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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* AYUMU YOKOYAMA,  
HENRY A. TRONCO JR., ERIC C. HOUZE, SHEAU-HWA MA,  
KURT A. HANKERSON, JOSE ANTONIO GARCIA,  
GARY W. NICKEL, DELSON JAYME TRINDADE,  
MONIKA J. SIENKOWSKA, and JINGGUO SHEN

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Appeal 2019–003903  
Application 14/500,562  
Technology Center 1700

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Before MICHAEL P. COLAIANNI, GEORGE C. BEST, and  
DEBRA L. DENNETT, *Administrative Patent Judges*.

DENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

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<sup>1</sup> In our Decision, we refer to the Specification filed September 29, 2014 (“Spec.”) of Application 14/500,562 (“the ’562 Application”); the Final Office Action dated May 23, 2018 (“Final Act.”); the Advisory Action dated October 1, 2018 (“Advisory Act.”); the Appeal Brief filed October 30, 2018 (“Appeal Br.”); and the Examiner’s Answer dated February 19, 2019 (“Ans.”).

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>2</sup> appeals from the Examiner’s decision to reject claims 1, 3, 4, 6–9, 11, 12, and 14–16 of Application 14/500,562. Appeal Br. 5. We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we AFFIRM.

## BACKGROUND

The ’562 Application relates to curable coating compositions, particularly those having a low volatile organic component (VOC) and a low bake temperature. *See* Spec. ¶ 2. The ’562 Application describes that such curable coating compositions are suitable for use in automotive original equipment manufacturer (OEM) finish and refinish applications as primer coats, basecoats, and clearcoats. *Id.* ¶¶ 2, 3. According to the Specification, the curable coating compositions’ basecoat layer possesses improved resistance to sagging when applied over a slanted or vertical substrate surface. *Id.* ¶¶ 5, 52.

Claims 1 and 3 are representative of the ’562 Application’s claims and are reproduced below from the Claims Appendix of the Appeal Brief with key limitations italicized.

1. A multi-layer coating system comprising:  
a curable base coat coating composition comprising:  
a crosslinkable component comprising an acid functional acrylic copolymer polymerized from a monomer mixture comprising 2 percent to 12

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<sup>2</sup> We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Coatings Foreign IP Co. LLC as the real party in interest. Appeal Br. 2.

percent of one or more carboxylic acid group containing monomers, percentages based on total weight of the acid functional acrylic copolymer,

a crosslinking component; and

*a control agent comprising a rheology component chosen from an amorphous silica, a clay, or a combination thereof, the rheology component present in an amount of from about 0.1 to about 10 weight percent, and about 0.1 weight percent to about 10 weight percent of polyurea, said percentages based on total weight of the crosslinkable and crosslinking components; and*

a clear coat coating composition comprising an acrylic copolymer component comprising one or more acrylic polymers, wherein the clear coat coating composition comprises primary hydroxyl and secondary hydroxyl groups at a ratio of about 30:70 to about 80:20, and wherein the clear coat coating composition overlies and is in contact with the curable base coat coating composition.

3. The multi-layer coating composition of claim 1, *wherein said rheology component is the amorphous silica.*

Appeal Br. 9, 10 (emphases added).

## REFERENCES

The Examiner relies on the following prior art in rejecting the claims on appeal:

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Ma et al. ("Ma")	US 2006/0047051 A1	Mar. 2, 2006
Schellekens et al. ("Schellekens")	US 2006/0281862 A1	Dec. 14, 2006
Brinkhuis	US 2008/0139755 A1	June 12, 2008

## REJECTION

On appeal, the Examiner maintains<sup>3</sup> the following rejection under 35 U.S.C. § 103:<sup>4</sup>

1. Claims 1, 3, 4, 6–8, 9, 11, 12, and 14–16 over Ma, in view of Brinkhuis, and further in view of Schellekens. Final Act. 5–7.

## DISCUSSION

Appellant’s arguments focus on limitations recited in independent claims 1 and 9 and dependent claim 3. Appeal Br. 5–8. We select claim 1 as representative of the independent claims. Claims 4, 6–8, 9, 11, 12, and 14–16 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv). Claim 3 is discussed separately.

