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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SYLVAIN DIGUET, KARIN FELTES, NICOLLE KLEEMANN,
BRUNO LEUENBERGER, and JOHANN ULM

Appeal 2015-004616
Application 13/113,543
Technology Center 1700

Before CHUNG K. PAK, JEFFREY T. SMITH, and
WESLEY B. DERRICK, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 8 through 10, which are all of the claims pending in the above-identified patent application.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Appellants identify the Real Party in Interest as DSM IP Assets B.V. (Appeal Brief filed November 13, 2014, ("App. Br.") 2.)

² Claims 1, 3, 5–7, and 20 were cancelled in an Amendment filed August 12, 2004, in response to the Final Office Action entered May 13, 2014 ("Final Act."). The Examiner indicated in an Advisory Action entered September 5, 2014, that the amendments would be entered.

STATEMENT OF CASE

The subject matter on appeal is generally directed to a process for preparing an extruded ready-to-eat cereal food product (Spec. 4, ll. 21–24; 5, ll. 24–25.)

CLAIMED SUBJECT MATTER

Details of the appealed subject matter are recited in representative claim 8, reproduced below from the Claims Appendix to the Appeal Brief.

8. A process for preparing an extruded ready-to-eat cereal food product comprising the steps of:
 - (a) adding encapsulated particles in the form of beadlets containing a polyunsaturated fatty acid (PUFA) to an extrudable cereal food material, wherein the beadlets are comprised of a PUFA embedded in a crosslinked protein matrix and, optionally, an internal lubricant and/or further ingredients, wherein the PUFA content embedded in the beadlets is from 10–60%
 - (b) mixing and extrusion cooking the extrudable cereal food material at high temperature between 100°C to 180°C in an extruder to obtain a homogeneous extrusion cooked cereal food material mixture thereof,
 - (c) extruding the extrusion cooked cereal food material mixture from the extruder and cutting the extruded mixture into pieces, and optionally,
 - (d) coating and/or drying the pieces to form the extruded ready-to-eat cereal food product.

(App. Br. 11, Claims App'x.)

REFERENCES AND REJECTIONS

Appellants seek review of the following grounds of rejection maintained by the Examiner in the Answer entered on December 29, 2014 (“Ans.”):

Claim 8 and the Specification under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement; and

Claims 8–10 under 35 U.S.C. § 103(a) as unpatentable over the disclosures of International Patent Application Publication WO 01/74175 A1, published in the name of Sanguansri et al. on October 11, 2001 (hereinafter referred to as “Sanguansri”) and U.S. Patent Application Publication 2004/0017017 A1, published in the name of Van Lengerich et al. on January 29, 2004 (hereinafter referred to as “Van Lengerich”) as evidenced by *Bailey’s Industrial Oil and Fat Products*, 6th ed., Fereidoon Shahidi Editor (2005) (hereinafter referred to as “Bailey’s”) and *Extrusion Cooking—Technologies and Applications*, Woodhead Publishing in Food Science and Technology, Robin Guy Editor (2001) (hereinafter referred to as “Extrusion Cooking”).

DISCUSSION

Upon consideration of the evidence on this appeal record and each of Appellants’ contentions, we affirm the Examiner’s rejection of claims 8–10 under 35 U.S.C. § 103(a) for the reasons set forth in the Final Office Action and the Answer, but reverse the Examiner’s rejection of claim 8 and the Specification under 35 U.S.C. § 112, first paragraph for the reasons set for

the in the Appeal Brief. We add the discussion below primarily for emphasis and completeness.

*Rejection of Claim 8 and the Specification for Failing to Comply with the
Written Description Requirement*

The Examiner finds that the recitation in claim 8 of “at high temperature between 100°C to 180°C” and the recitation in the Specification of “cooking . . . between 100°C to 180°C” both constitute new matter because the written descriptive support that Appellants identified for adding this subject matter to claim 8 and the Specification is based on a non-patent literature publication (Extrusion Cooking) that was incorporated by reference into Appellants’ Specification. (Final Act. 2–4.)

