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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MASATOSHI NAKANO,
MIKA ARIFUKU, HARUMI MIZUKOSHI,
SUSUMU MIZUSAWA, KAZUMASA KIMURA,
and MASAHIKO ITO

Appeal 2019–003883
Application 13/260,772
Technology Center 1700

Before MICHAEL P. COLAIANNI, GEORGE C. BEST, and
DEBRA L. DENNETT, *Administrative Patent Judges*.

DENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Pursuant to 35 U.S.C. § 134(a), Appellant² appeals from the
Examiner’s decision to reject claims 1, 3, 11, 12, 14, and 15 of Application

¹ In our Decision, we refer to the Specification filed September 28, 2011 (“Spec.”) of Application 13/260,772 (“the ’772 Application”); the Non-Final Office Action dated September 5, 2018 (“Non-Final Act.”); the Appeal Brief filed November 19, 2018 (“Appeal Br.”); the Examiner’s Answer dated March 8, 2019 (“Ans.”); and the Reply Brief filed April 18, 2019 (“Reply Br.”).

² We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Kabushiki Kaisha Yakult Honsha as the real party in interest. Appeal Br. 2.

13/260,772. *See* Appeal Br. 6; Non-Final Act. 1. We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we REVERSE.

BACKGROUND

The '772 Application relates to (i) a method for culturing lactic acid bacteria, and (ii) a food and drink product comprising a lactic acid bacteria culture obtained by this method. Spec. ¶ 1.

The '772 Application describes that lactic acid bacteria is frequently cultured in a milk medium to produce fermented dairy foods such as yogurt, lactic acid bacteria beverages, cheese, etc. *Id.* ¶ 3. Milk quality, however, is said to be highly variable, which may detrimentally affect the stability of lactic acid bacteria in fermented dairy products. *Id.* ¶ 8, 9. The '772 Application describes that lactic acid bacteria cultured in a milk medium having a free phosphoric acid concentration of less than 0.25 wt%, along with phosphate added thereto, produces fermented milk products having desirable product stability. *Id.* ¶ 9.

Claims 1, 11, and 12 are representative of the '772 Application's claims and are reproduced below from the Claims Appendix of the Appeal Brief with key limitations emphasized.

1. A method of making a lactic acid bacteria beverage by fermenting lactic acid bacteria comprising the steps of:

providing a medium comprising a skim milk powder, the skim milk powder having a free phosphoric acid concentration of less than 0.25 wt% based on the weight of the skim milk powder and wherein a protein content per solid nonfat milk component (SNF) of the milk ingredient is less than 35 wt%;

selecting a phosphate compound for addition to said medium;

determining a free phosphoric acid concentration after the addition of the phosphate compound based on the weight of the skim milk powder, wherein the free phosphoric acid concentration is between about 0.25 wt% and about 0.5 wt% based on the weight of the skim milk powder;

determining an amount of the phosphate compound by calculation using the formula

$$\left(\begin{array}{l} \text{free} \\ \text{phosphoric acid} \\ \text{concentration after} \\ \text{the addition of} \\ \text{phosphate} \\ \text{compound based on} \\ \text{the weight of the} \\ \text{skim milk powder} \end{array} \right) \cdot \left(\begin{array}{l} \text{free phosphoric} \\ \text{acid concentration} \\ \text{in skim milk} \\ \text{powder used for} \\ \text{preparing the} \\ \text{medium} \end{array} \right) \times \left(\begin{array}{l} \text{the skim} \\ \text{milk powder} \\ \text{concentration} \\ \text{in the} \\ \text{medium} \end{array} \right) \times \left(\begin{array}{l} \text{molecular} \\ \text{weight of the} \\ \text{phosphate} \\ \text{compound} \end{array} \right)$$

$$100 \times \left[\text{molecular weight of phosphorus} \right]$$

wherein the skim milk powder concentration in the medium is between 5 wt% and 30 wt%; *adding the phosphate compound in the amount determined as above to the medium;* and inoculating lactic acid bacteria to the medium,

wherein the lactic acid bacteria is *Lactobacillus casei*, and wherein a pH of the medium subsequent to adding the phosphate compound is about 3.6.

11. A fermented milk product prepared by the method of making a lactic acid bacteria according to claim 1.

12. A lactic acid bacteria beverage prepared by the method of making a lactic acid bacteria according to claim 1.

Appeal Br. 30-31, 32 (Claims App.).

REFERENCES

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

Name	Reference	Date
Holbrook et al. (“Holbrook”)	US 4,376,791	Mar. 15, 1983
Irvine et al. (“Irvine”)	US 4,692,338	Sept. 8, 1987
Ogasawara et al. (“Ogasawara”)	US 6,759,067 B1	July 6, 2004
Murakami et al. (“Murakami”)	JP 2001-095484 ³	April 10, 2001
S. Kim et al., “Optimization of Growth and Storage Conditions for Lactic Acid Bacteria in Yogurt and Frozen Yogurt,” <i>J. Korean Soc. Appl. Biol. Chem.</i> , 52(1), 76–79 (2009) (hereinafter “Kim”).		

