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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* TILO HÜHN and ROLAND LAUX

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Appeal 2018-006950  
Application 13/141,846  
Technology Center 1700

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Before N. WHITNEY WILSON, CHRISTOPHER C. KENNEDY and  
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

WILSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant<sup>1</sup> appeals under 35 U.S.C. § 134(a) from the Examiner's January 13, 2017 decision finally rejecting claims 2–6, 9–22, 24, 25, and 27 (“Final Act.”). We have jurisdiction over the appeal under 35 U.S.C. § 6(b). An oral hearing was held on September 12, 2019, a transcript of which will be made part of the record.

We reverse.

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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. Appellant identifies ZUERCHER HOCHSCHULE FUER ANGEWANDTE WISSENSCHAFTEN, as the real party in interest (Appeal Br. 3).

### CLAIMED SUBJECT MATTER

Appellant's disclosure relates to a method for processing coffee beans (Abstract). The claimed method involves a series of specific steps, including a step in which a water/oil phase comprising particles, an oil phase, and a water phase is produced (Appeal Br. 5). This water/oil phase is then separated into three separate portions: (1) the particles, (2) an oil phase comprising lipids with hydrophobic aroma components, and (3) a water phase comprising water-soluble flavors, water soluble polyphenols and fats or lipids adapted to be maintained in the water phase (*id.*). Details of the claimed method are set forth in claim 2, which is reproduced below from the Claims Appendix to the Appeal Brief (*emphasis added*):

2. A method of processing coffee beans comprising:
  - selecting and blending whole, unroasted coffee beans;
  - roasting the whole, unroasted coffee beans to obtain whole, roasted coffee beans;
  - blending the whole, roasted coffee beans with water and under heat;
  - subsequently, breaking or cracking the whole roasted coffee beans to obtain broken or cracked coffee beans, or breaking or cracking the whole roasted coffee beans and adding water to form a suspension or mixture;
  - grinding or milling the broken or cracked coffee beans, the suspension or mixture to obtain ground or milled coffee beans;
  - performing a first extraction on the ground or milled coffee beans with heat and under pressure;
  - subsequently, performing a first vacuum de-aeration or evaporation step on the coffee beans on which said first extraction was performed;
  - subsequently, recovering aroma components contained in vapor expelled in said first vacuum de-aeration or evaporation step;

separating solid material from a water/oil phase in a first decanting step, wherein the water/oil phase comprises: particles, an oil phase, and a water phase;

*separating the water/oil phase into the particles, the oil phase comprising lipids with hydrophobic aroma components and the water phase comprising water-soluble flavors, water soluble polyphenols and fats or lipids adapted to be maintained in the water phase, to obtain one or more coffee extraction products, wherein at least one of the coffee extraction products comprises the fats or lipids adapted to be maintained in the water phase;*

subjecting at least the coffee extraction product comprising the fats or lipids adapted to be maintained in the water phase to a second evaporation in which excessive water is evaporated;

recovering flavor compounds evaporated in said second evaporation together with the water; and

subsequently lyophilizing at least the coffee extraction product comprising the fats or lipids adapted to be maintained in the water phase to obtain, after adding the aroma components recovered in the first vacuum de-aeration or evaporation step and/or the flavor compounds recovered in the second evaporation step, coffee products.

## REJECTIONS

1. Claims 2–6, 9–16, 21, 22, 24, and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Goto<sup>2</sup> in view of Bach.<sup>3</sup>

2. Claim 17 is rejected under 35 U.S.C. § 103(a) as unpatentable over Goto in view of Bach and Hawes.<sup>4</sup>

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<sup>2</sup> Goto et al., US 2007/0231443 A1, published October 4, 2007.

<sup>3</sup> Bach et al., US 3,652,292, issued March 28, 1972.

<sup>4</sup> Hawes, et al., US 4,474,820, issued October 2, 1984.