However, with respect to the Examiner’s apparent rejection of the Specification under 35 U.S.C. § 112, first paragraph, as explained in Manual of Patent Examining Procedure (M.P.E.P.) § 2163.06, an Examiner should *object* to new matter added to a Specification under 35 U.S.C. § 132, rather than issuing a rejection under 35 U.S.C. § 112, first paragraph.³

Accordingly, we reverse the Examiner’s rejection of the Specification under

³ See also *Pennwalt Corp. v. Akzona Inc.*, 740 F.2d 1573, 1578 n.11 (Fed. Cir. 1984) (“Claims which are amended with limitations unsupported by the original disclosure are rejected under 35 U.S.C. § 112 (first paragraph) as lacking support in the specification, while such amendments to the abstract, specification, and drawings are objected to as being drawn to new matter [under § 132]” (citing *In re Rasmussen*, 650 F.2d 1212 (CCPA 1981))).

35 U.S.C. § 112, first paragraph. To the extent that the Examiner objects to the Specification for containing new matter, we have jurisdiction to decide both the rejection of claim 8 under 35 U.S.C. § 112, first paragraph and the objection to the Specification because our decision on the § 112 rejection will have the same effect on the new matter objection in this situation due to the same new matter involved. M.P.E.P. § 2163.03 II.

As Appellants explain, they submitted an Amendment to the Patent Office on January 14, 2014 in which claim 8 was amended to add “at high temperature between 100°C to 180°C,” and page 5, lines 23–24 of the Specification were amended to add “cooking . . . between 100°C to 180°C.” (App. Br. 5–6.) Appellants indicated in the January 14, 2014 Amendment that support for the added limitation relating to the recited extrusion temperature was present at page 6 of Extrusion Cooking (Amendment filed January 14, 2014, 6), which had been incorporated by reference into Appellants’ Specification as originally filed via the following statements:

The terms “extruded food” and “extruded cereals” are used in the meaning with which the person skilled in the art is familiar and comprise all food or cereals which are obtained by compression as part of their preparation and relate to extrusion products based on corn, wheat, rye, barley, oats, rice, millet, etc., comprising, optionally, additives such as flavourings, vitamins and minerals. *Extruded cereals and the technology for their preparation is described in detail in, e.g., “Extrusion Cooking”, R. Guy, editor, Woodhead 20 Publ. Ltd., Cambridge, GB, 2001, which is herewith incorporated into the present specification by reference.* The term extrusion, therefore, comprises extrusion cooking as well as extrusion at relatively low temperatures. Low temperature extrusion is used in the preparation of pasta and

noodles while extrusion at relatively high temperatures is used for ready-to-eat cereals, such as breakfast cereals and snacks.

(Spec. 5, ll. 14–24.) (emphasis added.)

We agree with Appellants that the amendments to claim 8 and the Specification to include subject matter originally incorporated by reference to a non-U.S. patent publication—Extrusion Cooking—is specifically sanctioned by 37 CFR §1.57(g). (App. Br. 6.) In addition, the statement in the Specification incorporating “[e]xtruded cereals and the technology for their preparation,” including extrusion of “ready-to-eat cereals, such as breakfast cereals and snacks” at relatively high temperatures, described in Extrusion Cooking by reference makes clear that such disclosures in Extrusion Cooking are effectively part of the Specification as originally filed. *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citations omitted). (“Incorporation by reference provides a method for integrating material from various documents into a host document . . . , by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein.”)

Moreover, the disclosures of Extrusion Cooking are sufficient to demonstrate that Appellants were in possession of the temperature range added to claim 8 and the Specification at the time of filing. (Extrusion Cooking 6, ll. 1–10 (“A second feature that distinguishes extrusion cooking from other food processes is the use of very high temperature, usually in the range of 100–180°C. . . . The use of high temperatures reduces the

processing time and allows a full transformation of raw material to its functional form in periods as little as 30-120s . . . to form the required product structure in direct extrusion, or to form the half-products in the second generation snack pellets”), 143 (Table 7.4) (showing various breakfast cereals extrusion-cooked at 110–180°C); *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991) (To fulfill with written description requirement “the applicant must . . . convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the ‘written description’ inquiry, whatever is now claimed.”)

Accordingly, we reverse the Examiner’s rejection of claim 8 and the Specification under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement.

