

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ERIC BRYAN BOND, JEAN-PHILIPPE MARIE AUTRAN,
LARRY NEIL MACKEY, ISAO NODA,
HUGH JOSEPH O'DONNELL, and DEAN VAN PHAN

Appeal 2007-2603
Application 10/958,559
Technology Center 1700

Decided: September 6, 2007

Before CHARLES F. WARREN, THOMAS A. WALTZ,
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-9, the only claims pending in the application. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

Claims 1 and 4 are illustrative of the invention and are reproduced below:

1. A nonwoven web comprising highly attenuated fibers comprising:

- a. destructureized starch;
- b. a thermoplastic polymer, and
- c. a plasticizer;

wherein said highly attenuated fibers contain less than 1% free water.

4. A nonwoven web comprising highly attenuated fibers consisting of:
- a. from about 5% to about 85% of destructureized starch,
 - b. from about 15% to about 90% of a thermoplastic polymer having a molecular weight of from about 5,000 g/mol to about 500,000 g/mol, and
 - c. from about 2% to about 70% of a plasticizer,

wherein said highly attenuated fibers contain less than 1% free water and thermoplastic polymer microfibrils are formed within the starch matrix in the highly attenuated fiber.

The Examiner relies on the following prior art references to show unpatentability:

Tomka	US 5,362,777	Nov. 8, 1994
Ryan	US 6,506,873 B1	Jan. 14, 2003

The Examiner made the following rejection:

Claims 1-9 under 35 U.S.C. § 103 as unpatentable over Ryan in view of Tomka.

ISSUE

Based on the contentions of the Examiner and the Appellants, the issue before us is: Are the facts and reasons relied on by the Examiner sufficient to establish that a person of ordinary skill in the art would have

been motivated to combine the teachings of the references in the manner claimed, or has the Examiner improperly relied on hindsight reasoning?

For the reasons discussed below, we find that the Examiner has properly established a prima facie case of obviousness which Appellants have failed to rebut.

RELEVANT FINDINGS OF FACT

- 1) Ryan relates to degradable polymer fibers for use in woven and nonwoven products (col. 1, ll. 18-21).
- 2) Ryan discloses fibers containing polylactide (col. 3, ll. 62-63) blended with one or more additional components or additives including plasticizers (col. 9, ll. 8-9) in an amount of .5 to 20 percent by weight (col. 9, ll. 16-17).
- 3) Ryan teaches that other components which may be blended with the polylactide include destructureized starch compositions (col. 10, ll. 62-63).
- 4) According to Ryan, the degradable polymer fibers may be formed using various conventional techniques, including melt spinning, melt blowing, and spunbonding (col. 11, l. 66-col. 12, l. 2). In each of the three latter techniques, the components are fed to an extruder where they are melted and processed (Ryan, Figures 1 and 2, and col. 13, ll. 50-51).
- 5) Ryan teaches that when blends of polymers are used, blending can either occur in the extruder or prior to introduction into the extruder (col. 13, ll. 26-31).

- 6) Tomka discloses a method of producing a thermoplastically processable starch which is a substantially water free, combination of starch with at least one additive such as a plasticizer (claim 1). In particular, Tomka teaches that the resultant starch may have a water content of less than 1.0% (claim 16).
- 7) According to Tomka, a high water content, i.e., on the order of 17% or more prevents reasonable extrusion of the starch (col. 2, ll. 6-8).
- 8) The thermoplastically processable starch can be in the form of granulates, flakes, pills, tablets, powder, or fibers (col. 5, ll. 64-68; claim 10).
- 9) In accordance with Tomka's process, native starch is mixed with a plasticizer using an extruder or kneader to form an approximately homogeneous thermoplastic mass (col. 4, ll. 18-24).
- 10) According to Tomka, the thermoplastically processable starch is suitable, in particular, as a blending component or formulation aid for addition to thermoplastic or thermosetting polymers (col. 6, ll. 14-18).

ANALYSIS AND CONCLUSIONS

Appellants concede that Ryan discloses degradable polymer fibers for use in nonwovens, the fibers being comprised of polylactide blended with different types of polymers, such as a destructurized starch composition (Br.

4). Appellants also do not dispute the Examiner's finding that Tomka discloses a thermoplastically processable starch with a moisture content of less than 1.0%, the starch being mixed with an additive or plasticizer and used in the construction of extruded sheets (Br. 4). Rather, Appellants argue that the Examiner has relied on improper hindsight reasoning in concluding that one having ordinary skill in the art would have been motivated by the teachings of Ryan, either alone or in combination with Tomka, to develop multicomponent fibers containing less than 1% free water (Br. 5). Appellants' argument is based on their contention that Ryan is silent regarding the use of destructureized starch containing less than 1% water and does not describe materials in relation to water content (Br. 5).

While the analysis in support of an obviousness determination should "identify a reason that would have prompted a person of ordinary skill in the art to combine the elements" in the manner claimed, *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1731, 82 USPQ2d 1385, 1389 (2007), "the analysis [of whether the subject matter of a claim is 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*, 127 S. Ct. at 1741, 82 USPQ2d at 1396 (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)). See *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361, 80 USPQ2d 1641, 1645 (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 our view, the Examiner properly set forth a *prima facie* showing of obviousness for the reasons well-stated in the Answer. Thus, the burden was properly shifted to the Appellants to come forward with evidence or argument in rebuttal. *In re Soni*, 54 F.3d 746, 749, 34 USPQ2d 1684, 1686 (Fed. Cir. 1995). Appellants’ arguments are not sufficient to satisfy this burden because they fail to address the Examiner’s reliance on the teachings of Tomka for motivation to provide the composition of Ryan with materials containing less than 1% free water (*see* Answer 5). Likewise, we are not persuaded by Appellants’ argument that the transitional phrase “consisting of” renders claim 4 patentable over the combined teachings of Ryan and Tomka. Appellants argue, in particular, that the phrase “consisting of” excludes any element not specified in claim 4 and, therefore, would exclude polylactide, an essential component of Ryan’s fibers (Br. 4). Appellants have not, however, refuted the Examiner’s finding that Ryan’s polylactide meets the claim 4 limitation of “a thermoplastic polymer having a molecular weight of from about 5,000 g/mol to about 500,000 g/mol” (*see* Answer 6).

ORDER

The rejection of claims 1-9 under 35 U.S.C. § 103 as unpatentable over Ryan in view of Tomka is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(i)(iv).

AFFIRMED

clj

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