

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MUKUND PARTHASARATHY

Appeal 2008-0742
Application 10/271,902
Technology Center 1700

Decided: February 29, 2008

Before EDWARD C. KIMLIN, CHUNG K. PAK, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Statement of the Case

This is an appeal under 35 U.S.C. § 134 from a final rejection
of claims 1-7. We have jurisdiction under 35 U.S.C. § 6.

Appellant's invention relates to a dry pet food. An understanding of Appellant's invention can be gleaned from independent claim 1 which appears below:

1. A dry pet food comprising less than 15%, by weight, water and thermal-stable α -amylase and having a bulk density above about 25 pounds per cubic foot.

The Examiner relies on the following references in rejecting the appealed subject matter:

| | | |
|-----------|-----------|---------------|
| Coffee | 4,190,679 | Feb. 26, 1980 |
| Spradlin | 4,393,085 | Jul. 12, 1983 |
| Marino | 4,418,086 | Nov. 29, 1983 |
| Priegnitz | 4,540,585 | Sep. 10, 1985 |
| Tonyes | 4,713,250 | Dec. 15, 1987 |

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as follows:

- I. Claims 1-3 stand rejected over Priegnitz in view of Coffee.
- II. Claims 4-7 stand rejected over Priegnitz, Coffee and further in view of Marino and Tonyes or Spradlin.

We have thoroughly reviewed each of Appellant's arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in

view of the applied prior art. Accordingly, we will sustain the Examiner's rejections.¹

The Examiner contends that Priegnitz describes a pet food product comprising the claimed enzyme and having the claimed density. The Examiner recognizes that Priegnitz does not characterize the pet food product as a "dry" pet food product comprising water that is less than 15% by weight. (Answer 4). The Examiner contends that Coffee describes the advantages of a dry pet food product. The Examiner concludes that it would have been obvious to a person of ordinary skill in the art to formulate a pet food product comprising a moisture content of less than 15% to obtain the disclosed advantages of a dry pet food. (Answer 4).

Appellant contends that the Examiner has failed to establish a *prima facie* case of obviousness in the rejection because there is no teaching or suggestion to combine the cited references to arrive at the present claims and, even if combinable, the cited references fail to disclose or suggest every element of the present claims. (Br. 12-15).

The issue presented is as follows:

Has the Examiner correctly determined that a person of ordinary skill in the art would have found it obvious to have formulated a pet food product, having a moisture content of less than 15%, with α -amylase, within the meaning of 35 U.S.C. § 103? On this record, we answer this question in the affirmative.

¹ Appellant has grouped the arguments for claims 1-3 together and claims 4-7 together. We select claims 1, 4 and 5 as representative.

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim would have been obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); see also *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361 (Fed. Cir. 2006)(“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969)(“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”); *In re Hoeschele*, 406 F.2d 1403, 1406-07 (CCPA 1969)(“[I]t is proper to take into account not only specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom . . .”).

Priegnitz invention relates to food products and more particularly to food products of an amylaceous character containing heat stable α -amylase which is added in amounts sufficient to maintain or improve the soft texture after a heat treatment. (Col. 1, ll. 9-14).

Priegnitz discloses hardness and change in texture is inherently undesirable in most food products, and it thus becomes clearly desirable to prevent this change in texture or reduce the texture deterioration in a stored food. (Col. 1, ll. 31-34).

Priegnitz discloses to avoid texture deterioration in food products, α -amylase is added to the food product in quantities that would have assured a sufficiently high activity level after processing to maintain or improve the texture of the food product. (Col. 2, ll. 50-55). Priegnitz also discloses that another advantage in adding α -amylase is an improvement in palatability upon storage. (Col. 4, ll. 18-22).

Priegnitz discloses processing of the food product depends on temperature and time, which must be sufficient to cook the food and gelatinize the starch, yet insufficient to inactivate the α -amylase. In other words, the α -amylase must be heat stable. Priegnitz discloses,

[p]rocessing temperatures of food containing α -amylase can range up to 150° C for short periods of time with the effective amounts of the added α -amylase remaining active. However, it is more preferable to operate at process temperatures between 75° C and 110° C, which is an effective temperature range for achieving most food processing and stabilization. It is critical that the α -amylase not

be totally or substantially inactivated by such conditions as overly high temperatures or long retention times during processing. (Col. 3, ll. 20-37).

Priegnitz discloses that suitable residence time for the food product ranges from 5 seconds to 15 minutes. (Col. 3, ll. 38-42).

Priegnitz also discloses that the rate and degree of softening of the food is dependent upon the activity of the enzyme used, the presence and amount of free moisture, enzyme, chloride ion, calcium, the pH and temperature of the product. (Col. 3, ll. 3-5). Priegnitz discloses α -amylase is active in a pH range of about 2 to 11 with a moisture content of over 10-15%. (Col. 3, ll. 11-13).

Priegnitz further discloses that when stored for the same period of time under the same conditions food products are at least 5 percent softer than the extruded foods without α -amylase added. Food products without the α -amylase added experienced a staling or hardening effect, while the food products with the additional α -amylase were at least as soft as the original texture. (Col. 3, ll. 49-57).

Appellant's principal contention is that the cited prior art does not describe or suggest the use of a heat stable α -amylase enzyme in a dry pet food. In support of this position Appellant contends that Priegnitz is directed to a semi-moist or wet pet food and teaches away from a dry pet food. (Br. 12-15). Appellant also contends that

Priegnitz discourages the uses of α -amylase in food products containing less than 15% moisture. (Reply Br. 3).²

Priegnitz discloses the concept of adding α -amylase enzyme is applicable to any type of food, preferably to semi-moist foods. (Col. 3, ll. 58-60). Priegnitz discloses the α -amylase utilized must withstand the processing conditions sufficient to cook the food product and gelatinize the starch, without inactivating α -amylase. (Col. 3, ll. 20-37). In an obviousness analysis, we consider “not merely what the references disclose, but whether a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would have been led to make the combination recited in the claims.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In the present case, a person of ordinary skill in the art would have recognized from the teachings of Priegnitz that α -amylase could have been added to any type of food product with the expectation that α -amylase would have had some activity in an environment comprising a moisture content within 10-15%, a product identified by Appellant as “dry”. Moreover, based on the teachings of Priegnitz, we find that a person of ordinary skill in the art would have been led to add α -amylase to any type of food product to obtain an improvement in palatability upon storage.

Regarding claims 4-7, Appellant contends that the claimed invention requires water in the range of from 8 to about 11% by

² Appellant has not presented arguments directed to the bulk density of the food product.

weight and further that claims 5-7 require the α -amylase to be added before extrusion. (Br. 16-19). As discussed above, we find that Priegnitz evidences the obviousness of adding α -amylase to a food product comprising a moisture content within 10-15%. Priegnitz also discloses the addition of α -amylase to the food product prior to extrusion.

The Examiner has added additional prior art references to the combination of Priegnitz and Coffee to address the specific limitations of the claims. Appellant has not specifically argued that the additional cited prior art references do not teach the features identified by the Examiner and would not have been suitable for combining the teachings thereof with the teachings of Priegnitz and Coffee.

For the foregoing reasons and those presented in the Answer, the rejections of claims 1-7 under 35 U.S.C. § 103(a) are affirmed. As a final point with respect to the § 103 rejections, we note that Appellant bases no argument upon objective evidence of nonobviousness, such as unexpected results.

ORDER

The rejection of claims 1-7 under 35 U.S.C. § 103 (a) is affirmed.

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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

tf/ls

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