### *a. Claims 1, 4, 6–8, 9, 11, 12, and 14–16*

The Examiner determines that claim 1 would have been obvious over Ma in view of Brinkhuis, and further in view of Schellekens. Final Act. 5–7. Specifically, the Examiner finds that Ma teaches or suggests every limitation of the claimed curable base coat composition comprising an amorphous silica control agent in the requisite amounts, except that Ma does not disclose the use of polyurea as a control agent. *Id.* at 5–6.

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<sup>3</sup> Upon entering Appellant’s September 17, 2018 Amendment After Final, the Examiner withdrew the rejections of claims 1, 3, 4, 6–9, 11, 12, and 14–16 under: (i) 35 U.S.C. § 112(a) as failing to comply with the written description requirement; and (ii) 35 U.S.C. § 112(b) as indefinite. Advisory Act. 2, 3; Final Act. 2–4.

<sup>4</sup> Because this application was filed after the March 16, 2013, effective date of the America Invents Act, we refer to the AIA version of the statute.

The Examiner finds that Brinkhuis, like Ma, teaches that ingredients may be added to confer the desired property of sag resistance to coating compositions. *Id.* at 6. In particular, the Examiner finds that Brinkhuis teaches the effective use of polyurea in amounts that overlap the claimed range as an anti-sag control ingredient. *Id.* The Examiner determines that it would have been obvious to one of ordinary skill in the art at the time of the invention to have used Brinkhuis’s polyurea sag control agent in the requisite amounts as Ma’s sag control agent in order to provide the desired sag control effect. *Id.*

The Examiner finds that Ma is silent with respect to a specific clear coat composition. *Id.* The Examiner, however, finds that Schellekens teaches or suggests every component and limitation of the claimed clear coating composition recited in claim 1. *Id.* The Examiner determines that it would have been obvious to one of ordinary skill in the art at the time of the invention to have used Schellekens’s clear coating composition “as the clear coat generally called for in modified Ma in order to provide [Schellekens’s] high gloss and car wash resistance.” *Id.*

Appellant argues, “Ma describes a coating with amorphous silica, but Ma fails to describe the use of polyurea as an anti-sag component.” Appeal Br. 6. According to Appellant, “Brinkhuis describes coatings with polyurea, but Brinkhuis fails to describe the use of silica.” *Id.* Appellant argues, “Schellekens describes a clear coat, but . . . Schellekens does not describe the combination of an amorphous silica with a polyurea” as sag control agents. *Id.*

Appellant’s arguments, however, are unpersuasive because one cannot show non-obviousness by attacking references individually when the

rejection is based on a combination of references. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Each reference cited by the Examiner must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *See id.* The Examiner adequately demonstrates that each element of claim 1 is present in the combined references.

A *prima facie* case of obviousness may be shown where, as here, structural similarities exist between the claimed and prior art compositions and reason or motivation exists to make the claimed composition. *In re Dillon*, 919 F.2d 688, 692 (Fed. Cir. 1990) (en banc) (“structural similarity between claimed and prior art subject matter, proved by combining references or otherwise, where the prior art gives reason or motivation to make the claimed compositions, creates a *prima facie* case of obviousness”); *In re Best*, 562 F.2d 1252, 1255–56 (Fed. Cir. 1977); *In re Wilder*, 429 F.2d 447, 450 (CCPA 1970).

Appellant may rebut the *prima facie* case of obviousness by showing the prior art combination is deficient, no motivation exists to modify the prior art as suggested by the Examiner, the presence of unexpected results achieved by the claimed subject matter relative to the prior art, or other objective evidence of non-obviousness. *In re Mayne*, 104 F.3d 1339, 1342 (Fed. Cir. 1997); *In re Geisler*, 116 F.3d 1465, 1469–70 (Fed. Cir. 1997); *Dillon*, 919 F.2d at 692–93. As discussed above, Appellant does not show that Ma in view of Brinkhuis, and further in view of Schellekens, fails to disclose or suggest the claim elements or that the references should not be combined. For the reasons set forth below, Appellant’s attempt to demonstrate unexpected results is likewise unsuccessful.

Appellant “note[s] that an unexpected increase in sag control results when amorphous silica is combined with polyurea.” Appeal Br. 6. As evidence of this unexpected increase, Appellant points to Tables 4–7 in the Specification, which are summarized as a table in the Appeal Brief. *Id.* (see “Test data from [S]pecification”); *see also* Spec. 29–32.

