

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

American Axle & Manufacturing, Inc.
Petitioner,

v.

Neapco Drivelines LLC,
Patent Owner.

Case IPR2018-01761
Patent No. 5,772,520

PATENT OWNER'S NOTICE OF APPEAL

Please take notice that under 35 U.S.C. §§ 141(c), 142, 319; 37 C.F.R. §§ 90.2(a), 90.3(a), and Federal Rules of Appellate Procedure/Federal Circuit Rule 15, Patent Owner, Neapco Drivelines LLC, hereby appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision entered on March 25, 2020 (Paper 59), and all rulings leading up to those decisions. A copy of the Final Written Decision is attached as Exhibit A.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Neapco identifies at least the following issues for appeal:

(i) the Board’s decision that claim 11 of U.S. Patent No. 5,772,520 (Ex. 1001, “the ‘520 patent”) was shown to be unpatentable under 35 U.S.C. § 102(e) as anticipated by Burton, U.S. Patent No. 5,655,968 (Ex. 1004, “Burton”);

(ii) the Board’s decision that claim 12 of the ‘520 patent was shown to be unpatentable under 35 U.S.C. § 103 as obvious over Burton in view of various additional references, including that substantial evidence supports a finding that one of skill in the art would have been motivated to combine those references;

(iii) the Board’s construction of certain terms, including the term “vent,” the term “seal,” the term “sealingly engage,” as well as the Board’s implicit construction of those limitations and their application to the prior art;

(iv) the Board’s claim construction determination that the preamble is not limiting, and the Board’s application of that decision to the prior art;

(v) the Board's interpretation of the prior art;

(vi) the Board's findings that conflict with the evidence of record or are otherwise not supported by substantial evidence;

(vii) the Board's legal errors in its obviousness and anticipation analyses;
and

(viii) all other issues decided adversely to Patent Owner in any orders, decisions, ruling and opinion underlying or supporting the Final Written Decision.

Simultaneously with this submission, Neapco is filing a copy of this Notice of Appeal with the Director of the United States Patent and Trademark Office and a copy of the same, along with the required docketing fee, with the Clerk of the United States Court of Appeals for the Federal Circuit as set forth in the accompanying certificate of service.

Dated: May 26, 2020

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on May 26, 2020, a complete and entire copy of this Patent Owner's Notice of Appeal was served by email to the Petitioner at the following correspondence address of record:

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I hereby certify that, in addition to being filed electronically through the Board's E2E System, the original version of the foregoing Notice of Appeal was filed by hand on May 26, 2020, with the Director of the United States Patent and Trademark Office, at the following address:

Director of the United States Patent and Trademark Office
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I hereby certify that on May 26, 2020, a true and correct copy of the foregoing Notice of Appeal, along with a copy of the Final Written Decision, was

filed electronically with the Clerk's Office of the United States Court of Appeals
for the Federal Circuit, at the following address:

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EXHIBIT A

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN AXLE & MANUFACTURING, INC.,
Petitioner,

v.

NEAPCO DRIVELINES LLC,
Patent Owner.

IPR2018-01761
Patent 5,772,520

Before GEORGE R. HOSKINS, FRANCES L. IPPOLITO, and
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

American Axle & Manufacturing, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting institution of an *inter partes* review of claims 11 and 12 of U.S. Patent No. 5,772,520 (Ex. 1001, “the ’520 patent”). Neapco Drivelines LLC (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of claims of claims 11 and 12 of the ’520 patent, on all presented challenges. Paper 9 (“Dec. to Inst.”). After institution, Patent Owner filed a Response (Paper 16, “PO Resp.”), to which Petitioner filed a Reply (Paper 24, “Pet. Reply”), and Patent Owner filed a Sur-Reply (Paper 35, “PO Sur-Reply”).

Several motions were filed during the trial. Patent Owner filed a Motion to Exclude (Paper 44), Petitioner filed an Opposition (Paper 45) to that Motion, and Patent Owner filed a Reply (Paper 48). Patent Owner filed a Motion to Seal related to certain exhibits, and for Entry of a Protective Order (Paper 18), which Petitioner did not oppose. Petitioner filed a Motion to Seal its Reply Brief and two exhibits (Paper 25) and another Motion to Seal its demonstrative exhibits (Paper 54). Patent Owner did not file an opposition to either of Petitioner’s Motions to Seal.

An oral hearing in this proceeding was held on January 10, 2020; a transcript of the hearing is included in the record (Paper 58, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. 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 11 and 12 of the ’520 patent are unpatentable.

II. BACKGROUND

A. Real Parties in Interest

Petitioner states that the real parties-in-interest are American Axle & Manufacturing, Inc. and American Axle & Manufacturing Holdings, Inc. Pet. 4. Patent Owner states that “Neapco Drivelines LLC (‘Neapco’) is . . . the real party-in-interest.” Paper 4, 1.

B. Related Proceedings

The parties indicate that the ’520 patent has been asserted in *Neapco Drivelines LLC v. American Axle & Manufacturing, Inc.*, Case No. 2:17-cv-13287-AJT-APP (E.D. Mich.) (filed Oct. 5, 2017; complaint served Oct. 12, 2017). Pet. 5; Paper 4, 1.

C. The ’520 Patent (Ex. 1001)

The ’520 patent issued June 30, 1998, from an application filed on July 11, 1996. Ex. 1001, [22], [45]. The ’520 patent relates to “[a] vented slip joint assembly” having two splined shafts, a seal, and a vent. *Id.* at [57]. Figure 1 of the ’520 patent is reproduced below.

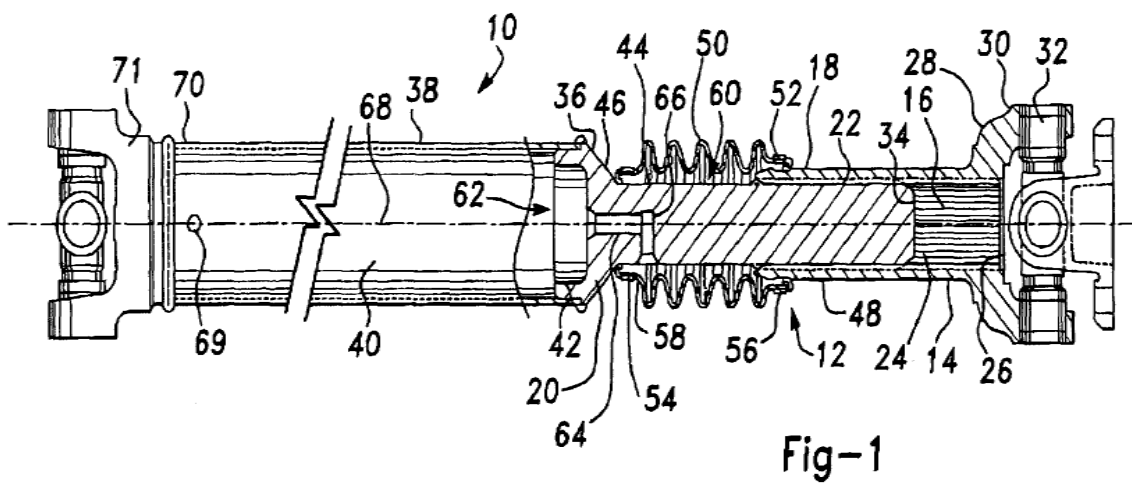


Figure 1 depicts driveshaft assembly 10 that includes slip joint 12. Ex. 1001, 1:66–67. Slip joint 12 includes slipyoke 14, which is a female shaft having internally splined portion 24, bore 16, and first end 18. *Id.* at 2:1–3, 2:10–11. First end 18 of slipyoke 14 slidingly receives first end 34 of studyoke 20, which is a male shaft having externally splined diameter 22. *Id.* at 2:1–3, 2:10–11, 2:18–19. Plug 26 on the end of slipyoke 14 opposite the studyoke retains lubricant within bore 16. *Id.* at 2:5–8. Plug 26 “may be solid, or vented.” *Id.* at 2:8. Second end 36 of studyoke 20 is welded to driveshaft 38, which includes hollow bore 40. *Id.* at 2:21–23. Boot seal 50 prevents contamination of lubricant within the system, and creates cavity 60 between outer diameter 44 of studyoke 20 and boot seal 50. *Id.* at 2:29–31, 2:38–41. As studyoke 20 and slipyoke 14 move axially closer to one another, pressure builds up in cavity 60. Figure 1 depicts one version of vent 62 in studyoke 20, which relieves pressure in cavity 60 by diverting air through vent 62 to cup-shaped end 42 of studyoke 20. *Id.* at 2:45–55.

The ’520 patent describes several embodiments that vary the manner in which air escapes the areas of the system that are under pressure during operation. For example, Figure 2 depicts axial bore 64’ that “extends through the entire length” of studyoke 20’. *Id.* at 2:58–60. Axial bore 64’ allows air to escape from internal bore 16 when air is compressed within internal bore 16 of slipyoke 14, between first end 34’ of studyoke 20’ and plug 26. *Id.* at 2:60–62. The compressed air escapes through axial bore 64’ into a larger volume of hollow bore 40 within driveshaft 38, with the larger volume providing less resistance to axial movement during operation. *Id.* at 2:62–66. In addition, Figure 3 depicts removal of one or more spline teeth 23 from studyoke 20’, which creates an axial channel between

studyokey 20' and slipyokey 14. *Id.* at 2:66–3:3. When the structures of Figures 2 and 3 are combined, the omitted spline tooth 23 permits compressed air in cavity 60 to escape between the shafts and into bore 16, then through axial bore 64', and into hollow bore 40 within driveshaft 38. *Id.* at 3:3–7. The '520 patent also describes communication between cavity 60 under boot seal 50 to the through bore 64' using a radial bore similar to radial bore 66 in Figure 1. *Id.* at 3:7–10. The '520 patent also describes, in “a further alternative embodiment,” aperture 69 that “may be provided” at second end 70 of drive shaft 38 “to permit the air to escape from the driveline entirely.” *Id.* at 3:11–14.

