

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID J. DOMINGUES
and
DAVID A. KIRK

Appeal 2007-0212
Application 10/446,483
Technology Center 1700

Decided: November 30, 2006

Before KIMLIN, WALTZ, and KRATZ, *Administrative Patent Judges*.
KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-26. Claim 1 is illustrative:

1. A dough product comprising raw dough inside a package, the dough product comprising an oxidoreductase enzyme and a substrate that reacts with oxygen in the presence of the oxidoreductase enzyme, in amounts to consume oxygen to inhibit enzymatic discoloration of the dough.

The Examiner relies upon the following references as evidence of obviousness:

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|---------------|-----------------|---------------|
| Lehtonen | US 4,996,062 | Feb. 26, 1991 |
| Vaisanen | US 5,547,690 | Aug. 20, 1996 |
| Narayanaswamy | US 6,759,070 B1 | Jul. 6, 2004 |

Appellants' claimed invention is directed to a packaged dough product and its method of preparation. The product comprises raw dough, an oxidoreductase enzyme, such as glucose oxidase, and a substrate, such as glucose, that reacts with oxygen in the presence of the enzyme. The enzyme and substrate are present in an amount sufficient to consume oxygen and, thereby, to inhibit the enzymatic discoloration of the dough.

According to the Background section of Appellants' Specification, it was known in the art that enzymatic oxidation reactions can cause problematic discoloration of food products during processing and storage (page 1 of Specification, second paragraph). According to Appellants, the claimed "enzymatic approach to inhibiting enzymatic discoloration of a packaged dough is unique because it uses an enzyme and substrate that competes for oxygen with other enzyme(s) and substrate(s) in a dough that can cause discoloration" (page 7 of Br., penultimate paragraph). Appellants explain that the claimed enzymatic approach "can advantageously permit increased processing efficiencies by eliminating, if desired, the purging of a packaged dough's headspace with an inert gas (e.g., nitrogen)" (page 7 of Br., last paragraph).

Appealed claims 1-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Narayanaswamy in view of Vaisanen and Lehtonen.¹

Appellants have provided separate arguments only for claims 2, 15 and 16. Accordingly, claims 3-14 and 17-26 stand or fall together with claim 1.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we find ourselves in complete agreement with the Examiner's reasoned analysis and application of the prior art, as well as his cogent and thorough disposition of the arguments raised by Appellants. Accordingly, we adopt the Examiner's reasoning as our own in sustaining the rejection of record, and we add the following for emphasis only.

There is apparently no dispute that Narayanaswamy discloses a packaged dough product comprising raw dough and a substrate, glucose, that reacts with oxygen in the presence of a suitable enzyme. Narayanaswamy inhibits the deleterious effects of oxygen on the dough by reducing the residual oxygen content to less than 4% and, for best results, less than 2% (col. 7, ll.7-9). As appreciated by the Examiner, Narayanaswamy does not teach the claimed method of incorporating an oxidoreductase enzyme into the dough for removing the oxygen via chemical reaction with the glucose

¹ The statement of the rejection at page 3 of the Examiner's Answer refers to claims 1-25 rather than appealed claims 1-26. However, since the Examiner finally rejected claims 1-26 and has not explicitly withdrawn the rejection of claim 26, we consider the Examiner's omission of claim 26 in the statement of the rejection to be harmless error. Also, we note that Appellants have not separately argued claim 26.

substrate. However, we fully concur with the Examiner that Lehtonen provides ample motivation for one of ordinary skill in the art to employ Appellants' enzymatic approach to reduce the oxygen level in Narayanaswamy's package dough.

Lehtonen, like the admitted prior art in Appellants' Specification, establishes that it was known in the art that the removal of oxygen from packaged foods has the advantage of reducing spoiling caused by microorganisms that need oxygen to grow (see Lehtonen at col. 2, ll. 8-13). Lehtonen specifically states that "[o]xygen removal has been suggested for the purpose of minimizing detrimental oxidative processes in food" (col. 2, ll. 14-15). As an improvement over purging the packaging of oxygen with other gases, such as nitrogen, Lehtonen discloses the use of Appellants' enzymatic approach, i.e., adding glucose oxidase to the food product to reduce the oxygen level below 1% (col. 3, ll.8-12). Consequently, although Lehtonen does not specifically disclose raw dough as the food product, we are convinced that it would have been obvious for one of ordinary skill in the art to utilize Lehtonen's enzymatic approach instead of the gaseous purging method disclosed by Narayanaswamy. We agree with the Examiner that inhibiting discoloration of the dough product would be an inherent result that naturally flows from following the teachings of Lehtonen. As explained by the Examiner, Appellants have advanced no rationale why one of ordinary skill in the art would not include raw dough within the general class food products disclosed by Lehtonen. Nor have Appellants established that the amounts of enzyme fairly taught by Lehtonen would not inhibit discoloration, particularly with respect to the unspecified degree claimed.

Vaisanen simply provides additional motivation for one of ordinary skill in the art to include the claimed oxidoreductase enzyme in the packaged dough of Narayanaswamy, namely, for improving the rheological properties of the dough. As noted by the Examiner, one cannot obtain patent protection merely by discovering another advantage of doing what is taught by the prior art. *In re Dillon*, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990); *In re Lintner*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972). Of course, as explained above, Lehtonen teaches the advantage disclosed by Appellants of adding an oxidoreductase enzyme to a dough-based product.

As for separately argued claims 2, 15 and 16, we agree with the Examiner's reasoning set forth at pages 13-16 of the Answer.

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the inference of obviousness established by the Examiner.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims 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)(2006).

AFFIRMED

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