Table 4 tested a Coating System of Comparative Example 4 having 0% sag control agent; Table 5 tested a Coating System of Comparative Example 5 having 21% of a silica sag control agent; Table 6 tested a Coating System of Comparative Example 6 having 38% of a polyurea sag control agent; and Table 7 tested a Coating System of Example 1 of the Present Invention having 29% of a sag control agent in the form of silica and polyurea. Appeal Br. 6; *see also* Spec. 29–32. Test results are provided as “DOI” values in which “[h]igher values for the [distinctness of image] indicate better sag control.” Appeal Br. 6; *see* Spec. ¶ 73.

Appellant shows that silica and polyurea control agents individually provided a DOI improvement calculated by Appellant to be 22% for silica in Comparative Coating Example 5 (Table 5), and 30% for polyurea in Comparative Coating Example 6 (Table 6) over Comparative Coating Example 4 (Table 4), which had no sag control agent. Appeal Br. 7; *id.* 6 (see “Test data from [S]pecification”); Spec. 29–31. Appellant contrasts these results with inventive Coating Example 1 (Table 7) in which the combination of silica and polyurea sag control agents provided what Appellant characterizes as “a significant unexpected benefit” in the form of a 60% DOI improvement over Comparative Coating Example 4 (Table 4). Appeal Br. 8; *id.* 6 (see “Test data from [S]pecification”); Spec. 29, 32. According to Appellant, the “60% improvement is significantly more than a

22% or 30% improvement, even though about the same total amount of rheological component was utilized.” Appeal Br. 7.

A party asserting unexpected results as evidence of nonobviousness has the burden of proving that the results are unexpected. *Geisler*, 116 F.3d at 1469–70. Appellant’s arguments to that effect cannot take the place of evidence. *Id.* at 1471; *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978); *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

Appellant’s evidence is not persuasive of unexpected results. Unexpected results must be “commensurate in scope with the degree of protection sought by the . . . [claims on appeal].” *In re Harris*, 409 F.3d 1339, 1344 (Fed. Cir. 2005). Appellant’s results do not support the scope of claim 1 at least because Appellant provides no evidence for compositions containing clay or a combination of amorphous silica and clay. As explained by the Examiner, the data presents testing of “a specific amount and type (AEROSIL) of silica” and “a particular type and amount of pol[y]urea.” Ans. 11. Each of these ingredients are critical to Appellant’s showing of alleged unexpected results. Claim 1, however, recites each of these anti-sag ingredients in a range of amounts that is much broader than the single exemplified amount tested. Appeal Br. 9 (claim 1 recites “the rheology component [such as “an amorphous silica”] present in an amount of from about 0.1 to about 10 weight percent, and about 0.1 weight percent to about 10 weight percent of polyurea.”).

Moreover, the allegedly unexpected result for inventive Coating Example 1 with silica and polyurea over Comparative Coating Example 5 with silica alone may have occurred only because a larger total amount of

anti-sag agent was used in the former, 29%, as compared to the latter, i.e., 21%. Appeal Br. 6; *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1539 (Fed. Cir. 1983) (“A nexus is required between the merits of the claimed invention and the evidence offered, if that evidence is to be given substantial weight enroute to conclusion on the obviousness issue.”). Appellant’s alleged unexpected results, therefore, fail to meet the requirements to rebut the Examiner’s prima facie case of obviousness.

On balance, the weight of the evidence of record supports the Examiner’s conclusion of obviousness. Therefore, we sustain the Examiner’s rejection of claim 1 over Ma in view of Brinkhuis, and further in view of Schellekens. For the same reasons, we sustain the rejection of claims 4, 6–9, 11, 12, and 14–16.

*b. Claim 3*

Claim 3 further limits claim 1 by requiring that the rheology component in the claimed control agent is amorphous silica. Appeal Br. 9, 10. Claim 3, however, does not further limit silica to any particular particle size or to any specific amount. Rather, claim 3 is directed to amorphous silica present in an amount from about 0.1 to about 10 weight percent. *Id.*

For the reasons set forth above, Appellant’s results do not support the scope of claim 3 because Appellant only tested a single specific amount and type of silica. *See* Ans. 11. Therefore, we sustain the Examiner’s rejection of claim 3 over Ma in view of Brinkhuis, and further in view of Schellekens.

CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 3, 4, 6–9, 11, 12, 14–16	103	Ma, Brinkhuis, Schellekens	1, 3, 4, 6–9, 11, 12, 14–16	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED