

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LAVELLE INDUSTRIES, INC.,
Petitioner,

v.

DANCO, INC.,
Patent Owner.

Case IPR2017-00159
Patent 9,273,455 B2

Before PATRICK R. SCANLON, HYUN J. JUNG and
BEVERLY M. BUNTING, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
35 U.S.C. § 314 and 37 C.F.R. § 42.108

I. INTRODUCTION

Lavelle Industries, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1, 6, 11, and 14 of U.S. Patent No. 9,273,455 B2 (Ex. 1001, “the ’455 patent”). Danco, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 16, “Prelim. Resp.”). Patent Owner submitted the Declaration of Chad Jones (Ex. 2003) in support of its Preliminary Response.

We have jurisdiction under 35 U.S.C. § 314, which provides that *inter partes* review may not be instituted unless “the information presented in the petition . . . and any [preliminary] response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

Upon consideration of the arguments and evidence presented by Petitioner and Patent Owner, we are not persuaded that Petitioner has demonstrated, under 35 U.S.C. § 314(a), a reasonable likelihood that it would prevail in showing the unpatentability of any of the challenged claims. Accordingly, we do not institute an *inter partes* review of any claim.

II. BACKGROUND

A. *Related Matters*

The parties indicate that the ’455 patent is at issue in the following United States District Court proceeding: *Danco, Inc. v. Lavelle Indus., Inc.*, Case No. 5:16-cv-00048-CMC (E.D. Tex.). Pet. 1; Paper 11, 1.

B. *The ’455 patent*

The ’455 patent is titled “Closet Collar Adaptations,” and issued on March 1, 2016, from U.S. Application No. 14/888,804 (“the ’804 application”) filed September 17, 2014. Ex. 1001, [21], [22], [45], [54].

The '804 application was a continuation application claiming the benefit of U.S. Application No. 13/771,773 (“the parent application”) filed February 20, 2013; the '804 application also claimed the benefit of two provisional patent applications filed February 20, 2012, and July 2, 2012. *Id.* at [60], [63], 1:5–15.

1. *Effective Filing Date*

As an initial matter, we address the effective filing date of the '455 patent here for our analysis of *inter partes* review eligibility discussed *infra* in Section III.A. Although not addressed by either party, the effective filing date of the challenged claims depends on application of 35 U.S.C. § 100(i)(1)(B), which provides that the effective filing date means “the filing date of the earliest application for which the patent or application is entitled, as to such invention, . . . to the benefit of an earlier filing date under section 120.” In relevant part, 35 U.S.C. § 120 provides that

[a]n application for patent for an invention disclosed in the manner provided by section 112(a) . . . in an application previously filed in the United States . . . shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application . . . and if it contains or is amended to contain a specific reference to the earlier filed application.

The '804 application indicates it “is a Continuation application of, and claims priority to, *copending* U.S. Non-Provisional patent application entitled ‘CLOSET COLLAR ADAPTATIONS’ and having Ser. No. 13/771,773, filed on Feb. 20, 2013.” Ex. 1001, 1:5–9 (emphasis added). Thus, on the record before us, the '804 application contained a specific reference to the earlier application and was filed before the patenting,

abandonment of, or termination of proceedings on the earlier application, and therefore satisfies the requirements of § 120.

Furthermore, a continuation application by definition is “based on the same disclosure as an earlier application” and “claims the same invention claimed in [the] earlier application, although there may be some variation in the scope of the subject matter claimed.” *Transco Prod. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 555 (Fed. Cir. 1994). *See also* MPEP § 706.02(VI)(A) (indicating that, when an application is a continuation of an earlier application, the effective filing date of an invention claimed in the application is the same as the earliest filing date of the continuation application if the requirements of § 120 have been satisfied).

In this case, we are not directed to anything in the current record to suggest that the ’804 application, as a continuation application, contained at any time a claim not entitled under 35 U.S.C. § 120 to the benefit of the filing date of the parent application. Accordingly, for the purposes of this Decision, we determine that the effective filing date of the ’804 application was at least as early as February 20, 2013. Because neither party addresses whether either of the provisional applications referenced in the ’804 application discloses the invention claimed in the challenged claims in the manner provided by § 112(a), and because an earlier effective filing date would not impact our analysis, we do not consider whether the challenged claims are entitled to the benefit of the filing date of either of the provisional applications under 35 U.S.C. § 119(e).

2. Disclosure

The '455 patent describes a sealing assembly for use between a toilet and a closet collar. Ex. 1001, Abstract. Figure 27C of the '455 patent is reproduced below.

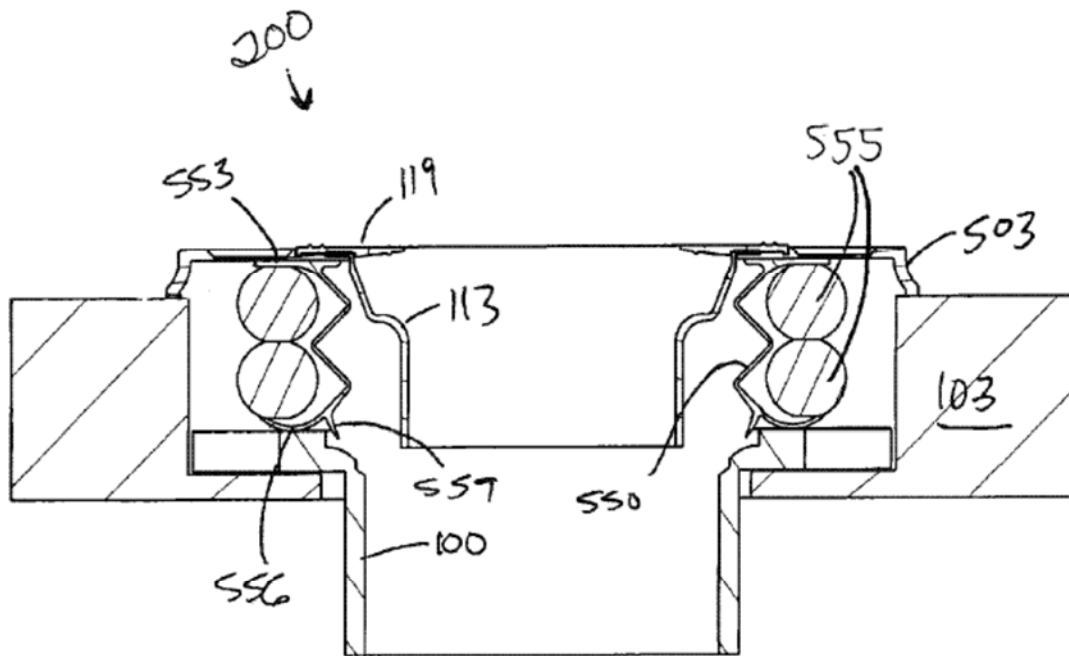


Fig. 27C

Figure 27C shows a closet collar adaptation assembly. *Id.* at 2:28–30.

Closet collar adaptation assembly 200 includes bellow 550 that has first lip 553, second lip 556, ridge 559, and collapsible portion 563 (shown in Figure 27B). *Id.* at 9:63–66, Fig. 27C. Adapter plate 503 is seated on flooring 103, and closet collar adapter 113 is seated between adapter plate 503 and sealing washer 119. *Id.* at 10:10–14, Fig. 27C.

Bellow 550 is disposed between closet collar 100 and adapter plate 503, such that first lip 553 contacts adapter plate 503, and second lip 556

and ridge 559 contact closet collar 100. *Id.* at 10:14–19, Fig. 27C. One or more flexible rings 555 are located between bellow 550 and flooring 103. *Id.* at 10:27–28, Fig. 27C.

C. Challenged Claims

Challenged claims 1, 6, 11, and 14 are independent claims. Claims 1 and 11 are illustrative and are reproduced below.

