

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ENTECH INSTRUMENTS, INC.,
Petitioner,

v.

SILCOTEK CORPORATION,
Patent Owner.

Case IPR2017-00354
Patent 6,511,760 B1

Before JON B. TORNQUIST, CHRISTOPHER M. KAISER, and
MICHELLE N. ANKENBRAND, *Administrative Patent Judges*.

ANKENBRAND, *Administrative Patent Judge*.

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

I. INTRODUCTION

Entech Instruments, Inc. (“Petitioner”) requests *inter partes* review of claims 1–20 of U.S. Patent No. 6,511,760 B1 (“the ’760 patent,” Ex. 1001). Paper 1 (“Pet.”). SilcoTek Corporation (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). We may not institute an *inter partes* review “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Applying that standard, and upon consideration of the information presented in the Petition and the Preliminary Response, we deny the Petition and do not institute an *inter partes* review.

II. BACKGROUND

A. Related Matters

The parties identify the following litigation involving the ’760 patent: *SilcoTek Corp. v. Entech Instruments, Inc.*, No. 2:15-cv-01531-JFC (W.D. Pa.). Pet. 1; Paper 5, 2. Patent Owner represents that it agreed to “administratively close [that] litigation” after it filed a Request for Supplemental Examination (“Request”) providing to the Office, *inter alia*, the prior art references that Petitioner identified in the litigation as rendering the ’760 patent invalid. Prelim. Resp. 1–3. Patent Owner states that the Office granted the Request and initiated an ex parte reexamination of claims 1–20 of the ’760 patent based on that prior art and declarations from the Patent Owner describing its previous commercial activity. *Id.* at 3 (citing Ex. 2005). Patent Owner further notes that the Office issued an Ex Parte

Reexamination Certificate confirming the patentability of claims 1–3, 5–15, and 17–20, and confirming the patentability of claims 4 and 16 as amended during the reexamination.¹ *Id.* at 3; *see* Ex. 2012 (Ex Parte Reexamination Certificate).

B. The '760 Patent

The '760 patent, titled “Method of Passivating a Gas Vessel or Component of a Gas Transfer System Using a Silicon Overlay Coating,” issued on January 28, 2003. The '760 patent relates to “a method of passivating a gas vessel or component of a gas transfer system to reduce corrosion” and a corrosion resistant gas storage vessel having a passivated interior surface. Ex. 1001, 1:14–16, 2:33–35. According to the specification, prior methods of passivating metal surfaces “focused on layers of silicon modified by oxidation to prevent adsorption,” used “silanes or silicon hydrides passed through metal surfaces at low temperatures,” or “utilized a single treatment of silicon hydride gas,” and did not focus on “the surface roughness of articles to be coated with a silicon layer.” *Id.* at 1:25–29, 34–36, 39–40.

In the method of the disclosed invention, by contrast, “[s]uccessive layers of silicon are . . . applied to the surface under controlled conditions” (e.g., the duration of the silicon deposition step is in the range of 30 to 240 minutes depending on the roughness average (RA) of the surface) and the “thickness of the silicon layer is dependent on the average roughness of the surface.” *Id.* at 2:21–23, 60–64. The specification describes the method in further detail.

¹ Patent Owner explains that the amendments to claims 4 and 16 were “unrelated to any prior art rejections.” *Id.* at 3 n.1.

First, the interior surface of the gas storage vessel is dehydrated and evacuated. *Id.* at 1:60–65. Subsequently, a layer of silicon is deposited on the interior surface of the vessel by introducing silicon hydride gas into the vessel, and heating and pressurizing the vessel containing the silicon hydride to decompose the gas. *Id.* at 1:65–2:3. The duration of the silicon depositing step is controlled to prevent the formation of silicon dust in the vessel, and the number of deposition cycles is selected to ensure that all exposed metal surfaces are passivated. *Id.* at 2:4–5, 3:23–25 (noting that, under the conditions utilized in the '760 patent, decomposition of silicon hydride gas in the vessel will eventually form silicon dust), 3:43–54 (explaining that the desired thickness of the deposited silicon layer depends on the roughness average (RA) of the metal surface). After deposition, the vessel is purged with an inert gas to remove the silicon hydride gas. *Id.* at 2:6–7.

C. Illustrative Claims

Of the challenged claims, claims 1, 13–17, and 20 are independent.