The '520 patent touts advantages of its system, including allowing for the escape of compressed air during assembly and operation, which provides less resistance and more precise balancing of the driveline. *Id.* at 3:19–25.

C. Challenged Claims

The '520 patent has 13 claims, of which Petitioner challenges independent claim 11 and claim 12, which depends from claim 11. Claims 11 and 12 are reproduced below.

11. A method of venting a slip joint assembly comprising[:]
providing a first shaft having a first end with an externally splined portion;
providing a second shaft having a closed first end with an internally splined portion defining a first cavity therein, the second shaft drivably connected to the first end of the first shaft;
providing a seal to sealingly engage the first and second shafts to create a second cavity therebetween defined by the seal and the first and second shafts; and

providing a vent in the first shaft having a first end in fluid communication with the second cavity and a second end in fluid communication outside the first and second cavities.

12. A method according to claim 11, wherein the vent is provided by removing a spline from one of the shafts to provide fluid communication between the first and second cavities and providing an axial bore through the first shaft to provide fluid communication outside the first and second cavities.

Ex. 1001, 4:61–5:13.

D. Asserted Grounds

Petitioner challenges claims 11 and 12 on the following grounds:

(1) claim 11 under 35 U.S.C. §102(e) as anticipated by Burton;¹

(2) claim 11 under 35 U.S.C. § 103 as unpatentable over Burton and Minel^{2,3}

(3) claim 12 under 35 U.S.C. § 103 as unpatentable over Burton, Rabson,⁴ Warner,⁵ Yaegashi,⁶ Minel, and the knowledge of one of ordinary skill in the art;

¹ U.S. Patent No. 5,655,968, filed May 7, 1996 and claiming priority to an application filed June 30, 1994 (Ex. 1004, “Burton”).

² French Patent Pub. No. 2,257,042, published August 1, 1975 (Ex. 1006, “Minel”).

³ Although Petitioner groups challenges (2) and (3) in this list together, it appears that Petitioner’s challenge to claim 11 on this basis relies only on Burton and Minel, and we therefore treat it as a separate ground. *See* Pet. 8, 50–57.

⁴ U.S. Patent No. 3,063,266, issued November 13, 1962 (Ex. 1010, “Rabson”).

⁵ U.S. Patent No. 1,923,649, issued August 22, 1933 (Ex. 1005, “Warner”).

⁶ U.S. Patent No. 5,771,737, issued June 30, 1998 (Ex. 1020, “Yaegashi”).

(4) claim 11 under 35 U.S.C. § 102(b) as anticipated by Yoshida;⁷ and

(5) claims 11 and 12 under 35 U.S.C. § 103 as unpatentable over Minel, Yoshida, SAE Manual,⁸ Rabson, Warner, Yaegashi, and the knowledge of one of ordinary skill in the art. Pet. 8.

In addition the references above, Petitioner relies on the Declaration of Gregory W. Davis, Ph.D. (Ex. 1002).

III. ANALYSIS

A. *Legal Standards*

To prevail in its challenges, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”

Harmonic Inc. v. Avid Tech., Inc., 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity ... the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

To anticipate a claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation.”

⁷ Japanese Patent Pub. No. S58-152931, published September 10, 1983 (Ex. 1022, “Yoshida”).

⁸ *Universal Joint and Driveshaft Design Manual*, Advances in Engineering Series, No. 7 (SAE International 1991) (Ex. 1003, “SAE Manual”).

Finisar Corp. v. DirecTV Group, Inc., 523 F.3d 1323, 1334 (Fed. Cir. 2008). That “single reference must describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art.” *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented 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. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

The level of skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). “The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art” at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.*

Petitioner contends that a person having ordinary skill in the art would have

either (1) a graduate's degree in mechanical or automotive engineering; or (2) a bachelor's degree in mechanical or automotive engineering and experience relating to the design and operation of powertrain components and systems.

Pet. 7 n.2 (citing Ex. 1002 ¶¶ 21–24).

Patent Owner proposes a different level of ordinary skill in the art:

A person having ordinary skill in the art of the '520 Patent would hold at least a bachelor's degree in mechanical engineering, or related scientific field, with two or more years of related post-graduate experience (academic or industrial) in the design and development of driveshafts or similar automotive components and in the concept of venting powertrain components. Ex. 2004 at ¶ 21.

PO Resp. 8–9.

The parties' proposals do not appear to differ in any respect that would suggest our determination on this issue would impact any of our findings in this case. We do note that Petitioner's proposal includes a person having a graduate degree in mechanical engineering without any experience in the automotive components. Based on the full record before us, because the asserted references describe the problems and solutions of automotive components such as venting powertrain components, we apply Patent Owner's proposal to our analysis because it is more consistent with the prior art of record.

C. Claim Construction

The '520 patent expired in July 2016. Pet. 30. In this *inter partes* review, the claims of the expired '520 patent are interpreted using the same standard applicable in district court. 37 C.F.R. § 42.100(b) (July 2018);

Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc., 853 F.3d 1272, 1279 (Fed. Cir. 2017) (“The Board construes claims of an expired patent in accordance with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).”).⁹ Claim terms are given their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1313–17.

The parties present competing constructions for a number of claim terms. We need only construe claim terms to the extent necessary to resolve the determinative issues in this *inter partes* review. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (construing explicitly only those claim terms in controversy and only to the extent necessary to resolve the controversy); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

1. *The Preamble As a Limitation*

Patent Owner argues that we should treat the preamble of claim 11—“A method of venting a slip joint assembly”—as limiting. PO Resp. 9. According to Patent Owner, “the preamble limits the claims to a method: (i) of venting ‘a slip joint assembly;’ and (ii) that provides for the escape of

⁹ On October 11, 2018, the Office revised its rules to harmonize the Board’s claim construction standard with that used in federal district court. CHANGES TO THE CLAIM CONSTRUCTION STANDARD FOR INTERPRETING CLAIMS IN TRIAL PROCEEDINGS BEFORE THE PATENT TRIAL AND APPEAL BOARD, 83 Fed. Reg. 51340 (Oct. 11, 2018). This rule change, however, applies to petitions filed after November 13, 2018, so the district court claim construction standard applies here due to the expiration of the challenged patent, not due to the revised rule. *Id.*

compressed air outside of the slip joint assembly entirely, to relieve pressure within the joint.” *Id.* As to the first requirement, Patent Owner contends that the Specification repeatedly refers to the “slip” aspect of the described joint, and that the “relative sliding axial movement . . . gives life and meaning to the venting system.” *Id.* at 10. As to the second requirement, Patent Owner contends that “venting a slip joint assembly” means that compressed air within the joint must “escape outside of the slip joint assembly.” *Id.* at 11. Patent Owner contends that the language of the preamble supports this interpretation, as well as consistent disclosure of escape of air from the slip joint assembly in each embodiment of the Specification. *Id.* at 11–12. Patent Owner further contends that one of ordinary skill in the art would not consider the claimed “vented” slip joint to encompass “sealed” joints that fail to vent outside of the joint. *Id.* at 12–13. Patent Owner also relies on the prosecution history, alleging that the applicant distinguished over prior art on the basis that it failed to relieve pressure outside the slip joint. *Id.* at 13. In Patent Owner’s view, the preamble must limit the claim to provide “life and meaning to the claims” by “making clear that the claims do not encompass a sealed slip joint assembly.” *Id.*

Petitioner argues that generally a preamble does not limit a claim, and that none of the typical factors that should be considered when determining whether a preamble limits a claim favor Patent Owner’s position here. Pet. Reply 2–4. Petitioner also argues that even if the preamble limits the claims, “it only limits the claims to a ‘slip joint assembly’ having the express structurally complete venting arrangement in the claim bodies.” *Id.* at 4–5. Petitioner also relies on claim 6, which includes the same preamble but has

limitations in the body of the claim that require escape of air outside the slip joint, suggesting the applicant knew how to claim that requirement when it sought to do so, while only requiring escape of air outside the claimed cavities in claim 11. *Id.* at 5. As to the prosecution history, Petitioner contends that the Examiner found that prior art *sealed* joints disclose the preamble requirements, and applicant never refuted those findings. *Id.* at 5–6.

In its Sur-Reply, Patent Owner again argues that the preamble gives “life and meaning” to the claim. PO Sur-Reply 4. More specifically, Patent Owner argues that the preamble gives life and meaning to the claims and provides necessary context by (1) specifying a slip joint that allows for axial movement and making clear the claim does not cover other joints; and (2) making clear that “the object being vented is the ‘slip joint assembly,’ not merely a cavity or cavities within a slip joint assembly”; and (3) identifying “where the escaped air is going—outside of the slip joint assembly.” *Id.* at 4–5.

A preamble generally limits a claim “if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). On the other hand, “a preamble is not limiting ‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’” *Id.* (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed.Cir.1997)).

In our view, the preamble at issue here more closely resembles a statement of intended use followed by a complete invention, than something

that recites essential steps or structure. The body of method claim 11 includes four steps that define a complete method, including complete structures used in the method steps. Ex. 1001, 4:61–5:7 (body of claim including “providing a first shaft . . . providing a second shaft . . . providing a seal . . . and providing a vent”); *see also* PO Resp. 10 (“[T]he bodies of the claim recite the structural elements of a slip joint.”). In addition, the preamble states an intended use of the invention—to vent a slip joint assembly—that introduces the steps of the method but does not suggest it limits those steps or adds further steps or structure. Ex. 1001, 4:61. Patent Owner argues that the preamble must limit the claim to specify “where the escaped air is going” because the body of the claim fails to do so, but we disagree. *See, e.g.*, PO Sur-Reply 5. The body of the claim already specifies where the escaped air must go by requiring a vent “with a second end in fluid communication outside the first and second cavities.” Ex. 1001, 5:5–7. Nothing in the claim language suggests any ambiguity in the “vent” limitation, including the language requiring venting outside the two claimed cavities.

