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ANDREWS KURTH KENYON LLP
1350 I STREET, N.W.
SUITE 1100
WASHINGTON, DC 20005

EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HAIBO LING

Appeal 2016-000614
Application 12/564,744
Technology Center 1700

Before CATHERINE Q. TIMM, AVELYN M. ROSS, and
DEBRA L. DENNETT, *Administrative Patent Judges*.

DENNETT, *Administrative Patent Judge*.

DECISION ON APPEAL¹

STATEMENT OF THE CASE

Appellant² appeals under 35 U.S.C. § 134 from a rejection of claims 1–6, 8, 10, and 21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ In our Opinion below we reference the Declaration of Haibo Ling filed April 22, 2013 (“Ling Decl.”) in Application No. 12/564,762, the Non-final Action mailed December 5, 2014 (“Non-final Act.”), the Appeal Brief filed February 27, 2015 (“App. Br.”), the Examiner’s Answer mailed August 14, 2015 (“Ans.”), and the Reply Brief filed October 13, 2015 (“Reply Br.”).

² Appellant identifies the real party in interest as Beijing Yihecun Technology Co., Ltd. App. Br. 3.

The claims are directed to a direct-acidified milk beverage that maintains a high viable cell count at ambient temperature for one to six months and a process for preparing same. Claim 1, reproduced below with the disputed limitation underlined, is illustrative of the claimed subject matter:

1. A process of preparing direct-acidified milk beverage with high viable cell count, comprising:
 - adjusting pH value of a non-fermented milk beverage to 4.0-4.5 to obtain an acidified milk beverage;
 - sterilizing said acidified milk beverage; and
 - adding concentrated culture, concentrated frozen culture or freeze dried culture of *Lactobacillus rhamnosus* ATCC 53103 together with 0.01-5% wt of growth promoting factors to said acidified milk beverage under aseptic condition to produce a final product,
 - wherein said final product can be stored for 1-6 months under ambient temperature with a viable cell count of *Lactobacillus rhamnosus* ATCC 53103 of at least 10^5 cfu/ml milk beverage,
 - wherein said growth promoting factors are selected from one or more of glucose, fructose, galactose, arabinose, ribose, mannose, rhamnose, fucose, tagatose, sucrose, maltose, cellobiose, trehalose, melizitose, gentiobiose, galactitol, mannitol, sorbitol, inositol, gluconic acid, salicin, aescine, arbutin, amygdalin and acetylglucosamine, and wherein said growth promoting factors can be added together with milk base before sterilization or with *Lactobacillus rhamnosus* A TCC 53103 under aseptic condition.

App. Br. 21 (Claims App'x).

REFERENCES

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

Igoe	US 4,169,854	Oct. 2, 1979
Germond, et al., ("Germond")	WO 01/88150 A1	Nov. 22, 2001

Grosso and Fàvaro-Trindade, *Stability of Free and Immobilized Lactobacillus acidophilus and Bifidobacterium lactis in Acidified Milk and of Immobilized B. lactis in Yoghurt*, 35 Brazilian J. Microbio. 151 (2004) ("Grosso")

REJECTIONS

Claims 1–6, 8–10, and 21 stand rejected under 35 U.S.C. § 103(a) as obvious over Grosso in view of Germond and Igoe. Non-final Act. 3.

OPINION

Appellant argues claims 1–6, 8–10, and 21 as a group. We select claim 1 as representative for deciding the issues on appeal for that group.

Combining Grosso with Germond

The primary reference asserted by the Examiner is Grosso. Grosso teaches adding probiotic bacteria *Lactobacillus acidophilus* or *Bifidobacterium lactis* immobilized in calcium alginate beads to sterilized milk and sterilized milk that has been acidified by the addition of 4N lactic acid in order to achieve pH values of 5.0, 4.4, and 3.8. Grosso p. 152, right column. The acidified, cultured milk is stored at 7°C for 28 days. *Id.*

According to Grosso, free and immobilized *B. lactis* and *L. acidophilus* presented a good survival rate in milk and acidified milk. *Id.* at Abstract.

