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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* JIN-E SHIN,  
TEODORO RIVERA, RACHEL L. JORDAN,  
BRYAN W. HITCHCOCK, WILLIAM B. SMALL II,  
JEFFREY D. MATHEWS, SUNDAR BALA, and MONGJAN HSIEH

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Appeal 2019–003412  
Application 15/394,949  
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>

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>2</sup> appeals from the Examiner’s decision to reject claims 1–22 of Application 15/394,949. *See* Final Act. 1; Appeal Br. 4. We have jurisdiction under 35 U.S.C. § 6.

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<sup>1</sup> In our Decision, we refer to the Specification filed December 30, 2016 (“Spec.”) of Application 15/394,949 (“the ’949 Application”); the Final Office Action dated June 26, 2018 (“Final Act.”); the Appeal Brief filed November 26, 2018 (“Appeal Br.”); the Examiner’s Answer dated February 21, 2019 (“Ans.”); and the Reply Brief filed March 28, 2019 (“Reply Br.”).

<sup>2</sup> We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Tropicana Products, Inc. as the real party in interest. Appeal Br. 2.

For the reasons set forth below, we AFFIRM.

## BACKGROUND

The '949 Application relates to a beverage comprising a liquid and a co-product from pomace resulting from juice extraction. Spec. ¶ 6. The '949 Application describes that juice extraction excludes portions of a whole fruit or vegetable that would be consumed if the fruit or vegetable were to be eaten in its whole form. *Id.* at ¶ 3. Fruit and vegetable juices are said to lack nutrients, such as fiber, phytonutrients, and vitamins, which are contained in these excluded portions. *Id.* The '949 Application describes that use of co-products obtained from fruit or vegetable juice extraction enhances the beverage's viscosity and fermentability, thereby improving metabolic and gut health. *Id.* at ¶¶ 2, 5.

Claim 1 is representative of the '949 Application's claims and is reproduced below from the Claims Appendix of the Appeal Brief with key limitations emphasized.

1. A beverage comprising:
  - a liquid;
  - a co-product formed from a pomace resulting from juice extraction, wherein the co-product further comprises:
    - phytonutrients from the pomace;
    - a number average particle size between 0.1 and 2000 microns;*
    - a peel and seed content between 0.01[]% and 80% by weight; and
    - dietary fiber; and

*wherein the beverage comprises a viscosity between 1 – 100,000 cps at 25°C.*

Appeal Br. 14 (Claims Appendix).

## REFERENCES

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

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Gyllang et al. (“Gyllang”)	US 4,649,051	Mar. 10, 1987
Cagley et al. (“Cagley”)	US 5,137,744	Aug. 11, 1992
Paeschke et al. (“Paeschke”)	US 2012/0135109 A1	May 31, 2012

M.J. Fallourd et al., “1—Ingredient selection for stabilisation and texture optimisation of functional beverages and the inclusion of dietary fibre,” in *Functional and Speciality Beverage Technology*, Woodhead Publishing Series in Food Science, Technology and Nutrition, edited by P. Paquin (Woodhead Publishing, 2009), p. 24 (hereinafter “Paquin”).

## REJECTIONS

The Examiner maintains<sup>3</sup> the following rejections:<sup>4</sup> (1) claims 1–3 and 7–16 under 35 U.S.C. § 103 as unpatentable over Paeschke in view of

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<sup>3</sup> The Examiner has withdrawn the rejections of: (i) claims 17–22 under 35 U.S.C. § 112(a) as failing to comply with the written description requirement; and (ii) claims 1–22 under 35 U.S.C. § 112(b) as indefinite. Ans. 4–7.

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

Paquin and (2) claims 4–6 and 17–22 under 35 U.S.C. § 103 as unpatentable over Paeschke, in view of Gyllang, and further in view of Cagley. Final Act. 6–17.

## DISCUSSION

### *Ground 1: Rejection of claims 1–3 and 7–16 as obvious over Paeschke in view of Paquin*

The Examiner determines that claims 1–3 and 7–16 would have been rendered obvious over Paeschke in view of Paquin. Final Act. 6–15.

Appellant argues the claims as a group. Appeal Br. 10–12. We select claim 1 as representative. Claims 2, 3, and 7–16 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Appellant argues that “the Examiner has not asserted a prima facie obviousness rejection of claim 1 because the Examiner has not considered” two limitations recited therein: (i) a co-product comprising “a number average particle size between 0.1 and 2000 microns” and (ii) “a beverage comprises a viscosity between 1 – 100,000 cps at 25°C.” Appeal Br. 10–12, 14 (Claims App).

Appellant does not contest the Examiner’s findings with respect to the obviousness of the remaining limitations recited in claim 1. *See id.* at 10–12; Final Act. 7, 9–10. Accordingly, our discussion regarding Ground 1 focuses on whether Paeschke in view of Paquin would have rendered the disputed limitations obvious.

#### *A. The claimed co-product comprising “a number average particle size between 0.1 and 2000 microns”*

Appellant argues, “the Examiner’s interpretation of Appellant’s claim fails to consider the presence of any co-product, or that the co-product is

formed from particles having a number average particle size between 0.1 and 2000 microns.” Appeal Br. 12.