Further, while not determinative, claim 6 employs claim language that allows for compressed air to escape outside the slip joint assembly by requiring a vent “in fluid communication with the first cavity of the driveshaft,” i.e., outside the slip joint. *Id.* at 4:29–30. The preamble of claim 6 recites a “vented slip joint assembly,” which is similar to the preamble phrase “venting a slip joint assembly” in claim 11. *Id.* at 4:15, 4:61. Patent Owner asks us to read the language in claim 11’s preamble as limiting, when there appears to be no reason to do so in the preamble of claim 6 because the body of the claim already specifies that the compressed

air vents outside the slip joint and into the driveshaft. That language in the body of claim 6 suggests that the applicant knew how to claim venting outside the slip joint when it desired, and it did not seek that claim scope in claim 11 when it merely required venting outside certain cavities, but not the slip joint. We are reluctant to read the preamble as limiting, and construe it as requiring venting outside the slip joint, when the express language in the body of the claim indicates otherwise and other claim language suggests that the choice was deliberate.

In addition to the principles addressed above, we consider several “guideposts” when determining whether language in a preamble limits a claim. *Catalina Mktg.*, 289 F.3d at 808. We agree with Petitioner that those guideposts do not establish that the preamble limits claim 11 here. *See* Pet. Reply 3–4. For example, claim 11 is not in “Jepson” format, the preamble does not provide antecedent basis for terms used on the body of the claim, and limitations in the body of the claim are understandable without resort to the preamble language. *See Catalina Mktg.*, 289 F.3d at 808, 810 (concluding that preamble language was not “essential to understand limitations or terms in the claim body”); *Ex. 1001*, 4:61–5:7. In addition, although the Specification describes structures that vent outside the slip joint, it does not underscore the importance of venting outside the slip joint instead of venting the cavities within the slip joint. *See Catalina Mktg.*, 289 F.3d at 808. Rather, the Specification stresses relief of pressure from the cavities, which does not require compressed air to leave the entire slip joint. *See Ex. 1001*, 1:6–8 (referring to “vented studyoke” in the “Field of the Invention,” which refers to venting studyoke 20 only, not the entire slip joint 12); 238–66 (describing venting cavities to relieve pressure).

Patent Owner also contends that the prosecution history shows the preamble was used to distinguish over the prior art. PO Resp. 13 (citing Ex. 1023, 192; Ex. 2004 ¶¶ 148–151). “[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention.” *Catalina Mktg.*, 289 F.3d at 808. “Without such reliance, however, a preamble generally is not limiting when the claim body describes a structurally complete invention.” *Id.* at 809.

Here, Patent Owner did not clearly rely on the preamble to distinguish the prior art. The one page Patent Owner cites from the prosecution history appears to show the applicant attempting to distinguish the prior art on the basis that it fails to disclose venting from a cavity, or cavities. Ex. 1023, 192 (“In the references of record, any vent communicates from one end of closed cavity to the opposite end of the cavity, but not outside a closed cavity, thus displacing air from one end to the opposite end.”). Applicant did not argue that the compressed air in the prior art devices fails to leave the entire slip joint as supposedly required by the preamble. *Id.* Even if Patent Owner distinguished its claimed inventions from the prior art based on venting aspects of the claims, those arguments are not sufficiently tied to the preamble language at issue here to constitute clear reliance on that language to distinguish the prior art. *See Catalina Mktg.*, 289 F.3d at 810 (finding that the applicants “did not rely on preamble phrase to distinguish over” the prior art in question); *Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1238 (Fed. Cir. 2017) (finding arguments in prosecution history in

relation to claim limitations in the body of the claim insufficient to distinguish the prior art based on the language in the preamble).

Based on the foregoing, we agree with Petitioner that the preamble of claim 11 does not limit the claim. Even if we did find the preamble limiting, we would not ascribe to it the narrow meaning Patent Owner proposes. Instead, we would construe “venting a slip joint assembly” to encompass venting within the slip joint assembly, given that the body of the claim merely requires venting from the claimed cavities, which would encompass venting to another area within the slip joint assembly. In that sense, the preamble would limit claims 11 and 12 to “slip joint assemblies” but would not result in a construction that aids Patent Owner in this proceeding or change the outcome of any of our findings and conclusions in this Decision.

2. *Vent*

a. *Construction at the time of Institution*

We considered the parties’ arguments in the Petition and Preliminary Response prior to providing a preliminary construction in our Institution Decision. Dec. to Inst. 7–8. Petitioner contends that “vent” means “a passageway that permits the transfer of a gas or liquid from a cavity.” Pet. 31 (emphasis omitted). Patent Owner contended, in its Preliminary Response, that Petitioner’s construction cannot be correct because it covers structure that does not vent, including any mere passageway. Dec. to Inst. (citing Prelim. Resp. 19, 23). Patent Owner argued that the construction of “vent” means “a passageway that permits the escape of compressed air from a cavity.” *Id.* Patent Owner contended that the specification uses “the term ‘vent’ synonymously and interchangeably with the phrase ‘escape of compressed air.’” *Id.* at 8.

We adopted Patent Owner’s proposed construction in our Institution Decision because it “more closely aligns” with the use of the term “vent” in the Specification. Dec. to Inst. 8. The Specification describes passageways as forming vents in the context of describing the escape of compressed air. *See* Ex. 1001, 1:25–30, 1:42–46, 2:45–49, 2:60–66, 3:1–7, 3:11–14, 3:19–20. Although we found support for Patent Owner’s phrase “permits the escape of compressed air from a cavity” in its proposed construction, we noted that the Specification does not require venting to atmosphere, and includes venting to another cavity. Dec. to Inst. 8 (citing Ex. 1001, 3:11–14 (describing use of aperture 69 venting to atmosphere as “a further alternative embodiment” that “may be provided”)). We found that the surrounding claim language supports that construction, as it “makes clear that venting or escape of air to any area ‘outside the first and second cavities’ falls within the scope of the claims.” *Id.* at 8. Accordingly, we construed “vent” to mean “a passageway that permits the escape of compressed air from a cavity.” *Id.*

b. Arguments After Institution

Although we adopted Patent Owner’s construction in our Institution Decision, Patent Owner proposes a revised construction in its Patent Owner Response. PO Resp. 14. Patent Owner now proposes a construction for “vent” and “venting” (in the preamble) that replaces the phrase “from a cavity” with the phrase “to relieve pressure” when compared to Patent Owner’s earlier construction. *Id.* As a result, Patent Owner now proposes the following construction for “vent”: “a passageway that permits the escape of compressed air to relieve pressure.” *Id.* Patent Owner does not acknowledge or explain the change in its proposed construction. Patent

Owner supports the “to relieve pressure” aspect of its construction by pointing to a portion of the Specification that describes the buildup of pressure in cavity 60, and the passage that follows: “To relieve this pressure, a vent 62 is provided.” *Id.* at 15 (quoting Ex. 1001, 2:45–49). Patent Owner also continues to assert that Petitioner’s construction cannot be correct because, in light of the Specification, a vent is more than a mere passageway and must allow for the escape of compressed air. *Id.* at 16–19. Patent Owner relies on the testimony of its declarant to refine further its position as to required relief of pressure:

[T]he compressed air must escape to a large enough volume such that “pressure in the substantially larger volume space would not change significantly due to the addition of the smaller volume caused by the axial movement.” [Ex. 2004] at ¶ 158. As such, “[v]enting occurs as the escaping gas or liquid mixes with a cavity or atmosphere sufficient that the change in this cavity or atmosphere that gas or liquid escaped to is negligible. *Id.* at ¶ 159.

PO Resp. 18–19.

In its Reply, Petitioner maintains support for its proposed construction, but relies on our construction from the Institution Decision when asserting that the prior art discloses the limitations. Pet. Reply 7, n.1. As to Patent Owner’s new construction, Petitioner contends that Patent Owner improperly imposes a number of new requirements on the “vent” limitation, including imposing requirements on the volume of space the vent must connect to and the drop in pressure in the cavities. *Id.* at 7. Petitioner argues that Patent Owner fails to acknowledge that the claims “only require venting to ‘outside the first and second cavities’” and do not “impose some quantitative volume or pressure restriction.” *Id.* at 8. Petitioner also argues

that Patent Owner's position that the air must escape the entire slip joint assembly lacks support. *Id.* at 8–9.

In its Sur-Reply, Patent Owner argues that Petitioner's approach, where the escape of any compressed air from a cavity constitutes venting, would mean that every passageway would be a vent. PO Sur-Reply 9. Patent Owner suggests that a passageway must allow escape of air to a volume large enough to provide effective pressure relief, as in the '520 patent, to satisfy the "vent" limitation. *Id.* at 10–11.

c. Discussion

Patent Owner's arguments do not persuade us that our construction in the Institution Decision, adopting Patent Owner's originally proposed construction, should be altered by replacing "from a cavity" with "to relieve pressure." First, claim 11's surrounding claim language already requires "providing a vent . . . in fluid communication outside the first and second cavities," consistent with the "from a cavity" language in our construction. That portion of the construction may be redundant, but does not appear incorrect, and Patent Owner does not explain why it omits the language from its new proposed construction.

