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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HANS HENRIK HOLST, ANJA SUNDGREN, and
VALENTIN RAUH

Appeal 2019-002242
Application 13/811,532
Technology Center 1700

Before GEORGE C. BEST, BRIAN D. RANGE, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 3–5, 7, 8, 10–12, 16–24, 26, 27, and 34–38. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Aria Foods AmbA. Appeal Br. 2.

CLAIMED SUBJECT MATTER²

Appellant describes the invention as relating to lactose-reduced milk-related products having a long shelf life. Spec. 1:7–10. Appellant alleges that the claimed milk product has a previously unknown combination of a very long shelf life, surprising low furosine value, and acceptable taste.

Appeal Br. 11. Claim 1 is illustrative:

1. A method of producing a packaged, lactose-reduced milk-related product, the method comprising:

a) providing a lactose-reduced milk-related feed comprising a total amount of mono- and disaccharides in a range of 1-3.2% (w/w) relative to a total weight of the milk-related feed,

b) subjecting a milk derivative derived from said milk-related feed to a High Temperature (HT)-treatment, **wherein the milk derivative is heated to a temperature in the range of 150-160 degrees C, kept in that temperature range for a period of at most 200 msec.**, and then finally cooled,

c) packaging a lactose-reduced milk-related product derived from the HT-treated milk derivative,

which method furthermore involves hydrolysis wherein at least some of the lactose is hydrolyzed into glucose and galactose and enzyme inactivation whereby the combined activity of plasmin and plasminogen of a treated liquid is reduced by at least 60% relative to the activity of an untreated liquid,

and wherein the hydrolysis is performed at least one of:

(1) after subjecting the milk-related feed to the enzyme inactivation,

and

² In this Decision, we refer to the Final Office Action dated February 23, 2018 (“Final Act.”), the Appeal Brief filed July 23, 2018 (“Appeal Br.”), the Examiner’s Answer dated December 11, 2018 (“Ans.”), and the Reply Brief filed January 1, 2019 (“Reply Br.”).

(2) one of, before or after, subjecting the HT-treated milk derivative to the enzyme inactivation.

Appeal Br. 21 (Claim App.) (emphasis added to certain key recitations).

REJECTION AND REFERENCES

On appeal, the Examiner maintains the rejection of claims 1, 3–5, 7, 8, 10–12, 16–24, 26, 27, and 34–38 under 35 U.S.C. § 103 as obvious over Ur-Rehman et al., US 2007/0166447 A1; July 19, 2007 (“Ur-Rehman”) in view of Tossavainen et al., WO 2009/00972 A1; Dec. 31, 2008 (“Tossavainen”), Rysstad, G., & Kolstad, J., *Extended shelf life milk-advances in technology*, Int’l J. Dairy Tech., 59(2), 85–96 (2006) (“Rysstad”), and Lewis et al., “Heat Treatment of Milk,” BLBK061-Tamine, 15:19, 168-204 (September 19, 2008) (“Lewis”).

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”). After considering the evidence presented in this Appeal and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error. Thus, we affirm the Examiner’s rejections for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Appellant argues all claims as a group. *See* Appeal Br. 11–19. Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv)

(2013), we limit our discussion to claim 1, and all other claims on appeal stand or fall together with claim 1.

The Examiner finds that Ur-Rehman teaches treatment of a lactose reduced milk composition where, for example, the composition meets the “mono- and disaccharide” recitation of claim 1. Ans. 4 (citing Ur-Rehman). The treatment includes a hydrolysis step and heat treatment step. *Id.* at 4–5. The Examiner finds that Ur-Rehman does not teach claim 1’s recited reduction in plasminogen and plasmin activity and does not teach claim 1’s time and temperature for heat treatment (“150–160 degrees C, kept in that temperature range for a period of at most 200 msec”).

The Examiner finds that Tossavainen teaches heat treatment to destroy plasmin and plasminogen enzyme activity. *Id.* at 5 (citing Tossavainen). The Examiner determines that a person having ordinary skill in the art would have been motivated to include the Tossavainen heat treatment to modify Ur-Rehman to inactivate plasminogen and plasmin enzymes. *Id.* The Examiner further finds that Rysstad teaches high temperature treatment at 130–145°C for less than one second and that Lewis teaches heating for 130–150°C for an appropriate holding time. *Id.* at 6 (citing Rysstad and Lewis). The Examiner determines that a person of skill in the art would have, based on the combined disclosure of Rysstad and Lewis, used high temperature heating to destroy spore containing microbes after subjecting the feed to an enzyme inactivation step. *Id.* at 6–7.

