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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/273,567	05/09/2014	Didier Labouche	12008605A1	7311
24959	7590	01/30/2020	EXAMINER	
PPG Industries, Inc. IP Law Group One PPG Place 39th Floor Pittsburgh, PA 15272			FUNG, CHING-YIU	
			ART UNIT	PAPER NUMBER
			1787	
			MAIL DATE	DELIVERY MODE
			01/30/2020	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DIDIER LABOUCHE, MARIE-NOELLE MAILLET, and
SIAMANTO ABRAMI

Appeal 2019-002483
Application 14/273,567
Technology Center 1700

Before ROMULO H. DELMENDO, MICHAEL G. McMANUS, and
JANE E. INGLESE, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant¹ appeals under 35 U.S.C. § 134(a) from the Primary Examiner’s decision to reject claims 1, 2, 5–15, 17–19, and 22–25.² We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42—namely, “PRC-DeSoto International, Inc.” (Application Data Sheet filed May 9, 2014 at 5). The Appellant identifies “PPG Industries Ohio, Inc.” as the real party in interest (Appeal Brief filed October 9, 2018 (“Appeal Br.”) at 1).

² See Appeal Br. 1–7; Reply Brief filed January 23, 2019 (“Reply Br.”) at 1–2; Non-Final Office Action entered July 11, 2018 (“Non-Final Act.”) at 5–18; Examiner’s Answer entered December 3, 2018 (“Ans.”) at 4–24.

I. BACKGROUND

The subject matter on appeal relates to: (i) a coating composition comprising an epoxy-functional resin, a corrosion-resisting particle, and a crosslinker having a first functionality that crosslinks with the epoxy functionality and a second functionality that self-crosslinks; (ii) a method of coating a substrate; and (iii) a coated substrate (Specification filed May 9, 2014 (“Spec.”) ¶¶ 1, 43, 48; Appeal Br. 8–9). The Specification describes that, in certain embodiments, MgO (magnesium oxide) may be included in the coating composition as corrosion-resisting particles (Spec. ¶¶ 9–11, 17). The Specification describes other embodiments that include amino acid in the coating composition to improve the coating’s corrosion resistance (*id.* ¶ 22).

Representative claims 1 and 6 are reproduced from the Claims Appendix to the Appeal Brief, as follows:

1. A *solvent-borne* coating composition comprising:
 - (a) a first component comprising:
 - (i) an epoxy functional resin; and
 - (ii) ***a corrosion resisting particle comprises MgO***; and
 - (b) a second component comprising a crosslinker having a first functionality that crosslinks with the epoxy functionality of the first component and a second functionality that self-crosslinks, and ***wherein the MgO comprises 10 to 50 wt. % of the coating, with wt. % based on total solids.***

6. A coating composition comprising:
 - (a) a first component comprising:
 - (i) an epoxy functional resin; and
 - (ii) a corrosion resisting particle; and
 - (b) a second component comprising a crosslinker having a first functionality that crosslinks with the epoxy

functionality of the first component and a second functionality that self-crosslinks, *wherein the coating further comprises an amino acid*.

(Appeal Br. 8 (emphases added)).

II. REJECTIONS ON APPEAL

On appeal, the Examiner maintains three rejections under AIA 35 U.S.C. § 103, as follows:

- A. Claims 1, 2, 5, 7–11, 14, 15, 17–19, 22, and 23 as unpatentable over Van Ooij et al.³ (“Van Ooij”), Walters et al.⁴ (“Walters”), and Harris;⁵
- B. Claims 6, 24, and 25 as unpatentable over Van Ooij and Honda;⁶ and
- C. Claims 12 and 13 as unpatentable over Van Ooij, Abrami et al.⁷ (“Abrami”), and *Dictionary.com*.⁸

(Ans. 4–24; Non-Final Act. 5–18).

III. DISCUSSION

Grouping of Claims. For Rejections A and B, the Appellant argues the claims subject to each rejection together (Appeal Br. 3–7). Therefore,

³ US 2008/0081120 A1, published April 3, 2008.

