

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OMEGA LINER COMPANY, INC.,
Petitioner,

v.

BUERGOFOL GmbH,
Patent Owner.

IPR2023-01372
Patent 9,657,882 B2

Before GRACE KARAFFA OBERMANN, KIMBERLY McGRAW, and
JAMES J. MAYBERRY, *Administrative Patent Judges*.

OBERMANN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Omega Liner Company, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) for *inter partes* review of claims 1, 3–7, and 10–13 of U.S. Patent No. 9,657,882 B2 (Ex. 1001, “the ’882 patent”). Buergofol GmbH (“Patent Owner”) did not file a preliminary response.

A. *Real Parties-in-Interest*

Petitioner identifies itself as the sole real party-in-interest. Pet. 1. Patent Owner also identifies itself as the sole real party-in-interest. Paper 4, 2.

B. *Related Matters*

The parties identify *Buergofol GmbH v. Omega Liner Company, Inc.*, Case No. 22-cv-04112-KES (D. S.D.) (“the District Court action”) as a related matter. Pet. 1; Paper 4, 2. Patent Owner further indicates that IPR2023-01402 (“IPR1402”) involves U.S. Patent No. 8,794,269 B2, which also is asserted in the District Court action. Paper 4, 2. We concurrently enter a decision denying review in IPR1402.

II. BACKGROUND

A. *The ’882 Patent (Ex. 1001)*

The ’882 patent is titled “Tubular Film and the Use Thereof” and describes a tubular film having “one or more layers.” Ex. 1001, codes (54), (57), 1:5–6. Tubular films are useful, for example, “in the tube lining process for trenchless sewage pipe renovation.” *Id.* at 1:14–15.

By way of background, the Specification describes a trenchless sewage pipe renovation process that employs “an insertion tube (tube liner)” that typically includes “an external tube (outer tubular film)” as well as “an internal tube (inner tube film).” *Id.* at 1:30–33. “Between them, a carrier material” that is “impregnated with reactive plastic resin is introduced.” *Id.* at 1:34–35. A polyethylene film,

known as “[a] sliding film,” optionally may be “positioned tightly against the inner wall of the pipe” requiring renovation. *Id.* at 1:17–21.

During pipe renovation, “the insertion tube is inflated from the inside with compressed air against the mechanically stable inner tube film until the outer tube film presses tightly against the pipe’s inner wall or the sliding film.” *Id.* at 1:40–44. After the insertion tube is inflated, “the resin can be cured,” for example, by pulling a UV-radiation light source “through the interior of the inflated insertion tube.” *Id.* at 1:44–47. Thereafter, “the inner tube film of the insertion tube is pulled out and removed,” however, to do this properly, “a good release effect is necessary so the inner tube film can be pulled out without residues from the cured resin.” *Id.* at 1:47–50. This arrangement “has been known for a long time” (*id.* at 12:23–24) and is depicted in Figure 1 from the ’882 patent, which we reproduce below.

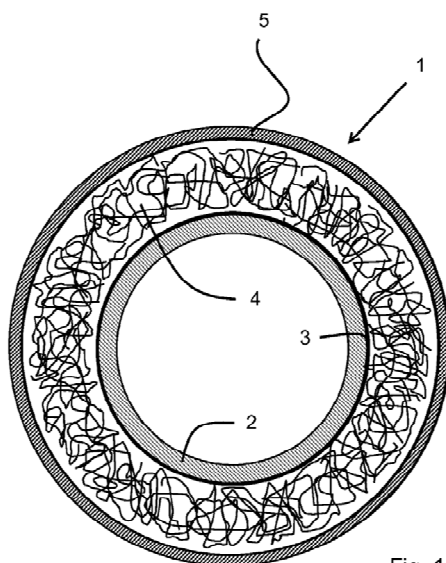


Fig. 1

Id., Fig. 1. Figure 1 illustrates tube liner 1 in an inflated state, inner tube film 2, coating 3, resin carrier system 4, and outer tube film 5.

The claims specify “[a]n insertion tube” that includes, among other features, “an inner tubular film” having “a coating of at least one of (1) a coating with a polysiloxane; or (2) a coating or covering with at least one migrating compound.”

Id. at 20:18, 20:31–33. Both the Specification and claim 10 identify “wax” as an example of a “migrating compound.” *Id.* at 4:15–20; 21:17–19.