Appellant argues that Ur-Rehman teaches a much lower heating that would not inhibit plasmin and plasminogen. Appeal Br. 13–14. Similarly, Appellant argues that Tossavainen does not teach the temperature or times recited by claim 1. Reply Br. 5. This argument does not persuasively

identify error because the Examiner's rejection is not based on Ur-Rehman or Tossavainen alone. Rather, the Examiner combines the teachings of Ur-Rehman, Tossavainen, Rysstad, and Lewis. Ans. 4–7. The Examiner explains why the combined references suggest a process that includes the recited heating step and includes inactivation of plasmin and plasminogen. *Id.* at 15–17. One cannot show nonobviousness by attacking references individually when the rejection is based on a combination of references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Appellant also argues that Ur-Rehman does not teach heat treating a lactose-reduced derivative derived from the claimed feed. Appeal Br. 14. The Examiner finds that Ur-Rehman teaches heating of a derivative at paragraphs 34 and 38 (Ans. 18), and Appellant does not explain why this finding is incorrect. We also note that, according to the Specification, the “milk derivative may be identical to the milk-related feed.” Spec. 16:34–37.

Appellant further argues that a person of skill in the art would not have a reason to combine the teachings of Ur-Rehman and Tossavainen. Appeal Br. 15. Appellant emphasizes that Tossavainen teaches separation of fractions while Ur-Rehman does not. *Id.*; *see also* Reply Br. 5–6 (arguing that Tossavainen teaches that enzyme destruction requires separation of materials and temperatures and times not part of the claims on appeal). The Examiner, however, determines that a person of skill in the art would use heat treatment, as taught by Tossavainen, with the Ur-Rehman process because doing so would, according to Tossavainen, inactivate problematic plasmin enzyme activities. Ans. 5 (citing Tossavainen ¶¶ 32, 33). In particular, Tossavainen explains that problematic enzymes can be inactivated by heating them “simultaneously with separation.” Tossavainen

¶ 33. Based on the preponderance of the evidence before us, we agree with the Examiner that Tossavainen is best understood as teaching that it is the heating of the feed that leads to enzyme inactivation. *Id.* at ¶ 32 (explaining that the half-life of the enzymes depends on time and temperature).

Appellant’s argument, therefore, does not persuasively rebut the Examiner’s stated rationale as to why a person of skill in the art would combine the teachings of Ur-Rehman and Tossavainen.

Appellant also argues by extensively quoting the December 28, 2015, Declaration of Valentin Rauh (“the Rauh Declaration”). Appeal Br. 15–17. We have carefully considered the content of the Rauh Declaration, but we agree with the Examiner that the Declaration and Appellant’s related arguments do not identify error. Ans. 18–20. In particular, the Declaration focuses on distinctions between Tossavainen and the Specification’s disclosure, but the Examiner’s rejection relies on Ur-Rehman as the primary reference. *Id.* at 18–19. The Declaration does not address the Examiner’s findings regarding Ur-Rehman and does not squarely address the Examiner’s stated rationale for combining the teachings of the cited art. Appeal Br. 15–17.

The Declaration also states that Rauh finds the Specification’s results “unexpected and very surprising.” *Id.* at 17. Establishing that results are unexpected requires, for example, Appellant to proffer factual evidence that shows unexpected results relative to the closest prior art. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991). Here, Appellant does not address what the closest prior art is or why its method provides better or unexpected results as compared to the closest art.

Appellant argues that Rysstad is not focused on lactose-reduced milk and Lewis produces commercial sterile milk. *Id.* at 18–19. Appellant again addresses the references individually rather than addressing the Examiner’s rejection based upon the references’ combined teachings. Appellant does not dispute, for example, the Examiner’s stated rationale as to why a person of skill in the art would have combined the high temperature treatments of Rysstad and Lewis with Ur-Rehman (to destroy microorganisms such as spore containing microbes). Ans. 6–7.

Finally, in the Reply Brief, Appellant argues that none of the references teach heat treatment at 150°C for at most 200 milliseconds. Reply Br. 4–5. Appellant’s argument does not identify error because it does not address the references’ combined teachings. Lewis teaches heating to 150°C for “appropriate holding times necessary to achieve ‘commercial sterility,’” and Rysstad teaches that aerobic spores can be eliminated by heating for less than 1 second. Rysstad 87. The time taught by Rysstad, zero to one second, overlaps with claim 1’s recited time period of zero to 0.2 seconds. A person of skill in the art would look to references like Rysstad to determine the “appropriate” holding time referenced in Lewis. Ans. 6–7, 16. Moreover, our reviewing court has held that “even a slight overlap in range establishes a prima facie case of obviousness.” *See In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003).

Because Appellant’s arguments do not identify harmful error, we sustain the Examiner’s rejection.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3-5, 7, 8, 10-12, 16-24, 26, 27, 34-38	103	Ur-Rehman, Tossavainen, Rysstad, Lewis	1, 3-5, 7, 8, 10-12, 16-24, 26, 27, 34-38	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED