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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KARL RAGNARSSON, DANIEL T. PIORKOWSKI, and
KATHERINE JOSEPHINE MEYERS¹

Appeal 2018-008560
Application 13/791,390
Technology Center 1700

Before KAREN M. HASTINGS, JEFFREY B. ROBERTSON, and
CHRISTOPHER C. KENNEDY, *Administrative Patent Judges*.

KENNEDY, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 12–31. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

BACKGROUND

The subject matter on appeal relates to liquid beverage concentrates. *E.g.*, Spec. ¶ 2; Claim 12. Claim 12 is reproduced below from page 18 (Claims Appendix) of the Appeal Brief:

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. The Appellant identifies the real party in interest as Kraft Foods Group Brands LLC. *See* App. Br. 3.

12. A flavored liquid beverage concentrate having a pH of about 1.8 to about 3.1, the concentrate comprising:
 - at least about 40 percent water;
 - about 8 to about 60 percent acidulant;
 - about 0.5 to about 40 percent flavoring; and
 - a viscosity increasing agent in an amount effective to provide a Newtonian liquid viscosity of about 7.5 to about 100 cP as measured using Spindle S00 at 10 rpm at 20°C or a non-Newtonian liquid viscosity of about 7.5 to about 10,000 cP as measured using Spindle S00 at 10 rpm at 20°C,wherein the concentrate has a concentration such that when diluted with a potable liquid at a ratio of about 1:50 to about 1:160 to provide a beverage, the concentrate delivers about 0.01 to 0.8 percent acid by weight of the beverage.

REJECTIONS ON APPEAL

The claims stand rejected as follows:

1. Claims 12–23 under 35 U.S.C. § 112, ¶ 2 as indefinite;
2. Claims 12–31 under 35 U.S.C. § 102(e) as anticipated by Ragnarsson (US 8,293,299 B2, issued Oct. 23, 2012);
3. Claims 12–17, 20–28, and 31 under 35 U.S.C. § 103(a) as unpatentable over Nakel (US 4,737,375, issued Apr. 12, 1988);
4. Claim 23 under 35 U.S.C. § 103(a) as unpatentable over Nakel and Braun (US 4,830,862, issued May 16, 1989);
5. Claims 25–28 under 35 U.S.C. § 103(a) as unpatentable over Nakel and Zablocki (US 6,139,895, issued Oct. 31, 2000);
6. Claim 23 under 35 U.S.C. § 103(a) as unpatentable over Nakel and Lee (US 7,572,471 B2, issued Aug. 11, 2009);

7. Claims 18 and 29 under 35 U.S.C. § 103(a) as unpatentable over Nakel and Given (US 8,431,178 B2, issued Apr. 30, 2013 from an application published March 15, 2012);

8. Claims 12–17, 19–28, 30, and 31 under 35 U.S.C. § 103(a) as unpatentable over Nakel and Skaggs (US 2007/0264312 A1, published Nov. 15, 2007);

9. Claim 23 under 35 U.S.C. § 103(a) as unpatentable over Nakel, Skaggs, and Braun;

10. Claims 12–31 under 35 U.S.C. § 103(a) as unpatentable over Burkes (US 5,422,128, issued June 6, 1995).

ANALYSIS

After review of the cited evidence in the appeal record and the opposing positions of the Appellant and the Examiner, we determine that the Appellant has not identified reversible error in Rejections 3–10. Accordingly, we affirm those rejections for reasons set forth below, in the Non-Final Action dated June 1, 2017 (“Office Act.”), and in the Examiner’s Answer. *See generally* Office Act.; Ans. However, for reasons set forth below, we reverse as to Rejections 1 and 2.

Rejection 1

The legal standard for definiteness in prosecution is whether a claim reasonably apprises those of skill in the art of its scope. *In re Warmerdam*, 33 F.3d 1354, 1361 (Fed. Cir. 1994).

The Examiner concludes that the term “at least about 40 percent water” in claim 12 is indefinite. Ans. 4. The Examiner states that the terms “at least” and “about” “are deemed to be appropriate claim language,” but

that the combination of those terms to form “at least about” “does not clearly recite a range.” *Id.* In the Response to Argument section of the Answer, the Examiner states that “it is well established the phrase is ambiguous.” *Id.* at 23.