*Rejection of Claims 8–10 under 35 U.S.C. § 103(a)*⁴

Appellants do not dispute the Examiner’s finding that Van Lengerich discloses encapsulating polyunsaturated fatty acids in a film-forming component (e.g., “film-forming protein”) to form beadlets, which can be processed at high temperatures to form a powder. (*Compare* Final Act. 6–7 with App. Br. 7–9; *see also* Van Lengerich ¶¶ 18–22 and 94–97.)

⁴ We limit our discussion to those claims separately argued, and claims not separately argued stand or fall with the argued claims. 37 C.F.R. § 41.37(c)(1)(iv). Appellants argue claims 8–10 as a group on the basis of claim 8. (*See generally* App. Br. 7–9.) Therefore, for the purposes of this appeal, we select claim 8 as representative, and decide the propriety of the rejection of claims 8–10 based on claim 8 alone.

Appellants also do not dispute the Examiner's finding that Van Lengerich discloses that the encapsulated polyunsaturated fatty acids having nutritional and/or therapeutic benefits are suitable for incorporation into ready-to-eat cereal products. (*Compare* Final Act. 7 with App. Br. 7–9; *see also* Van Lengerich ¶¶ 4, 18–22, 42, 43, and 68.) Nor do Appellants dispute the Examiner's finding that Extrusion Cooking evidences that it was well-known in the art that ready-to-eat cereal products, such as breakfast cereals, were typically prepared by extrusion cooking at 115°C–180°C. (*Compare* Final Act. 7 with App. Br. 7–9.) According to page 6 of the Extrusion Cooking evidence referred to by Appellants, “[t]he use of [such] high temperatures reduces the processing time and allows a full transformation of raw material to its functional form in periods as little as 30–120 s.”

Appellants also do not dispute the Examiner's finding that Sanguansri discloses embedding tuna oil in a cross-linked, sugar-protein matrix to form beadlets containing up to about 80% oil. (*Compare* Final Act. 5 with App. Br. 7–9.) Appellants also do not dispute the Examiner's finding that Bailey's evidences that tuna oil contains at least 33.09% polyunsaturated fatty acids, indicating that Sanguansri's beadlets with 80% tuna oil would contain 26.50% polyunsaturated fatty acids. (*Compare* Final Act. 5–6 with App. Br. 7–9.) Nor do Appellants dispute the Examiner's finding that Sanguansri discloses that the beadlets can be used as a food ingredient in conventional extruded foods such as pasta, which is cereal product. (*Compare* Final Act. 5–6 with App. Br. 7–9.)

Based on the above undisputed findings, the Examiner concludes that it would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the polyunsaturated fatty acids encapsulated in a protein matrix taught by Sanguansri as the encapsulated fatty acid of the ready-to-eat breakfast cereals prepared by extrusion cooking at 115°C–180°C, as suggested by Van Lengerich and Extrusion Cooking. (Final Act. 7.)

Appellants argue that although Sanguansri discloses that tuna oil encapsulated in a protein matrix can be used as an ingredient in pasta, pasta products are made by extrusion cooking at temperatures well below 100°C, rather than at temperatures of between 100°C and 180°C, which are required for making ready-to-eat cereal products. (App. Br. 7–8.) In support of this argument, Appellants rely on section 9.9.5.2 (under the heading “Extruding”) of the “Food and Agricultural Industry” publication submitted to the Patent Office during prosecution of the instant application on January 14, 2014, which states that during extrusion “[i]f the dough is too hot (above 74°C), the pasta will be damaged.” (App. Br. 8.) Appellants contend that this publication provides evidence that Sanguansri’s disclosure of including tuna oil encapsulated in a protein matrix in pasta would not have provided one of ordinary skill in the art with a reasonable expectation that a ready-to-eat cereal product containing tuna oil encapsulated in a protein matrix could be successfully prepared by extrusion cooking at 100°C to 180°C. (*Id.*) Appellants further argue that Van Lengerich, Baileys, and Extrusion

Cooking do not cure the deficiencies of Sanguansri because these references provide no disclosure that would have indicated to one of ordinary skill in the art that Sanguansri's encapsulated tuna oil could have been used with a reasonable expectation of success to produce a ready-to-eat cereal product made at extrusion temperatures of 100°C to 180°C. (App. Br. 8–9.)

However, Van Lengerich discloses encapsulating an oil containing polyunsaturated fatty acids in a film-forming protein by mixing the oil and protein with an aqueous component to form an emulsion, homogenizing the emulsion, and reducing the water content of the emulsion by spray-drying it at temperatures of 110°C–200°C to form a powder. (Van Lengerich ¶¶ 18–22, 42, and 97.) Van Lengerich exemplifies extruding a homogenized emulsion of wheat protein and omega-3 fish oil. (Van Lengerich ¶¶ 87–90.) Van Lengerich further discloses that the protein-encapsulated oil can be incorporated into ready-to-eat breakfast cereals and pasta products to provide nutritional and/or therapeutic benefits (Van Lengerich ¶¶ 4 and 68), and Extrusion Cooking provides evidence that breakfast cereals are conventionally extrusion cooked at temperatures of 110°C–180°C. (Extrusion Cooking 143 (Table 7.4).)

Moreover, Sanguansri discloses an oil-in-water emulsion of tuna oil encapsulated in protein, and discloses spray-drying the emulsion at 180°C to form a powder containing 80% oil. (Sanguansri 2, ll. 28–32; 5, ll. 8–15, 18–20; 7, ll. 1–6.) Baileys provides evidence that tuna oil contains at least 33.09% polyunsaturated fatty acids (Baileys 304), indicating that

Sanguansri's powder including 80% tuna oil would contain 26.50% polyunsaturated fatty acids. Sanguansri further discloses that the powder can be used as a food ingredient, and disclosed using the powder in extruded products such as pasta. (Sanguansri 3, ll. 1–3.)

Thus, we concur with the Examiner that one of ordinary skill in the art seeking to produce a ready-to-eat breakfast cereal containing polyunsaturated fatty acids (e.g., omega-3 fatty acids) encapsulated in a film-forming protein for providing nutritional and/or therapeutic benefits, as taught by Van Lengerich, would have been led to employ an oil containing polyunsaturated fatty acids, such as tuna oil, encapsulated in a protein matrix, as disclosed in Sanguansri, in the extrusion process for producing a ready-to-eat breakfast cereal suggested by Van Lengerich and Extrusion Cooking, with a reasonable expectation of successfully extrusion-cooking the ready-to-eat breakfast cereal in the presence of the encapsulated oil taught by Sanguansri at conventionally-used temperatures of 110°C –180°C. Accordingly, Appellants' arguments are unpersuasive of reversible error.

Appellants also argue that although “Sanguansri discloses the production of a powder with oil (Tuna oil) encapsulated with a protein reacted with a reducing sugar, the protein that is employed is milk protein [] not gelatine [sic] as in the presently claimed invention.” (App. Br. 7.) However, this argument lacks persuasive merit because it is not based on limitations required by the claims. *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (“[A]ppellant's arguments fail from the outset because . . . they are not

based on limitations appearing in the claims.”) In other words, claim 8 does not require the protein to be gelatin.

Appellants further argue that the data presented in the Declaration of Andrea Bulbarello, submitted to the Patent Office on January 14, 2013, demonstrate that polyunsaturated fatty acids beadlets produced using gelatin and fructose had a pleasant, caramel flavor, and had no fishy or rancid flavor, in contrast to polyunsaturated fatty acids beadlets produced using modified food starch and sucrose, which had a fishy, rancid flavor, rather than a caramel flavor. (App. Br. 9.)

However, as discussed above, claim 8 does not require the protein embedding the polyunsaturated fatty acids to be gelatin. *In re Self*, 671 F.2d at 1348. In addition, Appellants do not allege, much less demonstrate, that the results presented in the Declaration would have been unexpected, and the results thus do not establish the non-obviousness of the claimed subject matter. *In re Gershon*, 372 F.2d 535, 538 (CCPA 1967) (“Expected beneficial results are evidence of obviousness of a claimed invention, just as unexpected results are evidence of unobviousness thereof.”)⁵

Accordingly, we sustain the Examiner’s § 103(a) rejection of claims 8–10.

CONCLUSION

⁵ See also *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1371 (Fed. Cir. 2007) (“[A]ny superior property must be *unexpected* to be considered as evidence of non-obviousness.”)

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In view of the reasons set forth above and the reasons set forth in the Final Action and the Answer, we affirm the Examiner's decision rejecting claims 8–10 under § 103(a), but reverse the Examiner's decision rejecting claim 8 and the Specification under § 112, first paragraph.

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).

AFFIRMED