Claims 1 and 13 are illustrative of the challenged claims and recite:

1. A method of passivating the interior surface of a gas storage vessel to protect the surface against corrosion, comprising the steps of:
 - a) dehydrating the interior surface of the vessel;
 - b) evacuating the interior of the vessel;
 - c) introducing a silicon hydride gas into the vessel;
 - d) heating and pressurizing the silicon hydride gas in the vessel;
 - e) depositing a layer of silicon on the interior surface of the vessel;
 - f) controlling the duration of the silicon depositing step to prevent the formation of silicon dust in the vessel;
 - g) purging the vessel with an inert gas to remove the silicon hydride gas;
 - h) cycling the vessel through steps b–g until the entire interior surface of the vessel is covered with a layer of silicon;
 - i) evacuating the vessel; and,
 - j) cooling the vessel to room temperature.

Ex. 1001, 4:19–37.

13. A corrosion resistant gas storage vessel having a passive interior surface, comprising:
 - a) a metallic interior surface having an average surface roughness RA;
 - b) a silicon layer formed over the entire interior surface, said silicon layer being formed from a plurality of sublayers of silicon which are substantially free of silicon dust;said interior surface having an average roughness RA less than about 20 microinches, and said silicon layer having a thickness in the range of 120 to 500 angstroms.

Id. at 5:5–16.

D. The Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims of the '760 patent are unpatentable based upon the following grounds:

Reference(s)	Statutory Basis	Claims Challenged
Rohwer ²	§102(b) or §103	1, 4–8
Rohwer	§103	2, 3
Rohwer and Briesacher ³	§103	15, 20
Rohwer and Zou ⁴	§103	1–8
Rohwer, Zou, Briesacher	§103	9–20

The Petition is supported by the Declaration of Daniel B. Cardin. (Ex. 1002).

III. ANALYSIS

A. Discretionary Denial under § 325(d)

Patent Owner asks that we deny institution of a trial in this proceeding under 35 U.S.C. § 325(d). Prelim. Resp. 1–4, 56–57. In a nutshell, Patent Owner argues that the Petition should be denied because the Office reconsidered the patentability of claims 1–20 of the '760 patent only a few months ago in view of prior art and arguments that are substantially similar to the art and arguments raised in the Petition. *Id.* at 3–4, 56–57. More specifically, Patent Owner argues that (1) after Patent Owner filed its complaint against Petitioner for infringement of the '760 patent, Petitioner identified certain prior art references and commercial activity that Petitioner

² E.R. Rohwer et al., *Deactivation, Coating and Performance of Nickel Capillary Columns for GLC*, 9 J. HIGH RESOLUTION CHROMATOGRAPHY & CHROMATOGRAPHY COMM'NS 30, 30–32 (1986) (Ex. 1007).

³ U.S. Patent No. 5,238,469, issued August 24, 1993 (Ex. 1011).

⁴ Naizhong Zou et al., *Stainless Steel Capillary Columns for High Temperature Gas Chromatography*, 16 J. HIGH RESOLUTION CHROMATOGRAPHY 188 (1993) (Ex. 1006).

alleged rendered the claims of the '760 patent invalid; (2) the prior art references included references directed to metallic tubing coated with a layer or layers of silicon; (3) after Petitioner identified the references, Patent Owner filed the supplemental examination Request and agreed to administratively close the litigation pending the outcome of the supplemental examination and/or any reexamination resulting from the supplemental examination; (4) the references that Petitioner identified formed the basis of Patent Owner's Request; (5) the Office granted the Request and ordered an ex parte reexamination of claims 1–20 of the '760 patent; (6) the Office issued an Ex Parte Reexamination Certificate confirming the patentability of claims 1–20 of the '760 patent; and (7) Petitioner's asserted references and arguments are substantially similar to the references and arguments considered during the reexamination. *Id.* at 1–4. Patent Owner also argues that granting the Petition “would undermine the recent reexamination proceeding and discourage patent owners from utilizing the newly-established Supplemental Examination process.” *Id.* at 4.