We discern no basis in the record to conclude that it is “well established the phrase is ambiguous.” *See id.* The Examiner appears to be relying on a *per se* rule, rather than meaningfully explaining how or why the term is unclear. *See id.* at 4, 23. We are not aware of a *per se* rule that supports the rejection. The section of the MPEP cited by the Examiner, *see id.* at 23, cites a case in which the term “at least about” was held indefinite. *See* MPEP § 2173.05(b) (citing *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200 (Fed. Cir. 1991)). Neither the MPEP nor the cited case, however, indicates that the term “at least about” is always or frequently indefinite. *See id.* On the contrary, the MPEP states that the term was held indefinite in *Amgen* because “there was close prior art and there was nothing in the specification, prosecution history, or the prior art to provide any indication as to what range of specific activity is covered by the term ‘about.’” *Id.* (emphasis added).

In this case, the Examiner expressly finds that the terms “at least” and “about” are independently “appropriate,” but provides insufficient reasoning to conclude that the term “at least about” is unclear.

The Appellant argues that a person of ordinary skill would understand the term to mean that “the minimum of the claimed range of water is ‘about 40 percent,’” and that “there is no difference between the rejected phrase and the phrase ‘about 40 percent to 100 percent water.’” App. Br. 11. On this record, we discern no reason to reject the Appellant’s position.

Because the Examiner has not adequately established that the term “at least about 40 percent water” is unclear, we reverse the Examiner’s rejection of claim 12. Because the remaining claims subject to Rejection 1 depend from claim 12, and the Examiner identifies no other indefinite term in those claims, we likewise reverse the Examiner’s rejection of claims 13–23.

Rejection 2

In rejecting claim 12 as anticipated by Ragnarsson, the Examiner fails to identify an ingredient of Ragnarsson’s composition that corresponds to the claimed “viscosity increasing agent.” *See* Office Act. 6–7 (failing to identify a “viscosity increasing agent”). In the Appeal Brief, the Appellant identifies that apparent deficiency in the Examiner’s rejection. *See* App. Br. 16 (“the Examiner does not address the fact that each of independent claims 12, 24, and 31 requires ‘a viscosity increasing agent’”). In the Answer, the Examiner fails to address that deficiency and instead asserts that the claimed viscosity itself (as opposed to a viscosity increasing agent) would have been inherent in Ragnarsson’s composition. *See* Ans. 5–6, 30–31.

A “viscosity increasing agent” is an affirmatively recited ingredient of the composition of claim 12. Because the Examiner has failed to identify an ingredient in Ragnarsson’s composition that meets that requirement of claim 12, the Examiner fails to establish anticipation by Ragnarsson. *See 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.”). We therefore reverse the rejection.

Because all remaining claims subject to Rejection 2 likewise require a “viscosity increasing agent,” either directly or through claim dependency, we likewise reverse the Examiner’s rejection of claims 13–31.

Rejections 3–9

The Appellant argues Rejections 3–9, all of which involve Nakel as the primary reference, as a group. *See* App. Br. 11–13. We select claim 12 as representative, and the remaining claims subject to Rejections 3–9 will stand or fall with claim 12.

The Examiner finds that Nakel teaches a beverage concentrate that includes the ingredients required by claim 12 in amounts that overlap those recited by claim 12, except that Nakel teaches an acidulant concentration “of 0.24 to 5.25%” rather than the claimed “about 8 to about 60 percent.” *Ans. 7.* However, the Examiner finds that “‘about’ 8% is embraced as 5.25% is about 8%.” *Id.* In the Response to Argument section of the Answer, the Examiner also indicates that acidulant concentration is a result-effective variable; that the “claimed range is wide (i.e. about 8%–60%), adjustable and optimizable”; and that “Appellants haven’t shown there is criticality or unexpected results from adjusting the amount of acid known to affect pH.” *Id.* at 23–24. The Examiner also finds that “the ingredients are all a function of taste/acidity,” and that “it would still be obvious to one skilled in the art to add more acid as it affects the taste (i.e the more acid, the lower the pH such as Coca-Cola® (more acidic) vs. water (less acidic)) to change the taste profile.” *Id.* at 24; *see* Office Act. 8 (finding that “[t]he amount of acid effects the pH” and that “increasing the amount of acid lowers the pH and effects [sic] the taste.”).

As to the claimed viscosity, the Examiner finds that Nakel discloses the use of some of the same ingredients identified as viscosity increasing agents by the Appellant's Specification, and that a person of ordinary skill in the art "would have been able to adjust the viscosity to any suitable level by carrying out routine experimentation depending upon the desired use and consistency." *Id.* at 9. The Examiner also finds that "mak[ing] a beverage concentrate viscous with a higher dilution factor at destination" would "reduce transportation and shipping costs." *Id.*

As to the "wherein" clause of claim 12, the Examiner finds that "[w]hat happens when diluted is expected to happen because the same claimed ingredients are taught in similar proportions," and indicates that the recited diluted concentrations would flow naturally from the composition. *Id.* at 11.

In view of those and other findings less material to the issues raised by the Appellant in this appeal, the Examiner concludes that the subject matter of claim 12 would have been obvious to a person of ordinary skill in the art.

The Appellant argues that Nakel's acidulant range of 0.24–5.25% does not fall within the scope of the claimed range of "about 8 to about 60 percent." App. Br. 11–12. Relevant to the Examiner's optimization analysis, the Appellant also argues that "the Examiner offers no evidence that increasing acid from the maximum disclosed in Nakel would have been viewed as in any way desirable," and that, by "set[ting] a maximum acid content of 5.25% by weight for beverage concentrates," Nakel "teach[es] away from the significantly higher claimed range." Reply Br. 2–3.

Even assuming that the Appellant is correct that Nakel's upper limit of 5.25% does not fall within the scope of "about 8," we are not persuaded of reversible error in the Examiner's determination that routine optimization would have led a person of ordinary skill in the art to the claimed acidulant concentration. Although the Appellant argues that Nakel teaches away from acidulant concentrations as high as 8%, the Appellant does not persuasively identify a disclosure in Nakel that criticizes, disparages, or otherwise teaches away from acidulant concentrations somewhat higher than the disclosed 5.25%. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Nakel's disclosure of a range that is different than the range recited by claim 12, of itself, does not constitute teaching away. *Cf. id.* ("The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of the[] [disclosed] alternatives . . .").

Consistent with the Examiner's analysis, Nakel discloses that the concentration of acidulant "depends on the beverage composition involved, the level of calcium included, as well as the mouthfeel and stability properties desired." Nakel at 5:5:10. The Appellant does not dispute the Examiner's finding that a person of ordinary skill in the art would also have known that acidulant concentration affects taste. Thus, acidulant concentration was a known result-effective variable. *See In re Applied Materials, Inc.*, 692 F.3d 1289, 1297 (Fed. Cir. 2012) ("A recognition in the prior art that a property is affected by the variable is sufficient to find the variable result-effective.").

"Discovery of an optimum value of a result effective variable . . . is ordinarily within the skill of the art." *Id.* at 1295. "Normally, it is to be expected that a change in temperature, or in concentration, or in both, would

be an unpatentable modification.” *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). Although a result-effective-variable rationale may be rebutted by evidence showing that the claimed range is critical and produces unexpected results, *see Applied Materials*, 692 F.3d at 1297, the Appellant in this case does not refute the Examiner’s findings of lack of criticality and unexpected results attributable to acidulant concentration. *Cf. In re Huang*, 100 F.3d 135, 139 (Fed. Cir. 1996) (burden of showing that unexpected results support conclusion of nonobviousness rests with the Appellant).

Moreover, although we recognize that, in some cases, a prior art’s disclosure of a specific range may indicate that the “determination of optimum values outside that range may not [have been] obvious,” *see In re Sebek*, 465 F.2d 904, 907 (CCPA 1972), the record in this case indicates that a person of ordinary skill in the art would not have felt strictly confined to the range disclosed by Nakel. As noted above, a person of ordinary skill in the art would have known that acid concentration affects properties of the composition including taste, and a person of ordinary skill in the art would have understood that somewhat higher acidulant concentrations than Nakel’s 5.25% could be used to achieve, e.g., a more sour composition.

Additionally, we observe that the Burkes patent, which lists the same assignee as Nakel, discloses a very similar calcium-supplemented beverage concentrate composition that includes up to 8.25% by weight acid. *See Burkes* at Abstract. Thus, the record as a whole supports the Examiner’s determination that a person of ordinary skill in the art would have optimized the acid concentration of the composition to achieve desired characteristics, and that such optimization reasonably would have led to compositions that have acidulant concentrations that fall within the scope of claim 12.

Accordingly, on this record, we are not persuaded of reversible error in the Examiner's determination that the claimed acidulant concentration would have been obvious in view of the prior art.

The Appellant also argues that Nakel does not teach or suggest the claimed viscosity. App. Br. 12–13. In particular, the Appellant argues that the claimed viscosity is not inherent in Nakel's compositions, that Nakel addresses a problem that is different from the problem with which the Appellant was concerned, and that Nakel does not disclose acidulant concentration that overlaps the claimed range. *Id.* at 13. As to the Examiner's finding that a person of ordinary skill in the art would have been motivated to increase viscosity to reduce transportation costs, the Appellant asserts that “add[ing] a viscosity modifying agent . . . does nothing to reduce the mass of the composition.” *Id.*

Those arguments are not persuasive. Like the Appellant's disclosure, Nakel discloses beverage concentrates. As described above, Nakel discloses ingredients and concentrations of those ingredients that overlap those of claim 12, with the exception that Nakel discloses a somewhat lower range (up to 5.25%) of acidulant concentration. Nakel also discloses the use of some of the same ingredients that are disclosed by the Appellant's Specification as suitable viscosity increasing agents. *Compare* Nakel at 9:28–31 (disclosing sucrose and fructose), 9:2–3 (disclosing, e.g., “gums” and “celluloses”) *with* Spec. ¶ 25 (disclosing “gum” and “cellulose derivative” as viscosity increasing agents) ¶ 27 (“Viscosity can also be increased by adding . . . sucrose, fructose . . .”).

As set forth above, we agree with the Examiner that, in view of the prior art, beverage concentrates having ingredients and concentrations that

fall within the scope of claim 12 would have been obvious. The Appellant provides no persuasive reason to believe that the viscosity of the composition does not flow naturally from the ingredients and ingredient concentrations of the composition.² The Appellant’s argument that Example 1 of the Specification shows that “two compositions can have very similar formulations but different viscosities,” App. Br. 12–13, fails to show or even suggest that compositions rendered obvious by Nakel would not have possessed viscosities falling within the claimed range, particularly in view of the fact that Nakel discloses the use of “gums,” *see* Nakel at 9:2–3, and Example 1 specifically uses a gum as a viscosity increasing agent, while the control sample does not, *see* Spec. ¶ 58 Table 3.

Additionally, the Appellant does not persuasively dispute that a person of ordinary skill in the art would have optimized the ingredients and ingredient concentrations to achieve desired concentrate viscosities, including viscosities that fall within the scope of claim 12. As noted above,

² *See In re Best*, 562 F.2d 1252, 1255–56 (CCPA 1977) (“Where, as here, 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.”); *Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985) (“The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.”); *see also In re Kubin*, 561 F.3d 1351, 1357 (Fed. Cir. 2009) (“Even if no prior art of record explicitly discusses the [limitation], [applicants’] application itself instructs that [the limitation] is not an additional requirement imposed by the claims on the [claimed invention], but rather a property necessarily present in [the claimed invention].”).

both Nakel’s disclosure and the Appellant’s claimed subject matter are directed to beverage concentrates, and the Appellant does not persuasively identify any difference between the purposes of the concentrates that would have led to differences in desired viscosities. Although the Appellant observes that “Nakel is concerned with delivery of calcium in a beverage syrup or concentrate,” while the Appellant’s Specification is not concerned with calcium, the Appellant does not explain why that would cause a person of ordinary skill following the disclosure of Nakel to produce compositions with viscosities different from those of claim 12. *See* App. Br. 13. Indeed, similar to the Appellant, *see* Spec. ¶ 2, a significant concern of Nakel is composition stability, *see* Nakel at Abstract, 2:5–6 (observing that “[s]tability against precipitation is a very significant problem for beverage concentrates . . .”).

In that regard, we observe that the Appellant does not persuasively dispute the Examiner’s findings of lack of criticality and unexpected results attributable to the claimed viscosity range. *E.g.*, Ans. 10. Although both the Appeal Brief and the Specification use the word “surprising” to describe an alleged stability improvement when a xanthan gum viscosity increasing agent is used, *e.g.*, App. Br. 13; Spec. ¶ 67, the Appellant fails to show—or even allege—that the relevant comparative example represents the closest prior art. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991) (“[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with the closest prior art.”). The comparative example does not include a gum; the Appellant does not dispute the Examiner’s finding that Nakel discloses the use of a gum and other viscosity increasing agents that are also disclosed by the Appellant’s

Specification. Moreover, Nakel specifically describes “gums” and “celluloses” as “emulsion stabilizers” relevant to the “flavor component” of Nakel’s composition. *See* Nakel at 9:3.