The Examiner acknowledges that Grosso does not teach *L. rhamnosus* ATCC 53103 as a probiotic, but finds that Germond teaches the use of lactic acid bacteria that are deficient in using lactose as a carbon source in food products for improved shelf life and maintenance of the organism. Non-Final Act. 4–5. According to the Examiner, Germond teaches that it is desirable to use the *Lactobacillus rhamnosus* ATCC 53103 strain as a probiotic and that it does not metabolize lactose.³ *Id.* at 5. Germond also teaches, per the Examiner, production of acidified milk products with strains of bacteria that exhibit the same properties (i.e., usefulness as a probiotic and inability to metabolize lactose). *Id.* Thus, the Examiner concludes that one of ordinary skill in the art at the time of the invention would have found it obvious to combine *L. rhamnosus* ATCC 53103, as taught in Germond, with the teachings of Grosso. *Id.*

Appellant urges that Grosso’s objective was to find a way to prolong the viability of *B. lactis* and *L. acidophilus* in acidified milk cultures and in fermented yogurt containing a starter culture, but was only concerned with the survival of probiotics at refrigeration temperatures. App. Br. 11. Appellant

³ Appellant disputes that Germond discloses this information. App. Br. 12, Reply Br. 3–4. To be exact, Germond teaches the desirability of preparing a food product containing lactose by using a lactic acid bacterium having probiotic properties and that does not use lactose as a carbon source such that no lactic acid is produced (Germond p. 1, ll. 6–10, p. 3, ll. 19–26), that the bacterial species *L. rhamnosus* is one of six species identified as “preferable” for such preparation (*id.* at p. 3, ll. 19–29), and specifically identifies *L. rhamnosus* ATCC 53103 as a probiotic (*id.* at p. 2, ll. 10). Thus, Germond teaches the desirability of using *L. rhamnosus*, but not specifically the particular strain ATCC 53103, as a probiotic.

suggests that Grosso uses an acidified milk beverage only as a starting point to test the survival of encapsulated *L. acidophilus* or *B. lactis*, and that the reference is not concerned with the means for creating an acidified milk product. *Id.* Appellant proposes that Grosso did not address the long term storage and viability of *L. rhamnosus* ATCC 53103 in refrigerated yogurt cultures, let alone at room temperature for one to six months with a viable cell count of *L. rhamnosus* ATCC 53103 of at least 10^5 cfu/ml milk beverage, and that at the time of the invention, there was no indication that the bacteria would survive for extended periods at ambient temperatures in an acidified milk product. *Id.* at 9, 11.

Appellant portrays Germond's disclosure of *L. rhamnosus* ATCC 53103 as a "minor **background teaching**" that is unrelated to the disclosures or other objectives in either Grosso or Germond. *Id.* at 12 (emphasis in original). Appellant charges that the Examiner does not sufficiently explain why it would have been obvious for one of ordinary skill in the art at the time of the invention to add the probiotic of Germond to Grosso's culture, emphasizing the limited description of the particular probiotic. *Id.* at 12.

Appellant further contends that Germond teaches away from employing probiotics unable to metabolize lactose, arguing that such teaching away disqualifies Germond as a reference in an obviousness. App. Br. 12 (citing Germond at p. 3, ll. 10–12 ("it is a desired trait that the microorganisms should assist in degradation of factors in gut, when lactose containing food material is incorporated")); *see also* Reply Br. 5.

We find Appellant's position unavailing. For an obviousness rejection, a reference is prior art for all that it teaches. *Beckman Instruments Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989) ("Even if a

reference discloses an inoperative device, it is prior art for all that it teaches.”). Grosso teaches adding a species of probiotic *Lactobacillus* to acidified, sterilized, non-fermented milk, and storing it at 7°C for 28 days. Grosso p. 152, right column. One of ordinary skill in the art at the time of the invention would have found it obvious to substitute another *Lactobacillus* species, such as *L. rhamnosus* or the particular strain *L. rhamnosus* ATCC 53103, as taught by Germond for the *Lactobacillus* in Grosso, as both references teach successful use of *Lactobacillus* to provide probiotic milk based products. *Id.*; Germond p. 3, ll. 14–30, p. 4, ln. 30–p. 5, ln.3.

The Examiner pointed out that Germond found that lactic acid bacteria deficient in using lactose as a carbon source, such that no lactic acid is produced, acidify and maintain the quality of the food products to which such these bacteria are added, and this results in an improved shelf life and maintenance of the organism. Non-Final Act. 5 (citing Germond pg. 3, lines 5–15 and pg. 5, lines 1–5, Ex. 4). The properties of *L. rhamnosus* ATCC 53103 are inherent to and inseparable from the strain. *See* Non-Final Act. 10. The Examiner has produced adequate motivation for one of ordinary skill in the art at the time of the invention to combine the teachings of Grosso and Germond. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (precise teachings directed to the claimed subject matter are not required where the Examiner’s explanation of the reasons a person of ordinary skill in the art would have had to combine the prior art teachings is sufficient when an allowance is made for “the inferences and creative steps that a person of ordinary skill in the art would employ.”); *see also In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992) (“As long as some motivation

or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventors.”); *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323 (Fed. Cir. 2005) (“One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings.”).

Review of the totality of Germond clarifies that its statement that “it is a desired trait that the microorganisms should assist in degradation of factors in gut, when lactose containing food material is incorporated” (page 3, lines 10–12) is not a suggestion to avoid use of probiotics unable to metabolize lactose. Rather, Germond clearly and unmistakably teaches using Lactic acid bacterium having probiotic properties and being “*deficient in using lactose* as a carbon source” but “still *capable to translate the β -galactosidase gene.*” *Id.* at p. 1, ll. 6–8 (emphasis added). Germond does not “teach away.”

Appellant’s argument that there would have been no reasonable expectation of success in combining the teachings of Grosso and Germond fares no better. *See* App. Br. 14. Appellant urges that Grosso indicates a lack of predictability for achieving a successful combination with Germond, due to “Grosso’s results highlighting the problems and lack of survivability of Grosso’s *microencapsulated* probiotics in the lactobacilli-containing fermented milk beverage upon storage at 7°C.” *Id.* (emphasis in original). In fact, Grosso discloses that *B. lactis* and *L. acidophilus* in both free and immobilized forms presented satisfactory rates of survival in milk and acidified milk. . . . The results showed that both microorganisms can be added to milk and acidified milk because their population was only slightly

affected during storage.” Grosso Abstract. Grosso discloses that the presence of a traditional bacterial culture in yogurt is harmful to survival of *B. lactis (id.)*, but this result is of no consequence to the matter before us.

Combining Igoe with Grosso and Germond

Igoe teaches preparing a direct acidified yogurt using milk, common food acids such as lactic acid, and 0 to 18% optional sweeteners such as glucose, fructose, sucrose, maltose, and a thickener. Igoe col. 1, ll. 36–62. Therefore, according to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to add glucose or maltose as a sweetener to the product of Grosso and Germond. Non-Final Act. 6. The Examiner urges that “the fact that Appellant has recognized another advantage (shelf life) 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.” Ans. 9 (citing *Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985)).

Appellant argues that “the gist of Igoe’s invention is to provide a means to ‘prepar[e] yogurt **which does not require fermentation**’,” thus combining Igoe’s non-microbial yogurt teachings with the microbial milk beverage teachings in Grosso and Germond makes no sense and relies on hindsight. App. Br. 16 (emphasis in original). Per Appellant, “the only reason that Igoe adds ‘growth promoting factors’, such as glucose, is for the purpose of **optionally** adding a carbohydrate sweetener,” thus there is no suggestion of any need to additionally include a sweetener in Grosso’s method. *Id.* (emphasis in original).

Appellant’s position notwithstanding, the reason for combining references does not have to be identical to that of the applicant in order to

establish obviousness. *See In re Kemps*, 97 F.3d 1427, 1430 (Fed. Cir. 1996). “As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor.” *In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992); *see also PerfectWeb Techs., Inc. v. InfoUSA, Inc.* 587 F.3d 1324, 1329 (Fed. Cir. 2009) (an analysis of obviousness “may include recourse to logic, judgment, and common sense available to the person of ordinary skill that do not necessarily require explication in any reference or expert opinion”). Here, the Examiner provides the motivation of adding a sweetener in the form of glucose or maltose, both identified as growth promoting factors in claim 1, as disclosed in Igoe, to the process resulting from the combination of Grosso and Germond. Ans. 9. Such motivation is sufficient to support the combination of references. *See KSR*, 550 U.S. at 419–420:

In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under § 103. . . . The first error of the Court of Appeals in this case was . . . holding that courts and patent examiners should look only to the problem the patentee was trying to solve.

Secondary considerations of non-obviousness

Appellant attempts to rebut the Examiner’s conclusion of obviousness with evidence of secondary considerations of non-obviousness. App. Br. 17. Appellant relies on the Declaration of Haibo Ling as evidence of the failure of others, long-felt by unsolved need, and unexpected results. *Id.* at 17–18.

The Ling Declaration, filed in a different application,⁴ makes statements about “the key features of the claimed invention.” The Ling Declaration does not mention a direct-acidified milk beverage or a process for making same, which is the subject of the present invention. The declaration provides no data on what was tested or how it was tested. The declaration therefore does not provide persuasive evidence of failure of others, long-felt by unsolved need, or unexpected results that support patentability of claim 1.

After reviewing the evidence as a whole, we determine that the Examiner did not reversibly err in rejecting claims 1–6, 8–10, and 21

DECISION

For the above reasons, the Examiner’s rejection of claims 1–6, 8–10, and 21 is AFFIRMED.

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) (2015).

AFFIRMED

⁴ See Ling Decl. identifying the serial number of the application at issue is 12/564,762, as opposed to the present application serial number, which is 12/564,744.