Patent Owner's arguments are not without merit. For instance, we agree that the references Patent Owner provided to the Patent Office in support of the Request—references that Petitioner identified as relevant to validity in the co-pending litigation—are similar in scope to the references Petitioner asserts in this proceeding. *Compare, e.g.,* Ex. 1006 (Zou reference describing a process for depositing silicon on the surface of stainless steel tubing using chemical vapor deposition, and the processing parameters), *with* Ex. 1004, 35 (finding that “[t]he Silcosteel® process bonds a submicron-thin layer of fused silica to stainless steel”). We also are

mindful of the policy goals supplemental examination is intended to achieve, including “satisfying a long-felt need in the patent community to be able to identify whether a patent would be deemed flawed if it ever went to litigation . . . [,] thereby promoting greater certainty for patentees and the public.” 157 Cong. Rec. S1097 (daily ed. Mar. 2, 2011) (statement of Sen. Hatch); *see* 157 Cong. Rec. S5319 (daily ed. Sept. 6, 2011) (statement of Sen. Kyl) (explaining that supplemental examination allows a Patent Owner to have the Patent Office reevaluate a patent based on new mater, and “[i]f the [O]ffice finds that the patent is valid, the parties will have a patent that they can be legally certain will be upheld and enforced”). Nevertheless, we choose not to exercise our discretion to deny institution in this case because, as explained below, we deny the Petition on its merits.

B. Claim Construction

The Board interprets claims in an unexpired patent using the “broadest reasonable construction in light of the specification of the patent.” 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 given their ordinary and customary meaning in view of the specification, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner proposes that we construe six terms or phrases: “controlling the duration of the silicon depositing step,” “substantially free of silicon dust,” “sublayers of silicon,” “gas storage vessel,” “evacuating,” and “cycling the vessel through steps b–g until the entire interior surface of

the vessel is covered with a layer of silicon.” *See* Pet. 5–14. Patent Owner provides competing constructions for most of the terms that Petitioner proposes, namely: “controlling the duration of the silicon depositing step,” “substantially free of silicon dust,” “gas storage vessel,” and “cycling the vessel through steps b–g until the entire interior surface of the vessel is covered with a layer of silicon.” Prelim Resp. 21–34. For the purpose of this decision, we determine that only the term “gas storage vessel” requires construction. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”).

Petitioner contends that a “gas storage vessel” is “any vessel able to store gas for some period of time,” “for example, sufficient to perform gas chromatography.” Pet. 9 (citing Ex. 1002 ¶¶ 21, 100), 11 (citing Ex. 1002 ¶ 106). More specifically, Petitioner argues that the plain meaning of the term “vessel” is “broad” and encompasses “any type of hollow vessel that may store or transfer a gas,” including tubing. *Id.* at 9.

In support of that construction, Petitioner explains that the specification of the ’760 patent does not define or illustrate a “gas storage vessel” or “vessel,” and that the specification does not limit the geometry of the vessel to any particular shape or size. *Id.* at 9 (citing Ex. 1001, 3:47–52). Petitioner further contends that the specification “does not distinguish a vessel from a tubular structure.” *Id.* (citing Ex. 1002 ¶ 101). Petitioner also points to extrinsic evidence—other prior art references—that Petitioner contends disclose numerous types of gas storage vessels, including bags, cylindrical structures, and gas chromatograph columns. *Id.* at 10.

Patent Owner argues that we should construe the phrase “gas storage vessel” to have its plain and ordinary meaning, “or, if it has to be rephrased,” a “gas storage vessel” is “a **container that holds gas for storage**.” Prelim. Resp. 22. In support, Patent Owner cites to various portions of the ’760 patent specification that describe the invention as being optimized for storage vessels used for holding species that degrade, are adsorbed, or attack metal surfaces, and that distinguish gas storage vessels from tubing. *Id.* at 23–24 (citing Ex. 1001, 1:30–32, 4:13–17).

Patent Owner argues that, although it is similar to Patent Owner’s construction on its face, Petitioner’s construction is unreasonably broad because, by including non-vessel-like structures such as tubing, the construction reads both the terms “storage” and “vessel” out of the phrase “gas storage vessel.” Prelim. Resp. 21–22. According to Patent Owner, the claims “are unequivocal in requiring **gas storage vessels**, and there is no reasonable construction that could define this term as including a tube without running afoul of the plain and ordinary meaning, the intrinsic evidence, and even the extrinsic evidence.” *Id.* at 22–23.

On the record before us, and applying the broadest reasonable interpretation of the phrase “gas storage vessel” in light of the specification, we agree with Patent Owner that the phrase does not include tubing. Focusing on the plain language of the claim, we note that a “gas storage vessel” must be a vessel and must store gas. Contrary to that plain language, Petitioner contends that a “gas storage vessel” or “vessel” is “any type of hollow vessel that may store *or transfer* a gas.” Pet. 9. Thus, under Petitioner’s construction, a “gas storage vessel” need not store gas but, rather, can be any component in a gas storage and transfer system that gas

passes through. Such a construction, however, impermissibly reads gas storage out of the claims.

