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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* YOSHIHISA OTA, MOTOKO NISHIDA, and  
MASATOSHI IKEUCHI

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Appeal 2019-002317<sup>1</sup>  
Application 14/369,113  
Technology Center 3700

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Before HUBERT C. LORIN, NINA L. MEDLOCK, and  
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant<sup>2</sup> appeals under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 1, 2, 5–13, and 15–17, which constitute all the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Our decision references Appellant’s Appeal Brief (“Appeal Br.,” filed June 21, 2018) and Reply Brief (“Reply Br.,” filed January 28, 2019), and the Examiner’s Answer (“Ans.,” mailed December 3, 2018) and Final Office Action (“Final Act.,” mailed December 22, 2017).

<sup>2</sup> Appellant identifies “LIVEDO CORPORATION” as the real party in interest. Appeal Br. 2.

We AFFIRM.

### CLAIMED INVENTION

Appellant's claimed invention "relates to technology for improving the absorbing performance of an absorbent article such as a disposable diaper and a sanitary napkin." Spec. ¶ 1.

Claims 1 and 7 are the independent claims on appeal.<sup>3</sup> Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A water-absorbent resin powder meeting the following requirements (a) to (e):

- (a) a bulk density: 0.45 g/ml to 0.62 g/ml;
- (b) an absorption speed by a vortex method: 20 seconds to 50 seconds;
- (c) a liquid-passing speed under load: 10 seconds or less;
- (d) a moisture absorption blocking ratio: 5% or less; and
- (e) a water-retaining capacity: 20 g/g to 45 g/g,

wherein the water-absorbent resin powder is obtained by treating, with a surface modifier (B), a crosslinked polymer (A) obtained by polymerizing a monomer composition containing: a water-soluble ethylenically unsaturated monomer (a1) and/or a hydrolyzable monomer (a2) producing the water-soluble ethylenically unsaturated monomer (a1) by hydrolysis; and an internal crosslinking agent (b), and

wherein the surface modifier (B) includes at least one member selected from the group consisting of a carboxy-modified polysiloxane having a carboxy equivalent of from 200 g/mol to 11,000 g/mol, an epoxy-modified polysiloxane having an epoxy equivalent of from 200 g/mol to 11,000 g/mol, and an amino-modified polysiloxane having an amino equivalent of from 200 g/mol to 11,000 g/mol.

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<sup>3</sup> Claim 7 refers to the water-absorbent resin powder of claim 1 as shorthand.

## REJECTION

Claims 1, 2, 5–13, and 15–17 are rejected under 35 U.S.C. § 103 as unpatentable over Ishizaki (WO 2005/092955 A1, pub. Oct. 6, 2005) and Fujimura (US 2011/0301560 A1, pub. Dec. 8, 2011).

## ANALYSIS

Appellant argues claims 1, 2, 5–13, and 15–17 as a group (*see* Appeal Br. 5–6; Reply Br. 2–6). We select independent claim 1 as representative. Claims 2, 5–13, and 15–17 stand or fall with independent claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

We are not persuaded by Appellant’s argument that the Examiner erred in rejecting independent claim 1 under 35 U.S.C. § 103(a) because the combination of Ishizaki and Fujimura fails to disclose or suggest the subject matter of claim 1 (*see* Appeal Br. 18–23; Reply Br. 5–7).

Instead, we agree with, and adopt, the Examiner’s findings and rationales as our own (*see* Final Act. 3–6; Ans. 7–9). We add the following discussion for emphasis.

In rejecting claim 1, the Examiner finds that Ishizaki discloses all of the claim limitations except that “the water-retaining capacity is 20g/g to 45 g/g and that the surface modifier is selected from the listed group” (Final Act. 4). The Examiner finds that Fujimura discloses a surface modifier as claimed and the Examiner determines that:

It would have been obvious to one of ordinary skill in the art to substitute the surface modifier as taught by Ishizaki with the specific surface modifier(s) as taught by Fujimura in order to provide the article with an even absorption ratio and excellent absorption performance thereby reducing skin irritation as taught by Fujimura in at least [paragraphs 21 and 22].

Final Act. 6.

Appellant argues that Fujimura's hydrophobic substance (C) is not a surface modifier (Appeal Br. 5). Instead, Appellant contends that Fujimura discloses inorganic powder (D) as a surface modifier (*id.* at 6). Thus, Appellant contends that one of ordinary skill in the art would have substituted Fujimura's inorganic powder for Ishizaki's surface modifier, and would have had no motivation to use Fujimura's hydrophobic substance as a surface modifier as proposed by the Examiner (*id.*).

Responding to Appellant's argument in the Answer, the Examiner points out that paragraph 105 of Fujimura "specifically states that the content of the hydrophobic substance (C) is present on the surface of the absorbent resin particle" (Ans. 9).

In paragraph 105, Fujimura discloses:

From the viewpoints of skin irritation resistance of an absorbent article and leakage resistance of an absorbent article, the content of the hydrophobic substance (C) present on the surface of the absorbent resin particle is usually 0.001 to 1.0% by weight, preferably 0.005 to 0.5% by weight, more preferably 0.01 to 0.3% by weight, and particularly preferably 0.01 to 0.1% by weight based on the weight of the crosslinked polymer (A1).

Appellant does not address this disclosure in the Reply Brief.

In view of Fujimura's teaching that the hydrophobic substance (C) is present on the surface of the absorbent resin particle, we are not persuaded of error in the Examiner's finding that Fujimura discloses a surface modifier as claimed.

We also are not persuaded of error by Appellant's argument that the Examiner's proposed combination of Ishizaki and Fujimura is improper

because it is based on the impermissible use of hindsight (Appeal Br. 6). In this regard, we note the Examiner provides articulated reasoning with some rational underpinning to support the obviousness determination (*see* Final Act. 6 (citing paragraphs 21 and 22 of Fujimura)). *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

For the first time in the Reply Brief, Appellant argues that “one of ordinary skill in the art would not apply the hydrophobic substance of Fujimura to the water absorbing agent of Ishizaki” because doing so would reduce the absorption speed of the material, which would cause discomfort to the user (Reply Br. 2–6). Appellant reproduces Figure 1 of Fujimura and states that “Example 1 of Fujimura has an absorption speed (Vortex method) of 110 seconds” (*id.* at 5). According to Appellant:

It would be understood by those skilled in the art that the absorption speed of absorbent resin particle is actually reduced by the presence of the hydrophobic substance in the inside of the particle and on the surface thereof.

Therefore, if the water absorbing agent of Ishizaki included the hydrophobic substance of Fujimura, the absorption speed (Vortex method) of the water absorbing agent would be greater than 60 seconds.

(*Id.* at 5–6). For the same reasons, Appellant argues that the combination of Ishizaki and Fujimura fails to disclose “(b) an absorption speed by a vortex method: 20 seconds to 50 seconds,” as called for in claim 1 (*id.* at 6).

Initially, we note that the arguments presented by Appellant in the Reply Brief are untimely because they were not presented in the Appeal Brief, and Appellant has not attempted to show good cause for presenting them for the first time in the Reply Brief. *See* 37 C.F.R. § 41.41(b)(2).

Although we note that the Examiner did not have an opportunity to respond to those arguments in the Examiner's Answer, we will nevertheless address them here.

Appellant's arguments are not persuasive of Examiner error at least because the Appellant's conclusion that the Examiner's proposed combination would result in a material having an absorption speed greater than 60 seconds is not adequately supported by record evidence. Appellant does not dispute the Examiner's finding that Ishizaki discloses, on page 43, an absorbing agent having an absorption speed within the claimed range, i.e., "20 seconds to 50 seconds" (*see* Final Act. 3). Nor can Appellant reasonably dispute this finding.<sup>4</sup> Rather, Appellant contends that the Examiner's proposed modification of Ishizaki would result in an absorbing agent having an absorption speed "greater than 60 seconds" (Reply Br. 6). But even if Appellant is correct that using the hydrophobic substance of Fujimura as a surface modifier would reduce the absorption speed of Ishizaki's absorbing agent by some amount, Appellant offers no evidence to quantify its conclusion that the proposed modification would result in an absorbing agent having an absorption speed "greater than 60 seconds." Mere conclusory statements that are unsupported by factual evidence are entitled to little probative weight. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). On this point, we do not see how Appellant's discussion (Reply Br. 4–6) of

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<sup>4</sup> *See, e.g.*, Ishizaki, 43:20–23 ("Absorption speed of a water absorbing agent of the present invention is shorter than 60 seconds, preferably 1 to 55 seconds, more preferably 2 to 50 seconds and most preferably 2 to 30 seconds.")

Fujimura's Example 1 is germane to the rejection. The Examiner does not propose to replace Ishizaki's absorbing agent with the absorbent resin particles of Comparative Example 1 of Fujimura. Rather, as noted above, the Examiner proposes "to substitute the surface modifier as taught by Ishizaki with the specific surface modifier(s) as taught by Fujimura" (Final Act. 6). We further note that Fujimura discloses, in paragraph 105 (reproduced above) that "the content of the hydrophobic substance (C) present on the surface of the absorbent resin particle is usually 0.001 to 1.0% by weight." Appellant has not shown that using such a small percentage by weight of a hydrophobic substance as a surface modifier would result in any particular quantified reduction in absorption speed, much less an absorption speed greater than 60 seconds in particular. As such, Appellant's argument that the absorption speed of the Examiner's proposed modification of Ishizaki's absorption agent "would be greater than 60 seconds" amounts to attorney argument unsupported by record evidence.

In view of the foregoing, we sustain the Examiner's rejection of claim 1 under 35 U.S.C. § 103(a). We also sustain the Examiner's rejection of claims 2, 5-13, and 15-17, which fall with claim 1.

### 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, 2, 5-13, 15-17	103(a)	Ishizaki, Fujimura	1, 2, 5-13, 15-17	

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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