Additionally, the relied upon example includes 1.28 wt% xanthan gum, but claim 12 is not limited to 1.28 wt% viscosity increasing agent (nor is it limited to the use of xanthan gum as the viscosity increasing agent), and the Appellant does not argue or provide evidence that a single example is representative of the full scope of claim 12. *See In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978) (“Establishing that one (or a small number of) species gives unexpected results is inadequate proof, for ‘it is the view of [the CCPA] that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.’” (quoting *In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971))). On this record, the Appellant has not shown that criticality or unexpected results support a conclusion of nonobviousness in this case.

Considering the record as a whole, we are not persuaded that the recited viscosity range renders the claimed subject matter nonobvious. *Cf. In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990) (“The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims . . . [and] in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” (citations omitted)).

The Appellant raises no other arguments concerning claim 12. We affirm the Examiner’s rejection of claim 12.

Rejection 10

The Appellant argues the claims subject to Rejection 10 as a group. We select claim 12 as representative, and the remaining claims will stand or fall with claim 12.

The Examiner finds that Burkes teaches or suggests beverage concentrates comprising the ingredients recited by claim 12 in concentrations that overlap the concentrations recited by claim 12, except that Burkes does not specify the amount of viscosity increasing agent. *See* Ans. 19–20. However, the Examiner finds that Burkes teaches some of the same viscosity increasing agents (sweeteners and gums) that are disclosed by the Appellant’s Specification, and that it would have been obvious “to adjust the viscosity to any suitable level by carrying out routine experimentation depending upon the desired use and consistency.” *Id.* at 21. The Examiner finds that “[t]here does not appear to be anything critical with respect to the properties claimed.” *Id.* at 22.

As to the “wherein” clause of claim 12, the Examiner finds that “[w]hat happens when diluted is expected to happen because the same claimed ingredients are taught in similar proportions,” and indicates that the recited diluted concentrations would flow naturally from the composition. *Id.*

In view of those and other findings less material to the issues raised by the Appellant, the Examiner concludes that the subject matter of claim 12 would have been obvious in view of Burkes.

The Appellant argues that “Burkes does not appear to discuss viscosity at all.” App. Br. 14. We disagree. Although Burkes does not numerically specify the viscosity of its compositions, Burkes does state, for

example, that at a certain stage of Burkes' mixing process, "the composition is very viscous." Burkes at 17:24. Burkes also expressly discloses that "gums/thickeners" may be added to its composition, *id.* at 18:36 and it discloses, e.g., xanthan, *id.* at 10:34. Thus, Burkes attributes some significance to the viscosity of a beverage concentrate composition, and it expressly identifies ingredients—some of which are the same as those disclosed by the Appellant's Specification—for modifying viscosity.

Burkes does not state the viscosity of its compositions, but, as above with respect to Rejections 3–9, the Appellant does not persuasively rebut the Examiner's determination that routine optimization of the components and concentrations of Burkes' composition would reasonably have led to a wide range of suitable viscosities, depending on desired concentrate characteristics, including viscosities that fall within the scope of claim 12. The fact that Burkes does not expressly disclose desired viscosities indicates that it would have been within the ordinary level of skill in the art to select ingredients and concentrations to achieve desired viscosity, including viscosities that fall within the scope of claim 12. As discussed above, the Appellant does not persuasively establish that criticality or unexpected results support a conclusion of nonobviousness in this case. *Cf. Woodruff*, 919 F.2d at 1578 ("The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims . . . [and] in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." (citations omitted)).

On this record, we are not persuaded of reversible error in the Examiner's conclusion that the subject matter of claim 12 would have been obvious in view of Burkes.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
12-23	112	Indefiniteness		12-23
12-31	102(e)	Ragnarsson		12-31
12-17, 20-28, 31	103(a)	Nakel	12-17, 20-28, 31	
23	103(a)	Nakel, Braun	23	
25-28	103(a)	Nakel, Zablocki	25-28	
23	103(a)	Nakel, Lee	23	
18, 29	103(a)	Nakel, Given	18, 29	
12-17, 19-28, 30, 31	103(a)	Nakel, Skaggs	12-17, 19-28, 30, 31	
23	103(a)	Nakel, Skaggs, Braun	23	
12-31	103(a)	Burkes	12-31	
Overall Outcome			12-31	

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