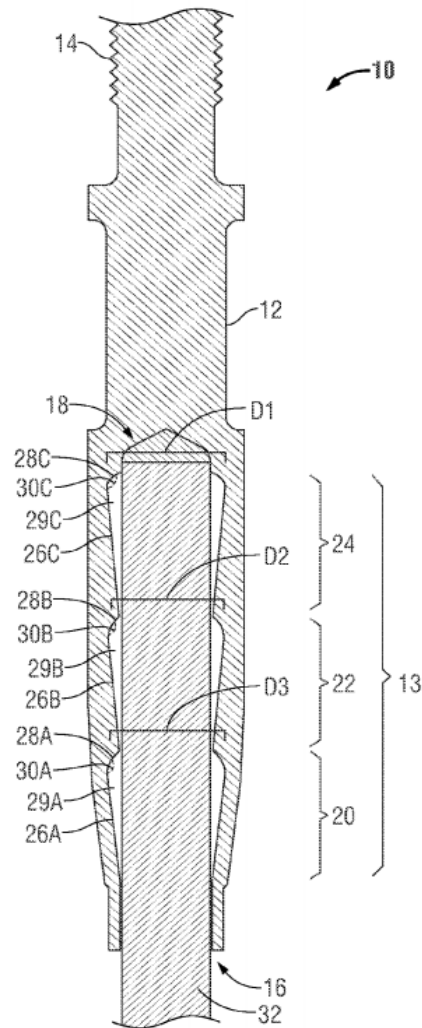


Figure 1

Figure 1 depicts a cross-sectional view of a rod and associated end fitting. *Id.* at 6:4–6. End fitting 10 includes open end 16, for receiving sucker rod 32, and closed end 18. *Id.* at 6:66–7:2. The interior surface of the end fitting includes wedge system 13, having outer 20, intermediate 22, and inner 24 wedges. *Id.* at 7:5–7. Each wedge includes a leading edge

(26A, 26B, 26C), a trailing edge (28A, 28B, 28C), and an angle between those edges (30A, 30B, 30C). *Id.* at 7:13–24.

A securing material such as resin is provided between rod 32 and fitting 10, wherein the resin cures and forms wedge sections 29A, 29B, 29C that protrude from the rod and fixedly secure the rod in the fitting. *Id.* at 7:7–12, 7:28–35. The '951 patent explains that contact between the protruding wedges of resin and the leading or trailing edges of the fitting distributes tensile and axial compressive forces at each of the wedge portions. *Id.* at 7:43–54. Further,

[t]he amount of each compressive force applied to each respective wedge portion can vary depending on the length of the leading edge, or trailing edge against which the protruding wedge of cured epoxy/resin material is urged by the axial force from reciprocation of the sucker rod string. The size of the angles influences the angle at which each of the edges extends relative to the corresponding protruding wedge of resin material and therefore also influences the force applied to each wedge portion.

Id. at 7:54–64 (reference numerals omitted). The '951 patent further explains that the lengths of the leading edges, trailing edges, and/or the size of the angles can be arranged to create a desired force distribution profile along the length of the end fitting, including to provide a profile in which compressive load at the outer wedge portion exceeds that at the inner wedge portion. *Id.* at 3:21–51.

C. Illustrative Claim

Challenged claims 4, 7, 14, and 21 are independent claims. Ex. 1001, 27:5–52, 27:57–28:39, 28:62–29:27, 29:44–30:28. Challenged claims 6 and 65 depend directly from claim 4. *Id.* at 27:55–56, 34:12–22. Challenged claims 8 and 66 depend directly from claim 7. *Id.* at 28:40–42, 34:23–33.

Challenged claims 15, 17, and 67 depend directly or indirectly from claim 14. *Id.* at 29:28–32, 29:35–36, 34:34–44. Challenged claims 22, 35, 50, 52, 57, 59, and 68 depend directly from claim 21. *Id.* at 30:29–31, 31:7–9, 31:59–61, 31:65–67, 32:12–14, 32:18–20, 34:45–55.

Claim 4, reproduced below, is illustrative:

4. An end fitting for a sucker rod, the end fitting comprising:

a body having an interior, a closed end, an open end, and a wedge system formed in the interior, wherein the wedge system comprises:

an outer wedge portion formed in the interior proximate to the open end, wherein the outer wedge portion comprises a first leading edge, a first trailing edge, and a first angle between the first leading edge and the first trailing edge, wherein the first leading edge faces the open end and the first trailing edge faces the closed end, and wherein the length of the first leading edge, the length of the first trailing edge, and the size of the first angle define a first distribution of force in the outer wedge portion;

an intermediate wedge portion formed in the interior between the outer wedge portion and the closed end, wherein the intermediate wedge portion comprises a second leading edge, a second trailing edge, and a second angle between the second leading edge and the second trailing edge, wherein the second leading edge faces the open end and the second trailing edge faces the closed end, and wherein the length of the second leading edge, the length of the second trailing edge, and the size of the second angle define a second distribution of force in the intermediate wedge portion; and

an inner wedge portion formed in the interior between the intermediate wedge portion and the closed end, proximate to the closed end, wherein the inner wedge portion comprises a third leading edge, a third

trailing edge, and a third angle first angle between the third leading edge and the second third edge, wherein the third leading edge faces the open end and the third trailing edge faces the closed end, and wherein the length of the third leading edge, the length of the third trailing edge, and the size of the third angle define a third distribution of force in the inner wedge portion,

wherein at least two of the first angle, the second angle, and the third angle differ in size such that during use a compressive load applied to the sucker rod at the inner wedge portion is greater than a compressive load applied to the sucker rod at the outer wedge portion, such that compressive forces applied to the sucker rod at the closed end of the body exceed compressive forces at the open end of the body, and

wherein the second angle is equal to one of the first angle or the third angle.

Ex. 1001, 27:5–52; *see also* Pet. 12–18.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references. Pet. 3.

Rutledge '431	U.S. 6,193,431 B1	Feb. 27, 2001	(Ex. 1003)
Iwasaki	U.S. 4,822,201	Apr. 18, 1989	(Ex. 1007)
McKay	U.S. 4,401,396	Aug. 30, 1983	(Ex. 1012)
Anderson	U.S. 4,653,953	Mar. 31, 1987	(Ex. 1018)

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. 3.

References	Basis	Challenged Claims
Rutledge '431, Iwasaki, and McKay	§ 103(a)	4, 6–8, 14, 15, 17, 21, 22, 35, 47, 52, 65–68
Rutledge '431, Iwasaki, McKay, and Anderson	§ 103(a)	50, 57, 59

II. ANALYSIS

A. *Claim Interpretation*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, claim terms are generally given their ordinary and customary meaning as would be understood by a person 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).

Petitioner proposes constructions for the phrases “define a [first/second/third] distribution of force” and “such that.” Pet. 20–25. Patent Owner disagrees with Petitioner’s constructions and proposes its own. Prelim. Resp. 18–22.

On the record before us, we need not construe explicitly these phrases in reaching our Decision. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

B. *Asserted Ground of Obviousness over Rutledge ’431, Iwasaki, and McKay*

Petitioner contends that claims 4, 6–8, 14, 15, 17, 21, 22, 35, 47, 52, 65–68 are unpatentable under 35 U.S.C. § 103(a) as obvious over Rutledge ’431, Iwasaki, and McKay. Pet. 25. To support this contention, Petitioner explains how it believes the references disclose or suggest each claim limitation, and why one skilled in the art would have found it obvious to combine the references. *Id.* at 25–50. Petitioner also relies upon the Declaration of Gary R. Wooley (Ex. 1010, the “Wooley Declaration”) in support. *Id.* Patent Owner counters that Petitioner fails to satisfy its burden

of presenting a proper case of obviousness in accordance with *Graham v. John Deere*¹ and, further, that the cited prior art fails to disclose or suggest all claim limitations. Prelim. Resp. 22–52.

We have reviewed the parties’ contentions and supporting evidence. Given the evidence of record, we determine that the information presented in the Petition fails to establish a reasonable likelihood that challenged claims 4, 6–8, 14, 15, 17, 21, 22, 35, 47, 52, 65–68 are unpatentable under 35 U.S.C. § 103(a) over Rutledge ’431, Iwasaki, and McKay. We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by a brief summary of the asserted prior art, and then we address the parties’ contentions.

1. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such 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 to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17–18. We analyze this ground based on obviousness in accordance with the above-stated principles.

¹ 383 U.S. 1 (1966).

2. Overview of Rutledge '431 (Ex. 1003)

Rutledge '431 discloses a connector for connecting together fiberglass sucker rods. Ex. 1003, Abstract. Figure 25 is reproduced below.

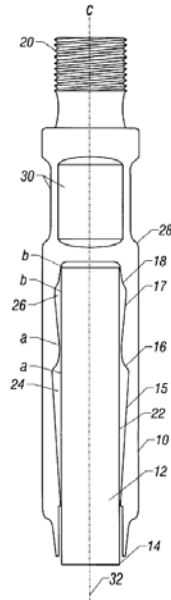
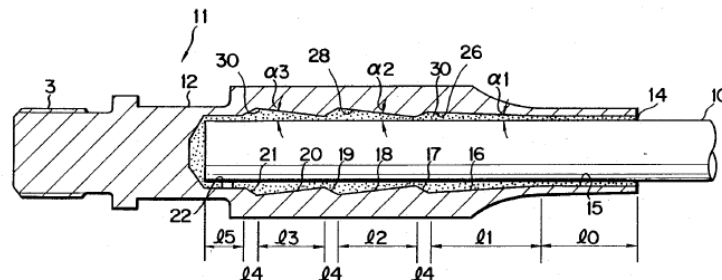


FIG. 25

Figure 25 presents a cross-sectional view of a sucker rod and connector. *Id.* at 7:39–40, 44–46. As shown, connector 10 includes axial receptacle 12 for receiving sucker rod 14, wherein the receptacle includes a plurality of wedge-shaped annuluses 24, 26. *Id.* at 7:48–55.

3. Overview of Iwasaki (Ex. 1007)

Iwasaki discloses a coupling pin for connecting together sucker rods. Ex. 1007, 1:17–21, 2:14. Figure 1 is reproduced below.

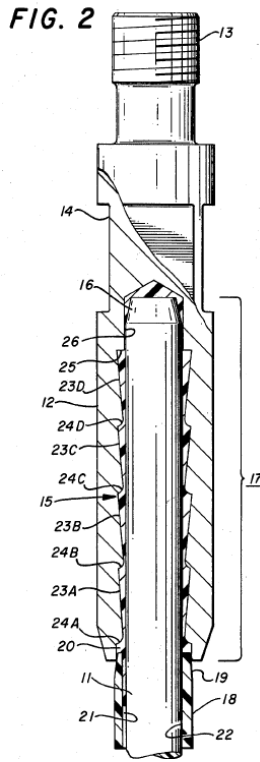


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Id. at 2:49–54.

4. Overview of McKay (Ex. 1012)

rods. Ex. 1012, Abstract. Figure 2 is reproduced below.



at 2:49–64.

5. Discussion

The Petition contends that the challenged claims would have been obvious over Rutledge '431, Iwasaki, and McKay, and concludes that “[it] would have been obvious to a POSITA to employ the Rutledge '431 Patent’s teachings with the teachings of Iwasaki and McKay given that each reference describes a potential means for addressing sucker rod fatigue by reducing stress concentrations within the wedge system.” Pet. 25–27.

We have reviewed Petitioner’s contentions and, for the reasons that follow, are not satisfied that the Petition provides adequate explanation or is appropriately precise and specific in articulating the basis of the proposed ground to warrant institution of an *inter partes* review. *See, e.g.*, Prelim. Resp. 22–28.

The question of obviousness is resolved on the basis of underlying factual determinations set forth in *Graham v. John Deere*. Namely, the “scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.” *Graham*, 383 U.S. at 17–18; *see supra* Section II(B)(1). In this case, the Petition fails to identify sufficiently or precisely the differences between the prior art and claims, and fails even to identify the specific prior art teachings upon which Petitioner relies, preventing proper evaluation of this asserted ground of unpatentability.

For example, in treating the first three limitations of the independent claims (termed X.1, X.2, and X.3 in the Petition),² the Petition contends that each of “[t]he Rutledge ’431, Iwasaki, and McKay patents teach end fittings” as claimed. Pet. 27–28. From this contention, it is unclear which reference Petitioner relies upon to teach these limitations, or whether Petitioner relies upon an unarticulated combination of the references. Petitioner does not explain why it cites all three references, and does not explain if the references’ teachings are equivalent, duplicative, or meant to address a feature missing in another reference. *See also id.* at 28–30 (similarly treating limitations X.4a–c, X.5a–c, X.6a–c).

