

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CORNING INCORPORATED
Petitioner

v.

DSM IP ASSETS B.V.
Patent Owner

Case IPR2013-00046
Patent 6,110,593

Before FRED E. McKELVEY, GRACE KARAFFA OBERMANN,
JENNIFER S. BISK, SCOTT E. KAMHOLZ, and ZHENYU YANG,
Administrative Patent Judges.

BISK, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Petitioner, Corning Incorporated (“Corning”), filed a petition on November 15, 2012, for *inter partes* review of all claims, 1-9, of U.S. Patent No. 6,110,593 (“the ’593 patent”) pursuant to 35 U.S.C. §§ 311-319. Paper 2 (“Pet.”). Patent Owner, DSM IP Assets B.V. (“DSM”), filed a preliminary response on February 20, 2013. Paper 11 (“Prelim. Resp.”). On May 13, 2013, the Board granted the petition as to a subset of the proposed grounds. Paper 12 (“Dec.”). We found that Corning had shown a reasonable likelihood of showing that the challenged claims were unpatentable based on the following grounds:

Claim(s) Challenged	Basis	Reference(s)¹
1, 2, and 7	§ 102	Edwards
1, 2, and 7	§ 103	Edwards
1-3 and 7-9	§ 103	Szum and Edwards or Broer
1, 2, and 7-9	§ 103	Shustack and Edwards or Broer
3	§ 103	Shustack, Edwards or Broer, and Jackson
4-6	§ 103	Shustack or Szum, Broer or Edwards, and Botelho

After institution, DSM filed a short patent owner response stating that “DSM chooses not to substantively respond to Corning’s Petition and instead submits a Motion to Amend under 37 C.F.R. § 42.121.”² Paper 43,

¹ The references are: U.S. Patent No. 5,416,880 (Ex. 1003) (“Edwards”); WO 95/15928 (Ex. 1002) (“Szum”); U.S. Patent No. 4,904,051 (Ex. 1006) (“Broer”); U.S. Patent No. 5,352,712 (Ex. 1005) (“Shustack”); U.S. Patent No. 4,900,126 (Ex. 1007) (“Jackson”); and WO 97/46380 (Ex. 1008) (“Botelho”).

² DSM also includes a footnote stating that it incorporates by reference its arguments from the preliminary response. Paper 43, 1 n.1. Our rules explicitly forbid incorporation by reference. 37 C.F.R. § 42.6(a)(3). We, therefore, consider only arguments made in the response itself.

1-2. DSM's motion to amend proposes new claims 10-13 for claims 1-3 and 7, respectively. Paper 44 ("Mot. to Amend"). Corning filed a reply to the patent owner response (Paper 60, "Reply") and an opposition to DSM's motion to amend. DSM then filed a reply in support of its motion to amend. Paper 68.

Corning filed and fully briefed a motion to exclude. Paper 72 ("Mot. to Exclude"); Paper 74; Paper 76. Oral hearing was held February 11, 2014. Paper 79.

The Board has jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

Corning has shown by a preponderance of the evidence that claims 1-9 are unpatentable.

DSM's motion to amend claims is *denied*.

B. Related Proceedings

Corning and DSM simultaneously are involved in nine other *inter partes* reviews based on patents claiming similar subject matter: IPR2013-00043; IPR2013-00044; IPR2013-00045; IPR2013-00047; IPR2013-00048; IPR2013-00049; IPR2013-00050; IPR2013-00052; and IPR2013-00053.

C. The '593 Patent (Ex. 1001)

The '593 patent generally relates to radiation-curable, optical fiber coating systems. Ex. 1001, 1:5-7. In particular, the patent describes optical glass fibers coated with two radiation-cured coatings: an inner primary coating and an outer primary coating. For identification purposes, the outer primary coating includes colorant or, alternatively, a third colored layer, called an ink coating, is applied to the outer primary coating. *Id.* at 1:42-47.

