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BEFORE THE PATENT TRIAL
AND APPEAL BOARD

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*Ex parte* CHRISTELLE SCHAFFER-LEQUART,
OLIVIER YVES ROGER, ANNE-SOPHIE WAVREILLE,
ANNE-CECILE AGNES LEBLEU, and
BEATRICE JEANNINE BAILLEUL

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Appeal 2017-002702
Application 13/992,994
Technology Center 1700

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Before ROMULO H. DELMENDO, LINDA M. GAUDETTE, and MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134 the final rejection of claims 1, 2, 4, 5, and 7–20. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b). Oral arguments were heard in this appeal on January 17, 2019.

We REVERSE.

The invention is directed to frozen confectionary products supplemented with whole grain. (claim 1; Spec. 1: 4-5).

Claim 1 is illustrative:

1. A frozen confectionary product comprising: 0 to 20% by weight fat, up to 25% by weight milk solids non fat, 5 to 35% sweetening agent, and up to 3% of stabiliser and/or emulsifier, and further comprising:

a hydrolysed whole grain composition having a substantial intact beta-glucan structure relative to a starting material;

an alpha-amylase or fragment thereof, which alpha-amylase or fragment thereof shows no hydrolytic activity towards dietary fibers when in the active state; and

a protease or fragment thereof, which protease or fragment thereof shows no hydrolytic activity towards dietary fibers when in the active state.

Appellant appeals the following rejection:

Claims 1, 2, 4, 5, and 7–20 are rejected under 35 U.S.C. § 103 as unpatentable over Conrad (US 4,377,602 issued March 22, 1983) in view of Bunzel (J. Sci. Food Agric. 81:653-660 (2001)), and Chatel (US 2010/0112127 A1 published May 6, 2010).

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[1] Appellant is Applicant, Nestec S.A., which is also the real party in interest (Application Data Sheet filed June 10, 2013 at 4; Appeal Br. 2).

Appellant's arguments focus on the subject matter common to independent claims 1, 14, 15, 16, and 18 (Appeal Br. 7-19). We select claim 1 as representative. Any claims not argued separately will stand or fall with our analysis of the rejection of claim 1.

## FINDINGS OF FACT & ANALYSIS

Claim 1 requires a frozen confectionary product comprising, in relevant part, "a hydrolyzed whole grain composition having a substantial intact beta-glucan structure relative to a starting material" and "a protease . . . which protease . . . shows no hydrolytic activity towards dietary fibers when in the active state."

The Examiner finds that Conrad teaches using Neutrase as a protease in the treatment of a whole grain product (Final Act. 2). The Examiner finds that "Neutrase is a known protease which does not affect dietary fibers." (Final Act. 2). The Examiner finds that Conrad's use of an amylase, which is unreactive toward dietary fiber, would have suggested selecting a protease that does not affect dietary fibers (Final Act. 4). The Examiner finds that Conrad is silent regarding a protease that is inactive towards all dietary fibers (Final Act. 4). The Examiner finds that Bunzel teaches hydrolysis of whole grains using alpha-amylase and a protease which are each inactive towards dietary fiber (Final Act. 4). The Examiner bases this finding on a determination that the dietary components in Bunzel are produced intact (Final Act. 4). The Examiner concludes[2] that it would have been obvious to

[2] The Examiner relies on Chatel to teach incorporating the hydrolyzed whole grain in frozen confection (Final Act. 4-6). Appellant does not specifically challenge this combination (Appeal. Br. *generally*). Therefore, we limit our

modify Conrad's hydrolyzed whole grain by using amylase and a protease which do not hydrolyze dietary fibers as taught by Bunzel based on common sense (Final Act. 4, 6).

Appellant argues that the Examiner has not established a prima facie case of obviousness because the rejection is based upon unsubstantiated characterizations of the applied prior art and misapplication of the law (Appeal Br. 8). Appellant contends that the Examiner has not provided any evidence to support the finding that the enzyme Neutrase in Conrad is a "known protease which does not affect dietary fibers" (Appeal Br. 8). Appellant argues that evidence in the 37 C.F.R. § 132 Declaration of Christina Vafeiadi ( "Vafeiadi Declaration") established that Neutrase hydrolyzes beta-glucan but not arabinoxylan in dietary fiber (Appeal Br. 8–9). Appellant contends that the Examiner's finding that the amylase used in Conrad is unreactive with dietary fibers is conclusory and lacks supporting evidence (Appeal Br. 9). Appellant contends that the Examiner is mistaken in relying on Conrad's disclosure that the amylase is substantially free of other carbohydrate-hydrolyzing enzymes to support the finding that amylase has no reactivity towards dietary fiber (Appeal Br. 9). Appellant argues that Conrad's disclosure merely indicates that amylase is used by itself, not that amylase does not react with dietary fiber (Appeal Br. 9, fn. 1). Appellant argues that Bunzel fails to teach that the Alcalase enzyme used does not react with dietary fibers (Appeal Br. 10). Appellant contends that Bunzel's focus is on the identification and quantification of dehydrodiferulates and not the dietary fiber (Appeal Br. 10). Appellant contends that contrary to the