With respect to the limitations of the independent claims drawn to wedge characteristics that “define a [first/second/third] distribution of force” (termed X.4d, X.5d, X.6d), the Petition again presents imprecise contentions. First, the Petition contends, “[t]hese limitations are *obvious*.” *Id.* at 30 (emphasis added). The Petition then states, however, that each of “the Rutledge ’431, Iwasaki, and McKay patents *disclose* that the shape of a wedge . . . *necessarily* ‘defines’ or impacts a distribution of force by contributing to the distribution of forces acting on that wedge. Accordingly, a POSITA would find that the Rutledge ’431, Iwasaki, and McKay patents *disclose* these limitations.” *Id.* at 31–33 (emphases added, citations omitted). On this record, it is unclear whether Petitioner contends that these limitations would have been obvious (*id.* at 30) or are disclosed inherently by the prior art (*id.* at 33), and by which references—Rutledge ’431, Iwasaki, McKay, or an unarticulated combination of the references.

² *See* Pet. 13–18 (charting independent claims 4, 7, 14, and 21 and assigning designators, e.g., “X.1,” to each claim limitation).

Finally, with respect to the limitations of the independent claims drawn to compressive loads applied to different wedges of the wedge system (termed X.7b, X.8), the Petition again presents imprecise contentions. First, the Petition contends, “these limitations are *obvious*.” *Id.* at 38 (emphasis added). The Petition then states, however, that each of “the Rutledge ’431, Iwasaki, and McKay [patents] *disclose* wedge systems” as claimed because, “[d]ue to the interior wedge’s proximity to the closed end . . . [it] naturally receives a greater amount of compressive forces,” such that “a POSITA would have found *the natural result* of the Rutledge ’431, Iwasaki, and McKay patents’ end fitting designs *to satisfy* the claims’ requirement.” *Id.* at 38–40 (emphases added, citations omitted). Finally, the Petition states that “[a] POSITA would have found it *obvious* that the wedge systems disclosed by the Iwasaki, McKay, and the Rutledge ’431 patents . . . results in greater compressive forces being applied to the interior wedges proximate the closed end of the end fitting.” *Id.* at 40. Again, on this record, it is unclear whether Petitioner contends that these limitations would have been obvious (*id.* at 38, 40) or are disclosed inherently by the prior art (*id.* at 38–40), and by which references—Rutledge ’431, Iwasaki, McKay, or an unarticulated combination of the references.

On this record, it is impossible to decipher what Petitioner asserts to be its alleged combination because Petitioner fails to identify adequately the specific teachings of the references upon which Petitioner relies. *See* Prelim. Resp. 23, 27. Merely identifying where limitations may be found in several prior art references is not sufficient to demonstrate a reasonable likelihood of success in showing the obviousness of the claims, without articulating how and why *specific* teachings of the references would have been combined. It

is Petitioner's responsibility "to explain specific evidence that support[s] its arguments, not the Board's responsibility to search the record and piece together what may support Petitioner's arguments." *Dominion Dealer Solutions, LLC v. Autoalert, Inc.*, Case IPR2013-00225, slip op. at 4 (PTAB Oct. 10, 2013) (Paper 15). Further, the lack of clarity in Petitioner's presentation deprives Patent Owner of an appropriate opportunity to respond to the Petition, and does not lend itself to informed evaluation by the panel. *See* Prelim. Resp. 23.

Accordingly, we do not institute an *inter partes* review on this ground.

*C. Asserted Ground of Obviousness
over Rutledge '431, Iwasaki, McKay, and Anderson*

Petitioner contends that dependent claims 50, 57, and 59 are unpatentable under 35 U.S.C. § 103(a) as obvious over Rutledge '431, Iwasaki, McKay, and Anderson. Pet. 50–57. Petitioner's reliance on Anderson to render obvious the limitations of dependent claims 50, 57, and 59 does not cure the deficiencies noted above with respect to independent claim 21, from which these claims depend. Pet. 50–57. Therefore, for the same reasons discussed above, we determine that the information presented in the Petition fails to establish a reasonable likelihood that Petitioner would prevail in showing that dependent claims 50, 57, and 59 are unpatentable over Rutledge '431, Iwasaki, McKay, and Anderson.

III. CONCLUSION

For the foregoing reasons, we conclude that there is not a reasonable likelihood that Petitioner would prevail in showing that claims 4, 6–8, 14, 15, 17, 21, 22, 35, 47, 50, 52, 57, 59, and 65–68 of the '951 patent are unpatentable.

IV. ORDER

Upon consideration of the record before us, it is:

ORDERED that the Petition is denied as to all challenged claims, and no trial is instituted.

Case IPR2016-01786

Patent 9,045,951 B2

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