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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MATTHIAS BOCKMEYER,
GABRIELE ROEMER-SCHEUERMANN,
ANDREA ANTON, and HANS-JOACHIM SCHMITT

Appeal 2016-000005
Application 12/459,643
Technology Center 1700

Before KAREN M. HASTINGS, GEORGE C. BEST, and
N. WHITNEY WILSON, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellants¹ appeal from the Examiner's decision finally rejecting claims 20–26 and 28–37 under 35 § U.S.C. 103(a). We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to the Appellants, the real party in interest is Schott AG (Br. 1).

CLAIMED SUBJECT MATTER

Claim 20 is illustrative of the claimed subject matter (emphasis added to highlight key limitations):

20. A glass or glass-ceramic article, comprising:
a glass or glass-ceramic substrate; and

a decorative coating comprising hardened sol-gel binding agent forming a metal oxide network and *decorative pigments, wherein the decorative pigments comprising flake-form pigment particles and solid lubricant in weight percent ratio of flake-form pigment particles to solid lubricant equal to 10:1 to 1:1, wherein the solid lubricant comprises an inorganic solid lubricant selected from the group consisting of graphite, boron nitride, molybdenum sulfide, inorganic non-oxide, and combinations thereof.*

(Br. 11; Claims App.)

REFERENCES AND REJECTIONS ON APPEAL

The Examiner maintains the following rejections under 35 U.S.C. § 103(a):

(a) claims 20–23, 28, 30–31, 33–35, and 37 as unpatentable over Esemann et al. (WO 2006/111359 A1, published Oct. 26, 2006) (relying on US 2009/0233082 A1, published Sept. 17, 2009, as the unofficial English translation) (hereinafter “Esemann”) in view of Olliges (US 2006/0154830 A1, published July 13, 2006) (hereinafter “Olliges”);

(b) claims 20–23, 28, 33–35 and 37 as unpatentable over Esemann in view of Elkovitch et al. (US 2006/0111548 A1, published May 25, 2006) (hereinafter “Elkovitch”);

(c) claims 24–26 as unpatentable over Esemann in view of Elkovitch, and further in view of Nakajima et al. (WO 2008/059839 A1, published May

22, 2008) (relying on US 7,767,018 B2, issued Aug. 3, 2010, as the unofficial English translation) (hereinafter “Nakajima”);

(d) claims 24–26 are rejected as unpatentable over Esemann in view of Olliges, and further in view of Nakajima;

(e) claims 29 and 36 as unpatentable over Esemann in view of Olliges, and further in view of Sakagami et al. (US 5,306,759, issued Apr. 26, 1994) (hereinafter “Sakagami”);

(f) claims 29 and 36 as unpatentable over Esemann in view of Elkovitch, and further in view of Sakagami;

(g) claim 32 as unpatentable over Esemann in view of Olliges, and further in view of McCord et al. (US 2008/0102267 A1, published May 1, 2008) (hereinafter “McCord”); and

(h) claim 32 is rejected under 35 U.S.C. § 103(a) as unpatentable over Esemann in view of Elkovitch, and further in view of McCord.

With the exception of claims 21, 22, and 28, Appellants do not make separate substantive arguments in support of patentability of any of the claims (*see generally* Br. 3–10). Accordingly, our discussion will focus on the obviousness rejections of independent claim 20. Claims 21, 22, and 28 will be addressed separately. Claims 20, 23–26, and 29–37 stand or fall together. 37 C.F.R. § 41.37(c)(1)(iv).

ANALYSIS

Upon consideration of the appeal record including the Appellants’ position in this appeal as set forth on pages 3–10 of the Brief, we affirm the Examiner’s rejections for the reasons stated by the Examiner (Final Office

Action mailed November 24, 2014, 2–14; Examiner’s Answer mailed July 22, 2015, 2–7). We add the following for emphasis.

Rejections (a)–(h) under 35 U.S.C. § 103(a)

It has been established that “the [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007); *see also In re Fritch*, 972 F.2d 1260, 1264–65 (Fed. Cir. 1992) (a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in the art would have reasonably been expected to draw therefrom).

Appellants do not challenge the Examiner’s determination that it would have been obvious to combine the teachings of Esemann with either Olliges or Elkovitch to obtain the two components in the claimed decorative pigments mixture (i.e., flake-form pigment particles and solid lubricant). As the Examiner explains (e.g., Ans. 2–3) and Appellants do not dispute (*see generally* Br. 3–10), “[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to use boron particle with [Olliges’] particle size . . . in [Esemann’s] coating . . . to obtain improved thermal and oxidative stability” (Ans. 3). Appellants, furthermore, do not dispute (*see generally* Br. 3–10) the Examiner’s determination that it would have been obvious to the ordinary skilled artisan “to use [Elkovitch’s] boron particle . . . in [Esemann’s] coating . . . to improve dimensional stability by lowering the coefficient of thermal expansion” (Ans. 6).

Rather, Appellants’ main arguments focus on an alleged lack of evidentiary support for the Examiner’s determination that the ordinary

skilled artisan would have: (i) been motivated by common sense to select a 1:1 weight ratio of flake-form pigment particles to solid lubricant (Br. 3–4) or (ii) understood that the properties of boron nitride are variables that can be modified by adjusting this ratio (*id.* at 5).

A preponderance of the evidence supports the Examiner’s position (Ans. 2–7). Even assuming the Examiner’s determination that “when faced with a mixture, one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio, a ratio that falls within the presently claimed amount, absent evidence of unexpected or surprising results” (*id.* at 3) is inaccurate, the presently claimed ratio is broad; the ratio extends from the minimum identified by the Examiner up to a ten-fold increase of the desired pigment particles (i.e., as little as 10% lubricant particles).

We have no doubt that varying the amounts of two different decorative pigment materials within the claimed broad ratio, in order to produce adhesive strength between coating and substrate, while improving impermeability, would have been within the level of ordinary creativity in the art based on the applied prior art of Esemann, with either Olliges or Elkovitch. *See Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009) (“We therefore hold that while an analysis of obviousness always depends on evidence that supports the required *Graham* factual findings, it also may include recourse to logic, judgment, and common sense available to the person of ordinary skill that do not necessarily require explication in any reference or expert opinion.”).

Furthermore, a “recognition in the prior art that a property is affected by the variable is sufficient to find the variable result-effective.” *In re Applied Materials, Inc.*, 692 F.3d 1289, 1297 (Fed. Cir. 2012). As indicated

by the applied prior art, thermal, oxidative, and dimensional stability is a result-effective variable based on the amount of boron nitride (*see Ans. generally*). Olliges teaches that 2 to about 10 wt. % of boron nitride powder present in a lubricant composition provides significant improvement in thermal and oxidative stability (Olliges ¶ 15). Elkovitch teaches that use of boron nitride as a reinforcing filler in the suitable range of 5 to 30 wt. % “improve[s] dimensional stability by lowering the coefficient of thermal expansion” (Elkovitch ¶¶ 50, 51, and 54). Thus, we are not persuaded by Appellants’ arguments that “the cited art . . . fail[s] to provide any starting point from which to base its supposed routine experimentation” (Br. 5).²

Moreover, it is well settled that it would have been obvious for an artisan with ordinary skill to develop workable or even optimum ranges for result-effective parameters. *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990) (where the difference between the claimed invention and the prior art is some range, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results). Thus, the use of flake-form pigment particles and boron nitride in weight percent ratio of flake-form pigment particles to boron nitride equal to 10:1 to 1:1 is within the level of ordinary skill in the art over the Olliges teaching of 2 to about 10 wt. % of boron nitride powder (Olliges ¶ 15) and the teachings of Elkovitch for use of boron nitride in the suitable range of 5 to 30 wt. % (Elkovitch ¶ 54).

Therefore, Appellants have not shown reversible error in the Examiner’s determination that one of ordinary skill in the art, using no more

² Esemann teaches the benefits of adding such fillers to sol-gel binders (Esemann ¶¶ 19, 21, and 23).

than ordinary creativity, would have mixed Esemann's flake-like pigments and boron nitride in the ratio claimed using amounts of boron nitride exemplified in either Olliges or Elkovitch. *In re Keller*, 642 F.2d 413, 425–26 (CCPA 1981) (“The test for obviousness . . . is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”).

Appellants argue that the Specification provides evidence of unexpected results, thereby demonstrating the criticality of the claimed ratio (Br. 5, citing Spec. ¶¶ 13, 17).

It is well settled that the burden of establishing unexpected results rests on the party asserting them. *In re Klosak*, 455 F.2d 1077, 1088 (CCPA 1972). In this instance, Appellants have not provided the required side-by-side comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims, and explained why the results would have been unexpected by one of ordinary skill in the art. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983). As the Examiner pointed out, Appellants' relied on paragraphs in the Specification provide only conclusory statements without sufficient evidence to support an assertion of unexpected results (Ans. 5).

Appellants' arguments urging reversal of claims 21 and 22 are substantially similar to the arguments addressed above. For example, Appellants argue that the Examiner “has merely guessed at a starting ratio,

has failed to consider the rebuttal evidence present in the specification, and has failed to acknowledge the surprising result of the claimed ratio” (Br. 7, 8). For the reasons set forth above, Appellants arguments are not persuasive.

With respect to claim 28, Appellants argue that the Examiner “has failed to establish that the very different compositions of Olliges and Elkovitch inherently have the claimed surface energy” (*id.* at 9). Appellants’ argument, however, fails to identify reversible error in the Examiner’s finding because the applied prior art discloses the same inorganic solid lubricant, i.e., boron nitride, as present claim 28 (Final Act. 3, 5). Therefore, the solid lubricant in the Examiner’s proposed combination of Esemann in view of either Olliges or Elkovitch would necessarily have the same properties as required in claim 28.

DECISION

All of the appealed rejections are affirmed.

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