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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FRANK Y. XU
and MICHAEL N. MILLER

Appeal 2015-004853
Application 13/106,407
Technology Center 1700

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

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellants¹ appeal the Examiner's decision rejecting claims 5–17 under 35 U.S.C. § 103(a). We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

¹ The real parties in interest are stated to be Canon Nanotechnologies, Inc. and Molecular Imprints, Inc. (Br. 1).

Claim 5 is illustrative of the appealed subject matter (emphasis added to highlight key disputed limitations):

5. *A nano-scale fabrication imprinting material* comprising:
one or more polymerizable components;
a fluorinated surfactant comprising -CH₂CH₂CH₂O-, -CH(CH₃)CH₂O-, -OCH(CH₃)CH₂-, -CH(CH₃)CH(CH₃)O-, or a combination thereof; and
a photoinitiator,

wherein, after deposition of the imprinting material in the form of a droplet on an imprint lithography substrate exposed to air, the fluorinated surfactant rises to the air-liquid interface of the droplet, yielding a surfactant-component-rich sub-portion and a surfactant-component-depleted sub-portion, wherein the surfactant-component-depleted sub-portion is positioned between the nanoimprint lithography substrate and the surfactant-component-rich sub-portion.

(Br. 11, Claims App. 1).

The Examiner maintains the following rejections:

(a) claims 5–17 are rejected under 35 U.S.C. § 103(a) as unpatentable over Palazzotto et al. (US 2004/0122122 A1, published June 24, 2004) (hereinafter “Palazzotto”) in view of Olson (US 3,787,351, issued Jan. 22, 1974) (hereinafter “Olson”); and

(b) claims 5–12 and 16 are rejected on the ground of nonstatutory double patenting as unpatentable over claim 10 of Xu et al. (US 7,307,118 B2, issued Dec. 11, 2007) (hereinafter “Xu”).

With the exception of claim 15, Appellants’ arguments urging reversal of the obviousness rejection of claims 5–17 focus on limitations common to independent claim 5 (Br. 2–12). Accordingly, in the absence of arguments

specific to their patentability, dependent claims 6–14, 16, and 17 stand or fall with claim 5. 37 C.F.R. § 41.37(c)(1)(iv).

Appellants do not present any explicit argument for reversal of the nonstatutory double patenting rejection of claims 5–12 and 16. We, therefore, summarily affirm the Examiner’s rejection of claims 5–12 and 16 on the ground of nonstatutory double patenting as unpatentable over claim 10 of Xu.

ANALYSIS

Upon consideration of the evidence on this record and each of Appellants’ contentions, we find that the preponderance of evidence supports the Examiner’s conclusion that independent claim 5 and all of its dependent claims are unpatentable over the applied prior art and that Appellants have failed to show that the Examiner erred reversibly. We sustain the Examiner’s § 103 rejection, listed in (a) above, of all the appealed claims for essentially the reasons set out by the Examiner in the Non-Final Office Action and the Answer.

We add the following primarily for emphasis.

The Examiner finds that Palazzotto’s disclosure of a photocurable composition discloses all of the elements of claim 5 except that Palazzotto “. . . fails to explicitly teach a fluorinated surfactant of the instant invention[]” (Non-Final Act. 3). The Examiner finds, however, that Olson discloses compositions useful for resin composites comprised of a fluoroaliphatic oligomer (*id.* (citing Olson 3:20–4:75)). The Examiner concludes that it would have been obvious for the ordinary skilled artisan to:

add [Olson’s] fluoroaliphatic oligomer . . . to [Palazzotto’s] curable composition . . . and would have been motivated to do

so, in order achieve a composition having improved mechanical properties, since such oligomers act in effect as wetting agents in that they promote the wetting of the fillers or reinforcing elements by the resin so as to promote a strong and extensive bond there between and minimize the presence of voids, thereby improving mechanical properties of the resulting composite, as suggested by Olson.

(Non-Final Act. 4–5 (citing Olson 2:14–19)).

The Examiner further determines that the language contained in the wherein clauses of claim 5, which functionally describe the fluorinated surfactant rising to the air-liquid interface of the composition and the respective positions of surfactant-component sub-portions thereafter, is a product-by-process limitation (Non-Final Act. 5).² Therefore, according to the Examiner, determination of patentability is based on the product itself (*id.*). The Examiner concludes that the proposed combination of Palazzotto and Olson “would implicitly achieve the fluorinated surfactant rising to the air-liquid interface of the composition, since Olson teaches employing the fluorosurfactant in an amount of 0.005 to 5 weight percent of the resin composition Olson[,]” which overlaps the surfactant range of 0.05%–5% by

² Although we hold that the limitation at issue is functional, i.e., not a product-by-process limitation, the burden shifts to Appellants in both instances to show that the art does not have the claimed functionality. Where functional characteristics are described or suggested in the prior art, the burden shifts to the applicant to demonstrate that the prior art does not possess the claimed functionality. *In re Hallman*, 655 F.2d 212, 215 (CCPA 1981). “Where . . . the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.” *In re Best*, 562 F.2d 1252, 1256 (CCPA 1977).

weight of the composition disclosed in the Specification (*id.* at 6 (citing Olson 5:67–71); *see also* Spec. ¶ 61).

Appellants argue that Olson is not a proper reference for use in an obviousness rejection for two reasons (Br. 3). First, Appellants argue that “Olson is not the same field of endeavor as the claimed invention” because Olson is directed to “shaped articles of self-supporting structural filled or reinforced resin composites” (*id.* (citing Olson 1:19–20)), whereas Appellants’ claimed invention is directed to “a nano-scale fabrication imprinting material[]” (Br. 3). Second, according to Appellants, Olson is not reasonably pertinent to the problem faced by Appellants because “[t]he nano-fabrication imprinting material of the instant invention . . . does not include fillers or reinforcing elements[]” as taught by Olson (*id.* at 4). Appellants’ position is that “the fillers of Olson . . . [are] incompatible with an imprinting material for nanoscale fabrication of structures” (*id.* at 4–5).

Appellants’ arguments, however, are not persuasive because the recitation of “a nano-scale fabrication imprinting material” in the preamble of claim 5 is merely an intended use limitation, which does not further limit the claimed subject matter. *See, e.g., Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999) (explaining that if the body of the claim fully sets forth the complete invention and the preamble offers no distinct definition of any of the limitations, but merely states the purpose or intended use of the invention, then the preamble is of no significance to claim construction).

Furthermore, we discern no reversible error in the Examiner’s reasoned determination that the ordinary skilled artisan would have been motivated to combine Olson’s fluoroaliphatic oligomer with Palazzotto’s

curable composition when such oligomers act as wetting agents to promote the wetting of fillers. Appellants' arguments are not persuasive because "motivation to modify a prior art reference to arrive at the claimed invention need not be the same motivation that the patentee had." *Alcon Research, Ltd. v Apotex Inc.*, 687 F.3d 1362, 1368 (Fed. Cir. 2012) (citing *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406, 420 (2007) (stating that it is error to look "only to the problem the patentee was trying to solve")). Indeed, Palazzotto teaches use of inert fillers as an adjuvant for its curable composition (*see* Palazzotto ¶ 77).

Given the similarity in the Examiner's modified composition as taught by the prior art to Appellants' composition comprising polymerizable, fluorinated surfactant and photoinitiator components as claimed, we determine that the Examiner was justified in concluding that the composition of Palazzotto in view of Olson renders claim 5 obvious. The Examiner's modified composition would reasonably be believed to exhibit the claimed effects and physical properties (*e.g.*, Ans. 5–8 (finding that the Specification exemplifies (¶¶ 84–88) and Olson teaches (8:67–70) employing the surfactant in an amount of 0.5 wt. %)). *See, e.g., In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) ("[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not. *In re King*, 801 F.2d 1324, 1327, 231 USPQ 136, 138 (Fed. Cir. 1986); *In re Ludtke*, 441 F.2d 660, 664, 169 USPQ 563, 566 (CCPA 1971).").

With respect to separately argued claim 15, the Examiner acknowledges that Palazzotto is silent regarding the requisite viscosity limitation of less than about 20 cP at room temperature (Non-Final Act. 6).

According to the Examiner, however, the applied prior art “teaches all of the claimed reagents, claimed amounts, and substantially similar processes” (*id.* at 7; *see also* Ans. 3–9) and the composition described in the Specification exhibits a viscosity of less than 20 cP (*see* Spec. ¶¶ 29, 51). Thus, the Examiner concludes that “the claimed effects and physical properties, i.e.,] viscosity of the composition at room temperature, would implicitly be achieved by a composition with all the claimed ingredients[]” (Non-Final Act. 7).

On the other hand, Appellants assert that the Examiner has not provided sufficient rationale or evidence demonstrating “that the claimed viscosity is necessarily present based on the disclosure of Palazzotto[]” Br. 9. Appellants’ arguments, however, are not persuasive because the Examiner has provided a reasonable determination that the composition of Appellants and the prior art composition as modified in an obvious way are the same. *See, e.g., In re Spada*, 911 F.2d at 708.

Appellants have not shown the Examiner erred in the obviousness determination of the subject matter of claims 5–17 over the applied prior art. Appellants have not specifically refuted the Examiner’s determination that all components of independent claim 5 and separately argued dependent claim 15 are disclosed by the combination of Palazzotto and Olson (Non-Final Act. 3–7; Ans. 3–9), such that Palazzotto’s curable composition is capable of the claimed functions if combined with Olson’s fluoroaliphatic oligomer (*id.*, Br. *generally*).

Accordingly, we affirm the Examiner’s § 103 rejection of the claims on appeal.

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DECISION

The Examiner's § 103 and nonstatutory double patenting rejections are affirmed.

TIME PERIOD

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