⁴ US 2012/0082843 A1, published April 5, 2012.

⁵ Daniel C. Harris, *Materials for Infrared Windows and Domes: Properties and Performance* 114 (1999).

⁶ US 2013/0081612 A1, published April 4, 2013.

⁷ US 2012/0315466 A1, published December 13, 2012.

⁸ *Dictionary.com*, <http://dictionary.com/browse/catalyst> (last visited December 6, 2016).

the claims subject to Rejections A and B stand or fall with claim 1 and claim 6, respectively, which we select as representative. *See* 37 C.F.R.

§ 41.37(c)(1)(iv). For Rejection C, the Appellant relies on the same arguments offered against Rejection A (Appeal Br. 7). Therefore, our discussion of Rejection A applies equally to Rejection C.

Rejections A and C. The Examiner finds that Van Ooij teaches a superprimer coating composition that may be formulated to comprise a water soluble or dispersible polymer such as an epoxy resin, nanoparticles such as MgO, a bis-silane such as bis(trimethoxysilylpropyl) amine, and an aqueous *or* non-aqueous solvent (Ans. 4–5; Non-Final Act. 5–6). Regarding the amount of MgO nanoparticles, the Examiner finds that these nanoparticles are added as pigments and that the calculated amount of such pigments may be 0–19.5% (Ans. 6, 20; Non-Final Act. 7). The Examiner finds that although Van Ooij does not disclose that the MgO nanoparticles have corrosion inhibiting or resisting properties, the prior art pigment nanoparticles are identical to the Appellant’s MgO particles and, therefore, would be capable of functioning (i.e., inherently function) as corrosion inhibiting or resisting nanoparticles (Ans. 5; Non-Final Act. 6).⁹

The Appellant contends that Van Ooij does not disclose or suggest “solvent-borne” compositions as claimed (Appeal Br. 3). According to the Appellant, “a solvent-borne composition [is defined in the Specification as] one in which solvent is present in an amount greater than 50 percent of the diluent” and that “it is clear that ‘solvent’ in this context refers to organic solvents and not water” (*id.* at 4 (citing Spec. ¶¶ 30–31)). The Appellant

⁹ The Examiner does not rely on Walters and Harris in rejecting claim 1 (e.g., Ans. 4–7). Therefore, we need not discuss these references.

argues that “[i]n Paragraph 13, Van Ooij describes his ‘superprimer’ and indicates that the solvent can be aqueous or non-aqueous (i.e. waterborne or solvent-borne), but there is no disclosure of use of magnesium oxide” (*id.*). The Appellant argues that although Van Ooij’s paragraph 129 discloses magnesium oxide, it “is only one of many pigments listed” and that

[s]hould the Office take the position that magnesium oxide is a leachable inhibitor (even if Van Ooij did not recognize it as such), then the teachings of Van Ooij are outside the scope of the current claims [because] Van Ooij teaches use of such an inhibitor in amounts of less than 5%[.]”

(*Id.* at 4–5). The Appellant urges that selections of certain components disclosed in Van Ooij are required to arrive at the subject matter recited in the current claims and the Appellant has “some indications that a waterborne composition comprising magnesium oxide at the levels recited in [c]laim 1 would result in a destabilized aqueous resin dispersion that would flocculate” (*id.* at 5).

For the reasons discussed below, the Appellant’s arguments fail to identify reversible error in the Examiner’s rejection. *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011).