The Examiner, however, makes reasoned findings that Paeschke’s process for providing a beverage from juice extraction byproducts discloses or suggests forming the disputed co-product from particles having a number average particle size between 0.1 and 2000 microns. In particular, the Examiner finds “Paeschke teaches [a] variety of particle sizes in the composition, including: between 1 micron and 50 cm (1 to 500,000 microns) . . . , which encompasses the claim[ed] particles having a number average of between 0.1 and 2000 microns.” Final Act. 7 (citing Paeschke ¶ 49). The Examiner concludes that

it would have been obvious to one with skill in the art at the time of the invention to determine the optimal value for the particle size used in the process of Paeschke, through routine experimentation with physical reduction (i.e. cutting, shredding, slicing, grinding, shearing, extruding, homogenizing, pulverizing, comminuting, subjecting to cavitation (e.g., via ultrasonic frequency), pressurizing, and combinations thereof) and varied byproduct compositions, to impart the beverage with the desired particle sizes associated with the bi-product [sic].

Final Act. 9 (citing Paeschke ¶¶ 48, 49).

According to Appellant, the Examiner finds that Paeschke merely teaches “that at least one dimension of a particle could fall within the asserted range.” Reply Br. 2. Therefore, Appellant argues, Paeschke’s disclosure “is not dispositive on the number average particle size.” *Id.*; see Paeschke ¶ 49.

We are not persuaded by this argument because it ignores the Examiner’s findings and conclusions that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Paeschke’s

method to attain the desired byproduct particle size by: (i) varying the types of byproduct components and (ii) selecting an appropriate particle size reduction method. Final Act. 9. As the Examiner explains, one of ordinary skill in the art would have had a reasonable expectation of success because Paeschke teaches that the byproduct's particle size will vary depending on: (i) the particular byproduct type and (ii) methods to reduce the particle size by physical force. *Id.* at 7–9.

Paeschke teaches passing fruit and vegetable extraction byproduct through a 20 mesh filter and adding the filtered byproduct liquid to a beverage. Paeschke ¶¶ 62, 93. The disclosed use of a 20 mesh filter would have provided particles with a size of 841 microns or less. *See Mesh to Micron Conversion Chart*, accessed December 19, 2019, <https://www.skylighter.com/blogs/fireworks-information/mesh-to-micron-conversion-chart>. In other words, Paeschke's filtration method further suggests forming the claimed particles having a number average size of between 0.1 and 2000 microns.

We are not persuaded that the Examiner fails to consider the first of two disputed limitations recited in claim 1. We, furthermore, find that Appellant's assertion fails to identify reversible error in the Examiner's findings.

*B. The claimed "beverage comprises a viscosity between 1 – 100,000 cps at 25°C"*

The Examiner finds that Paeschke describes that the viscosity of the juice extraction byproduct is between 500 and 9,000 cp, thereby overlapping

the claimed viscosity of between 1 and 100,000 cps.<sup>5</sup> Final Act. 10 (citing Paeschke Fig. 5). The Examiner finds that Paeschke further describes the fiber’s viscosity as a result effective variable, which can be altered by the fiber’s molecular weight. Final Act. 12 (citing Paeschke ¶ 19).

Although Paeschke is silent with respect to modifying the fluid’s viscosity, the Examiner finds “Paeschke opens the door” to such modifications “by teaching that the beverages disclosed may have any of numerous different specific formulations or constitutions, including formulations that vary the mouthfeel.” Final Act. 11 (citing Paeschke ¶¶ 67, 68).

The Examiner finds Paquin teaches that “some types of hydrocolloids produce a shear thickening effect which results in a higher viscosity (e.g. coated mouth feel), while other produce a shear thinning effect which results in a lower viscosity (e.g. non-coated mouth feel).” Final Act. 11. According to the Examiner, Paquin teaches that “shear thickening of a juice beverage is result effective based on the type of hydrocolloid selected.” *Id.* The Examiner concludes:

it would have been obvious to one with skill in the art at the time of the invention to determine the optimal value for the viscosity (i.e. shear thickening) and type of hydrocolloid used in the process of Paeschke in view of Paquin, through routine experimentation, to impart the material with the desired viscosity properties, as claimed, associated with juice beverage

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<sup>5</sup> Appellant appears to be using “cps” as an abbreviation for “centipoises,” i.e. the plural of “centipoise.” See Appeal Br. 14–16 (Claims App.). This interpretation is supported by the fact that “centipoises” is spelled out in claims 10 and 17–22, which depend from claim 1. “Centipoises” is commonly abbreviated as “cP” or “cp,” which is the abbreviation used by the Examiner. See Final Act. 10.

because the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness.

*Id.* The Examiner finds that it would have been reasonable for one of ordinary skill in the art to expect that a beverage produced from the use of shear force to adjust beverage viscosity would have resulted in a viscosity of between 1 and 100,000 cps. *Id.* at 12.

Appellant argues the Examiner’s interpretation of claim 1 “fails to consider Appellant’s claimed viscosity limitation.” Appeal Br. 12.

This argument of Appellant is not persuasive of reversible error. More substantive arguments are required in an appeal brief to overcome a rejection. *In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) (holding that the Board reasonably interpreted 37 C.F.R. § 41.37 (c)(1)(vii) as requiring “more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art”). Furthermore, we find that the Examiner *has* considered Appellant’s claimed viscosity limitation. Final Act. 10–12; Ans. 20–21.

Appellant argues the Examiner’s finding “that Paeschke opens the door to modify the viscosity of the final product is untrue to the extent that it is . . . used to justify increasing the viscosity of a beverage” via Paquin’s teachings because “Paeschke specifically states that its low molecular weight fiber should not result in a concomitant significant increase in viscosity.” Reply Br. 2 (citing Paeschke ¶ 62). Appellant asserts that the Examiner’s proposed modification would have impermissibly changed Paeschke’s principle of modulating viscosity through varying the molecular weight of

fibers with Paquin’s method of modulating viscosity by varying hydrocolloid content. Reply Br. 2.

However, the teachings of Paeschke alone are sufficient to have rendered the disputed beverage’s viscosity between 1 – 100,000 cps obvious. Appellant does not contest the Examiner’s finding that Paeschke’s viscosity of the juice extraction byproduct is between 500 and 9,000 cp, which is encompassed by the broadly claimed viscosity range of between 1 and 100,000 cps. *See* Final Act. 10 (citing Paeschke Fig. 5). Moreover, each sample in Paeschke’s Tables 1 and 2 provides viscosity readings within the claimed viscosity range. Paeschke ¶¶ 91–97. Furthermore, Paquin teaches that hydrocolloids provide a viscosity value of only 30 cps, which is also within the broadly claimed range. Paquin 24 (hydrocolloids provide “higher viscosities (i.e. 30 mPa s).”). For purposes of § 103, a reference is prior art for all that it discloses. *Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991). 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. *In re Fritch*, 972 F.2d 1260, 1264–65 (Fed. Cir. 1992).

On the record before us, Appellant’s contention that the Examiner’s proposed modification impermissibly changes Paeschke’s principle of operation is not persuasive of reversible error by the Examiner in view of Paquin’s relatively modest viscosity modulation. *See* Reply Br. 2.

We sustain the rejection of claim 1 as obvious over Paeschke in view of Paquin. For the same reasons, we sustain the rejection of claims 2, 3, and 7–16 as obvious over the same combination of references.

*Ground 2: Rejection of claims 4–6 and 17–22 as obvious over Paeschke in view of Gyllang, and further in view of Cagley*

The Examiner finds that claims 4–6 and 17–22 are unpatentable over Paeschke in view of Gyllang, and further in view of Cagley. Final Act. 15–17.

Appellant merely argues that the Examiner’s assertions do not cure the deficiencies in Ground 1 (obviousness over Paeschke and Paquin). Appeal Br. 12.

Having found no deficiencies in Paeschke and Paquin in Ground 1, *supra*, we sustain the rejection of claims 4–6 and 17–22 as obvious over Paeschke in view of Gyllang, and further in view of Cagley.

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, 7–16	103	Paeschke, Paquin	1–3, 7–16	
4–6, 17–22	103	Paeschke, Gyllang, Cagley	4–6, 17–22	
<b>Claims Rejected</b>			1–22	

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

<b>Notice of References Cited</b>	Application/Control No. 15/394,949	Applicant(s)/Patent Under Patent Appeal No. 2019-003412	
	Examiner	Art Unit 1793	Page 1 of 1

**U.S. PATENT DOCUMENTS**

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**NON-PATENT DOCUMENTS**

*	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
U	Mesh to Micron Conversion Chart, accessed December 19, 2019.
V	
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X	

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## Mesh to Micron Conversion Chart

U.S. MESH	INCHES	MICRONS	MILLIMETERS
3	0.2650	6730	6.730
4	0.1870	4760	4.760
5	0.1570	4000	4.000
6	0.1320	3360	3.360
7	0.1110	2830	2.830
8	0.0937	2380	2.380
10	0.0787	2000	2.000
12	0.0661	1680	1.680
14	0.0555	1410	1.410
16	0.0469	1190	1.190
18	0.0394	1000	1.000
20	0.0331	841	0.841
25	0.0280	707	0.707
30	0.0232	595	0.595
35	0.0197	500	0.500
40	0.0165	400	0.400
45	0.0138	354	0.354
50	0.0117	297	0.297
60	0.0098	250	0.250
70	0.0083	210	0.210
80	0.0070	177	0.177
100	0.0059	149	0.149
120	0.0049	125	0.125
140	0.0041	105	0.105
170	0.0035	88	0.088
200	0.0029	74	0.074
230	0.0024	63	0.063
270	0.0021	53	0.053
325	0.0017	44	0.044
400	0.0015	37	0.037
625	0.0008	20	0.020
1250	0.0004	10	0.010
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