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discussion to combination of the teachings of Conrad and Bunzel as argued by Appellant.

Examiner's unsupported finding, Conrad, Bunzel and Chatel fail to teach or suggest whole grain hydrolysate having intact beta-glucan structure relative to the starting material (Appeal Br. 11). According to Appellant, the Examiner's reason for using a protease that does not react with dietary fiber is based on the conclusory assertion of common sense (Appeal Br. 12). Appellant argues that the Examiner's proposed modification of Conrad with the teachings of Bunzel and Chatel so as to yield a hydrolyzed whole grain material with substantially intact beta-glucan structure lacks rational underpinnings (Appeal Br. 12).

The Examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that burden is met, the burden of coming forward with evidence or argument shifts to the Applicant. *Id*.

In this present case, the Examiner's rejection is based upon Conrad's teaching to use Neutrase as a protease. The Examiner finds that Neutrase is a protease that does not react with dietary fiber (Final Act. 2). The Examiner finds that the supporting evidence in the Vafeiadi Declaration showing Neutrase hydrolyzes beta-glucan in dietary fiber is inconclusive because Neutrase is a commercial enzyme solution that may include other enzymes that affect dietary fiber (Ans. 7-8). Appellant is correct, however, that Conrad uses Neutrase as the protease in the exemplified whole grain hydrolysis (Conrad examples 1 to 7 in cols. 5 to 8) and Conrad does not teach purifying the Neutrase to remove enzyme contaminants (Reply Br. 2–3). In other words, the preponderance of the evidence favors Appellant's

argument that the Vafeiadi Declaration evidence shows that Conrad's Neutrase would interact with the beta-glucan structure in the dietary fiber.

The Examiner further finds that Bunzel teaches that in order to form intact soluble and insoluble dietary fibers the amylase and protease should be inactive toward dietary fibers (Ans. 8). The Examiner, however, does not cite to where Bunzel provides such a teaching. In addressing Appellant's argument that Bunzel is only directed to identifying and quantifying the dihydrodiferulates in soluble and insoluble dietary fiber, the Examiner finds that Bunzel teaches isolating soluble and insoluble dietary fibers from whole grains and using those isolated portions to determine the dehydroferulate amounts in each portion (Ans. 9). The Examiner cites to page 654 of Bunzel where the preparation of the insoluble and soluble dietary fiber are taught (Ans. 9). The Examiner finds that Bunzel uses the same protease as Appellants (i.e., Alcalase 2.4L) and finds that Bunzel teaches that the idea of using alpha-amylase and a protease which are not reactive towards dietary fibers was known in the art, at the time the invention was made (Ans. 10). Appellant is correct that Bunzel, however, does not teach that the protease should not affect the soluble or insoluble dietary fibers. Bunzel may use the same protease enzyme as the Inventors use, but there is no indication from Bunzel that the Alacalase enzyme is a better protease to use than, for example, Neutrase as used in Conrad. Appellant argues persuasively that the Garcia-Carreno[3] reference, made of record as of December 4, 2015, shows that proteases differ greatly in, for example, specificity, chemical nature of the amino acid or prosthetic group, enzyme activity, identity of inhibitors

[3] F. L. Garica Carreno, *Biotechnology Education*, Vol. 2, No. 4, pp. 150-153, 1991.

and activators, solubility, kinetic properties, and degree of hydrolysis (Reply Br. 6). In other words, the Examiner has not sufficiently explained why one of ordinary skill in the art would have substituted the Alcalase enzyme of Bunzel as the protease in Conrad, absent impermissible hindsight.

On this record, we are constrained to reverse the Examiner's § 103 rejection.

## DECISION

The Examiner's decision is reversed.

## ORDER

REVERSED