Van Ooij describes an improved superprimer (i.e., coating) composition for providing corrosion protection and increased adhesion between substrates and a subsequent bonded material (Van Ooij ¶¶ 3–5). Consistent with the Examiner’s findings (Ans. 4–5), Van Ooij discloses that the superprimer composition comprises: (a) one or more bis-silanes (e.g., bis(trimethoxysilylpropyl) amine¹⁰); (b) a water dispersible or soluble

¹⁰ The Appellant describes bis(trimethoxysilylpropyl) amine as a suitable crosslinker (Spec. ¶ 24; Appeal Br. 8 (claim 10)).

polymer (e.g., an epoxy resin); and (c) an aqueous *or non-aqueous solvent*, wherein at least one of the resin and the silane are crosslinked using a crosslinking agent (*id.* Abstract; ¶¶ 5, 15, 17–18, 119, 128). According to Van Ooij, a corrosion inhibitor such as zinc phosphate is added in an amount between about 1–50% by weight (*id.* ¶¶ 12, 14). In addition, Van Ooij teaches including additional components such as pigments, leachable inhibitors, emulsifiers, surfactants, film builders, UV absorbers or reflectors, thickeners, or toughening agents (*id.* ¶ 129). As a suitable pigment, Van Ooij discloses MgO nanoparticles (*id.*).

Although we agree with the Appellant that “solvent-borne” in the context of the claimed invention means that a non-aqueous solvent is the primary diluent (Spec. ¶¶ 30–31), that does not establish reversible error in the Examiner’s rejection because, as acknowledged by the Appellant (Appeal Br. 4), Van Ooij teaches that either an aqueous *or non-aqueous* solvent may be used (Van Ooij Abstract; ¶ 13).

Additionally, although some selections are required to arrive at the subject matter recited in claim 1 in view of Van Ooij’s disclosure as whole, we discern no reversible error in the Examiner’s obviousness analysis (*see, e.g.,* Ans. 19). *See, e.g., Wm. Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 683 F.3d 1356, 1364–65 (Fed. Cir. 2012) (“strong case of obviousness” exists where the combination of ingredients recited in the claims were based on selections from a finite number of identified, predictable solutions); *Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (“That the [reference] discloses a multitude of effective combinations does not render any particular formulation less obvious.”).

We also discern no persuasive merit in the Appellant’s argument that the amount of MgO nanoparticles in Van Ooij is limited to less than 5% by weight. Van Ooij limits the amounts of the leachable inhibitor to less than 5% by weight of the superprimer and additives other than the pigment to less than 3% of the solids (Van Ooij ¶ 129). But, as the Examiner finds (Ans. 19), Van Ooij teaches that the MgO nanoparticles are pigments for which Van Ooij does not place any particular limitation as to amounts that may be used (Van Ooij ¶ 129). Here, the Examiner calculates suitable amounts for the MgO nanoparticles as being 0–19.5% by weight based on Van Ooij’s disclosure of amounts as to other components in the superprimer (Ans. 6; Non-Final Act. 7). The Appellant does not refute these calculations (Appeal Br. 3–5).

The Appellant’s argument that Van Ooij does not appreciate MgO’s corrosion inhibiting property is also unpersuasive because it is well-settled that a compound and its properties are inseparable. *In re Dillon*, 919 F.2d 688, 697 (Fed. Cir. 1990) (en banc) (“[A] compound and all of its properties are inseparable.”) (citing *In re Papesch*, 315 F.2d 381, 391 (CCPA 1963)).

In this regard, the motivation or reason in the prior art to arrive at the claimed invention (i.e., the reason for including MgO nanoparticles in Van Ooij—i.e., pigmentation) need not be the same as that of the Inventors (i.e., corrosion inhibition). *KSR Int’l Co. Teleflex Inc.*, 550 U.S. 398, 420 (2007) (“The first error of the Court of Appeals in this case was to foreclose [an obviousness] reasoning by holding that . . . patent examiners should look only to the problem the patentee was trying to solve.”). “Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the [prior art] can provide a reason for

combining the elements in the manner claimed.” *Id.*; accord *In re Kemps*, 97 F.3d 1427, 1430 (Fed. Cir. 1996) (the motivation or reason in the prior art need not be the same as that of the inventor).

Thus, when MgO nanoparticles are added as pigments in accordance with Van Ooij’s teachings, the nanoparticles’ inherent corrosion inhibiting property would necessarily flow from following the prior art’s teachings. *In re Kubin*, 561 F.3d 1351, 1357 (Fed. Cir. 2009) (“Even if no prior art of record explicitly discusses the ‘wherein the polypeptide binds CD48’ aspect of claim 73, the Kubin–Goodwin application itself instructs that CD48 binding is not an additional requirement imposed by the claims on the NAIL protein, but rather a property necessarily present in NAIL.”); *Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985) (“The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.”).