Second, as to the "to relieve pressure" language Patent Owner seeks to add, although the Specification uses that phrase to describe the effect of venting one of the cavities, Patent Owner does not persuasively argue that we should import that venting effect into the construction of the term "vent." Nor do we view the claim as requiring a particular type of venting that would relieve pressure in a particular manner, or to any degree, as Patent Owner suggests. *See* PO Resp. 18–19; PO Sur-Reply 10–11. Patent Owner's arguments make clear that it does not view its own construction as

merely requiring the relief of some pressure from the claimed second cavity, which would be the case with almost any vent, but seeks to impose other requirements not included in its proposed construction. *See id.* Those additional constraints require an ill-defined but sufficiently large space to provide “effective pressure relief,” without ever precisely identifying those constraints in the construction or elsewhere.

We view the claim language and our construction as sufficiently clear and complete, without the need to further define the impact that “providing a vent” may have on the cavity being vented, such as specifying a particular amount of relief of pressure in the cavity. We are also reluctant to add “to relieve pressure” to the construction when, in Patent Owner’s view, that phrase adds further requirements, which we view as more ambiguous than the seemingly clear claim limitation we are attempting to construe. Based on the foregoing, we continue to apply our construction of “vent” to mean “a passageway that permits the escape of compressed air from a cavity.”

3. *Splined Portion (Claim 11) and Spline (Claim 12)*

Petitioner contends that “splined portion” or “spline” means “any machine element consisting of integral keys (spline teeth) or keyways (spaces) equally spaced around a circle or portion thereof.” Pet. 34 (emphasis omitted). Patent Owner contends that “spline” means “integral tooth” and that “splined portion” means “portion having integral teeth equally spaced around a circle.” PO Resp. 20.

In our Institution Decision, we adopted Patent Owner’s proposed construction as more consistent with the claim language. Dec. to Inst. 10. Petitioner continues to press for its proposed construction, but we need not revisit our original construction, as the dispute over these constructions only

impacts grounds we need not reach to resolve the issues in this Decision. Accordingly, we need not revisit our original construction, and we apply that construction in this Decision where appropriate.

4. *Seal*

In our Institution Decision, we addressed Patent Owner’s argument that “seal” means “a unitary device.” Dec. to Inst. 10. We were not persuaded, based on the preliminary record, that the claim language or Specification supports construing “seal” as narrowly as Patent Owner proposed because the construction appeared to read in features from the preferred embodiments in the Specification into the claims. *Id.* at 11. Having preliminarily rejected Patent Owner’s proposed construction, and before hearing from Petitioner on these issues, we applied the ordinary meaning of “seal.” *Id.*

Patent Owner now proposes a different construction for “seal,” and contends that it means “boot” rather than “a unitary device.” PO Resp. 24. Patent Owner does not explain its change in position. *See id.* Patent Owner argues that the Specification uses the terms “seal” and “boot” interchangeably and that only a boot would work in the application the Specification discloses. PO Resp. 24–26. Shedding further light on what “boot” encompasses, Patent Owner contends that “a ‘boot’ is a single flexible device that extends around, and is often used to enclose, two shafts in a slip joint assembly.” *Id.* at 26. Patent Owner concludes that the step of “providing a seal” in claim 11 should be read as “providing a boot.” *Id.* at 27.

Petitioner contends that “[s]eal’ is a common word that needs no construction,” that it encompasses several types of seals, “and is not limited

to a ‘boot’ or ‘boot seal.’” Pet. Reply 10. Petitioner raises five arguments in support of its position: (1) nothing in the claims suggests a special meaning for “seal” and dependent claims 3 and 10 requiring a seal that comprises a “rubber boot” supports a broader construction for “seal”; (2) the Specification uses the terms “boot seal” and “boot” interchangeably, but not “seal” and “boot” as Patent Owner alleges; (3) during prosecution the Examiner found, without argument from the applicant, that prior art disclosing a bearing sleeve (not a boot seal) satisfies the “seal” limitation; (4) extrinsic evidence supports a broader interpretation of “seal” in this art; and (5) seals other than boot seals cause the pressure build up the Patent Owner claims the ’520 patent sought to solve. *Id.* at 10–12.

In its Sur-Reply, Patent Owner acknowledges that “there are other types of seals,” but contends that “the ’520 invention is only concerned with providing a solution to the problem that comes with a boot seal, not any other type of seal.” PO Sur-Reply 16. Patent Owner also describes any claim differentiation from dependent claims 3 and 10 as “weak at best” because those claims do not depend from claim 11. *Id.* Patent Owner also contends that the Specification and prosecution history do not support a broader construction of “seal.” *Id.* at 17.

We agree with Petitioner that the term “seal” requires no construction, and if it did, we would not construe it to mean “boot.” First, replacing the term “seal” with “boot” in the claim to require “providing a boot” introduces more ambiguity as to the scope of the claim than no construction at all. Patent Owner attempts to rectify this problem by providing a construction of its construction via a definition of “boot,” but that definition begs more questions by requiring a “single flexible device.” *See* PO Resp. 26. Patent

Owner's "boot" definition suggests that the real construction Patent Owner seeks is a single, flexible boot, without any justification for the single-piece requirement or guidance as to how flexible it must be. *See* Dec. to Inst. 11 (rejecting attempt to construe "seal" as a "unitary device").

Second, even if the scope of the term "boot" were clear, Patent Owner does not provide persuasive argument and evidence that we should read that term in from the Specification. Nothing in the claim language suggests a special type of seal, or establishes that only a boot will function within the claimed environment. *See* Ex. 1001, 5:1–3. As discussed further below in the context of Burton, an inflexible, non-unitary seal can still meet the claim requirement to sealingly engage the claimed shafts and create a cavity. We credit the testimony on Dr. Davis on this point, who testifies that non-"boot" type seals will also work in the disclosed environment of the '520 patent. *See* Ex. 1027 ¶¶ 179–184. In addition, nothing in the Specification or prosecution history discusses the differences between a boot and other seals or suggests only a boot will work in the disclosed environment. Finally, although not determinative, the inclusion of the "rubber boot" limitations in dependent claims 3 and 10 suggests that the applicant knew how to claim a "boot" when desired and chose not to do so in claim 11, which counsels against a construction of "seal" in claim 11 that means the same thing as different terms in other claims.

Based on the foregoing, we reject Patent Owner's argument that we should construe "seal" as "boot." Instead, we apply the ordinary meaning of "seal" in this Decision.

5. *Sealingly Engage*

In our Institution Decision, we addressed Patent Owner’s argument that “sealingly engage” means “engagement that creates a releasable seal.” Dec. to Inst. 10. We were not persuaded, based on the record at that time, that the claim language or specification supports construing the term that narrowly because the construction appeared to read in features from the preferred embodiments in the Specification into the claims. *Id.* at 11. Having preliminarily rejected Patent Owner’s proposed constructions, and before hearing from Petitioner on these issues, we applied the ordinary meaning of “sealingly engage.” *Id.*

Patent Owner proposes the same construction for “sealingly engage” as before—“engagement that creates a releasable seal.” PO Resp. 27. Similar to its argument above for “seal,” Patent Owner argues that the only seal the Specification discloses is boot seal 50, which creates a releasable seal. *Id.* at 28. According to Patent Owner, the term “engage,” when read in light of the Specification’s description of releasable seals having clamped ends, supports reading “engage” as “an engagement (clamping) that creates a releasable seal.” *Id.* Patent Owner also argues that the Specification describes other connections, such as welding, differently. *Id.* at 29.

Petitioner argues that “sealingly engage” need not be construed because nothing in the intrinsic record supports Patent Owner’s construction. Pet. Reply 12. Petitioner contends that nothing in the claims or Specification suggests that “sealingly engage” must have a special meaning, or describes the seal as “releasable” or a “releasable engagement.” *Id.* at 13.

We agree with Petitioner that we need not construe “releasable engagement.” Patent Owner proposes reading “sealingly engage” as

requiring a “releasable seal,” but does not direct us to any portion of the Specification that describes a boot seal as “releasable” or stresses the importance of having a *releasable* seal. At most, the Specification describes a releasable type of seal and clamping arrangement without commenting on its releasable nature or noting any advantages of such a structure. *See* Ex. 1001, 2:28–44. We are reluctant to read an unarticulated structural feature into the claim from the Specification without further support in the intrinsic record.

Based on the foregoing, we reject Patent Owner’s argument that we should construe “sealingly engage” as “engagement that creates a releasable seal.” Instead, we apply the ordinary meaning of “sealingly engage” in this Decision.

D. Anticipation of Claim 11 by Burton

Petitioner challenges claim 11 as anticipated by Burton. Pet. 37–42. For this challenge, Petitioner cites to the asserted reference and declarant testimony. *Id.* Patent Owner, relying on its own declarant testimony, contends that Burton fails to anticipate claim 11 because Burton fails to disclose several limitations in claim 11.

1. Overview of Burton

Burton discloses a slip joint for a driveshaft. Ex. 1004, [57]. The slip joint includes two shafts having internal and external splines to enable sliding movement between the shafts. *Id.* Burton’s Figure 3, annotated with color by Petitioner, is reproduced below (*see* Pet. 38).