3. Claims 18 and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Goto in view of Bach and Hisamori.<sup>5</sup>

4. Claim 19 is rejected under 35 U.S.C. § 103(a) as unpatentable over Goto in view of Bach and Sakano.<sup>6</sup>

5. Claim 27 is rejected under 35 U.S.C. § 103(a) as unpatentable over Goto in view of Bach and Feldbrugge.<sup>7</sup>

### DISCUSSION

We decide this appeal based on limitations in independent claim 2, common to all of the appealed claims. Accordingly, we focus our analysis on the rejection of claim 2 over Goto and Bach, and in particular, the limitation *separating the water/oil phase into the particles, the oil phase comprising lipids with hydrophobic aroma components **and the water phase comprising water-soluble flavors, water soluble polyphenols and fats or lipids adapted to be maintained in the water phase.***

The Examiner finds that this limitation is suggested by Goto because Goto discloses similar steps leading up to this step:

Modified Goto does not explicitly disclose[] the lipid water/oil phase into the fine particles, the oil phase comprising lipids with hydrophobic aroma components and the water phase comprising water-soluble flavors and water-soluble polyphenols, however modified Goto teaches similar materials, roasted coffee beans and water in similar manner, roasting, grinding, extracting, first decanting step and second separating step as claimed; *hence Goto is expected to contain similar*

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<sup>5</sup> Hisamori, et al., JP 2003-204757, published July 22, 2003.

<sup>6</sup> Sakano, et al., WO 95/11595, published May 4, 1995.

<sup>7</sup> Feldbrugge et al., US 3,482,987, issued December 9, 1969.

*materials*, discloses the lipid water/oil phase into the fine particles, the oil phase comprising lipids with hydrophobic aroma components *and the water phase comprising water-soluble flavors and water soluble polyphenols as cited.*

(Final Act. 5, emphasis added).

However, as persuasively argued by Appellant (*see, e.g.* Appeal Br. 7–8, Reply Br. 2–6), the water phase produced by Goto’s process is explicitly described as being free of oils (i.e. fats and lipids) which are required to be in the water phase of the claimed process. In particular, Goto describes the generation of a “coffee extract” (which corresponds to the claimed water phase) through a centrifugation step (Goto ¶ 66) “having only a little content of coffee oil,” (Goto ¶ 67), but then goes on to recite that the extract is subjected to a fine filtration step in order to remove “coffee oil” (corresponding to the claimed fats and lipids) which cannot be removed by the centrifugation separation which created the extract (Goto ¶ 70).

Although the Examiner finds (Ans. 11) that the precise wording in Paragraph 70 might suggest that removal of coffee oil from the coffee extract is optional because Goto states that the fine filtration “is performed in order to remove the fine powder *or* coffee oil” (Goto, ¶ 70, emphasis added), we conclude that, when read in the context of Goto’s entire disclosure, the use of the word “or” in that phrase is used to convey that the fine filtration step removes whichever of fine powder or coffee oil remains in the coffee extract after the centrifugation step. This interpretation is consistent with Goto’s statement that the combination of the centrifugation and fine filtration steps “remove[s] the oil component” from the coffee extract (Goto ¶ 34).

The Examiner also cites a passage in Goto — which states that “the aroma-containing clarified and concentrated coffee extract obtained according to the present invention contains almost no coffee oil component” — in support of his finding that Goto teaches a coffee extract (corresponding to the claimed water-phase) which contains some coffee oil component (Ans. 11, citing Goto ¶ 95). However, as explained by Appellant (Reply Br. 3–6), the full context of Goto suggests to a person of skill in the art that Goto seeks removal of all of the coffee oil from the coffee extract, but uses the phrase “almost no coffee oil extract” as a concession that while complete removal of the coffee oil is sought (*see* Goto ¶ 95 (“the coffee oil-containing liquid is separated from the coffee extract in step (d)”); *see also* Goto ¶¶ 128 and 133 (examples in which “removal” of the coffee oil is described), it may be impossible to fully verify this because of measuring limits or other reasons.

The Examiner has the initial burden of establishing a *prima facie* case of obviousness based on an inherent or explicit disclosure of the claimed subject matter under 35 U.S.C. § 103. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992) (“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.”). To establish a *prima facie* case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). In this instance, the preponderance of the evidence of record does not support the Examiner’s finding that Goto teaches a step in which a water extract containing fats or lipids adapted to be maintained in

the water phase is created. Accordingly, we reverse the rejection of claim 2. We also reverse the rejections of the remaining claims on appeal, each of which depends from claim 2, for the same reason.

CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
2-6, 9-16, 21, 22, 24, and 25	§ 103(a) Goto and Bach		2-6, 9-16, 21, 22, 24, and 25
17	§ 103(a) Goto, Bach, and Hawes		17
18 and 20	§ 103(a) Goto, Bach, and Hisamori		18 and 20
19	§ 103(a) Goto, Bach, and Sakano		19
27	§ 103(a) Goto, Bach, and Feldbrugge		27
<b>Overall Outcome</b>			2-6, 9-22, 24, 25, and 27

REVERSED