Moreover, although the specification states that the method can be used on gas storage vessels and other components of a gas transfer system, the claims are limited to a gas storage vessel and Petitioner does not direct us to any disclosure in the specification that refers to a gas storage vessel as tubing (or other components of the system). Rather, as Patent Owner points out, the specification distinguishes between a gas storage vessel and gas transfer components, such as tubing. See Ex. 1001, 1:14–16 (“The present invention relates to a method of passivating a gas vessel *or* component of a gas transfer system”) (emphasis added), 1:53–55 (“The present invention also provides gas storage vessels and gas transfer components having corrosive gas contact surfaces which have been passivated in accordance with the method of the present invention), 4:13–18 (listing “gas storage vessels” and “tubing used for the transport of corrosive gas” as separate components of a gas storage and transfer system).

Our determination that a gas storage vessel does not encompass tubing is further supported by the reexamination history. See *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (“The PTO should also consult the patent’s prosecution history in proceedings in which the patent has been brought back to the agency for a second review.”); *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1439 (Fed. Cir. 1988) (finding that statements made during a reissue or reexamination proceeding “are relevant prosecution history when interpreting claims”). The examiner and specialists in the reexamination proceeding considered prior art references that disclose tubing coated with

single and multiple layers of silicon in reassessing the patentability of the '760 patent claims. *See, e.g.*, Ex. 1004, 35–39 (disclosing tubing coated with the Silcosteel process); Ex. 1005, 154–155. In rejecting certain claims based on that prior art, the examiner distinguished between tubing and vessels. Ex. 1005, 155–156 (explaining that the Silcosteel process for passivating metal surfaces “can be used not only for coating tubing but also for coating . . . vessels”); *see id.* at 5–6 (the statement of reasons confirming patentability finding that “the process of coating tubing is different from the process of coating gas storage vessels”). “Because an examiner in reexamination can be considered one of ordinary skill in the art,” the examiner’s findings in that regard “carr[y] significant weight.” *St. Clair Intellectual Property Consultants, Inc. v. Canon Inc.*, 412 F. App’x 270, 276 (Fed. Cir. 2011) (unpublished); *see In re Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002) (observing that, in finding relevant facts, an examiner is presumed to act from the viewpoint of the person of ordinary skill in the art).

We also are not persuaded that the extrinsic evidence on which Petitioner relies supports Petitioner’s construction of “gas storage vessel.” For example, Petitioner contends that Briesacher describes a “vessel” as “a type of tubular structure or other structure through which a gas can be passed.” Pet. 9–10. Briesacher, however, does not describe a “gas storage vessel.” Briesacher describes a “getter vessel,” and Petitioner does not identify any disclosure in Briesacher equating a “getter vessel” to a “gas storage vessel.” In any event, we note that, like the '760 patent specification, Briesacher distinguishes between the getter vessel and tubing. Ex. 1011, 4:16–20 (“A getter vessel . . . preferably includes a generally cylindrical housing provided with welded gas-tight caps at both ends. One

cap is provided with an inlet coupled to tubing . . . , and the other cap is provided with an outlet coupled to a length of tubing.”).

Petitioner also points to Rohwer and Zou as teaching gas chromatograph columns as “examples of gas storage vessels.” Pet. 10. But neither reference describes the tubing it discloses as a vessel for storing gas. Rather, Zou explains that its tubing operates, not as a gas storage vessel, but as a “wall coated open tubular . . . column[]” or a “porous layer open tubular . . . column” for high temperature gas chromatography. Ex. 1006, Summary (emphases omitted). Similarly, Rohwer discloses passivated nickel tubing that is used as a column for gas liquid chromatography. Ex. 1007 §§ 1, 2.2, and Title. In other words, both references disclose that the passivated tubing is used for columns through which gases pass, not for vessels that store gas.

Petitioner contends both references teach that the tubing “can be closed and opened via sealing, pinching or valves to store gas therein.” Pet. 10. We acknowledge that Rohwer and Zou disclose altering or modifying the tubing during the passivation process in order to hold silane gas inside. *See* Ex. 1006 § 2.1 (explaining that to deposit the silicon layer, both ends of the stainless steel tubing were sealed); Ex. 1007 § 2.1 (disclosing that the tube was pinch-closed during the silicon deposition process); *see also* Ex. 1002 ¶¶ 85–89 (Mr. Cardin testifying how a person of ordinary skill in the art would have modified a tubular structure with two open ends, like the tubing disclosed in Rohwer and Zou, to “a vessel that only has one opening through which a gas may be passable”). That tubing can be altered or modified in some way to hold gas, however, does not transform the tubing into a gas storage vessel.

In view of the foregoing, we construe the term “gas storage vessel” to have its plain and ordinary meaning, which does not encompass tubing.

C. Overview of the Asserted References

1. Rohwer

Rohwer discloses a process for deactivating the inner surface of nickel tubing by applying a silicon layer to the surface. Ex. 1007 §§ 1–2. The passivated tubing is used as a gas liquid chromatography capillary column. *Id.* In Rohwer’s process, the nickel tubing is rinsed with distilled water and subsequently coupled to a silane loading system. *Id.* § 2.1. After coupling, the tubing is flushed with nitrogen at 380°C for five minutes, in order to control the amount of adsorbed moisture in the tubing and displace air in the tube. *Id.* Rohwer explains that the air reacts with silane “to produce undesirable, fine SiO₂-dust upon contact.” *Id.* The tubing is allowed to cool to room temperature and then filled with silane. *Id.* Next, one end of the tubing is pinch-closed to allow the pressure of the silane in the tube to reach a preset pressure of 250 kPa. *Id.* The other end of the tubing is then pinch-closed and the tubing is heated for three hours at 380°C. *Id.* The tubing is cooled to room temperature, opened in a nitrogen atmosphere, and flushed for two minutes to prevent contact between residual silane and air. *Id.*

2. Zou

Zou discloses a process for preparing wall coated open tubular and porous layer open tubular capillary columns for high temperature gas chromatography. Ex. 1006 § 1. The columns are prepared from “thermostable deactivated” stainless still tubing (i.e., stainless steel tubing with a layer of silicon deposited on its internal surface). *Id.* §§ 1, 2.1. The silicon deposition process includes: (1) rinsing the tubing separately with

water, alcohol, and benzene; (2) purging the tubing with nitrogen gas; (3) filling the tubing with silane at a pressure of 200 kPa; and (4) sealing both ends of the tubing and heating the sealed tubing to 400°C for three hours. *Id.* § 2.1. The process is repeated several times to generate a silicon film that is 0.3–0.5 µm thick. *Id.*

3. *Briesacher*

Briesacher “relates generally to gas purification, and more particularly to methods and apparatus for removing impurities from noble gasses, nitrogen, and other non-reactive gasses.” Ex. 1011, 1:6–9. Briesacher discloses that the interior surfaces of the gas purification system components that may come into contact with a gas (e.g., connecting tubing, valves, and gas handling assemblies) should be made from a non-reactive metal that is “clean and well-polished.” *Id.* at 3:30–36. According to Briesacher, “[t]he desirable degree of smoothness of the polished metal surface should be between 5 and 25 microinch [surface] Ra. Appropriate metals which can provide such surfaces include stainless steel and industry-standard alloys.” *Id.* at 3:36–41.

D. Asserted Anticipation by Rohwer or Obviousness over Rohwer

Petitioner asserts two grounds of unpatentability based on Rohwer alone: (1) that Rohwer anticipates and/or would have rendered obvious the subject matter of claims 1 and 4–8; and (2) that Rohwer would have rendered obvious the subject matter of claims 2 and 3. Pet. 39–43; *see id.* at 20–25 (claim chart). Patent Owner contends that Rohwer fails to teach or suggest passivating a gas storage vessel, as required by each of claims 1–8. Prelim. Resp. 34–36, 40. Having considered the arguments and evidence before us, for the reasons set forth below, we find that the record does not

establish a reasonable likelihood that Petitioner will prevail on its asserted ground.

Petitioner contends that Rohwer discloses a method for passivating the interior surface of a gas storage vessel to protect the surface against corrosion. Pet. 20. In particular, Petitioner points to Rohwer's passivation process for nickel tubing used as a chromatograph column. *Id.* at 20–21 (citing Ex. 1007 §§ 2.1, 3.1, and Fig. 2A). Petitioner argues that the person of ordinary skill in the art “would have known that such tubing was a gas storage vessel as the column is configured to store gas.” *Id.* at 21 (citing Ex. 1002 ¶¶ 20–21, 34, 43, 84, 103–106, 112). In other words, Petitioner relies exclusively on Rohwer's disclosure of passivating tubing as meeting the recited “passivating the interior surface of a gas storage vessel.” See Ex. 1007 §§ 2.1, 3.1 (describing the process for depositing a layer of silicon on the interior surface of nickel tubing for capillary columns used in gas liquid chromatography and a depth profile analysis of the coated tubing).

Petitioner's assertions are based on its proposed claim construction of the phrase “gas storage vessel.” See Pet. 9–11, 20–21. As explained above, however, we determine that the plain and ordinary meaning of “gas storage vessel” does not encompass tubing, such as the passivated nickel tubing used in Rohwer's capillary columns. See *supra* § III.B. Accordingly, we are not persuaded on this record that Petitioner demonstrates sufficiently that Rohwer discloses “passivating the interior surface of a gas storage vessel” as required by claims 1–8. Petitioner, therefore, does not establish a reasonable likelihood of prevailing in showing that Rohwer anticipates claims 1 and 4–8, or would have rendered obvious the subject matter of claims 1–8.

E. Asserted Obviousness over Rohwer and Briesacher, Rohwer and Zou, or Rohwer, Zou, and Briesacher

Petitioner asserts three grounds of unpatentability based on the combination of Rohwer with Briesacher and/or Zou: (1) that the subject matter of claims 15 and 20 would have been obvious over the combination of Rohwer and Briesacher; (2) that the subject matter of claims 1–8 would have been obvious over the combination of Rohwer and Zou; and (3) that the subject matter of claims 9–20 would have been obvious over the combination of Rohwer, Zou, and Briesacher. Pet. 44–54; *see id.* at 25–39 (claim chart). All of the claims challenged in the three grounds of unpatentability require “passivating the interior surface of a gas storage vessel” or a “gas storage vessel having a passive interior surface.” *See, e.g.*, Ex. 1001, 4:19–37 (claim 1), 5:5–16 (claim 13).⁵

Petitioner relies on both Rohwer and Zou as disclosing methods of passivating the interior surface of a gas storage vessel or a gas storage vessel having a passive interior surface. *See, e.g.*, Pet. 28 (“Rohwer and Zou disclose methods of passivating the interior surface of a gas storage vessel to protect the surface against corrosion”), 32 (“Rohwer and Zou each disclose a gas storage vessel having a passive interior surface (e.g. a layer of silicon covering a metallic vessel’s interior surface.”). For the reasons provided above, Petitioner does not show sufficiently that Rohwer discloses a gas storage vessel or passivating the interior surface of a gas storage vessel.

⁵ Claims 2–12 ultimately depend from claim 1, independent claims 13–17 and 20 recite either a gas storage vessel having a passive interior surface (claims 13–15 and 20) or a method of passivating the interior surface of a gas storage vessel (claims 16, 17), and claims 18 and 19 depend from claim 17. Ex. 1001, 4:38–6:67.

Zou, like Rohwer, discloses passivating the interior surface of tubing and passivated tubing. Ex. 1006 § 2.1 (describing the process for passivating stainless steel tubing). Zou, therefore, does not cure the deficiency in Rohwer; it has the same deficiency.

Petitioner does not assert that Briesacher cures the deficiency in Rohwer and Zou. Rather, Petitioner contends that Briesacher discloses the limitations of the challenged claims related to average surface roughness of the interior surface of a gas storage vessel. *See, e.g.*, Pet. 26 (asserting “Briesacher discloses that the 5–25 microinch RA is a commonly specified metal average roughness for the interior surface of gas vessels”), 31 (same). Accordingly, for the reasons set forth above, we are not persuaded that Petitioner establishes a reasonable likelihood of prevailing in showing that the subject matter of claims 1–20 would have been obvious over any asserted ground of unpatentability requiring the combination of Rohwer with Briesacher and/or Zou.

IV. CONCLUSION

Taking account of the information presented in the Petition and the Preliminary Response, and the evidence of record, we determine that Petitioner fails to demonstrate a reasonable likelihood of prevailing at trial as to any challenged claim. Accordingly, the Petition is *denied* and no trial is instituted.

V. ORDER

It is hereby

ORDERED that the Petition is *denied* as to all challenged claims of the '760 patent, and no trial is instituted.

IPR2017-00354
Patent 6,511,760 B1

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