1. An apparatus comprising:
 - an annular collapsible portion;
 - a lower lip extending radially outward from a first end of the annular collapsible portion, the lower lip configured to contact a closet collar;
 - an upper lip extending radially outward from a second end of the annular collapsible portion, the upper lip configured to be positioned under a bottom surface of a toilet;
 - a ridge extending from the annular collapsible portion configured to extend into the closet collar, wherein the annular collapsible portion, the lower lip, the upper lip, and the ridge are formed of a unitary structure; and
 - at least one flexible ring located in a recessed channel bordered by the lower lip, the upper lip, and the annular collapsible portion.

Ex. 1001, 12:56–13:3.

11. A method, comprising:
 - positioning a closet collar adaptation assembly onto a closet collar, wherein the closet collar adaptation assembly comprises:
 - an annular collapsible portion;
 - an upper lip extending radially outward from a first end of the annular collapsible portion, wherein the upper lip is configured to be positioned under a bottom surface of a toilet;

a lower lip extending radially outward from a second end of the annular collapsible portion, wherein the lower lip is configured to contact the closet collar;

a ridge extending from the annular collapsible portion; and

at least one flexible ring positioned between the upper lip and the lower lip; and

positioning the toilet above the closet collar adaptation assembly.

Id. at 14:1–17.

D. The Prior Art

Petitioner relies on the following prior art:

1. U.S. Patent No. 3,349,412, issued October 31, 1967 (Ex. 1002, “Schwartz”);

2. U.S. Patent No. 7,814,580 B2, issued October 19, 2010 (Ex. 1003, “Coronado I”);

3. U.S. Patent No. 8,069,502 B2, issued December 6, 2011 (Ex. 1004, “Coronado II”);

4. U.S. Patent No. 2,976,543, issued March 28, 1961 (Ex. 1005, “Turner”);

5. U.S. Patent No. 6,332,632 B1, issued December 25, 2001 (Ex. 1006, “Hodges”); and

5. U.S. Patent No. 6,719,294 B2, issued April 13, 2001 (Ex. 1009, “Nguyen”).

E. Asserted Grounds of Unpatentability

Petitioner challenges claims 1, 6, 11, and 14 of the '455 patent on the following grounds:^{1,2}

Reference(s)	Basis	Claims Challenged
Schwartz	§ 102(e) ³	1, 6, 11, and 14
Coronado I, Coronado II, Schwartz, and Nguyen	§ 103	1, 6, 11, and 14
Turner, Schwartz, and Nguyen	§ 103	1, 6, 11, and 14
Coronado I, Coronado II, Schwartz, Nguyen, and Hodges	§ 103	1, 6, 11, and 14

III. ANALYSIS

A. Inter Partes Review Eligibility

A petition for *inter partes* review shall be filed after the later of nine months after the grant of a patent, or if a post-grant review is instituted under

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. §§ 102 and 103, effective March 16, 2013. Because the challenged patent has an effective filing date prior to March 16, 2013, as discussed in Section II.B.1, we refer to the pre-AIA versions of §§ 102 and 103 in this Decision.

² Petitioner asserts several grounds of unpatentability in the alternative. Taking the references in the alternative would expand what is asserted as one ground into multiple, separate grounds of unpatentability. The function of the Board is not to comb through a petitioner’s arguments in order to decipher the strongest argument or to determine the strongest combination of references to challenge the claims. As such, we exercise our discretion and consider all of the references in combination as one ground of unpatentability. See 35 U.S.C. § 314(a); 37 C.F.R. § 42.108.

³ Although Petitioner asserts that Schwartz anticipates the challenged claims under § 102(e) (Pet. 3), we note that, with an issue date of October 31, 1967, Schwartz also would qualify as prior art under § 102(b).

chapter 32, the date of the termination of such post-grant review. 35 U.S.C. § 311(c). Section 311(c) does not apply, however, to a petition for *inter partes* review of a patent that is not a patent described in section 3(n)(1) of the Leahy-Smith America Invents Act (“AIA”). Pub. L. No. 112-274, § 1(d), 126 Stat. 2456 (2013). Similarly, our rules require that a petition for *inter partes* review may not be filed less than nine months from the grant of the challenged patent if it “is a patent described in section 3(n)(1) of the [AIA].” 37 C.F.R. § 42.102(a)(1).

Section 3(n)(1) of the AIA states that such patents include those issuing from an application that contains or contained at any time a claim having an effective filing date, as defined in 35 U.S.C. § 100(i), on or after “the expiration of the 18-month period beginning on the date of the enactment of” the AIA. Because the AIA was enacted on September 16, 2011 (Pub. L. No. 112-29, 125 Stat. 284), patents described in section 3(n)(1) include those with a claim having an effective filing date on or after March 16, 2013.

The Petition has been accorded a filing date of October 28, 2016 (Paper 4, 1), which is less than nine months after the March 1, 2016 issue date of the ’455 patent. We have determined, however, that for the purposes of this Decision, the effective filing date of the ’804 application (including all claims contained therein at any time) was at least as early as February 20, 2013, and thus prior to March 16, 2013. *See supra* Section II.B.1.

Accordingly, based on the record before us, the ’455 patent is not a patent described in section 3(n)(1) of the AIA. As such, we determine that the Petition does not violate either 35 U.S.C. § 311(c) or 37 C.F.R. § 42.102(a)(1).

B. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). 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 does not propose a level of ordinary skill in the art. Relying on the testimony of Mr. Jones, Patent Owner, asserts that a person of ordinary skill in the art “typically would have had (a) a bachelor’s degree in mechanical engineering, or a related field, and at least two years of experience in the design of plumbing components; or (b) a high school degree and at least four years of experience in the design of plumbing components.” Prelim. Resp. 19 (citing Ex. 2003 ¶ 24). Mr. Jones testifies that his opinion is based on his “experiences working in the field of product design in the plumbing industry in addition to the specification and claims of the ‘455 Patent in light of the state of the art in the 2012 time frame.” Ex. 2003 ¶ 24. We determine that the level of ordinary skill proposed by Mr. Jones is consistent with the challenged patent and the asserted prior art, and we therefore adopt this definition of the level of ordinary skill in the art for the purposes of the analysis below.

C. Claim Construction

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under the broadest reasonable interpretation 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). Furthermore, only those terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner does not propose a specific construction for any claim term, stating only that “[t]he claims define an annular collapsible portion, and not a[] collapsible corrugated portion, and “at least one flexible ring, and not a flexible plastic ring.” Pet. 19. Patent Owner agrees that no claim construction is necessary, and the claim terms should be given their ordinary and customary meaning. Prelim. Resp. 20. Thus, on the present record, we determine that no claim term requires express construction at this juncture. *See Vivid Techs.*, 200 F.3d at 803.

D. Asserted Anticipation by Schwartz

Petitioner challenges claims 1, 6, 11, and 14 as anticipated under 35 U.S.C. § 102(e) by Schwartz. Pet. 3, 20–28.

1. Overview of Schwartz

Schwartz relates to a “gasket for sealing the connection between a toilet bowl outlet and a soil pipe that extends upward through a floor.” Ex. 1002, 1:9–11. The invention of Schwartz “reduces costs and promotes convenience” by providing a single gasket that can cooperate with soil pipes of different sizes. *Id.* at 1:62–65. Figure 1 of Schwartz is reproduced below.