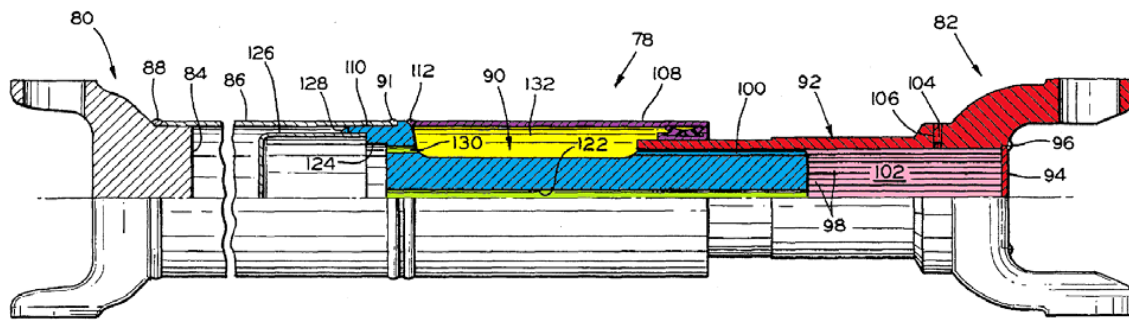


FIG. 3

Annotated Figure 3 depicts “male splined shaft 90” (in blue) and “female splined shaft 92” (in red). *Id.* at 3:62–4:4. Female shaft 92 includes “chamber 102 [in pink] beyond the end of the male splined shaft 90.” *Id.* at 4:9–10. “Sealing sleeve 108” “is affixed to a large diameter hub 110 of the male splined shaft 90 by a weld 112” and engages “two sealing rings 114 and 116” (identified in Figure 4) on the other end. *Id.* at 4:13–15, 4:22–29. Sealing rings 114, 116 “are carried in back-to-back relationship in a groove 118 of a band 120” that “can be affixed to an outer end of the female splined shaft 92.” *Id.* at 4:22–29, Fig. 4. Figure 3 also depicts bore or passage 122 (in green) extending through male splined shaft 90 that “communicates with the chamber 102 and with a chamber 124 in the hub 110 of the splined shaft 90.” *Id.* at 4:30–33. In addition, “[p]assages or bores 130 [in green] in the hub 110 connect the chamber 124 with a space 132 between the sleeve 108 and the shaft 90.” *Id.* at 4:35–37.

In operation, when yokes 80, 82 “retract toward one another, air moves from the space 132 through the passages 130 and the chamber 124, through the bore 122 and toward the chamber 102.” *Id.* at 4:41–44. After assembly, the slip joint seal and driveshaft are placed in a “middle position so that air volume at both ends of the splines is substantially equal.” *Id.* at

4:49–52. Plug 106 is then placed in transverse hole 104 at one end of female splined shaft 92 “to permanently seal the slip joint.” *Id.* at 4:52–53.

2. *Discussion*

a. *Preamble: A method of venting a slip joint assembly*

As discussed above, Petitioner contends that the preamble does not limit claim 11. Pet. Reply 16. If it does limit the claim, Petitioner contends that Burton discloses a slip joint and venting. Pet. 40 (citing Ex. 1002 ¶ 183; Ex. 1004, 1:6–7, 2:34–39, 4:41–46, Figs. 1–4); Pet. Reply 16. Patent Owner premises its argument that Burton fails to disclose the preamble of claim 11 on its claim construction argument that we rejected above. *See* PO Resp. 29–34.

We concluded above that the preamble does not limit the claim, so we need not address the preamble to conclude that Burton anticipates claim 11. We note, however, that even if the preamble did limit the claim, we would construe it to require a slip joint assembly and some type of venting of that assembly, not venting that must allow for the escape of air outside the slip joint as Patent Owner contends. Assuming that the preamble limits the claim, we are persuaded by Petitioner’s argument and evidence, and find that Burton discloses a slip joint and venting that slip joint, and therefore discloses the preamble of claim 11. *See* Ex. 1004, 1:6–7 (“This invention relates to a slip joint.”), 4:30–46 (describing passages and bores that vent cavities within the joint).

b. *providing a first shaft having a first end with an externally splined portion*

Petitioner alleges that Burton discloses the “providing a first shaft” limitation. Pet. 40 (citing Ex. 1002 ¶ 183; Ex. 1004, 3:62–63, 4:4–8, Fig. 3). More specifically, Petitioner contends that Burton’s male splined shaft 90

with external splines 100 discloses the “first shaft having a first end with an externally splined portion.” *See id.* Patent Owner does not address Petitioner’s argument and evidence as to this limitation.

We are persuaded by Petitioner’s argument and evidence, and find that Burton discloses “providing a first shaft having a first end with an externally splined portion” because Burton’s male splined shaft 90 includes a first end with external splines 100. *See* Ex. 1002 ¶ 83; Ex. 1004, 3:62–63, 4:4–8, Fig. 3.

c. providing a second shaft having a closed first end with an internally splined portion defining a first cavity therein, the second shaft drivably connected to the first end of the first shaft

Petitioner alleges that Burton discloses the “providing a second shaft” limitation. Pet. 40 (citing Ex. 1002 ¶ 183; Ex. 1004, 3:66–4:4, 4:8–12, 4:52–54, Fig. 3). More specifically, Petitioner contends that Burton’s female splined shaft 92 with internal splines 98 on a closed first end defines chamber 102, and discloses the “second shaft having a closed first end with an internally splined portion defining a first cavity therein.” *See id.* Petitioner also argues that female splined shaft 92 drivably connects to the first end of male splined shaft 90, such that Burton also discloses “the second shaft drivably connected to the first end of the first shaft.” *See id.* (citing Ex. 1002 ¶ 183; Ex. 1004, 4:8–12, Fig. 3). Patent Owner does not address Petitioner’s argument and evidence as to this limitation.

We are persuaded by Petitioner’s argument and evidence, and find that Burton discloses “providing a second shaft having a closed first end with an internally splined portion defining a first cavity therein, the second shaft drivably connected to the first end of the first shaft” because Burton’s

female splined shaft 92 includes a closed end with internal splines 98 defining chamber 102, and a drivable connection to the first end of male splined shaft 90. *See* Ex. 1002 ¶ 83; Ex. 1004, 3:66–4:4, 4:8–12, 4:52–54, Fig. 3.

d. providing a seal to sealingly engage the first and second shafts to create a second cavity therebetween defined by the seal and the first and second shafts

Petitioner alleges that Burton discloses the “providing a seal to sealingly engage” limitation. Pet. 41 (citing Ex. 1002 ¶ 183; Ex. 1004, 4:13–29, 4:36–37, Figs. 3–4). More specifically, Petitioner contends that Burton’s seal includes sealing sleeve 108, and two sealing rings 114, 116 carried in groove 118 of band 120, with the seal engaging shaft 90 at weld 112 and shaft 92 via band 120. *Id.* Petitioner contends that this sealing structure forms the claimed cavity in the form of space 132. *Id.*

Patent Owner argues that Burton fails to disclose the claimed “seal to sealingly engage” limitation, but Patent Owner premises those arguments its proposed constructions of those terms that we rejected above. *See* PO Resp. 40 (arguing that “Burton does not disclose a boot”), 41 (arguing that Burton does not disclose a releasable seal). Patent Owner does not argue that Burton fails to disclose either limitation in the event that its constructions for the terms are not adopted. *See id.* at 40–41.

We are persuaded by Petitioner’s argument and evidence, and find that Burton discloses “providing a seal to sealingly engage the first and second shafts to create a second cavity therebetween defined by the seal and the first and second shafts” because Burton discloses a “seal” in the form of sealing sleeve 108, sealing rings 114, 116, and band 120, which sealingly engages with shafts 90, 92, and creates space 132 between the shafts and

seal to disclose the claimed “second cavity.” *See* Ex. 1002 ¶ 83; Ex. 1004, 4:13–29, 4:36–37, Figs. 3–4.

e. providing a vent in the first shaft having a first end in fluid communication with the second cavity and a second end in fluid communication outside the first and second cavities

Petitioner alleges that Burton disclose the “providing a vent” limitation. Pet. 41–42 (citing Ex. 1002 ¶ 183; Ex. 1004, 4:30–36, Fig. 3; Ex. 1024, 3). More specifically, Petitioner contends that Burton’s vent includes passage or bore 130 provided in hub 110 of shaft 90, with bore 130 including a first end in fluid communication with space 132 (the claimed “second cavity”) and the other end in fluid communication with chamber 124 (“outside the first and second cavities”). *Id.* Petitioner also contends that passage or bore 122, in communication with chamber 124 and cavities 102 and 132, meets the “providing a vent” limitation. *Id.*

Patent Owner argues that Burton fails to disclose the “providing a vent” limitation, but those arguments are premised on Patent Owner’s proposed construction of “vent” that we rejected above. *See* PO Resp. 34–37. Patent Owner does not argue that Burton fails to disclose a vent if we do not adopt Patent Owner’s construction that includes the phrase “to relieve pressure.” *See id.* at 34 (“Under the correct construction, Burton does not satisfy the “vent” limitation.”); PO Sur-Reply 9–15 (focusing on relief of pressure issue).

We are persuaded by Petitioner’s argument and evidence, and find that Burton discloses “providing a vent in the first shaft having a first end in fluid communication with the second cavity and a second end in fluid communication outside the first and second cavities” because Burton discloses passage or bore 130 that corresponds to the claimed “vent,” and

because bore 130 is “a passageway that permits the escape of compressed air from a cavity,” i.e., space 132, which corresponds to the claimed “second cavity.” We also find that Burton discloses a “vent” (passage/bore 130) provided in hub 110 of shaft 90 (the claimed “first shaft”), where that “vent” includes one end in fluid communication with space 132 and the other end in fluid communication with chamber 124, which is “outside the first and second cavities” as the limitation requires. *See* Ex. 1002 ¶ 83; Ex. 1004, 4:30–36, Fig. 3.

3. Conclusion

Based on the foregoing, Petitioner persuades us by a preponderance of the evidence that claim 11 is unpatentable as anticipated by Burton. We do not reach Petitioner’s alternative argument that claim 11 would have been obvious based on Burton and Minel, in the event that Burton fails to disclose “providing a vent.” *See* Pet. 50–53.