REJECTIONS

The Examiner maintains the following rejections:^{4, 5}

1. Claims 11 and 12 under 35 U.S.C. § 102(b) as anticipated by Ogasawara. Non-Final Act. 4–5.

³ The Examiner relies on the machine translation of record, to which Appellant does not object. Non-Final Act. 4; Appeal Br. *generally*. Thus, we will rely on and cite to the machine translation.

⁴ Because this application claims priority to an application filed before the March 16, 2013 effective date of the America Invents Act, we refer to the pre-AIA version of the statutes.

⁵ In the Answer, the Examiner withdrew the rejections of (i) claims 1, 3, 14, and 15 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement, and (ii) claims 1, 3, 11, 14, and 15 under 35 U.S.C. § 112, second paragraph, as indefinite. Ans. 9.

2. Claims 1, 11, 12, 14, and 15 under 35 U.S.C. § 103(a) as obvious over Kim, in view of Murakami, Ogasawara, and further in view of Holbrook. Non-Final Act. 6–10.
3. Claim 3 under 35 U.S.C. § 103(a) as obvious over Kim, in view of Murakami, Ogasawara, Holbrook, and further in view of Irvine. Non-Final Act. 10–11.

DISCUSSION

Ground 1: Rejection of claims 11 and 12 as anticipated by Ogasawara

Appellant argues claims 11 and 12 as a group. *See* Appeal Br. 13–15. Our decision regarding Ground 1 turns on whether the prior art discloses each of the claimed compositions, which are produced by the step of “adding the phosphate compound” in a pre-determined amount. *See* Appeal Br. 30–31, 32 (Claims App.).

The Examiner finds, *inter alia*, that Ogasawara’s method of reconstituting a skim milk powder in a medium and fermenting the medium with *L. casei* results in a fermented milk drink, which is a lactic acid beverage having the requisite pH. Non-Final Act. 4 (citing Ogasawara Abstract; 4:35–67; 6:23–54; Test Examples 1–3; Table 6); *see also* Non-Final Act. 5. The Examiner finds Ogasawara anticipates claims 11 and 12 because “there is no evidence that the recited process [of claim 1] produces a product that is materially different from what is disclosed in” Ogasawara. Non-Final Act. 4; *see id.* 5.

Appellant distinguishes Ogasawara’s fermented milk drink, which requires hemicellulose, from the unexpectedly stable compositions of claims

11 and 12. Appeal Br. 13–14 (asserting that “the beverages of claims 11 and 12 do not recite the addition of water-soluble hemicellulose.”). Appellant additionally argues that Ogasawara does not disclose the “addition of any phosphate compound to any composition” and “nowhere so much as even mentions ‘phosphate.’” *Id.* 14.

The Examiner responds by arguing that “claims 11 and 12 do not exclude the presence of hemicellulose.” Ans. 10. The Examiner’s position is persuasive as claim 1 contains the open transitional term “comprising,” which permits elements in addition to those specified in the recited medium of the claim. *In re Crish*, 393 F.3d 1253, 1257 (Fed. Cir. 2004). We agree with the Examiner that “unexpected results are not sufficient to overcome a [§ 102(b)] rejection.” Ans. 10.

However, the Examiner does not respond to Appellant’s remaining argument. Specifically, the Examiner does not rebut Appellant’s assertion that Ogasawara is silent regarding the fermented milk drink’s phosphate content. *Id.*; Appeal Br. 14.

The Examiner must establish a prima facie case of anticipation under § 102 by showing, as a matter of fact, that all elements arranged as specified in a claim are disclosed within the four corners of a reference, either expressly or inherently, in a manner enabling one skilled in the art to practice an embodiment of the claimed invention without undue experimentation. *ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1344 (Fed. Cir. 2012); *Sanofi-Synthelabo v. Apotex Inc.*, 550 F.3d 1075, 1083 (Fed. Cir. 2008).

On this record, the Examiner has not made any findings that Ogasawara describes the fermented milk product’s or lactic acid bacteria

beverage’s phosphate content. The Examiner, furthermore, has not adequately explained how Ogasawara’s product or beverage is identical to the claimed compositions, which result from the addition of phosphate. Thus, the Examiner has not established that all of the elements, as specified in claims 11 and 12, are disclosed within Ogasawara, either expressly or inherently.

We do not sustain the rejection of claims 11 and 12 as anticipated by Ogasawara.