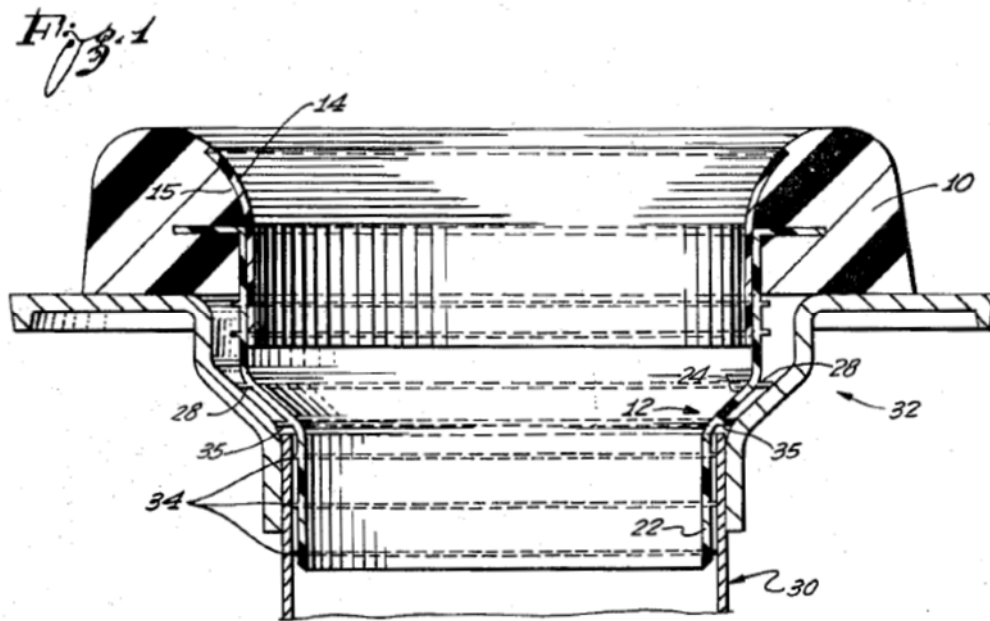


Figure 1 is a section view of a preferred embodiment showing how the sealing gasket cooperates with a small-diameter soil pipe. *Id.* at 1:70–2:2. This embodiment includes sealing ring 10 (made of a wax-like material), plastic ferrule 12, and liner 14. *Id.* at 2:12–15, Fig. 1. The upper end of ferrule 12 includes radial flange 18, which is embedded in sealing ring 10. *Id.* at 2:20–26, Figs. 1, 2. Ferrule 12 has a “stepped configuration” comprising upper circumferential portion 20 of relatively large diameter, lower circumferential portion 22 of smaller diameter, and intermediate portion 24 that provides a transition between the diameters of the upper and lower portions. *Id.* at 2:26–31, Figs. 1, 5. Intermediate portion 24 has outer

circumferential flange or lip 28 formed thereon, and lower portion 22 is provided with three outer circumferential flanges or lips 34. *Id.* at 2:37–39, 2:55–57, Fig. 1.

As shown in the embodiment of Figure 1, lower portion 22 extends into the upper end of soil pipe 30. *Id.* at 2:48–50, Fig. 1. Soil pipe 30 is “conventionally” provided with flanged collar 32, which has a flared configuration and embraces the upper end of the pipe. *Id.* at 2:42–44, Fig. 1. Lip 28 of intermediate portion 24 makes sealing contact with the inner surface of collar 32, and lips 34 of lower portion 22 make sealing contact with the inner surface of soil pipe 30. *Id.* at 2:58–64, 3:30–32, Fig. 1.

2. Discussion

Petitioner provides analysis purporting to show where each limitation recited in claims 1, 6, 11, and 14 is disclosed in Schwartz. Pet. 20–28. In particular, Petitioner argues that intermediate portion 24 of Schwartz’s ferrule 12 corresponds to the annular collapsible portion recited in each of the challenged claims. *Id.* at 21–25 (citing Ex. 1002, 2:21). Petitioner further argues that, as used in the ’455 patent, the term “collapsible” encompasses at least partially collapsing in response to exerted force. *Id.* at 27. According to Petitioner, given that Schwartz’s plastic intermediate portion 24 “provides a transition between two different diameters” and “includes lips that must seal against the soil pipe,” the intermediate portion “must also at least partially collapse in order to provide a sealing force against the sides of the soil pipe due to a force exerted thereon, and to take up any variable space present above the pipe.” *Id.* at 27–28.

Patent Owner argues that column 2, line 21 of Schwartz, “[t]he only evidence to which Petitioner cites in arguing this claim element,” merely

describes the shape of ferrule 12 and does not “even remotely suggest that the intermediate portion 24 of the ferrule 12 is collapsible.” Prelim. Resp. 22 (citing Ex. 2003 ¶¶ 50–52). Patent Owner also argues that Petitioner’s argument that intermediate portion 24 “must also at least partially collapse” is a flawed inherency argument that is “based solely on attorney argument and is completely lacking any citation to actual evidence.” *Id.* at 22–23.

In addition, Patent Owner argues that Figures 3 and 4 (which depict the sealing gasket installed in a small diameter pipe and a large diameter pipe, respectively) of Schwartz contradict Petitioner’s argument. *Id.* at 23. According to Patent Owner, the fact that the shape of ferrule 12—including intermediate portion 24—is exactly the same in both figures “demonstrates that the intermediate portion 24 *does not* collapse in order to provide a sealing force against the sides of the soil pipe.” *Id.* at 24 (citing Ex. 2003¶ 51).

Having considered Petitioner’s argument and evidence, we are not persuaded that Schwartz’s intermediate portion 24 is collapsible. Instead, we agree with Patent Owner that the passage of Schwartz cited by Petitioner as disclosing collapsibility (line 21 of column 2), fails to suggest that intermediate portion 24 is collapsible. Indeed, this passage merely discloses that ferrule 12 is shaped with radial flange 18. Ex. 1002, 2:21. As such, we are not directed to any disclosure in Schwartz that suggests intermediate portion 24—or any part of ferrule 12—is collapsible. Schwartz discloses that ferrule 12 is made of “chemically inert plastic material” (Ex. 1002, 2:13–14), but insufficient reasoning is given to establish that this material necessarily would be collapsible.

Regarding Petitioner's argument noted above that intermediate portion 24 "must" be collapsible, we agree with Patent Owner that this argument is not persuasive. The assertion that the intermediate portion must at least partially collapse to provide a sealing force against the soil pipe and to take up any variable space present above the pipe is not supported sufficiently by objective evidence or analysis. Furthermore, this assertion is contradicted by Mr. Jones' testimony, which we credit. *See* Ex. 2003 ¶ 51.

Petitioner's anticipation analysis contains additional flaws. For example, Petitioner argues that the lowermost of Schwartz's three lips 34 corresponds to the lower lip recited in each of the challenged claims. Pet. 21–25 (citing Ex. 1002, 2:56–57, Fig. 1). Each challenged claim, however, requires that the lower lip (1) extends radially outward from an end of the annular collapsible portion and (2) is configured to contact a closet collar.

Regarding the first requirement, Patent Owner argues that the alleged lower lip does not extend radially outward from an end of the ferrule's *intermediate portion 24*, which is the specific portion of the ferrule 12 that Petitioner alleges as being the annular collapsible portion. Instead, the feature identified by Petitioner extends from the bottom of "the lower portion 22," which is not alleged by Petitioner as being an annular collapsible portion. Prelim. Resp. 25–26 (citing Ex. 1002, 2:26–31) (citation omitted). We agree with Patent Owner. Figure 1 of Schwartz clearly shows that lips 34 are formed on lower portion 22, *not* intermediate portion 24. Schwartz's written description also describes lips 34 as being formed on lower portion 22. Ex. 1002, 2:55–57. Therefore, Petitioner's assertion that the lowermost of Schwartz's three lips 34 corresponds to the claimed lower lip extending radially outward from an end of the annular collapsible portion is

incompatible with the assertion that intermediate portion 24 corresponds to the claimed annular collapsible portion.

