

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FONTERRA CO-OPERATIVE GROUP LIMITED and
FONTERRA (USA) INC.,
Petitioner,

v.

ARLA FOODS AMBA,
Patent Owner.

IPR2022-00662
Patent 10,729,150 B2

Before DONNA M. PRAISS, CHRISTOPHER M. KAISER,
and JEFFREY W. ABRAHAM, *Administrative Patent Judges*.

KAISER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

INTRODUCTION

A. Background

Fonterra Co-operative Group Limited and Fonterra (USA) Inc. (collectively, “Petitioner”) filed a Petition (Paper 3, “Pet.”) requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 10,729,150 B2 (Ex. 1001, “the ’150 patent”). Arla Foods AMBA (“Patent Owner”) filed a Preliminary Response. Paper 12 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a) (2020). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

After considering the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we do not institute an *inter partes* review of any challenged claim.

B. Related Matters

The same parties are involved in IPR2022-00661, challenging the patentability of claims of U.S. Patent No. 10,709,146 B2, which has subject matter similar to that of the ’150 patent. Pet. 11; Paper 6, 1. In addition, Patent Owner identifies application number 17/817,306, filed on August 3, 2022, for broadening reissue of the ’150 patent. Paper 13, 1. The parties do not identify any other matters that are related to the present proceeding.

C. The Asserted Grounds of Unpatentability

Petitioner contends that claims 1–20 of the ’150 patent are unpatentable based on the following ground (Pet. 29–53):¹

Claims Challenged	35 U.S.C. §	References/Basis
1–20	103	V Powder Publication, ² Havea, ³ Nutricia Publication, ⁴ Fanning & Gregory, ⁵ Coca-Cola Publication ⁶

D. The ’150 Patent

The ’150 patent, titled “High Protein, Fruit Flavoured Beverage; High Protein, Fruit and Vegetable Preparation; and Related Methods and Food Products,” issued on August 4, 2020. Ex. 1001, codes (45), (54). According to the patent, “it is challenging to prepare fruit and/or vegetable flavoured high protein dairy products, and particularly liquid dairy products, because the addition of conventional fruit preparation, which normal[ly] has a low protein content, dilutes the protein content of the other ingredients.” *Id.* at 1:58–63. To address this problem, the ’150 patent describes “a new type of fruit preparation (or fruit and/or vegetable preparation) which contains a significant amount of protein in addition to the fruit material that is normally present in the preparation.” *Id.* at 2:5–8. One “aspect of the invention pertains to a high protein, fruit-flavoured beverage.” *Id.* at 2:56–3:8.

¹ Petitioner also relies on declarations from Dr. E. Allen Foegeding and Esra Cakir Fuller, Ph.D. Ex. 1044; Ex. 1046; Ex. 1052.

² WO 2013/065014 A1, published May 10, 2013 (Ex. 1004).

³ WO 2010/120199 A1, published Oct. 21, 2010 (Ex. 1006).

⁴ WO 2012/050434 A1, published Apr. 19, 2012 (Ex. 1054).

⁵ AU 2013/101214 A4, published Oct. 17, 2013 (Ex. 1008).

⁶ WO 2011/130898 A1, published Oct. 27, 2011 (Ex. 1053).

E. Illustrative Claim

Claims 1–20 of the '150 patent are challenged. Claim 1 is independent and illustrative. We reproduce claim 1 below, with some formatting added for clarity:

1. A high protein, fruit-flavoured beverage containing:
 - water,
 - a sweetener[,]
 - a total amount of protein of at least 4% (w/w)[,]
 - a total amount of the solids of a denatured whey protein composition of at least 2% (w/w) relative to the total weight of the beverage, the denatured whey protein composition containing:
 - a total amount of protein of at least 60% (w/w) on a dry weight basis relative to the total weight of the denatured whey protein composition,
 - insoluble whey protein particles having a particle size in the range of 1–10 microns, where the amount of said insoluble whey protein particles is in the range of 50–100% (w/w) relative to the total amount of protein of the denatured whey protein composition,
 - a fruit flavouring agent in an amount of at least 5% (w/w) relative to the total weight of the beverage, and
 - a food acid,
- said beverage having a pH in the range of 3.0–4.8.

Ex. 1001, 51:6–25.

ANALYSIS

A. Claim Construction

Petitioner proposes construing four terms that appear in the challenged claims: “denatured whey protein composition,” “total amount of protein . . . on a dry weight basis,” “insoluble whey protein particles,” and

“fruit flavouring agent.” Pet. 12–14. “For the limited purpose of [its] Preliminary Response only,” Patent Owner adopts Petitioner’s proposed constructions for each of these terms. Prelim. Resp. 13.

With respect to “total amount of protein . . . on a dry weight basis,” Petitioner argues that the ’150 patent defines the term. Pet. 13 (quoting Ex. 1001, 13:18–21, 41:28–44). Specifically, Petitioner argues that the ’150 patent defines “total protein” as “pertain[ing] to the total amount of true protein of a composition or product and disregard[ing] non-protein nitrogen” and “dry weight” as “the weight of the composition or product when it has been dried to a water content of 3% (w/w) water.” *Id.* On the present record, we agree. The ’150 patent states that “[t]he total protein content (true protein) of a sample is determined by” first “[d]etermining the total nitrogen of the sample” according to a particular procedure, second “[d]etermining the non-protein nitrogen of the sample” according to a second procedure, and third “[c]alculating the total amount of protein as” 6.38 times the difference between the total nitrogen and the non-protein nitrogen. Ex. 1001, 41:28–44. Moreover, the ’150 patent states that “the term ‘dry weight’ of a composition or product relates to the weight of the composition or product when it has been dried to a water content of 3% (w/w) water.” *Id.* at 13:18–21. These portions of the ’150 patent support Petitioner’s proposed construction of “total amount of protein . . . on a dry weight basis” as the total weight of true protein disregarding non-protein nitrogen when the composition in question has been dried to 3% (w/w) water. Accordingly, we adopt that construction for purposes of the present decision.

To determine whether or not to institute trial, we need not construe any of the remaining terms for which Petitioner proposes a construction. Accordingly, we do not construe any other term expressly. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

B. Asserted Obviousness

Petitioner argues that claims 1–20 of the ’150 patent would have been obvious over “[t]he V Powder Publication in view of the knowledge of a POSA and/or Havea and/or the Nutricia Publication and/or Fanning & Gregory and/or the Coca-Cola Publication.” Pet. 29–53. Patent Owner disagrees.⁷ Prelim. Resp. 29–48.

1. V Powder Publication

The V Powder Publication is titled “Dairy Product and Process.” Ex. 1004, code (54). The publication “relates to high protein liquid nutritional foods and methods for their preparation and use.” *Id.* at 1:3–4.

⁷ In part, Patent Owner argues that the use of “and/or” to connect the asserted references in the Petition results in “an unexplained, excessive, and unjustified swarm of possible combinations” of references. Prelim. Resp. 31–32. Patent Owner argues that we should deny institution for this reason. *Id.* (citing *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 (PTAB Mar. 6, 2019) (informative)). As discussed below, we deny institution on the merits of the Petition. Accordingly, we need not decide whether the Petition’s use of “and/or” causes it to present such a “voluminous and excessive” number of grounds as to be “unduly burdensome” and to warrant denial of institution. *See Adaptics*, IPR2018-01596, Paper 20, 18–20.

The V Powder Publication discusses the preparation of “specialized foods” that provide “high calorific density . . . but at the same time low viscosity.” *Id.* at 1:6–24. The “exacting requirements” that apply to these foods “require a high degree of heat treatment.” *Id.* at 1:21–29. When “whey protein” undergoes this “high temperature processing,” a “sulphurous off-flavour” can be generated, and “the pH of the whey” affects the degree to which this occurs. *Id.* at 3:10–21. In particular, there are “flavour benefits at pHs below 6.0.” *Id.* at 3:14–19. On the other hand, whey protein was known to experience aggregation problems under some conditions. *Id.* at 2:15–29. Specifically, “to produce a low viscosity emulsion with a long shelf-life, whey proteins could only be used when the pH of the system was . . . <pH 4 or >pH 6, to avoid the formation of a high-viscosity liquid, paste, or gel.” *Id.* at 2:24–29. The V Powder Publication describes an invention intended “to overcome these difficulties.” *Id.* at 3:22–24.

To do so, the V Powder Publication discusses several different “denatured [whey protein concentrate] powders.” *Id.* at 26:18–19, 27 (Table 2). In discussing these powders, the V Powder Publication teaches that, “[i]n certain embodiments[,] the heat treated, substantially denatured whey protein, for example [whey protein concentrate] or [whey protein isolate], is dried to a moisture content of less than 5%.” *Id.* at 24:1–2.

2. *Havea*

Havea “relates to a process of making a whey protein concentrate (WPC) comprising denatured whey proteins.” Ex. 1006, 1:1–2. As a control against which to compare its denatured WPCs, Havea discloses using WPC392, “a commercial native cheese whey.” *Id.* at 22:12–15. Havea describes WPC392 as “essentially native whey protein,” meaning it is “0%

denatured.” *Id.* at 29:2–3. According to Havea, WPC392 is made up of “81% protein, 5.7% fat, 3.4% ash, 4% lactose, and 4% moisture,” and it can be used as a starting material for preparing denatured WPC compositions. *Id.* at 38:1–39:25.

3. *Nutricia Publication*

The Nutricia Publication “relates to a preferably dairy based, fruit containing, high energy (medical) oral nutritional composition with improved compliance indicated for children with, or at risk of, faltering growth due to malnutrition.” Ex. 1054, 1:4–6. In particular, the nutritional composition takes “the form of a smoothie” that “is high in protein content” and “comprises fruit, preferably . . . in the form of a juice or puree.” *Id.* at 3:4–7.

4. *Fanning & Gregory*

Fanning & Gregory relates to “a denatured whey protein composition for increasing the blood serum concentration of free leucine in a subject to substantially the same level as native whey protein.” Ex. 1008 ¶ 1. The “liquid nutritional composition” of Fanning & Gregory contains “from about 2 to about 25% by weight of protein,” “wherein at least 55% of the heat-denaturable protein is denatured.” *Id.* ¶ 22. The composition may “further comprise[] . . . fruit juice [or] juice concentrates.” *Id.* ¶ 46.

5. *Coca-Cola Publication*

The Coca-Cola Publication “relates to a fermented whey protein-based concentrate, and beverages comprising the fermented whey protein-based concentrate,” as well as “methods for producing” both the concentrate and the beverages. Ex. 1053, 1:5–8. “The whey protein concentrate . . . used in [the Coca-Cola Publication] has a protein content of not less than

80% w/w.” *Id.* at 5:15–16. In addition, the concentrate may contain “fruit juice or puree including but not limited to mango, grape, apple, pear, [or] peach.” *Id.* at 4:14–15. “The amount of juice or puree added varies from 1–20% w/w, preferably 3–10% w/w, most preferably 5–8% w/w based on the total weight of the concentrate.” *Id.* at 4:15–17.

6. *Analysis*

Among other limitations, claim 1 of the ’150 patent recites “a total amount of protein of at least 60% (w/w) on a dry weight basis relative to the total weight of the denatured whey protein composition.” Ex. 1001, 51:14–16. The remaining challenged claims all depend from claim 1. *Id.* at 51:25–52:65; *see also* Pet. 37 (“Claims 2–20 depend from claim 1.”). Accordingly, all of the challenged claims incorporate the limitations of claim 1. 37 C.F.R. § 1.75(c). Therefore, to show the obviousness of any challenged claim, Petitioner must show that the asserted prior art teaches or suggests “a total amount of protein of at least 60% (w/w) on a dry weight basis relative to the total weight of the denatured whey protein composition.”

Petitioner relies solely on the V Powder Publication for this teaching. Pet. 31–35. With respect to the “dry weight basis” portion of this limitation, Petitioner argues that “the protein content of Powder F [of the V Powder Publication] was reported ‘on a dry weight basis’” because “[t]he V Powder Publication taught that ‘substantially denatured whey protein . . . is dried to a moisture content of less than 5%.’” *Id.* at 31–32 (citing Ex. 1004, 24:1–2). We are not persuaded that this teaching of the V Powder Publication shows sufficiently that the protein content disclosed therein is “reported ‘on a dry weight basis,’” as Petitioner argues.

As discussed above, Petitioner argues that the phrase “dry weight basis” in the ’150 patent should be interpreted as “relat[ing] to the weight of the composition or product when it has been dried to a water content of 3% (w/w) water.” *Id.* at 13. On the present record, Patent Owner does not dispute this proposed construction, Prelim. Resp. 13, and the construction itself is taken directly from the ’150 patent. Ex. 1001, 13:18–21. For these reasons, as discussed above, we construe “dry weight basis” as “relat[ing] to the weight of the composition or product when it has been dried to a water content of 3% (w/w) water.” Pet. 13.

Although the ’150 patent defines “dry weight basis” as requiring drying “to a water content of 3% (w/w) water,” the V Powder Publication teaches only drying “to a moisture content of less than 5%.” *Id.*; Ex. 1004, 24:1–2. Petitioner does not explain why the obviousness of a claim requiring a specific water content of 3% is supported by a reference teaching a much broader range of water contents between 0% and 5%. Pet. 31–32.

Nor is it clear to us why such an obviousness argument should prevail. It is true that “a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a *prima facie* case of obviousness.” *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003). But the specific water content of the challenged claims (precisely “a water content of 3% (w/w) water”) is not a “somewhat narrower claimed range” that is encompassed by the broader range of the V Powder Publication. *Id.* It is not a range at all; rather, it is a single, discrete point. This distinguishes the present situation from that in *Peterson*, in which the claims at issue recited ranges formed from single values that were modified in each case by

the term “about.” *Id.* at 1327 (reciting, e.g., “about 14 percent chromium,” “about 9.5 percent cobalt,” and “about 3.8 percent tungsten”).

Instead, this case presents a situation more analogous to that in *In re Baird*, in which the prior art taught a wide range of chemical compounds and the claims at issue recited a single compound within that range. 16 F.3d 380, 382 (Fed. Cir. 1994) (“[T]he generic diphenol formula disclosed in [the reference] . . . encompasses more than 100 million different diphenols, only one of which is [the claimed] bisphenol A.”). The teaching of a genus by a prior-art reference does not necessarily establish the obviousness of all possible species or subgenera that are encompassed by that genus. *Baird*, 16 F.3d at 382. Here, the challenged claims require a specific water content unmodified by “about” or any similar term. Ex. 1001, 13:18–21. There are an enormous, and potentially an infinite, number of such discrete points within the continuous range of 0% to 5% water content taught by the V Powder Publication. Under these facts, in the absence of some explanation from Petitioner as to why the conclusion would be warranted, we cannot conclude that the disclosure in the V Powder Publication supports the obviousness of the challenged claims. The present record provides no such explanation. Accordingly, we are not persuaded that Petitioner has shown sufficiently that the prior art teaches or suggests the “dry weight basis” limitation present in all the challenged claims.

C. Discretionary Denial

Patent Owner argues that we should exercise our discretion under 35 U.S.C. § 325(d) to deny institution. Prelim. Resp. 13–29. Because we deny institution based on the merits of Petitioner’s unpatentability

arguments, we need not decide whether to exercise discretion to deny institution.⁸

CONCLUSION

Upon consideration of the Petition, the Preliminary Response, and the evidence presented, we determine that Petitioner has not shown a reasonable likelihood that it will prevail in showing that at least one of the challenged claims is unpatentable. Accordingly, we do not institute an *inter partes* review of any challenged claim based on any ground asserted in the Petition.

ORDER

It is hereby

ORDERED that, pursuant to 35 U.S.C. § 314, the Petition is denied, and no *inter partes* review is instituted.

⁸ If we were to address the § 325(d) question, given the inclusion of all asserted references on the face of the '150 patent, Ex. 1001, code (56), we note that instituting review likely would require us to determine that Petitioner had demonstrated “that the Office erred in a manner material to the patentability of the challenged claims.” *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). Without taking a firm position on the issue, we note that Petitioner might encounter difficulty in making such a demonstration given the absence, discussed above, of a sufficient showing that the references in question teach or suggest all limitations of the challenged claims.

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