Ground 2: Rejection of claims 1, 11, 12, 14, and 15 as obvious over Kim, in view of Murakami, Ogasawara, and further in view of Holbrook

Appellant argues patentability of claims in this rejection on the basis of limitations recited in claim 1. *See* Appeal Br. 15–29. We select claim 1 as representative. Claims 11, 12, 14, and 15 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner finds Kim teaches, *inter alia*, a lactobacillus starter culture comprising skim milk powder and potassium phosphate. Non-Final Act. 6. According to the Examiner, “Kim discloses that the addition of phosphate slows the dropping of the pH and increased the growth of the bacteria.” *Id.*

The Examiner finds that Kim does not disclose: (i) that “the free phosphoric acid concentration of the skim milk powder is less than .25%” and (ii) the step of “determining an amount of the phosphate compound by calculation using the formula . . . recited in claim 1[,] wherein the free phosphoric acid concentration in skim milk powder after the addition of phosphate compound based on the weight of the skim milk powder is between about .25% and about 0.5%.” *Id.*

The Examiner, however, finds that “Murakami discloses cow’s milk with a low phosphorus milk such that the milk contains 750 ppm (.075%) phosphate.” *Id.* 7. The Examiner concludes that

[a]t the time of the invention it would have been obvious to one of ordinary skill in the art having the teachings of Kim and Murakami to provide the skim milk powder in a low phosphorus form in order for the milk to be digestible for those with ailments or for infants drinking the milk. Further[,] it would have been obvious to include a phosphate component in order to increase the phosphate content of medium containing a low amount of phosphorus since Kim discloses that the adding phosphate components to the medium containing skim milk powder for fermentation of lactic acid bacteria results in an increase in the number of bacteria that are produced due to buffering of the medium and that the addition of phosphate also stabilizes the medium.

Id. 7–8. According to the Examiner, “there is no patentable distinction” provided by the formula recited in claim 1. *Id.* 9.

Appellant argues that the Examiner’s reliance on Kim for merely teaching the step of adding phosphate is misplaced. Appeal Br. 15. Appellant contends that the Examiner’s applied prior art would not have motivated one of ordinary skill in the art to add a particular phosphate amount. *Id.* Appellant argues that Kim would not have suggested calculating the specific amount from a determination of a free phosphoric acid concentration, after the addition of the phosphate compound, between about 0.25 wt% and about 0.5 wt%, based on the skim milk powder’s weight. *Id.*; *see also id.* 30–31, 32 (Claims App.).

In response, the Examiner argues that the “determining step,” as recited in claim 1, “does not limit the amount of phosphorus added.” Ans. 10; *see also id.* 13.

Appellant explains that “[t]he ‘free phosphoric acid concentration after the addition’ is used to *calculate* the associated lower and upper limits on the amount of phosphate to add by ‘determining an amount of the phosphate compound by calculation using the [claimed] formula.’” Appeal Br. 12. Appellant argues that “the maximum amount of phosphate compound that can be added to the medium is that amount of phosphate compound determined by the formula and corresponding to a ‘determined phosphoric acid concentration after the addition’ equal to ‘0.5 wt% based on the weight of the skim milk powder.’” Reply Br. 4. Appellant further argues that “Kim provides no teaching whatsoever as to how much phosphate to add,” nor “any limit on how much phosphate may be advantageously added.” *Id.* 5–6.

“After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992); *see also In re Sullivan*, 498 F.3d 1345, 1352 (Fed. Cir. 2007) (“Whether the composition would have been obvious cannot be determined without considering evidence attempting to rebut the prima facie case.”).

On the record before us, Appellant’s contention that the Examiner’s reliance on Kim is misplaced because the determining step recited in claim 1 limits the amount of phosphate added is persuasive of reversible error by the Examiner. *See* Appeal Br. 15–18; 30–31 (Claims App.). We, furthermore, agree with Appellant that Kim fails to disclose or suggest an upper limit for the amount of phosphate added. *See id.* 15–18; *see also* Reply Br. 3–6.

We do not sustain the rejection of claim 1 as obvious over Kim, in view of Murakami, Ogasawara, and further in view of Holbrook. For the same reasons, we do not sustain the rejection of claims 11, 12, 14, and 15 as obvious over the same combination of references.

Ground 3: Rejection of claim 3 as obvious over Kim, in view of Murakami, Ogasawara, Holbrook, and further in view of Irvine

Claim 3, which depends from claim 1, was rejected as obvious over Kim, in view of Murakami, Ogasawara, Holbrook, and further in view of Irvine. Non-Final Act. 10–11. The additional Irvine reference does not remedy the deficiency of the Examiner’s proposed combination of Kim, Murakami, Ogasawara, and Holbrook, in the rejection of claim 1. Although Appellant did not argue separately against the rejection of claim 3 (*see* Appeal Br. 29), we do not sustain the rejection of the parent claim, and, therefore, do not sustain the rejection of claim 3.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
11, 12	102(b)	Ogasawara		11, 12
1, 11, 12, 14, 15	103(a)	Kim, Murakami, Ogasawara, Holbrook		1, 11, 12, 14, 15
3	103(a)	Kim, Murakami, Ogasawara, Holbrook, Irvine		3
Overall Outcome				1, 3, 11, 12, 14, 15

REVERSED