The Specification states that the tubular film of the invention “surprisingly” confers a number of “very good mechanical properties” to the pipe renovation system. *Id.* at 8:46–48. For example, according to the Specification, “[w]hen underground pipes are renovated, the tubular film” of the invention is “able to withstand very well the occurring stresses, particularly when inflating it in the pipe system.” *Id.* at 8:53–56. Further, the Specification explains, when the tubular film of the invention is used as the “inner tube film” of an inflation tube, the film confers an “excellent release effect” and “is sufficiently tear resistant” to be peeled off from the resin carrier system after curing “without leaving a residue” such that “no film fragments are left in the renovated sewage pipe.” *Id.* at 8:57–64.

B. Challenged Claims

Claim 1, reproduced below, is the only independent challenged claim.

1. An insertion tube suitable for use in trenchless sewage pipe renovation, comprising

an opaque external tubular film that is impermeable to liquids and at least partially reflects or absorbs UV radiation or visible light of short wavelengths;

an inner tubular film;

a carrier material impregnated with a reactive plastic resin arranged between the external tubular film and the inner tubular film; and

wherein the inner tubular film comprises:

one or multiple layers

an inner facing external side and an outer facing external side facing the carrier material;

a coating of at least one of (1) a coating with a polysiloxane; or (2) a coating or covering with at least one migrating compound; and

wherein the coating is applied over a section of or an entire circumferential area of the outer facing external side facing the carrier material.

Ex. 1001, 20:18–36 (Board’s emphasis). The other challenged claims depend directly from claim 1 and, therefore, inherit the emphasized limitation, which we refer to in our analysis as “the coating limitation.” *Id.* at 20:42–21:5, 21:16–22:19 (claims 3–7 and 10–13).

C. Grounds of Unpatentability

The Petition advances four grounds of unpatentability, which we identify in the chart below.

Ground	35 U.S.C. § ¹	Claims Challenged	Reference(s)/Basis
1	102(b)	1, 4–7, 10, 11	Hummel ² ,
2	103	3	Hummel,
3	103	1, 3–7, 10–13	Hummel, Schuhmann ³
4	103	1, 3–7, 10, 11	Hummel, Nagai ⁴

Pet. 24. The Petition is supported by the Declaration of Dr. Steven B. MacLean (Ex. 1003).

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), includes revisions to Sections 102 and 103 that became effective on March 16, 2013. Because the challenged claims issued from an application filed before March 16, 2013, we apply the pre-AIA law to the challenges. *See* Ex. 1001, code (30); Pet. 14 (asserting an earliest priority date of March 11, 2013, based on the filing date of a foreign patent application). At this stage of the proceeding, we are directed to no information indicating that the result would change based on which version of the law is applied.

² WO 2011/157356, published Dec. 22, 2011 (Ex. 1005) (certified translation).

³ WO 2011/054434, published May 12, 2011 (Ex. 1007) (certified translation).

⁴ JP 2022001819A, published Jan. 8, 2002 (Ex. 1009) (certified translation).

III. ANALYSIS

A. *Level of Ordinary Skill in the Art*

The grounds based on obviousness implicate the level of ordinary skill in the art at the time of the invention, which is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)). Petitioner argues that an ordinarily skilled artisan “would have at least a bachelor’s degree in Polymer Science and Engineering Material Science and Engineering, or a related engineering field, combined with at least three years of experience in the formulation, manufacturing, and end-use performance of polymeric film and sheet products.” Pet. 3 (citing Ex. 1003 ¶ 23). However, “at least seven years of experience” in that field would suffice, “without possessing a bachelor’s degree.” *Id.*

The prior art itself can reflect the appropriate level of ordinary skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Hummel is asserted in every ground advanced in the Petition and pertains to the formulation of polymeric materials useful in pipe renovation processes. *See, e.g.*, Ex. 1005, 2⁵ (code (57)), 4, 14, 17–25. For the sole purpose of deciding whether to institute a review, we apply Petitioner’s definition because, on this preliminary record, it appears to be consistent with Hummel’s disclosure, is supported by the declaration testimony of Dr. MacLean, and stands uncontested by Patent Owner. *See* Ex. 1003 ¶ 23 (Dr. MacLean’s declaration testimony on point).

⁵ We adopt Petitioner’s convention and refer to page numbers added by Petitioner.

B. Claim Construction

In an *inter partes* review, the Board construes the terms of a patent claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). Under that standard, claim terms generally are given their plain and ordinary meaning as would have been understood by the ordinarily skilled artisan at the time of the invention and within the context of the entire patent disclosure. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). We construe terms in controversy only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner contends that no express claim construction is necessary, with one exception relating to the coating limitation. Pet. 22; *see supra* 4 (emphasizing that limitation in our reproduction of claim 1). Petitioner requests that we construe the coating limitation, which specifies an inner tubular film comprising “a coating or covering with at least one migrating compound,” to include either of two alternatives; “(1) a migrating compound *incorporated into* the outermost layer of the inner tubular film or (2) a migrating compound *applied over* the external side of the inner tubular film.” *Id.* at 23 (Petitioner’s emphasis).

In Petitioner’s view, application of that two-pronged construction is supported by embodiments described in the Specification and consistent with positions taken by Patent Owner in the District Court action. *Id.* at 22–23 (citing Ex. 1001, 5:23–34; Ex. 1035, 11–14; Ex. 1033 ¶¶ 15, 28, 40; Ex. 1037 ¶¶ 14, 15, 28, 40; Ex. 1039, 6–7). Petitioner does not address the more fundamental question of whether the first prong of the proposed construction aligns with the plain words

that appear in claim 1. Even on this preliminary record, we have concerns about whether a migrating compound *incorporated into* an inner tubular film is “a coating or covering” of that film within the scope of claim 1. *See id.* at 30 (citing Ex. 1003 ¶ 134) (Petitioner’s reliance on extrinsic evidence to show that waxes migrate to the surface of the inner tubular film and, thereby, create “a ‘coating’” on that structure). To the contrary, claim 1 expressly requires that “the coating is *applied over* a section or an entire circumferential area of the outer facing external side” of the inner tubular film. Ex. 1001, 20:34–36 (Board’s emphasis).

We need not resolve that issue, however, for purposes of deciding whether to institute review. *See Nidec Motor Corp.*, 868 F.3d at 1017. Petitioner proposes two grounds that do not depend on a finding that a migrating compound *incorporated into* a film is “a coating or covering” as specified in claim 1, but instead are based on prior art that allegedly teaches a migrating compound *applied over* a film to satisfy the second, alternative prong of Petitioner’s proposed definition. Ex. 1001, 20:32; *see* Pet. 42–44, 55–57 (proposing that a coating containing a wax, as disclosed in Schuhmann or Nagai, would have been applied over the external surface of Hummel’s insertion tube).

C. *The Patentability Challenges*

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person of ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). We apply that standard to assess whether Petitioner shows sufficiently for purposes of trial institution that at least one challenged claim is unpatentable.

1. Ground Based on Hummel and Schuhmann

Petitioner argues that claims 1, 3–7, and 10–13 are unpatentable as obvious over Hummel and Schuhmann. Pet. 39–51. Petitioner adequately maps every limitation of claims 1, 10, and 11 to disclosures in Hummel, with the possible exception of the coating limitation. *Id.* For purposes of trial institution, however, Petitioner shows sufficiently that Schuhmann discloses a coating that contains a migrating compound, namely, a wax. *Id.* at 42–43 (citing Ex. 1003 ¶¶ 118–185; Ex. 1007, 4:11–12, 5:6–15, 6:10–22, 8:25–30, 18:9–33; Ex. 1037 ¶¶ 15, 28, 40).

Petitioner also adequately explains why an ordinarily skilled artisan would have been led to apply Schuhmann’s coating to the external surface of Hummel’s insertion tube; namely, “to provide a good release effect between the inner tubular film and the cured carrier material to prevent ‘tearing’ of the inner tubular film as desired by Hummel.” *Id.* at 43 (citing Ex. 1003 ¶ 194; Ex. 1005, 23:1–3). Accordingly, on this preliminary record, Petitioner shows sufficiently that independent claim 1 is unpatentable as obvious over the combined disclosures of Hummel and Schuhmann. Petitioner also shows sufficiently that dependent claims 10 and 11, which relate to applying a lipophilic migrating compound, such as a wax, over the external side of a tubular film, are unpatentable based on this ground. *Id.* at 49–51 (and evidence cited therein).

We decline to make preliminary findings about the sufficiency of Petitioner’s evidence as to the patentability of dependent claims 3–7, 12, or 13, which include weight percentage range and thickness range limitations. *See* Ex. 1001, 20:42–21:6, 22:8–18. The sufficiency of Petitioner’s evidence and arguments as to those range limitations may implicate relatively complex legal and factual issues better suited for resolution, in the first instance, on a full trial record

with the benefit of any counterarguments timely raised by Patent Owner, and only to the extent necessary to any final written decision. *See* Pet. 45–49, 51–53.

For the above reasons, we determine that Petitioner establishes “a reasonable likelihood” of prevailing with respect to claims 1, 10, and 11 based on the ground that asserts obviousness over Hummel and Schuhmann. 35 U.S.C. § 314(a).

2. Ground Based on Hummel and Nagai

Petitioner argues that claims 1, 3–7, 10, and 11 are unpatentable as obvious over Hummel and Nagai. Pet. 53–63. Petitioner adequately maps every limitation of claim 1 to disclosures in Hummel, with the possible exception of the coating limitation. *Id.* For purposes of trial institution, however, Petitioner shows sufficiently that Nagai discloses a coating that contains a migrating compound, namely, a wax. *Id.* at 55–56 (citing Ex. 1003 ¶ 235; Ex. 1009 ¶ 16.)

Petitioner also adequately explains why an ordinarily skilled artisan would have been led to apply Nagai’s coating to the external surface of Hummel’s inner tubular film; namely, “to increase the release effect between the inner tubular film and the cured resin to prevent sticking of the inner tubular film to the cured resin.” *Id.* at 56–57 (citing Ex. 1003 ¶ 238; Ex. 1009 ¶¶ 16, 25–29). Accordingly, on this preliminary record, Petitioner shows sufficiently that independent claim 1 is unpatentable as obvious over the combined disclosures of Hummel and Nagai. Petitioner also shows sufficiently that dependent claims 10 and 11, which relate to applying a lipophilic migrating compound, such as a wax, over the external side of a tubular film, are unpatentable based on this ground. *Id.* at 61–63 (and evidence cited therein).

We decline to make preliminary findings about the sufficiency of Petitioner’s evidence regarding the patentability of dependent claims 3–7, which include weight percentage range and thickness range limitations. *See* Ex. 1001,

20:42–21:6. The sufficiency of Petitioner’s evidence and arguments as to those range limitations may implicate relatively complex legal and factual issues better suited for resolution, in the first instance, on a full trial record with the benefit of any counterarguments timely raised by Patent Owner, and only to the extent necessary to any final written decision. *See* Pet. 58–61.

For the above reasons, we determine that Petitioner establishes “a reasonable likelihood” of prevailing with respect to claims 1, 10, and 11 based on the ground that asserts obviousness over Hummel and Nagai. 35 U.S.C. § 314(a).

3. Grounds Based on Hummel Alone

Petitioner argues that claims 1, 4–7, 10, and 11 are anticipated by Hummel. Pet. 25–36. Petitioner also argues that claim 3, which depends from claim 1, is unpatentable as obvious over Hummel. *Id.* at 36–39.

Petitioner adequately maps every limitation of claim 1 to disclosures in Hummel, with the possible exception of the coating limitation. *Id.* at 25–36. Petitioner’s evidence pertaining to Hummel’s alleged disclosure of that limitation is keyed to the first alternative prong of Petitioner’s proposed two-pronged claim construction. *See id.* at 27–29 (anticipation ground based on Hummel alone), 36 (obviousness ground based on Hummel alone).

Specifically, Petitioner argues that Hummel, by incorporating a wax into “any of the layers” of its disclosed multilayer film (*id.* at 28), teaches “an inner tubular film” that includes “a coating or covering with at least one migrating compound” (Ex. 1001, 20:27, 20:31–33). *See* Pet. 27–29, 36 (Petitioner’s arguments). As stated in our claim construction analysis, we have concerns about the adequacy of that argument to support trial institution. *See supra* 7–8.

We have determined that Petitioner shows sufficiently that at least one challenged claim is unpatentable based on the other two grounds asserted in the

Petition. We need not and, therefore, do not resolve whether the grounds that assert Hummel alone support institution. Any final determinations about these grounds shall be made on the full trial record as necessary to any final written decision.

D. Notices

The Board shall deem waived any issue not raised by Patent Owner in a timely response to the Petition or as permitted in another manner during trial.

Nothing in this Decision authorizes Petitioner, in a manner not otherwise permitted by the Board's rules, to supplement the information supporting any ground advanced in the Petition.

IV. CONCLUSION

For the above reasons, based on this preliminary record, we determine that Petitioner shows sufficiently, for purposes of trial institution, that the subject matter of at least one challenged claim is unpatentable. Accordingly, we institute an *inter partes* review of all challenged claims based on all grounds asserted in the Petition pursuant to 35 U.S.C. § 314(a). *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019)⁶ (“The Board will not institute on fewer than all claims or all challenges in a petition.”).

V. ORDER

It is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 3–7, and 10–13 of the '882 patent is hereby instituted based on all grounds set forth in the Petition; and

⁶ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), an *inter partes* review of claims 1, 3–7, and 10–13 of the '882 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of trial.

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