In addition, we agree with Patent Owner that “the alleged lower lip identified by Petitioner is not configured to contact *a closet collar*.” See Prelim. Resp. 26. Petitioner fails to identify expressly what structure in Schwartz it alleges corresponds to a closet collar. At best, Petitioner implies that soil pipe 30 is a closet collar by asserting that lip 34 contacts the soil pipe. Pet. 22–25 (citing Ex. 1002, 2:56–57, Fig. 1).

A review of the ’455 patent, however, controverts this implication. For instance, the ’455 patent states “[a] closet collar may provide a connection between a toilet and a drain pipe,” and thereby defines a closet collar as separate from the drain pipe. Ex. 1001, 1:19–21. Also, the drawings of the ’455 patent, such as Figures 1A–1C, depict closet collar 100 as structure distinct from a drain or soil pipe. Accordingly, we are not persuaded that soil pipe 30 can be considered to be a closet collar. Rather, we credit the testimony of Mr. Jones that one of ordinary skill in the art would know that Schwartz’s flanged collar 32, not the soil pipe, is a closet collar. See Ex. 2003 ¶ 54.

Lowermost lip 34 of Schwartz contacts soil pipe 30, not flanged collar 32, as Petitioner points out. Ex. 1002, 30–32, Fig. 1; Pet. 22–25. As such, the Petition does not demonstrate that Schwartz discloses a lower lip configured to contact a closet collar.

Each challenged claim also recites an upper lip and a ridge that both extend from the annular collapsible portion. Petitioner argues that the upper lip is satisfied by Schwartz’s radial flange 18 and the ridge is satisfied by the center one of Schwartz’s three lips 34. Pet. 21–26 (citing Ex. 1002, 2:20–

22, 2:55–57, Figs. 1, 3, 4). As correctly argued by Patent Owner, however, neither one of these elements extends from intermediate portion 24, which is the structure of Schwartz that Petitioner contends corresponds to the annular collapsible portion. Prelim. Resp. 27–30. Specifically, rather than extending from intermediate portion 24, radial flange 18 extends from upper portion 20, and center lip 34 extends from lower portion 22. Ex. 1002, 2:20–22, 2:55–57, Fig. 1. As such, the Petition fails to demonstrate that Schwartz discloses an upper lip and a ridge as claimed.

For the above reasons, we find that the Petition does not establish a reasonable likelihood that claims 1, 6, 11, and 14 are anticipated by Schwartz.

As an apparent alternative to anticipation by Schwartz, Petitioner further asserts

To the extent one might argue that the ring in Schwartz is not flexible, or that the intermediate portion is not collapsible, it would have been obvious in view of the other references cited herein to have, in the alternative, so provided Schwartz with a corrugated intermediate portion, as taught by Coronado I or II, or to have used a flexible plastic ring instead of the wax ring, as a matter of design choice, as taught by Gallacher.⁴ These were known alternatives with recognized benefits by those of ordinary skill in the art.

Pet. 28. This paragraph is Petitioner’s entire analysis supporting the assertion of obviousness based on Schwartz, Coronado I, Coronado II, and Gallacher.

⁴ Although not including Gallacher (Ex. 1011) expressly in an asserted ground of unpatentability, Petitioner submits that Gallacher discloses that the interchangeability of plastic and wax rings is well known. Pet. 26–27.

A petition for *inter partes* review must “identif[y], in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim.” 35 U.S.C. § 312(a)(3). A petition for *inter partes* review must identify “[h]ow the construed claim is unpatentable under the statutory grounds” on which the petitioner challenges the claims, and “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4). In addition, a petition must “identify[] specific portions of the evidence that support the challenge.” 37 C.F.R. § 42.104(b)(5). Similarly, each petition must include “[a] full statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence including material facts, and the governing law, rules, and precedent.” 37 C.F.R. § 42.22(a)(2).

Patent Owner argues, and we agree, that Petitioner’s brief, conclusory obviousness analysis fails to satisfy these requirements. *See* Prelim. Resp. 32–33. Petitioner fails to specify the particular teachings of Coronado I, Coronado II, and Gallacher that are being relied on or where theses teachings are disclosed in the respective references. Although Coronado I, Coronado II, and Gallacher are discussed elsewhere in the Petition (*see* Pet. 26–27, 28–38, 48–55), Petitioner does not explain adequately how these references would be combined with Schwartz.

Moreover, even assuming the modifications proposed by Petitioner could be understood adequately, the Petition lacks adequate reasoning, with rational underpinning, to show sufficiently that a person of ordinary skill would have had reason to combine Coronado I, Coronado II, and Gallacher with Schwartz. Rather, Petitioner merely states, without support, that the

proposed modifications would have been obvious “as a matter of design choice,” using allegedly “known alternatives with recognized benefits.” *Id.* at 28. These unsupported, conclusory assertions do not satisfy Petitioner’s burden of demonstrating obviousness. *See In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

Accordingly, we find that the Petition does not establish a reasonable likelihood that claims 1, 6, 11, and 14 are obvious over Schwartz, Coronado I, Coronado II, and Gallacher.

E. Asserted Obviousness Based on Coronado I, Coronado II, Schwartz, and Nguyen

Petitioner challenges claims 1, 6, 11, and 14 as obvious under 35 U.S.C. § 103(a) over Coronado I, Coronado II, Schwartz, and Nguyen. Pet. 3–4, 28–38. Although basing this ground on Coronado I “and/or” Coronado II, Petitioner relies on identical teachings from the two references⁵ and uses these references interchangeably, not in combination. *See id.* at 31–38. Accordingly, we limit our discussion to Coronado I, although our analysis applies equally to Coronado II.

1. Overview of Coronado I

Coronado I relates to “a flange apparatus, including a specially configured flexible sleeve and a closet flange, which mounts a water closet

⁵ The written descriptions and drawings of Coronado I and Coronado II contain substantial overlap. *Compare* Ex. 1003, 1:1–6:62, Figs. 1–9 with Ex. 1004, 1:1–7:2, Figs. 1–9.

(toilet) on a supporting floor surface and also provides a sealed interconnection between a water closet (toilet) and a water waste drain pipe.” Ex. 1003, 1:18–22. Figure 2A of Coronado I is reproduced below.

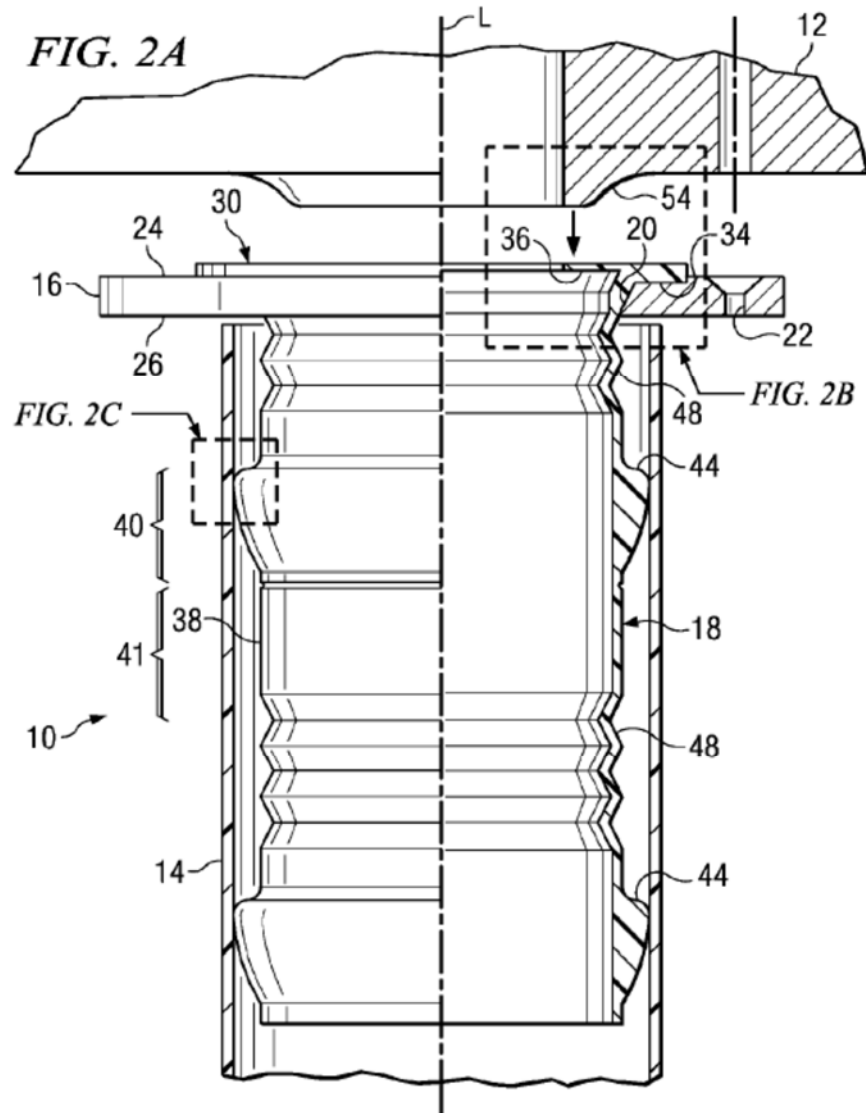


Figure 2A is a partial sectional, partial elevational view of a flexible flange apparatus “in its operative position between an exemplary plumbing discharge outlet and an exemplary waste drainpipe.” *Id.* at 2:50–53. Flexible flange apparatus 10 includes outer flange 16 and sleeve 18 disposed through aperture 20 in the outer flange. *Id.* at 3:25–27, Fig. 2A. Sleeve 18

includes upper portion 30, which is seated in the upper surface of outer flange 16, and lower portion 38 extending below the upper surface of outer flange 16. *Id.* at 3:41–43, 3:52–54, Fig. 2A. “In one embodiment, the sleeve **18** is made of substantially uniform material, and thus, the lower portion **38** is sufficiently flexible to permit distortion of the lower portion to achieve non-negligible angles of deflection.” *Id.* at 3:54–58. In addition, lower portion 38 may include one or more corrugated portions 48, “which aid flexibility of the sleeve **18** while preventing kinking during flexing.” *Id.* at 4:52–55, Fig. 2A.

Sleeve 18 further includes sealing elements 44 extending annularly around the sleeve. *Id.* at 4:4–5, Fig. 2A. When flexible flange apparatus 10 is disposed between plumbing fixture discharge 12 and waste drainpipe 14, as depicted in Figure 2A, sealing elements 44 engage inner wall 46 of drainpipe 14, thereby providing a tight seal between sleeve 18 and drainpipe 14. *Id.* at 4:46–51, Figs. 2A, 2C.

2. Discussion

Petitioner provides analysis purporting to show where each limitation recited in claims 1, 6, 11, and 14, except for the claimed ridge, is disclosed in Coronado I. Pet. 30–38. Petitioner argues that the claimed ridge would have been obvious in view of the teachings of Schwartz or Nguyen. *Id.* at 32, 34, 36, 38 (citing Ex. 1002, 2:56–57, Fig. 1; Ex. 1009, 2:30, Fig. 1). Petitioner’s entire analysis of the alleged obviousness of the claimed ridge, however, is limited to the statement that

the use of a ridge 34 [30] that extends into the waste drainpipe 14 to improve a seal or guide a sealing element is well known in the mechanical field and the addition of

such would be obvious to one skilled in the art; the elements are formed of a unitary structure.

Id. (citing Ex. 1002, 2:56–57, Fig. 1; Ex. 1009, 2:30, Fig. 1) (brackets in original).

Patent Owner argues that Petitioner fails to meet its burden of proving obviousness because “the Petition is silent regarding exactly *how* Petitioner proposes combining the particular teachings of Schwartz and/or Nguyen with the teachings of Coronado I.” Prelim. Resp. 34–35 (citing Pet. 28–38). Patent Owner also argues that Petitioner’s obviousness argument “does not provide the requisite explanation of why a person of ordinary skill would have been motivated to combine the teachings of the references, nor does it explain why a person of skill would have expected a combination of the cited references to be desired or successful.” *Id.* at 36.

We agree with Patent Owner. Schwartz discloses three outer circumferential flanges or lips 34 formed on lower portion 22 of ferrule 12. Ex. 1002, 2:55–57, Fig. 1. But Petitioner does not explain sufficiently why or how one of ordinary skill in the art would add one of Schwartz’s lips 34 to the apparatus of Coronado I, particularly given that Coronado I already includes two sealing members 44 that provide the sealing function Petitioner asserts lip 34 would add. Similarly, although Nguyen discloses a bowl gasket assembly having cylindrical lower housing formed with shoulder 30 (Ex. 1009, 4:33–35, Fig. 1), Petitioner does not explain sufficiently why or how one of ordinary skill in the art would add shoulder 30 to the apparatus of Coronado I. Petitioner’s unsupported, conclusory assertion that using the features of Schwartz and Nguyen “to improve a seal or guide a sealing element is well known in the mechanical field and the addition of such

would be obvious to one skilled in the art” does not satisfy the burden of demonstrating obviousness. *See Magnum Oil*, 829 F.3d at 1380.

Patent Owner also argues, and we agree, that Petitioner’s reliance on Coronado I’s lower sealing element 44 as corresponding to the claimed lower lip configured to contact a closet collar is flawed. Prelim. Resp. 36–38 (citing Pet. 31). As Patent Owner correctly argues, Figure 2A of Coronado I shows that lower sealing element 44 contacts waste drainpipe 14. *Id.* at 37. According to Patent Owner, outer flange 16 of Coronado I (shown in green in the annotated version of Figure 2A reproduced on page 37 of the Preliminary Response), not waste drainpipe 14, is a closet collar. *Id.* (citing Ex. 2003 ¶¶ 58–60). Thus, Patent Owner asserts that, in contacting waste drainpipe 14 but not outer flange 16, lower sealing element 44 is not configured to contact a closet collar. *Id.* (citing Ex. 2003 ¶¶ 58–60).

Petitioner fails to identify expressly what structure in Coronado I it alleges corresponds to a closet collar. At best, Petitioner implies that waste drainpipe 14 is a closet collar by asserting that lower sealing element 44 contacts the waste drainpipe. Pet. 31, 33, 35–36, 37 (citing Ex. 1003, 3:52, 4:4–5, 4:46–48, Fig. 2C). Petitioner also states that flexible sleeve 18 “is configured to fit a plurality of gap sizes between a toilet and a closet collar or drainpipe 14,” thereby possibly equating a closet collar to drainpipe 14.⁶ *Id.* at 33 (citing Ex. 1003, 4:1–2, 4:59–61).

⁶ On the other hand, Petitioner also indicates that Coronado I identifies a closet collar “as the distal portion of a toilet.” Pet. 35 (citing Ex. 1003, 3:30–32).

The '455 patent, however, does not support the notion that drainpipe 14 is a closet collar. As discussed above (*see supra* Section III.D.2.), the '455 patent defines a closet collar as being a separate and distinct element from a drain pipe. Ex. 1001, 1:19–21. Furthermore, we credit the testimony of Mr. Jones that one of ordinary skill in the art would know that outer flange 16 of Coronado I, rather than the drainpipe, is a closet collar. *See* Ex. 2003 ¶¶ 59–60. Accordingly, we are not persuaded that waste drainpipe 14 can be considered to be a closet collar. As such, the Petition does not demonstrate that Coronado I discloses a lower lip configured to contact a closet collar.

Patent Owner also disputes Petitioner's contentions regarding the claimed upper lip. Prelim. Resp. 38–40. Specifically, Petitioner argues that upper portion 30 of sleeve 18 of Coronado I corresponds to the upper lip recited in each of the challenged claims. Pet. 30, 31–32, 33–34, 35, 37 (citing Ex. 1003, 3:46, 4:24–26, Figs. 2A, 5). Patent Owner argues the language of each challenged claim “requires the upper lip and the lower lip to extend from respective ends of *the same* annular collapsible portion. Prelim. Resp. 38 (citing *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1356 (Fed. Cir. 1999)). But, according to Patent Owner, Petitioner's alleged lower lip (lower sealing element 44) and alleged upper lip (upper portion 30) extend from the ends of “***different*** alleged annular collapsible portion[s].” *Id.* at 40.

This argument by Patent Owner depends on the assertion that “Petitioner does not allege that the entire sleeve 18 is an annular collapsible portion.” *Id.* at 39. We are not persuaded, however, that this assertion necessarily is correct. Petitioner's position regarding the annular collapsible

portion recited in each of the challenged claims is somewhat unclear. In the annotated version of Figure 2A of Coronado I on page 30 of the Petition and in the accompanying text, Petitioner appears to assert that Coronado I's upper corrugated portion 48 corresponds to the annular collapsible portion. Pet. 30. In its claim charts, however, Petitioner maps the annular collapsible portion to "a flexible sleeve 18 with corrugated portions 48 that are collapsible." *Id.* at 31, 33, 35, 37 (citing Ex. 1003, 4:1–2, 4:59–61).

The latter statement possibly could be construed as meaning either the corrugated portions or the entire sleeve corresponds to the claimed annular collapsible portion. Either way, the statement is inconsistent with the indication on page 30 of the Petition that only the *upper* corrugated portion corresponds to the annular collapsible portion. We do not attempt to resolve the ambiguity of Petitioner's position, however, because it is not necessary for the purposes of this Decision. Rather, we find Petitioner's overall obviousness analysis flawed for other reasons, which are discussed above. Accordingly, we find that the Petition does not establish a reasonable likelihood that claims 1, 6, 11, and 14 are unpatentable over any combination of Coronado I, Coronado II, Schwartz, and Nguyen.

*F. Asserted Obviousness Based on Turner,
Schwartz, and Nguyen*

Petitioner challenges claims 1, 6, 11, and 14 as obvious under 35 U.S.C. § 103(a) over Turner, Schwartz, and Nguyen. Pet. 4, 39–48.

1. Overview of Turner

Turner "relates to plumbing installations, with special reference to toilet bowl installations and is directed to means for providing a fluid-tight

joint between the base of a toilet bowl and an associated soil pipe.” Ex. 1005, 1:15–18. Figure 2 of Turner is reproduced below.

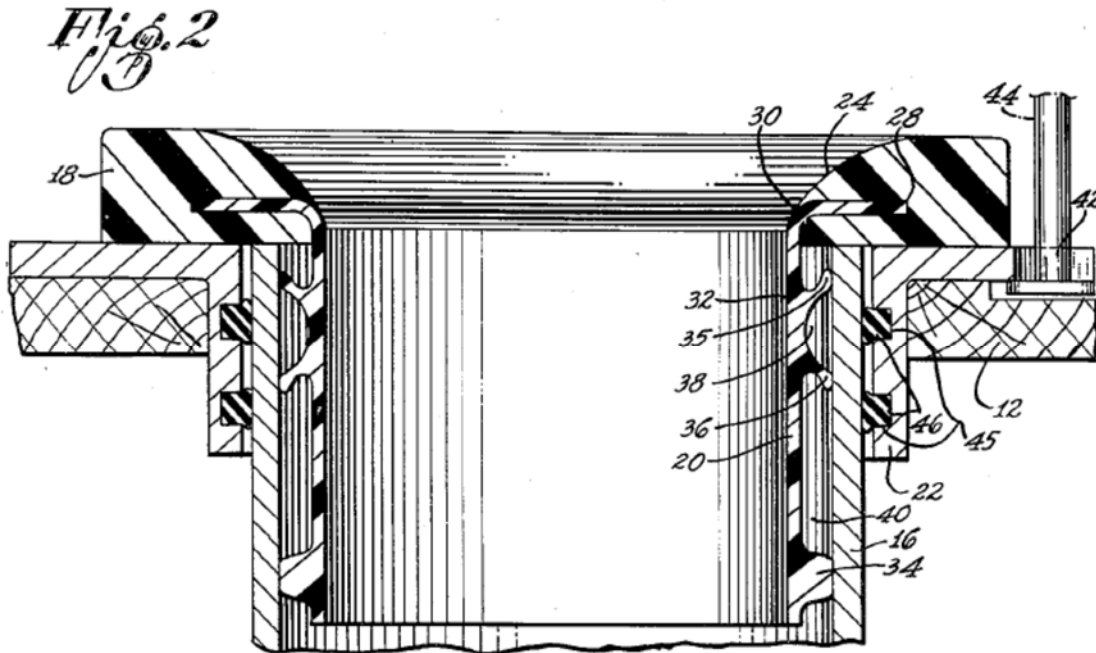


Figure 2 is a vertical section view showing a sealing assembly. *Id.* at 2:62–63. The sealing assembly includes primary sealing ring or gasket 18, flanged ferrule or sleeve 20, and cast-iron collar 22. *Id.* at 3:2–5, Fig. 2. Sleeve 20 is made of “a suitable smooth flexible and chemically inert plastic material,” and the upper end of sleeve 20 is provided with circumferential outward flange 28 that is embedded in sealing ring 18. *Id.* at 3:21–23, 3:28–30, Fig. 2. Sleeve 20 also includes lower circumferential rib 34 and a pair of circumferential lips 35, 36, which all function as auxiliary sealing rings engaging the inner surface of soil pipe nipple 16. *Id.* at 3:34–41, Fig. 2.

Figure 4 of Turner shows alternative sleeve 52 having flange 54 that is embedded in sealing ring 18. *Id.* at 4:46–49, Fig. 4. Sleeve 52 includes lower circumferential rib 55 and two downwardly directed circumferential lips 56, 57. *Id.* at 4:49–52, Fig. 4.

2. Discussion

Petitioner provides analysis purporting to show where each limitation recited in claims 1, 6, 11, and 14, except for the claimed ridge, is disclosed in Turner. Pet. 39–48. Petitioner argues that the claimed ridge would have been obvious in view of the teachings of Schwartz or Nguyen. *Id.* at 42–48 (citing Ex. 1002, 2:56–57, Fig. 1; Ex. 1009, 2:30, Fig. 1). Petitioner’s entire analysis of the alleged obviousness of the claimed ridge is

the use of a ridge 34 [30] that extends and contacts the soil pipe nipple 16 disposed within collar 22 to improve a seal or guide a sealing element is well known in the mechanical field and the addition of such would be obvious to one skilled in the art; the elements are formed of a unitary structure.

Id. (citing Ex. 1002, 2:56–57, Fig. 1; Ex. 1009, 2:30, Fig. 1) (brackets in original). This is virtually identical to the rationale Petitioner provided in asserting that it would have been obvious to combine Schwartz or Nguyen with Coronado I. *See id.* at 32, 34, 36, 38. We found that rationale insufficient for the reasons discussed above. *See supra* Section III.E.2. Accordingly, we find Petitioner’s rationale for combining Schwartz or Nguyen with Turner insufficient for the same reasons. Namely, Petitioner’s unsupported, conclusory assertion does not satisfy the burden of demonstrating obviousness. *See Magnum Oil*, 829 F.3d at 1380.