E. Obviousness of Claim 12 Based on Burton and Additional References

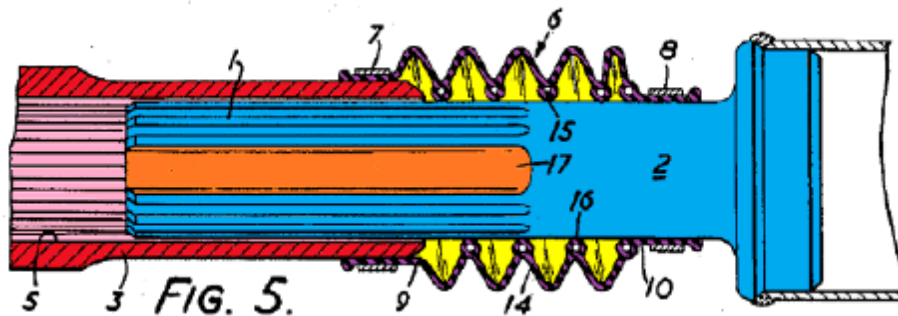
Petitioner challenges dependent claim 12 as unpatentable as obvious based on Burton and Rabson, Warner, Yaegashi, Minel, and the knowledge of one of ordinary skill in the art. Pet. 2, 42–60. For this challenge, Petitioner cites to the asserted references and declarant testimony. *Id.*

Claim 12 depends from claim 11 and further requires “wherein the vent is provided by removing a spline from one of the shafts to provide fluid communication between the first and second cavities and providing an axial bore through the first shaft to provide fluid communication outside the first and second cavities.” Ex. 1001, 5:8–13. Petitioner contends that Burton discloses the “axial bore through the first shaft,” and relies on Rabson and

Warner as disclosing the “removing a spline” limitation. *See* Pet. 42–48. Petitioner relies on Yaegashi and Minel for certain alternative arguments we need not reach.¹⁰ Patent Owner argues that it would not have been obvious to remove a spline from Burton. *See* PO Resp. 42–46.

1. Overview of Rabson

Rabson relates to lubrication of a plunger sliding in a cylinder, such as the “sliding spline of a motor vehicle propeller shaft.” Ex. 1010, 1:11–18. Rabson’s Figure 5, annotated with color by Petitioner, is reproduced below (*see* Pet. 44).



¹⁰ Petitioner argues that “removing splines was a well-known ‘phase-indexing technique’” as taught by Yaegashi, and that one of ordinary skill in the art would have been motivated to remove a spline from Burton’s slip joint to phase index Burton’s shafts as taught by Yaegashi. Pet. 48–49; *see also* Ex. 1020, 1:42–51, 2:19–40, Figs. 4a–4b. Because we conclude that claim 12 would have been obvious based on the combination of Burton and either Rabson or Warner, we do not reach this issue and do not discuss it further in this Decision. For the same reason, we do not reach Petitioner’s alternative argument that it would have been obvious to remove passage/bore 130 from Burton in combination with a removed spline. *See* Pet. 45. As noted above, we also do not reach Petitioner’s alternative challenge based on Burton and Minel as to claim 11 because we determined that Burton anticipates claim 11.

Figure 5 above depicts projecting male portion 2 of the propeller shaft in blue, and spline yoke 3 in red, having a closed end forming a cavity shown in pink. Ex. 1010, 2:29–35. Bellows 6 shown in purple forms a seal with yoke 3 via clamping ring 7 and forms a seal with male portion 2 on its other end via clamping collar 8. *Id.* at 2:43–47. Figure 5 also shows removed spline 17. *Id.* at 3:20–27. Rabson describes the function of removed spline as “facilitate[ing] the transfer of air and lubricant from the closed end of the splined yoke 3 to the bellows 6 and vice versa.” *Id.*

2. Overview of Warner

Warner relates to “transmitting rotary motion at high-speed through universal joints, such as the propeller shaft of an automobile.” Ex. 1005, 1:3–5.¹¹ Warner describes its object as providing a construction for a slip joint that remains “adequately lubricated at all times” during movement of the slip joint. *Id.* at 1:6–11. Warner’s Figures 1 and 2, annotated with color by Petitioner, are reproduced below (*see* Pet. 46).

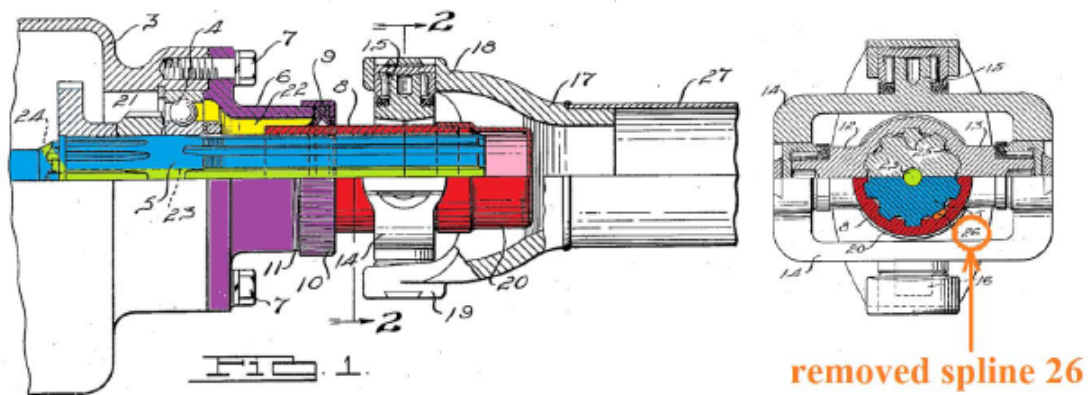


Figure 1 (on the left above) shows a side view, and Figure 2 (on the right above) an end view, of Warner’s invention. Figure 1 shows transmission

¹¹ We refer to the page numbering in Warner, not the page numbering added to the exhibit for purposes of this matter.

shaft 5 in blue, which includes a series of splines. Ex. 1005, 1:100–109. Figure 1 also shows “interiorly splined sleeve 8,” in red, having a closed end forming a cavity shown in pink. *Id.* at 2:5–6, 2:37–43. Warner also discloses collar 6 shown in purple that forms a cavity or space 22 shown in yellow. *Id.* at 1:110–2:13, 2:44–47. Axially disposed bore 23 joined with radially disposed axially inclined bore 24 (both shown in green) enable “lubricant to be vented” from cap 20 that forms the cavity at the end of sleeve 8 (in pink). *Id.* at 2:48–53. Figure 2 shows removed spline 26, which allows lubricant entrapped in cap 20 (in pink) to be vented to space 22 (in yellow). *Id.* at 2:44–47, 2:57–60.

3. Discussion

a. Disclosure of the Limitations of Claim 12

Petitioner contends that Burton, in addition to disclosing all of the limitations of claim 11, discloses claim 12’s limitation requiring “an axial bore through the first shaft to provide fluid communication outside the first and second cavities.” Pet. 43, 59. More specifically, Petitioner contends that Burton’s “central bore or passage 122” that extends through shaft 90 discloses the claimed “axial bore through the first shaft” and that the bore or passage 122 provides fluid communication from cavity 102 to cavity 124, which is “outside the first and second cavities” as claimed. *Id.* (citing Ex. 1002 ¶¶ 156–164, 182–189; Ex. 1004, 4:30–46, Fig. 3); *see also id.* at 59 (citing Ex. 1002 ¶ 218; Ex. 1004, 4:30–35, Fig. 3). Petitioner also asserts that Warner discloses this aspect of claim 12. *Id.* at 60 (citing Ex. 1002 ¶ 218; Ex. 1005, 2:44–68, Figs. 1–2). As to claim 12’s limitation requiring “removing a spline from one of the shafts to provide fluid communication between the first and second cavities,” Petitioner contends that both Rabson

and Warner disclose removing a spline to provide fluid communication between two cavities. *Id.* at 58–59 (citing Ex. 1002 ¶ 218; Ex. 1005, 2:57–63, Figs. 1–2; Ex. 1010, 2:31, 3:20–27, Fig. 5). Patent Owner does not argue that the references do not disclose these limitations, and instead argues that there would be no motivation to modify Burton by removing a spline, which we address below. *See* PO Resp. 42–44.

We are persuaded by Petitioner’s argument and evidence, and find that Burton discloses “an axial bore through the first shaft to provide fluid communication outside the first and second cavities” because Burton discloses “central bore or passage 122” that extends through shaft 90, which corresponds to the claimed “first shaft,” with passage 122 providing fluid communication to cavity 124, which is “outside the first and second cavities” as required by this aspect of claim 12. Ex. 1002 ¶¶ 156–164, 182–189, 218; Ex. 1004, 4:30–46, Fig. 3. We also find that both Rabson and Warner disclose “removing a spline from one of the shafts to provide fluid communication between the first and second cavities” because Rabson discloses removed spline 17 that provides a passageway between the closed end of yoke 3 and the area under bellows 6, and Warner discloses removed spline 26 that forms a passageway between the closed end of sleeve 8 and the space 22 under collar 6. Ex. 1002 ¶ 218; Ex. 1005, 2:57–63, Figs. 1–2; Ex. 1010, 2:31, 3:20–27, Fig. 5.

b. Reason to Combine

Petitioner contends that “it would have been obvious to a person of ordinary skill to modify the Burton slip joint by removing a spline” because “[d]oing so was known, desirable, and would have led to predictable results.” Pet. 43 (citing Ex. 1002 ¶¶ 190–207). As to the combination of Burton and

Rabson, Petitioner contends that Rabson shows the spline removal technique was well known, and that one of “ordinary skill would have been motivated to look to the teaching of Rabson to remove a spline from the Burton slip joint to further improve ‘the transfer of air and lubricant’ from the second cavity by permitting it to escape not only through ‘[p]assages or bores 130,’ but also through ‘central bore or passage 122’ by way of the removed spline.” *Id.* at 44 (citing Ex. 1002 ¶ 193; Ex. 1004, 4:30–35, Fig. 3; Ex. 1010 at 3:30). Petitioner contends that Burton itself provides motivation to make the modification because it was concerned with improving the transfer of air within its slip joint. *Id.* at 44–45 (quoting Ex. 1004, 2:7–10) (citing Ex. 1002 ¶ 193; Ex. 1004, 4:41–46). Petitioner contends that removing a spline would have led to predictable results, “i.e., a slip joint with the improved transfer of air from the second cavity through both ‘[p]assages or bores 130’ and ‘central bore or passage 122.’” *Id.* at 45 (citing Ex. 1002 ¶ 193; Ex. 1004, 4:30–35, Fig. 3). Petitioner also contends that the Specification and prosecution history, as well as prior art of record, confirm that removing a spline to facilitate movement of lubricant during operation was well known and obvious. *Id.* at 45–46 (citing Ex. 1002, 1:23–28; Ex. 1002 ¶¶ 194–196; Ex. 1008, 1:26–28, 3:16–29, Figs. 2, 4). As to the combination of Burton and Warner, Petitioner relies on similar arguments. *See id.* at 46–48. Petitioner contends that (1) one of “ordinary skill would have been motivated to look to Warner’s venting arrangement to combine Burton’s axial bore with a removed spline to further improve the ‘forced circulation’ of air within the Burton slip joint”; (2) the resulting structure would have allowed for enhanced communication between Burton’s cavities 102, 132 via the removed spline; and (3) Burton and

Warner share the same objective of improved circulation. *Id.* at 47–48 (citing Ex. 1002 ¶¶ 203–204; Ex. 1004, 2:7–10, 4:30–46; Ex. 1005, 1:6–11, 2:44–47, 2:112–116).