Lastly, the Appellant argues that it has “some indications that a waterborne composition comprising magnesium oxide at the levels recited in [c]laim 1 would result in a destabilized aqueous resin dispersion that would flocculate” (Appeal Br. at 5). That argument is ineffective because the Appellant does not direct us to objective evidence (e.g., a sworn declaration attesting to comparative experiments) establishing any such “indications” that may be probative in assessing nonobviousness over Van Ooij. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997).

For these reasons, we uphold the Examiner’s rejection as maintained against claim 1. As a consequence, Rejections A and C are sustained.

Rejection B. Claim 6 differs from claim 1 in that the claimed corrosion resisting particle need not comprise MgO, but the coating composition must comprise an amino acid (Appeal Br. 8).

To account for the amino acid limitation, the Examiner relies on Honda, which was found to teach an amino acid in the form of a compound having an imidazole ring including histidine as a corrosion inhibitor in a protective coating layer containing an epoxy resin, wherein the protective coating layer is part of a film mirror including a reflective layer (Ans. 12 (citing Honda Abstract; ¶¶ 93–95, 99, 102, 108, 114)).

The Appellant contends that Honda is directed to film mirrors for reflecting sunlight in which a protective coating layer is one of a number of different layers, and, therefore, “it is inaccurate to characterize Honda as being directed to the coatings art” (Appeal Br. 6). According to the Appellant, “Honda might teach a coating composition, [but] that coating composition is only used in conjunction with [a] film mirror laminate” and, therefore, “[o]ne skilled in the art of primer compositions would have had no motivation whatsoever to look to the teachings of Honda to modify the teachings of Van Ooij” (*id.*). The Appellant also argues that “Honda teaches countless corrosion inhibitors, and there is no particular motivation provided to one skilled in the art for selecting histidine from the laundry list of inhibitors that Honda discloses” (*id.*).

We discern no persuasive merit in the Appellant’s arguments. Honda, like Van Ooij, is concerned with providing a protective coating that includes an epoxy resin and a corrosion inhibitor (Honda ¶¶ 93–95; Van Ooij ¶¶ 12, 129). Because Van Ooij’s composition teaches including a corrosion inhibitor for a coating based on an epoxy resin, a person having ordinary

skill in the art would have considered all prior art teachings, including Honda, that are relevant to corrosion inhibition in a coating that is based on epoxy resin. That person having ordinary skill in the art would have been prompted to combine Van Ooij and Honda in the manner claimed by the Inventors because the substitution of a corrosion inhibitor, as disclosed in Van Ooij, with another known corrosion inhibitor, such as Honda's amino acid having an imidazole ring, would have been obvious as a matter of "mere substitution of one element for another known in the field." *KSR*, 550 U.S. at 416.

Lastly, the Appellant's argument that "Honda teaches countless corrosion inhibitors" (Appeal Br. 6) is ineffective to identify reversible error in the Examiner's rejection. Honda lists a limited number of classes of compounds, including a compound having an imidazole ring with histidine (Honda ¶¶ 102, 108). Again, "[t]hat the [reference] discloses a multitude of effective combinations does not render any particular formulation less obvious." *Merck*, 874 F.2d at 807.

For these reasons, we uphold the Examiner's rejection as maintained against claim 6. Rejection B is sustained.

IV. CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1, 2, 5, 7–11, 14, 15, 17–19, 22, 23	103	Van Ooij, Walters, Harris	1, 2, 5, 7–11, 14, 15, 17–19, 22, 23	
6, 24, 25	103	Van Ooij, Honda	6, 24, 25	
12, 13	103	Van Ooij, Abrami, <i>Dictionary.com</i>	12, 13	
Overall Outcome			1, 2, 5–15, 17–19, 22–25	

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

AFFIRMED