To create a cable or ribbon assembly, used in the construction of multi-channel transmission cables, a plurality of coated optical fibers is bonded together in a matrix material. *Id.* at 1:30-37. In order to connect the fibers of multiple ribbons, the surface of a glass fiber must be accessible. *Id.* at 1:62–2:16. This often is accomplished by a process known as “ribbon stripping”—removing the coatings and the matrix material, preferably as a cohesive unit. *Id.* The ’593 patent is directed to a ribbon assembly having improved ribbon stripping capabilities. *Id.* at 2:48-54. As described in the Background of the Invention, the prior art discloses ribbon assemblies composed of multiple optical glass fibers with both an inner and outer coating and an optional outer ink layer. *Id.* at 1:30-50.

II. ANALYSIS

A. *Claims 1-9 of the ’593 Patent*

DSM’s patent owner response states that “DSM chooses not to substantively respond to Corning’s Petition.” Paper 43, 1-2. Thus, DSM provides no substantive arguments beyond those previously asserted in its preliminary response (Paper 11). We previously considered those arguments, but did not find them persuasive. Dec. 6-23. For the reasons set forth in our Decision to Institute, we conclude that Corning has shown, by a preponderance of the evidence, that the challenged claims are unpatentable based on the following grounds: (1) claims 1, 2, and 7 based on anticipation by Edwards; (2) claims 1, 2, and 7 based on obviousness over Edwards; (3) claims 1-3 and 7-9 based on obviousness over Szum and Edwards or Broer; (4) claims 1, 2, and 7-9 based on obviousness over Shustack and Edwards or Broer; (5) claim 3 based on obviousness over Shustack, Edwards

or Broer, and Jackson; and (6) claims 4-6 based on obviousness over Shustack, Szum, Broer or Edwards, and Botelho.

Therefore, we determine that claims 1-9 of the '593 patent are unpatentable.

B. DSM's Motion to Amend Claims

DSM proposes four substitute claims 10-13 to replace original independent claims 1-3 and 7. Mot. to Amend 5.

As the moving party, DSM bears the burden of proof to establish that it is entitled to the relief requested. 37 C.F.R. § 42.20(c). The proposed amendment is not entered automatically, but only upon DSM's having demonstrated the patentability of the substitute claims.

In support of its motion, DSM proffers a declaration of Carl R. Taylor, Ph.D. Ex. 2032. We have reviewed DSM's motion and supporting evidence. For the reasons stated below, DSM's motion to amend claims is *denied*. The substitute claims will not be incorporated into the '593 patent.

In its motion, DSM proposes substitute claims 10-13. Mot. to Amend 1-4. Substitute claims 10-12 are independent, and substitute claim 13 depends from substitute claim 10. *Id.* The proposed substitute claims are reproduced below with markings to show the changes made relative to the original claims they are proposed to replace:

10. (Proposed substitute for claim 1) A system for coating an optical glass fiber comprising a radiation-curable inner primary coating composition and a radiation-curable outer primary coating composition wherein:

said radiation-curable inner primary coating composition comprising an oligomer comprising a polyol residue selected from the group consisting of a polyether polyol residue, a polycarbonate polyol residue, and combinations thereof, and at least one strip enhancing component;

said inner primary coating composition, after radiation cure, having the combination of properties of:

- (a) a glass transition temperature of below θ_{-20}° C.; ~~and~~
- (b) adhesion to glass of at least 5 g/in when conditioned at 95% relative humidity;

and

- (c) a crack propagation of greater than 1.5 mm at 90° C;

and

said outer primary coating composition comprising an oligomer having at least one functional group capable of polymerizing under the influence of radiation, said outer primary coating composition, after radiation cure, having a secant modulus of greater than 1000 MPa at 23° C after curing on a Mylar substrate.

11. (Proposed substitute for claim 2) A coated optical glass fiber, coated with at least an inner primary coating and an outer primary coating, wherein said inner primary coating is derived from a composition comprising an oligomer having a polyether polyol residue, the oligomer having at least one functional group capable of polymerizing under the influence of radiation and at least one strip enhancing component:

said inner primary coating having:

- (a) a glass transition temperature of below θ_{-10}° C.; ~~and~~
- (b) adhesion to glass of at least 5 g/in when conditioned at 95% relative humidity;

and

- (c) no delamination after 24 hours as measured in a 60° C water soak delamination test; and

said outer primary coating having a secant modulus of greater than 1000 MPa at 23° C.

12. (Proposed substitute for claim 3) A ribbon assembly comprising:

a plurality of coated optical glass fibers, at least one optical glass fiber coated with at least an inner primary coating and an outer primary coating, and optionally an ink coating; and

a matrix material bonding said plurality of coated optical glass fibers together, wherein:

said inner primary coating derived from a composition comprising an oligomer comprising a polyol residue selected from the group consisting of a polyether polyol residue, a polycarbonate polyol residue, and combinations thereof, and having at least one functional group capable of polymerizing under the influence of radiation and at least one strip enhancing component said inner primary coating having:

(a) a glass transition temperature of below θ -20° C.; ~~and~~

(b) adhesion to glass of at least 5 g/in when conditioned at 95% relative humidity;

and

(c) a crack propagation of greater than 1.5 mm at 90° C;

and

said outer primary coating having a secant modulus of greater than 1000 MPa at 23° C.

13. (Proposed substitute for claim 7) The system of claim ~~4~~10 wherein said inner primary coating composition, after cure, has ~~a crack propagation of greater than 0.7 mm at 90° C, and~~ a fiber pull-out friction of less than 40 g/mm.

1. DSM's Burden

An *inter partes* review is neither a patent examination proceeding nor a patent reexamination proceeding. The proposed substitute claims, in a motion to amend, are not entered automatically and then subjected to examination. Rather, the substitute claims will be added directly to the issued patent, without examination, if the patent owner's motion to amend claims is granted. The patent owner is not rebutting a rejection in an Office Action, as though this proceeding were a patent examination or a patent

reexamination. Instead, the patent owner bears the burden of proof in demonstrating patentability of the proposed substitute claims over the prior art in general and, thus, entitlement to add these proposed substitute claims to its patent.

There is no presumption of patentability as to the challenged claims or substitute claims in an *inter partes* review. In fact, upon consideration of the information presented in the petition, we determined that there is a reasonable likelihood that claims 1-9 are unpatentable under 35 U.S.C. §§ 102 and 103. Dec. 6-23. DSM did not file a patent owner response arguing the patentability of claims 1-9. As discussed above, we since have determined that Corning has shown by a preponderance of the evidence that claims 1-9 are unpatentable. Therefore, there is no inference of patentability of substitute claims 10-13 by virtue of the fact that they purportedly are replacing claims 1-3 and 7.

2. *Substitute Claims 10, 12, and 13*

DSM asserts that substitute claims 10, 12, and 13 are patentable over the prior art based on the following assertions:

(1) “[n]either Edwards nor Shustack teach using an oligomer comprising a polyether polyol residue, a polycarbonate polyol residue, or a combination thereof, as recited by proposed substitute claim 10” (Mot. to Amend 8 (citing Ex. 2032));

(2) because “Corning measured the crack propagation at 90°C for Coating Z of Coady and Example 5B of Szum and reported a value of 1.3 mm for both formulations and a value of 0.9 mm at 90° C for Edwards Formulation 2,” the crack propagation value of 1.5 mm at 90° C “renders

proposed substitute claim 10 patentably distinct over Coady, Edwards, and Szum” (*id.* (citing Ex. 2013)); and

(3) because “R-1055 has a glass transition temperature (or Tg) of -4°C, (’189 patent, Ex. 1012, at 4:23-24), and Corning measured the Tg of Coating Z of Coady to be - 17.8° C,” the limitation of Tg of below -20° C renders proposed substitute claim 10 patentably distinct over Coady and R-1055 (*id.* at 8-9 (citing Ex. 2013)).

DSM does not explain why it has added the limitation of “after curing on a Mylar substrate” to substitute claim 10. DSM adds that

no modification or combination of the known inner primary coating of Shustack, Szum, Edwards, Coady, or R-1055, such as using the outer primary coatings of Edwards or Broer as Corning proposes in its petition, teaches or suggests the limitations recited by proposed claim 10. . . . [therefore] no *prima facie* case of obviousness would exist for proposed substitute claim 10.

Id. at 9 (citing Ex. 2032); *see id.* at 11 (“For the reasons stated for claim 10, which are incorporated herein by reference, non[e] of the Cited references teach or suggest the claim limitations or combination of claim elements, either expressly or inherently. Accordingly, no *prima facie* case of obviousness would exist for proposed claim 12.”); *id.* (“For all the reasons stated for claim 10, which are incorporated herein by reference, no modification or combination of the known inner primary coatings of Shustack, Szum, Edwards, Coady, or R-1055, such as using the outer primary coatings of Edwards or Broer as Corning proposes in its petition, teaches or suggests the limitations recited by proposed claim 13. Accordingly, with the added claim limitations, no *prima facie* case of

obviousness would exist for proposed substitute claim 13.” (citation omitted)).

DSM’s arguments and Dr. Taylor’s testimony, proffered in support of the motion to amend, are insufficient to demonstrate the patentability of substitute claims 10, 12, and 13. DSM merely provides the aforementioned conclusory statements and relies primarily on Dr. Taylor’s declaration. Dr. Taylor’s testimony is limited to the prior art cited in the petition and, more specifically, to the tests run by Corning on various samples based on those references. *See Ex. 2032.*³

Dr. Taylor states that he “understand[s] these references include the closest prior art of which DSM is aware.” *Id.* at ¶ 73. Dr. Taylor, however, does not identify the closest prior art known to *him* with respect to the substitute claims. *See id.* Nor does he indicate that the prior art cited in the petition is the closest prior art known to him with respect to the substitute claims. *Id.* Without indicating that his patentability analysis is based on the closest prior art known to him, Dr. Taylor’s testimony provides insufficient information to establish that his patentability analysis as to the substitute claims is complete or reliable. Therefore, DSM’s conclusion that “[t]he proposed claims are patentable based on the amendments both specific and as a whole” is entitled to little weight. Mot. to Amend 6; *see Rohm & Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) (“Nothing in the

³ DSM did not point specifically to the paragraphs in Dr. Taylor’s declaration on which it relies for the patentability of substitute claims 10, 12, or 13. Mot. to Amend 8-11. Exercising our discretion and, despite DSM’s failure to cite specific paragraphs, we considered the entire declaration. Ex. 2032. Dr. Taylor does not opine specifically on the patentability of claim 13 in this declaration. *See id.*

rules or in our jurisprudence requires the fact finder to credit the unsupported assertions of an expert witness.”).

Further, Dr. Taylor’s testimony also is limited to whether the samples tested by Corning include the properties added to the substitute claims and fails to demonstrate sufficiently that the substitute claims are patentable over even the small collection of prior art references involved in this proceeding. Although Dr. Taylor concludes that the substitute claims are patentably distinct over the cited art (Ex. 2032 ¶ 76), Dr. Taylor’s analysis merely discusses how the specific samples tested by Corning do not include the features added in substitute claims 10, 12, and 13. *Id.* at ¶¶ 73-76, 103-06. Such a patentability analysis is insufficient to demonstrate patentability, because Dr. Taylor does not show or even assert that the many other compositions disclosed in the cited prior art, when created and tested, would not include the added features.

Additionally, Dr. Taylor does not proffer any evidence as to the level of ordinary skill in the art at the time of the invention, which is a necessary factual inquiry for determining obviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1965). In fact, Dr. Taylor’s testimony does not address the level of ordinary skill in the art at the time of the invention and what was known previously regarding the features added in substitute claims 10, 12, and 13. At least some explanations should have been provided as to why a person with ordinary skill in the art, applying his own knowledge and creativity, would not have found substitute claims 10, 12, and 13 obvious.

In sum, limiting the discussion to Corning’s tests of a subset of the compositions disclosed in the references cited in the petition is insufficient to demonstrate patentability of substitute claims 10, 12, and 13 over the

record prior art and the prior art in general. *See, e.g., Minkin v. Gibbons, P.C.*, 680 F.3d 1341, 1350-51 (Fed. Cir. 2012) (requiring a patentability analysis by a movant faced with a negative burden of proof). Without having discussed the level of ordinary skill in the art, and what was known previously regarding the features added in the substitute claims 10, 12, and 13, DSM's motion fails to demonstrate the patentability of substitute claims 10, 12, and 13.

3. *Substitute Claim 11*

DSM asserts that “[i]n addition to the reasons stated above,” substitute claim 11 is patentable over the prior art of record “and the art known to DSM” because the art fails to disclose the limitation “no delamination after 24 hours as measured in a 60° C water soak delamination test.” Mot. to Amend 9. DSM asserts that Corning did not perform this test on the prior art, but instead performed a “peel test.” *Id.* at 9-10 (citing Ex. 2032 ¶ 44-45). In addition, DSM asserts that it did its own water soak delamination test of Example 5B of Szum, which showed some delamination within 24 hours—thus failing the water soak delamination test. *Id.* at 10 (citing Ex. 2034). Based on these assertions, DSM concludes that “proposed substitute claim 11 is patentable over Edwards, Szum and Shustack.” *Id.* (citing Ex. 2032 ¶ 98).

DSM's arguments and Dr. Taylor's testimony suffer from the same deficiencies noted for substitute claims 10, 12, and 13 above and, thus, are insufficient to demonstrate the patentability of substitute claim 11. DSM's arguments and Dr. Taylor's testimony are limited to the prior art cited in the petition, tests run by Corning on various samples disclosed by those references, and tests run by DSM on a single sample disclosed by one

reference. *Id.* at 9-10; Ex. 2032 ¶¶ 88-91.⁴ Although Dr. Taylor states that he “understand[s] these references include the closest prior art of which DSM is aware,” as discussed above, this testimony alone is insufficient. Ex. 2032 ¶ 73.

For the reasons discussed with respect to substitute claims 10, 12, and 13, the discussion limited to Corning’s testing of a subset of the disclosed compositions in the references cited in the petition is insufficient to demonstrate patentability of substitute claim 11 over the record prior art and the prior art in general. Without having discussed the level of ordinary skill in the art, and what was known previously regarding the features added in substitute claim 11, DSM’s motion fails to demonstrate the patentability of substitute claim 11.

C. Corning’s Motion to Exclude Evidence

Corning filed a Motion to Exclude Evidence seeking to exclude Exhibits 2036, 2037, and 2038 as unauthenticated hearsay (Mot. to Exclude 3-7) and certain paragraphs of the declarations of Dr. Bowman (Ex. 2076) and Dr. Taylor (Ex. 2032) as relying and promulgating unauthenticated hearsay evidence (Mot. to Exclude 8-11). All of the evidence Corning seeks to exclude was filed by DSM with its Motion to Amend.

We find it unnecessary to consider the specific objections to the admissibility of evidence relating to DSM’s Motion to Amend, because

⁴ DSM points only to paragraph 98 in Dr. Taylor’s declaration to support its assertion that claim 11 is patentable over Edwards, Szum, and Shustack. Mot. to Amend 10. Paragraph 98, however, refers to proposed substitute claim 12. Ex. 2032 ¶ 98. Based on the headings, we have determined that paragraphs 88-91 appear to be the relevant paragraphs. Ex. 2032 (heading prior to ¶ 88, “Proposed Substitute Claim 11 Is Patentably Distinct Over The Prior Art Cited by Corning and the Closest Prior Art Known to DSM”).

DSM has failed to demonstrate that it is entitled to its proposed substitute claims, even assuming all its proffered evidence to be admissible. Corning's Motion to Exclude, therefore, is dismissed as moot, because even considering the evidence that Corning seeks to exclude, we have decided the issue in Corning's favor.

III. CONCLUSION

Corning has shown, by a preponderance of the evidence, that the challenged claims are unpatentable based on the following grounds: (1) claims 1, 2, and 7 based on anticipation by Edwards; (2) claims 1, 2, and 7 based on obviousness over Edwards; (3) claims 1-3 and 7-9 based on obviousness over Szum and Edwards or Broer; (4) claims 1, 2, and 7-9 based on obviousness over Shustack and Edwards or Broer; (5) claim 3 based on obviousness over Shustack, Edwards or Broer, and Jackson; and (6) claims 4-6 based on obviousness over Shustack, Szum, Broer or Edwards, and Botelho.

DSM has not shown that its proposed substitute claims 10-13 are patentable over the prior art.

Accordingly, it is

ORDERED that claims 1-9 of the '593 patent are determined to be UNPATENTABLE;

FURTHER ORDERED that DSM's Motion to Amend Claims is *denied*;

FURTHER ORDERED that Corning's Motion to Exclude Evidence is *dismissed*; and

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FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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