Patent Owner argues that “Petitioner’s suggested modification of Burton would introduce a redundant and unnecessary fluid pathway.” PO Resp. 42. More specifically, Patent Owner argues that Burton already provides for flow paths into and out of cavities 132 and 102, and there would be no motivation to provide a “redundant fluid flow path into and out of either of those two chambers” and no basis to conclude the modification would “improve flow.” *Id.* at 43 (citing Ex. 1004, 4:41–46, Fig. 3; Ex. 2004 ¶¶ 272–274). Patent Owner also argues that adding flow between Burton’s cavities would unsettle Burton’s existing flow and balance, and would make balancing the air on both sides of the removed splines more difficult. *Id.* at 44 (citing Ex. 1004, 4:37–40, 4:49–52; Ex. 1010, 3:29–32; Ex. 2004 ¶¶ 275–277).

In Reply, Petitioner argues that “[r]emoving splines would improve the escape of compressed air,” and that “[t]his is the same motivation articulated by the Examiner, and never refuted by the Applicant.” Pet. Reply 19 (citing Pet 43–48; Ex. 1002 ¶¶ 190–207; Ex. 1023, 32, 163–164; Ex. 1027 ¶¶ 270–288). Petitioner contends that removing a spline would not be redundant as Patent Owner alleges because the motivation is not just to vent Burton’s cavity but to improve the existing venting. *Id.* at 20 (citing PO Resp. 43–44; Ex. 1027 ¶¶ 273–279). Petitioner also contends that “there is nothing special about Burton’s fluid path” and removing a spline would not upset any “balancing” in Burton because it would not affect the volumes of air in Burton’s cavities. *Id.* (citing Ex. 1004, 4:37–46; Ex. 1027

¶¶ 280–288).

In its Sur-Reply, Patent Owner argues that one of ordinary skill in the art would not remove a spline to improve venting because “Burton *teaches away* from venting and explicitly states that ‘air need not be vented.’” PO Sur-Reply 18 (citing Ex. 1004, 5:35–39, 6:42–46). Patent Owner also repeats its argument that there is no reason to modify Burton’s existing fluid path to add a redundant feature. *Id.* (citing Ex. 1004 ¶¶ 272–277).

Based on the full record, we agree with Petitioner that one of ordinary skill in the art would have been motivated to remove a spline in Burton, based on the teachings of either Rabson or Warner, in order to improve venting of Burton’s cavities. Importantly, Burton already discusses the movement of air within its joint in a manner that provides “minimal resistance,” revealing that Burton seeks minimal resistance to flow. Ex. 1004, 2:7–10; *see also* Ex. 1002 ¶ 193; Ex. 1004, 4:41–46 (describing movement of air during operation). Both Rabson and Warner, similarly, tout the improved flow between cavities within their joints when splines are removed. Ex. 1005, 2:44–65 (describing removal of a spline as one way to help circulate entrapped lubricant, allowing it to flow to other cavities), Figs. 1–2; Ex. 1010, 3:20–27 (describing goal to “facilitate the transfer of air and lubricant” between cavities by removing a spline), Fig. 5. These overlapping goals, and the touting of the advantages of removing a spline in Rabson and Warner, support Petitioner’s assertion that one of ordinary skill in the art would have been motivated to remove a spline in Burton’s slip joint to further improve flow within that joint. Petitioner further supports its

positions with the testimony of Dr. Davis, which we credit as to the reason to combine the references because the record supports it. Ex. 1002 ¶¶ 193–196, 203–204; Ex. 1027 ¶¶ 272–288).

Patent Owner’s primary argument appears to assume that Burton’s venting arrangement works perfectly, and there was no way to improve it, or that removing a spline would create certain drawbacks. We find Patent Owner’s argument unpersuasive in the face of the stated advantages of removing a spline as taught by Rabson and Warner, and the lack of any record evidence that removing a spline would thwart Burton’s attempt to minimize resistance during movement. Moreover, Burton need not describe a deficiency in its approach to support a modification based on other references. We find the overlapping goals of the references and stated advantages of removing a spline, coupled with the declarant testimony, more persuasive than Patent Owner’s arguments against the combinations. We also find Patent Owner’s teaching away argument unpersuasive because, at most, Burton teaches away from venting via a vent directly to atmosphere, and does not address, much less teach away from, removing a spline to allow greater fluid communication within the slip joint. *See* Ex. 1004, 2:4–12 (describing advantages of “permanently sealed” slip joint); 4:52–54 (describing plug 106 in transverse vent hole 104 “to permanently seal the slip joint”), 5:35–36 (claim 1 stating “air need not be vented”), 6:42 (claim 10 stating “air need not be vented”).

c. Objective Indicia

Patent Owner relies on certain “secondary considerations of non-obviousness” in the form of alleged “widespread adoption and commercial success of the patented” method. PO Resp. 64. Patent Owner contends that

it uses the “patented venting method in dozens of propshafts,” resulting in hundreds of millions of dollars in revenue. *Id.* (citing Ex. 2004 ¶¶ 329–334; Ex. 2019 ¶¶ 8–12). Patent Owner also alleges that Petitioner uses the patented method because it infringes the ’520 patent, which establishes widespread adoption and further commercial success. *Id.* at 64–65 (citing Ex. 2004 ¶¶ 335–338; Ex. 2019 ¶ 15). Patent Owner contends that “because these driveshafts embody the claimed features and are coextensive with the claims, Ex. 2004 at ¶¶ 329–338, it is proper to presume that the commercial success of these driveshafts is attributable to the patented invention.” *Id.* at 65.

Petitioner argues that Patent Owner fails to establish that their driveshafts embody claim 12, and therefore are irrelevant to our obviousness analysis of this claim. Pet. Reply 26–27. As to American Axle’s products, Petitioner contends that Patent Owner’s failure to provide any sales, revenue, profit, or market share data undermines its argument that the product enjoyed commercial success. *Id.* at 27.

In its Sur-Reply, Patent Owner argues that Petitioner’s declarant failed to properly consider secondary considerations. PO Sur-Reply 22–23. Patent Owner contends that there is no dispute that its products practice claim 11, but does not address whether they practice claim 12 at issue here. *Id.* at 24.

We are not persuaded by Patent Owner’s reliance on secondary considerations with respect to claim 12. First, nothing in Patent Owner’s briefing establishes that its own products are covered by claim 12, even after Petitioner raised the issue. *See* PO Sur-Reply 22–24. In addition, the cited declaration testimony did not address claim 12. *See* Ex. 2004 ¶ 331 (“[I]t is my opinion that the slip joint assembly of the propeller shaft illustrated in

the engineering drawing practices at least claim 11 of the '520 Patent.”), ¶ 333 (“at least claim 11”), Appendix C (addressing claim 11 but not claim 12 in a claim chart). Accordingly, any alleged commercial success of Patent Owner’s own products lacks an adequate nexus to claim 12. Further, even assuming a nexus exists between Petitioner’s products and claim 12, Patent Owner’s failure or inability to introduce any evidence regarding the amount of sales or any related financial data impedes our ability to find that activity successful. Finally, we are not persuaded that adoption of the patented design by one player in the industry, based on the briefing before us, constitutes “widespread adoption” of the invention of claim 12.

4. Conclusion

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.”

Arctic Cat Inc. v. Bombardier Recreational Prods. Inc., 876 F.3d 1350, 1361 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

Above, based on full record before us, we provide our factual findings regarding (1) the level of ordinary skill in the art, (2) the scope and content of the prior art, (3) any differences between the claimed subject matter and the prior art, and (4) objective evidence of nonobviousness.

In particular, we find that (1) Patent Owner’s proposed level of ordinary skill in the art is consistent with the prior art of record; (2) the asserted references teach all the limitations of claim 12; (3) one of ordinary skill in the art would have had a reason to combine Burton and Rabson, as well as Burton and Warner, with a reasonable expectation of success; and

(4) there is no persuasive objective evidence of nonobviousness in the record. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claim 12 of the '520 patent is unpatentable over Burton and Rabson as well as Burton and Warner.

F. Additional Grounds

Petitioner challenges claim 11 as anticipated by Yoshida. Pet. 60–64. Petitioner also challenges claims 11 and 12 under 35 U.S.C. § 103 as unpatentable over Minel, Yoshida, SAE Manual, Rabson, Warner, Yaegashi, and the knowledge of one of ordinary skill in the art. Pet. 64–75.

We need not reach these additional grounds because we already concluded, as discussed above, that all of the challenged claims are unpatentable.

G. Patent Owner's Motion to Exclude (Paper 44)

Patent Owner moves to exclude portions of Exhibits 1002 and 1027, both of which are Declarations of Gregory Davis, as well as Exhibit 1024, a letter between counsel related to alleged discovery deficiencies in the District Court litigation. *See* Paper 44, 1; Exs. 1002, 1024, 1027.

As to Exhibit 1002, Patent Owner contends that several of the opinions contained therein lack sufficient factual support and are too conclusory, and are improper expert testimony under F.R.E. 702. Paper 44, 4–6. Patent Owner provides a few examples, but fails to identify, for each of the many paragraphs it seeks to exclude, why the explanations and opinions lack adequate support. *See id.* Such undeveloped arguments do not establish that we must exclude the testimony. Petitioner also provides persuasive argument that Dr. Davis laid a proper foundation for at least some of the challenged opinions relevant here. Paper 45, 2–3 (addressing opinions

regarding obviousness of claim 12 based on improved venting). We do not view those opinions as so conclusory that exclusion of the opinions would be appropriate, especially when the paragraphs in question are taken together with surrounding context and the cited references. Accordingly, to the extent the challenged paragraphs in Exhibit 1002 were relevant to our analysis,¹² we deny Patent Owner's Motion to Exclude as to Exhibit 1002. We do, however, consider Patent Owner's arguments when determining the weight to accord the testimony.

As to Exhibit 1024, although we note that Petitioner relied on the exhibit as described in in our summary of the arguments presented, we did not rely on the exhibit in our findings. We, therefore, deny Patent Owner's as moot as to Exhibit 1024.

As to Exhibit 1027, Patent Owner argues that Petitioner improperly incorporated by reference large swaths of Exhibit 1027 into its Reply. Paper 44, 8–9. As an initial matter, Patent Owner's attempt to frame the issue as one of admissibility based on relevance misses the mark. Patent Owner's complaint is that the page limits were flouted by Petitioner's citation; the proper remedy for such conduct is to seek authorization to file a motion to strike. Patent Owner sought such authorization, which we denied. Instead, we allowed Patent Owner to file an observation pointing out any violations of our rules as they relate to the scope of Petitioner's Reply. Patent Owner filed those observations, which focused solely on allegedly

¹² Patent Owner raises issues related to phase indexing and modifying Burton to allow for the escape of gas into the driveshaft that we do not reach in our analysis. *See* Paper 44, 5–7. The Motion to Exclude is denied as moot as to those portions of Exhibit 1002 that we did not rely on in our analysis.

new arguments made with respect to the Yoshida reference. *See* Paper 27, 1–2. The bulk of Patent Owner’s Motion to Exclude as to Exhibit 1027 also focuses on grounds 3 and 4, and Yoshida. *See* Paper 44, 10–12. Because we do not reach the merits of Petitioner’s challenges based on Yoshida, Patent Owner’s Motion to Exclude concerning new arguments related to Yoshida are denied as moot.

We do not view the remaining citations to Exhibit 1027 in Petitioner’s Reply as so egregious as to run afoul of our rules against incorporation by reference that we should exclude them as irrelevant, assuming the motion was properly brought in the first instance.

Finally, Patent Owner seeks to exclude paragraphs 265–334 and 365–414 of Exhibit 1027 because Dr. Davis allegedly failed to consider objective indicia of nonobviousness. Paper 44, 12–14. As discussed above, Patent Owner’s attempt to rely on such evidence contained several fatal flaws. We do not consider the failure of Dr. Davis to consider those allegations and evidence, even if true, as a sufficient basis to exclude his obviousness opinions. At most, the failure to take into account objective indicia would go to weight, and we have accorded his testimony the appropriate weight in light of Patent Owner’s arguments.

Based on the foregoing, we are not persuaded that any of the exhibits subject to this Motion are inadmissible and should be excluded. Accordingly, we deny Patent Owner’s Motion to Exclude.

H. Patent Owner’s Motion to Seal (Paper 18)

Patent Owner moves to seal Exhibit 2004 (Declaration of Steven Becker), Exhibit 2015 (Patent Owner’s engineering drawings), and Exhibit 2019 (Declaration of Robert Wehner). Paper 18, 1. Patent Owner

also seeks entry of our default protective order, and states that the parties have conferred regarding the matter and agree to be bound by that order. *Id.* at 2. Petitioner did not file an opposition to Patent Owner’s Motion to Seal.

Patent Owner contends that good cause exists to seal the exhibits in question because they “contain confidential commercial information, including, for example, proprietary sales information and financial information.” Paper 18, 2. Patent Owner also argues that “these exhibits also reference or include highly confidential engineering drawings, some of which were previously produced in a parallel district court litigation and designated as ‘HIGHLY CONFIDNETIAL – ATTORNEY’S EYES ONLY.’” *Id.*

There is a strong public policy that favors making information filed in *inter partes* review proceedings open to the public. *See Garmin Int’l v. Cuozzo Speed Techs., LLC*, IPR2012-00001, Paper 34 at 1–2 (PTAB March 14, 2013) (discussing the standards of the Board applied to motions to seal). The moving party bears the burden of showing that the relief requested should be granted. 37 C.F.R. § 42.20(c).

[A] movant to seal must demonstrate adequately that (1) the information sought to be sealed is truly confidential, (2) a concrete harm would result upon public disclosure, (3) there exists a genuine need to rely in the trial on the specific information sought to be sealed, and (4), on balance, an interest in maintaining confidentiality outweighs the strong public interest in having an open record.

Argentum Pharms. LLC v. Alcon Research, Ltd., IPR2017-01053, Paper 27 at 4 (PTAB January 19, 2018) (informative).

We find that Patent Owner has established good cause for sealing the exhibits in question. We also grant Patent Owner’s request to enter our

default protective order in this proceeding, and we note that the parties have already agreed to be bound by our default protective order. Based on the foregoing, we grant Patent Owner's Motion to Seal and for Entry of Protective Order.¹³

I. Petitioner's First Motion to Seal (Paper 25)

Petitioner's first Motion to Seal seeks to seal Petitioner's Reply Brief and Exhibits 1027 and 1029. Paper 25, 1. Petitioner contends that these documents include Patent Owner's confidential information, such as technical drawings and sales information designated as confidential by Patent Owner. *Id.* Petitioner states that the portions of its Reply Brief it seeks to seal discuss or cite to Exhibits 1027 and 1029. *Id.* Petitioner contends that good cause exists to seal the material. *Id.* Patent Owner did not file an opposition to Petitioner's Motion.

Based on our review of the material in question, we conclude that good cause exists to seal the exhibits in question. Accordingly, we grant Petitioner's first Motion to Seal (Paper 25).

J. Petitioner's Second Motion to Seal (Paper 54)

Petitioner's second Motion to Seal seeks to seal Petitioner's Demonstrative Exhibits (Paper 53). Paper 54, 1. More specifically,

¹³ The current version of the Board's Default Protective Order is set forth in Appendix B to the Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) ("the Consolidated Guide") (available at www.uspto.gov/TrialPracticeGuideConsolidated). We apply that version in this proceeding, even though it differs in some regards from the previous version that was in place when Patent Owner filed the Motion to Seal in June 2019. If either party desires modification of the Default Protective Order as entered in this case, such modification must be requested within two weeks of the entry of this Decision.

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Petitioner seeks to seal slides 53–55, 71, and 76 of its Demonstratives, because those slides include Patent Owner’s confidential information, such as technical drawings and sales information designated as confidential by Patent Owner. *Id.* Petitioner contends that good cause exists to seal the material. *Id.* Patent Owner did not file an opposition to Petitioner’s Motion.

Based on our review of the material in question, we conclude that good cause exists to seal the Demonstrative Exhibits in question, which are a portion of Paper 53. Accordingly, we grant Petitioner’s second Motion to Seal (Paper 54).

IV. CONCLUSION¹⁴

In summary:

| Claims | 35 U.S.C. § | Reference(s)/Basis | Claims Shown Unpatentable | Claims Not Shown Unpatentable |
|---------------|----------------------------|--|--|--|
| 11 | 102(e) | Burton | 11 | |
| 11 | 103(a) | Burton, Minel ¹⁵ | | |
| 12 | 103(a) | Burton, Rabson, Warner, Yaegashi, Minel, and the knowledge of one of ordinary skill in the art | 12 | |
| 11 | 102(b) | Yoshida ¹⁶ | | |
| 11, 12 | 103(a) | Minel, Yoshida, SAE Manual, Rabson, Warner, Yaegashi, and the knowledge of one | | |

¹⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

¹⁵ As explained above, we do not reach this alternative ground based on Burton’s failure to anticipate claim 11 because we concluded that Burton does anticipate claim 11.

¹⁶ As explained above, we do not reach this ground because we already concluded that claim 11 is unpatentable as anticipated by Burton.

| | | | | |
|----------------------------|--|---|--------|--|
| | | of ordinary skill in the art ¹⁷ | | |
| Overall Outcome | | | 11, 12 | |

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 11 and 12 of U.S. Patent No. 5,772,520 have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 44) is DENIED;

FURTHER ORDERED that Patent Owner's Motion to Seal and for Entry of a Protective Order (Paper 18) is GRANTED;

FURTHER ORDERED that Petitioner's first Motion to Seal (Paper 25) is GRANTED;

FURTHER ORDERED that Petitioner's second Motion to Seal (Paper 54) is GRANTED; and

FURTHER ORDERED that the Default Protective Order set forth in Appendix B of the Consolidated Guide is entered as the protective order governing this proceeding; 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.

¹⁷ As explained above, we do not reach this ground because we already concluded that claims 11 and 12 are unpatentable.

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