Petitioner’s obviousness analysis contains additional flaws. For example, Petitioner argues that Turner’s sleeve 20, or alternatively Turner’s sleeve 52, corresponds to the annular collapsible portion recited in each of the challenged claims. *Id.* at 39–47 (citing Ex. 1005, 3:4, 3:29–30, 3:57–68, 4:46–55, Figs. 2, 4). Petitioner asserts that sleeve 20 (or sleeve 52) is collapsible because it

comprises a thin cylindrical wall 32 and is molded of a smooth flexible plastic material (i.e., displays “plasticity” or the inherent ability to deform), such as polyethylene, which can be processed into soft and flexible products; the cylindrical wall 32 of the flange sleeve 20 [52] being relatively thin – on the order of 1/16 or 5/32 of an inch in thickness – thereby making it capable of deformation or collapse; the lips 35, 36 [57, 56], which form a part of the molded flange sleeve 20 [52], are likewise configured to be collapsible; that portion of the primary wax sealing ring 18 below the flange 28 [54] is collapsible as well.

Id. at 41 (citing Ex. 1005, 3:4, 3:29–30, 3:57–68, 4:46–55, Figs. 2, 4) (brackets in original).

Patent Owner disagrees, arguing that “[a]lthough Turner describes the cylindrical wall 32 as **flexible**, there is no teaching in Turner regarding the cylindrical wall 32 being **collapsible**.” Prelim. Resp. 50. Relying on the testimony of Mr. Jones, Patent Owner further argues that “flexibility is not the same as collapsibility.” *Id.* (citing Ex. 2003 ¶ 65). In addition, Patent Owner argues that Figure 2 of Turner, which “depicts the shape of the cylindrical wall 32 as being maintained – **not collapsed** – when the cylindrical wall 32 forces the lower circumferential rib 34 against the drain pipe,” supports Mr. Jones’ opinion that cylindrical wall 32 is not collapsible. *Id.* at 51.

We are not persuaded by Petitioner’s arguments and evidence that Turner’s sleeves 20, 52 are collapsible. We agree with Patent Owner and Mr. Jones that “flexibility is not the same as collapsibility,” and that Turner thus does not disclose that flexible sleeves 20, 52 necessarily are collapsible. Furthermore, Mr. Jones testifies that one of ordinary skill in the art would not find Turner’s sleeves to be collapsible and “a cylindrical polyethylene wall that is 1/16 or 5/32 of an inch [as disclosed in Turner] would actually be

relatively rigid (although still capable of flexing).” Ex. 2003 ¶¶ 65–66. We find this testimony, which is based on Mr. Jones’ “experiences with polyethylene and similar materials and how they have been used in the plumbing industry,” credible and persuasive. *See* Ex. 2003 ¶ 66. Petitioner, on the other hand, offers no objective evidence supporting its assertion that Turner’s sleeves are collapsible.

Patent Owner also argues, and we agree, that Petitioner’s reliance on Turner’s lower circumferential rib 34 (or, alternatively, lower circumferential rib 55) as corresponding to the claimed lower lip configured to contact a closet collar is flawed. Prelim. Resp. 52–53 (citing Pet. 41). As Patent Owner correctly argues, “Turner further explains the lower circumferential rib 55 “mak[es] effective sealing contact with the inner surface *of the soil pipe nipple*.” *Id.* at 52 (citing Ex. 1005, 4:57–60) (brackets in original); *see also* Ex. 1005, Fig. 2 (showing lower circumferential rib 34 contacting inner surface of soil pipe nipple 16). According to Patent Owner, cast-iron collar 22 of Turner (shown in green in the annotated version of Figure 2 reproduced on page 53 of the Preliminary Response), not soil pipe nipple 16, is a closet collar. *Id.* at 52–53 (citing Ex. 2003 ¶¶ 68–70). Thus, Patent Owner asserts that, in contacting soil pipe nipple 16 but not cast-iron collar 22, lower circumferential rib 34 (or, alternatively, lower circumferential rib 55) is not configured to contact a closet collar. *Id.* (citing Ex. 2003 ¶¶ 68–70).

Petitioner fails to identify expressly what structure in Turner it alleges corresponds to a closet collar. At best, Petitioner implies that soil pipe nipple 16 is a closet collar by asserting that lower circumferential ribs 34, 55

contact the soil pipe nipple. Pet. 41, 43, 45, 47 (citing Ex. 1005, 3:53–56, 4:46–55, Figs. 2, 4).

The '455 patent, however, does not support the notion that soil pipe nipple 16 is a closet collar. As discussed above (*see supra* Section III.D.2.), the '455 patent defines a closet collar as being a separate and distinct element from a drain or soil pipe. Ex. 1001, 1:19–21. Furthermore, we credit the testimony of Mr. Jones that cast-iron collar 22 of Turner, not a soil pipe, is a closet collar. *See* Ex. 2003 ¶¶ 69–70. Accordingly, we are not persuaded by Petitioner that soil pipe nipple 16 can be considered to be a closet collar. As such, the Petition does not demonstrate that Turner discloses a lower lip configured to contact a closet collar.

For the above reasons, we find that the Petition does not establish a reasonable likelihood that claims 1, 6, 11, and 14 are unpatentable over Turner in combination with Schwartz and/or Nguyen.

G. Asserted Obviousness Based on Coronado I, Coronado II, Schwartz, Nguyen, and Hodges

Petitioner challenges claims 1, 6, 11, and 14 as obvious under 35 U.S.C. § 103(a) over Coronado I, Coronado II, Schwartz, Nguyen, and Hodges. Pet. 4, 48–55.

This asserted ground of unpatentability is similar in many respects to the ground based on Coronado I, Coronado II, Schwartz, and Nguyen, but differs in that it relies on Figure 8 of Coronado I instead of Figure 2A.⁷ *Id.* at 48–49. Figure 8 of Coronado I is reproduced below.

⁷ Like the earlier ground (*see supra* Section III.E.), Petitioner references Coronado I “and/or” Coronado II, but actually relies on identical teachings from the two references and uses these references interchangeably, not in

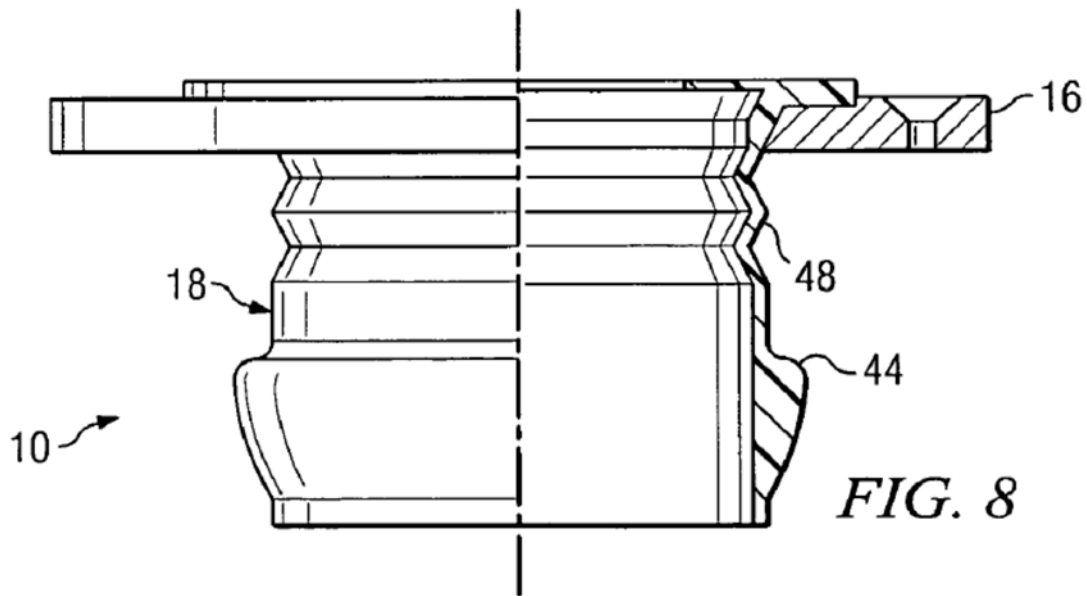


Figure 8 is a partial sectional, partial elevational view of another embodiment of a flexible flange apparatus. Ex. 1003, 3:7–9. In this embodiment, flexible flange apparatus 10 includes sleeve 18 having a single sealing element 44 and a single corrugated portion 48, rather than two sealing elements and two corrugated portions as in the embodiment of Figure 2A. *Id.* at 6:46–53.

Regarding the ridge recited in each of the challenged claims, Petitioner again argues that this limitation would have been obvious over Coronado I in combination with Schwartz or Nguyen. Pet. 50–51, 52, 54, 55 (citing Ex. 1002, 2:56–57, Fig. 1; Ex. 1009, 2:30, Fig. 1). Petitioner’s rationale for combining Schwartz or Nguyen with Coronado I is essentially identical to the rationale provided for combining Schwartz or Nguyen with Coronado I in the earlier ground. *Compare id. with id.* at 32, 34, 36, 38. We found that rationale insufficient for the reasons discussed above. *See supra*

combination. *See* Pet. 49–55. Accordingly, we again limit our discussion to Coronado I, although our analysis applies equally to Coronado II.

Section III.E.2. Accordingly, we determine Petitioner’s rationale for combining Schwartz or Nguyen with Coronado I in this asserted ground insufficient for the same reasons.

Another difference from the ground based on Coronado I, Coronado II, Schwartz, and Nguyen, is that this asserted ground relies on Hodges to disclose the flexible ring recited in each of the challenged claims. Pet. 49, 51, 52, 54, 55 (citing Ex. 1006, 1:16–24, 2:34, Figs. 3, 4). Specifically, Petitioner argues that, because Hodges teaches that it is well known to use a flexible ring, such as an O-ring, as a seal under a flange on a supporting floor surface, “[i]t would have been obvious to one of ordinary skill in the art to add a flexible ring under the upper lip in Coronado II to provide a further seal between the flange 16 and a supporting floor surface.” *Id.* at 49 (citing Ex. 1006, 1:16–24). In the annotated version of Figure 8 provided on page 49 of the Petition, Petitioner shows this proposed ring located at the corner defined by outer flange 16 and sleeve 18.

Hodges, however, does not disclose placing a flexible sealing ring “under a flange on a supporting floor surface,” as asserted by Petitioner. Instead, Hodges discloses a “push-in” closet flange that can be installed in a drain pipe to form a watertight seal. Ex. 1006, 1:10–13. Figure 1 of Hodges is reproduced below.

FIG. 1

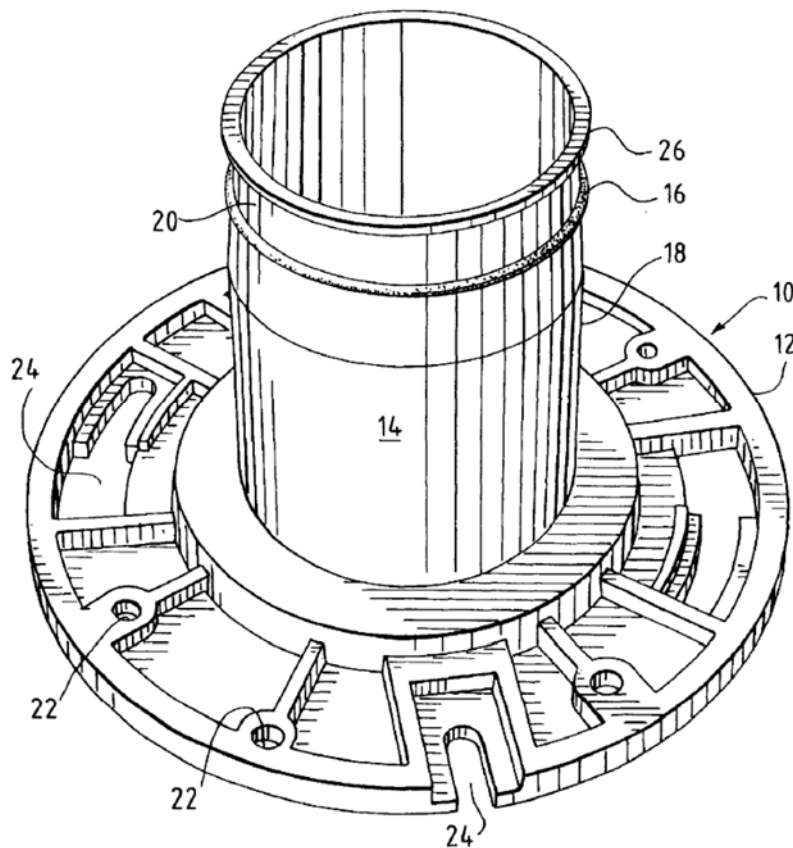


Figure 1 is a perspective view of closet flange 10. *Id.* at 2:7–8. Closet flange 10 includes shoulder portion 12 and body portion 14. *Id.* at 2:20–22, Figs. 1, 2. Body portion 14 includes cylindrical upstream portion 18 and tapered downstream portion 20. *Id.* at 2:26–32, Figs. 1, 2. Downstream portion 20 receives O-ring 16, which is sufficiently elastic to travel along the tapered surface of downstream portion 20. *Id.* at 2:33–35, Figs. 1, 2. When closet flange 10 is installed into the end of a drain pipe, O-ring 16 is compressed between body portion 14 and the inner wall of the pipe, thereby creating a tight fit between these two structures. *Id.* at 2:51–61.

Hodges disclosure of providing an O-ring on downstream portion 20, at a location that is displaced considerably from shoulder portion 12, would

not cause one of ordinary in the art to provide an O-ring “under a flange on a supporting floor surface.” As such, we agree with Patent Owner that “Hodges does not teach using an O-ring in the way that Petitioner proposes using an O-ring.” See Prelim. Resp. 60.

Furthermore, Mr. Jones testifies that

I disagree with Petitioner’s argument that it is well known to use a flexible ring, like an O-ring, as a seal under a flange on a supporting floor surface. I do not recall ever seeing or hearing of a ring (or any other sealing element) being used to make a seal between a flange and the floor, and I do not know of a legitimate reason why it would be desirable to do so.

Ex. 2003 ¶ 75. Mr. Jones also testifies that the arrangement proposed by Petitioner “would also probably prevent the installation from passing code inspection.” *Id.* We find this testimony credible and persuasive.

Accordingly, we are not persuaded that it would have been obvious to one of ordinary skill in the art to provide a flexible ring around sleeve 18 and immediately under outer ring 16 of Coronado I, as asserted by Petitioner.

Last, Patent Owner argues, and we agree, that the Petitioner’s alleged lower lip (sealing element 44) is not configured to contact a closet collar as required by each of the challenged claims. See Prelim. Resp. 61–62. For the same reasons discussed above in connection with the ground based on Coronado I, Coronado II, Schwartz, and Nguyen (*see supra* Section III.E.2), we find that sealing element 44 of Coronado I contacts a waste drainpipe, which is not a closet collar, but does not contact outer ring 16, and thus is not “configured to contact a closet collar,” as required by the challenged claims.

For the above reasons, we determine that the Petition does not establish a reasonable likelihood that claims 1, 6, 11, and 14 are unpatentable over Coronado I, Coronado II, Schwartz, Nguyen, and Hodges.

H. Conclusion

For the foregoing reasons, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. We do not institute an *inter partes* review of any claim of the '455 patent.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied*, and that we do not institute an *inter partes* review of any claim of the '455 patent.

IPR2017-00159
Patent 9,273,455 B2

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