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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DETLEF BUSCH, DOMINIC KLEIN, and BERTRAM SCHMITZ

Appeal 2015-006280
Application 12/295,131
Technology Center 1700

Before PETER F. KRATZ, CHRISTOPHER L. OGDEN, and AVELYN M. ROSS, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 11, 13, 17, 19, 21, and 23–33. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] In our Decision below we refer to the Specification filed September 29, 2008 (Spec.), the Final Office Action mailed June 16, 2014 (Final Act.), the Appeal Brief filed December 22, 2014 (Appeal Br.), and the Examiner's Answer mailed April 13, 2015 (Ans.).

STATEMENT OF CASE

The claims are directed to peelable film having a base layer and at least one peelable top layer. Spec. ¶2. Claim 11, reproduced below, is illustrative of the claimed subject matter:

> 11. A multilayer film which comprises a base layer and at least one peelable top layer, wherein the top layer contains 30 – 80% by weight amorphous polymer A which is polylactic acid (PLA) which contains 80 – 90% by weight of L lactic acid units and 10 – 20% by weight of D lactic acid units and 20 to 70% by weight biodegradable polymer B wherein the polymer B is a biodegradable blend which contains starch and a degradable polyester, and the top layer has a thickness of at least 3 μm and wherein the film has a sealed seam strength of 1 – 5 N/15 mm after sealing the top layer against itself at a temperature in the range of 85 – 120 °C, wherein the sealing can be done with a sealing time of 0.5 s and a sealing pressure of 10N/cm^2 and wherein the base layer comprises a crystalline lactic acid polymer (PLA) with a ratio of D lactic acids to L lactic acids (D:L) in a range from <10:90.

Claims Appendix at Appeal Br. 18.

REJECTIONS

The Examiner maintains the following rejections:

A. Claims 11, 13, 17, 21, 23–27, and 29–33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Narita[2] in view of Tokiwa[3] and in further view of Sawai[4] as evidenced by Ouchi.[5] Final Act.

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[2] Narita et al., EP 1 193 294 A2, published March 4, 2002 ("Narita").
[3] Tokiwa et al., US 2003/0079654 A1, published May 1, 2003 ("Tokiwa").
[4] Sawai et al., US 7,087,313 B2, issued August 8, 2006 ("Sawai").
[5] Ouchi et al., JP 2005-187630, published July 14, 2005 ("Ouchi").

B. Claims 19 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Narita in view of Tokiwa, in further view of Sawai and Haedt.[6] *Id.* at 5.

Appellants seek our review of rejections A and B, but focus their discussion on claims 11, 13, 19, and 28. Appeal Br. 3. Appellants do not present any argument for claims 17, 21, 23–27, and 29–33 separate from what is argued for claims 11, 13, 19, and 28. *Id.* at 10–14. We therefore focus our discussion below on claims 11 (Group I), 13 (Group II), 19 and 28 (Group III) to resolve the issues on appeal.

OPINION

Group I — Obviousness (claims 11, 17, 21, 23–27, and 29–33)

The Examiner rejects claim 11, among others, as obvious over Narita in view of Tokiwa and in further view of Sawai (as evidenced by Ouchi). Final Act. 2. The Examiner finds that Narita, in relevant part,

> discloses a multilayer film comprising a substrate and an aliphatic polyester composition on at least one surface of the substrate (claim 6). The aliphatic polyester comprises 90–9% by weight of polylactic acid (A) along with 90–9% by weight of an aliphatic polyester (B) (claim 6) where the film is biodegradable (paragraph 0035 and claim 5). The polylactic acid comprises a mixture of D-lactic acid and L-lactic acid (paragraph 0018).

Id. at 2–3. The Examiner acknowledges that Narita does not teach a biodegradable blend containing starch, but finds that Tokiwa "teaches a biodegradable resin composition comprising aliphatic polyesters blended with starch, such as Mater-Bi (paragraphs 37–38)." *Id.* The Examiner

[6] Haedt et al., EP 1 685 954 A1, published February 8, 2006 ("Haedt").

reasons that the skilled artisan would have reason to have substituted the biodegradable resin of Tokiwa for the aliphatic polyester of Narita to improve "biodegradability of the article while reducing cost of the article (paragraph 1 of Tokiwa)." *Id.* at 3. The Examiner also finds that while Narita teaches a polylactic acid mixture of D-lactic acid and L-lactic acid, Narita does not teach the relative weight percentages of each. *Id.* The Examiner finds that Sawai discloses

> a biaxially stretched film (column 1, lines 59-63) comprising a polylactic acid substrate layer (column 2, lines 64-67) and a polylactic acid copolymer of D-lactic acid and L-lactic acid containing 7-30% by weight of D-lactic acid (column 5, lines 55-58) where it would be expected for the copolymer to have 93-70% by weight of L-lactic acid.

Id. at 4. The Examiner explains that one skilled in the art would have reason to substitute the polylactic acid of Narita for the polylactic acid taught by Sawai "because they are functional equivalents." *Id.* The Examiner also finds that the "multilayer film of the combined references [would] intrinsically possess a [sealing seam strength at a] sealing temperature . . . , sealing time and sealing pressure [as claimed] because the cited references disclose a base layer and top layer with the same polylactic acid materials." *Id.*

First, Appellants argue that Narita does not teach that the polylactic acid "contains 80–90% by weight of L lactic acid units and 10–20% by weight of D lactic acid units as is required by the appellant's claimed invention." Appeal Br. 10. Rather, Narita teaches a polylactic acid having less than 2% D-lactic repeat units and therefore, Narita teaches away. *Id.* at 11. Moreover, Appellants urge that "[t]here is no disclosure in Sawai that the PLA **contains 80–90% by weight of L lactic acid units**." *Id.* 11–12.

Rather, Appellants urge that Sawai "requir[es] that the L-lactic acid content is less than 5% and preferably less than 3% by weight." Appeal Br. 11.

Appellants do not persuade us of reversible error. To begin, "[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley,* 27 F.3d 551, 553 (Fed. Cir. 1994). "[A] reference is not limited to the disclosure of specific working examples." *In re Mills*, 470 F.2d 649, 651 (CCPA 1972). And, disclosed examples do not constitute a teaching away from a broader disclosure. *In re Susi*, 440 F.2d 442, 446 n.3 (CCPA 1971). Here, Appellants fail to direct attention to any passage of Narita that discourages use of polylactic acid mixtures having 10–20% by weight of D lactic acid units.

In addition, Appellants argument that Sawai does not teach an L-lactic acid component of 80–90% by weight fails to identify error in the Examiner's reasoning. Sawai teaches that "[t]he polylactic acid copolymer (C) used in the present invention is a copolymer of D-lactic acid and L-lactic acid containing 7–30% by weight, preferably 8–25% of D-lactic acid." Sawai col. 5, ll. 54–57. The Examiner reasons that if the copolymer, having two lactic acid components, has a D-lactic acid weight percent of 7–30%, then the balance, i.e., the L-lactic acid percentage, must be 93–70%. Final Act. 4; Ans. 6–7. Thus, the relative weight percentages taught by Sawai overlap with those claimed. Moreover, and as the Examiner finds, when Sawai discusses L-lactic less than 5%, Sawai is describing the substrate layer and not the coating layer. Ans. 11. Appellants do not dispute this finding. Thus, we find no error in the Examiner's findings or reasoning.

Second, Appellants contend that "Narita does not pertain to PLA films allowing for the manufacture of sealing seams having sealing seam strength of 1- 5 N/15 mm (see claim 11)." Appeal Br. 12.

Appellants' argument reveals no error by the Examiner. Specifically, Appellants' argument fails to address the rejection as presented by the Examiner. The Examiner finds that the combination of references teaches the claimed multilayer film, having the claimed polylactic acid materials, and therefore, one skilled in the art would understand the multilayer film to intrinsically possess the claimed sealed seam strength. Final Act. 4; Ans. 8. These findings remain unrebutted by Appellants as Appellants have not shown that the multilayer film as proposed by the Examiner would not possess similar properties.

Third, Appellants argue that "Tokiwa does not relate to multilayer films but instead to a biodegradable resin composition with improved biodegradability or with an additional useful function (antibacterial properties)." Appeal Br. 12. As a result, Appellants argue that Tokiwa is not combinable, i.e., nonanalogous art. *Id.* at 13.

Again, Appellants' arguments are not persuasive of error. "Two separate tests define the scope of analogous art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved." *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). In order for a reference to be "reasonably pertinent" to the problem, it must "logically [] have commended itself to an inventor's attention in considering his problem." *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379–80

(Fed. Cir. 2007) (quoting *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992)). The scope of analogous art is to be construed broadly. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010). Here, the Examiner finds that Narita and Tokiwa are in the same field because both relate to "aliphatic polyester composition films." Final Act. 3; Ans. 9. More specifically, Narita and Tokiwa relate to packaging materials (Narita ¶ 3; Tokiwa ¶ 53) made from copolymers of D-lactic and L-lactic acid. Narita ¶¶ 4, 13, and 18; Tokiwa ¶¶ 13–16, 41 and 43. Furthermore, as the Examiner finds (Ans. 9), the resin of Tokiwa can be made into a film. Tokiwa ¶ 65; *see also id.* ¶ 52 ("The *biodegradable resin composition* obtained can be processed . . . and *formed into* membranes, sheets, *films* or nets.")(emphasis added). Thus, we find no error in the Examiner's findings.

Fourth, Appellants contend that films according to the instant invention possess advantages including: (1) "[they can] be excellently peeled on opening of the seal seam without a cohesion fracture or uncontrolled tearing of the film coming about" and (2) "an insubstantial raise of the haze of the film was observed." Appeal Br. 14. But, Appellants urge that these advantages are not realized or suggested by the prior art and therefore, the Examiner engaged in hindsight reconstruction. *Id.*

Appellants fail to identify any reversible error. As the Examiner explains, the advantages identified by Appellants are unclaimed features that will not be read into the claims. Ans. 9. Tellingly, Appellants do not quarrel with the Examiner's findings that these points of distinction have not been claimed. As unclaimed limitations, they provide no basis to distinguish the instant claims from the prior art. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) ("[A]ppellant's arguments fail from the outset because . . . they are

not based on limitations appearing in the claims."). Moreover, we find no evidence that the Examiner relies on impermissible hindsight reasoning as the Examiner's articulated reasons for combining the teachings of Narita, Sawai, and Tokiwa are supported by the prior art disclosures themselves. *See, e.g.*, *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (citing *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed. Cir. 1985)) ("The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made."). Here, the Examiner finds that the Narita in combination with Sawai, teaches each of the required elements of claim 1 in a PLA that contains 80–90% by weight of L lactic acid units and 10–20% by weight of D lactic acid units. The Examiner determines that the skilled artisan would have reason to combine Narita and Sawai because the polylactic acid copolymers of Narita and Sawai are functional equivalents. The Examiner further reasons that including a biodegradable blend containing a starch, as taught by Tokiwa, would have been obvious to improve biodegradability and lower cost. Final Act. 3. We discern no error in these findings and conclusions. Moreover, Appellants do not identify any knowledge relied upon by the Examiner that was gleaned only from the Appellants' disclosure and was not within the level of skill in the art at the time of the invention. *In re McLaughlin,* 443 F.2d 1392, 1395 (CCPA 1971).

Group II — Obviousness (claim 13)

The Examiner rejects claim 13 as obvious over Narita in view of Tokiwa and in further view of Sawai (as evidenced by Ouchi). Final Act. 2.

Claim 13 additionally requires that "the amorphous polymer is polylactic acid with 10–18% by weight D lactic acid units." Claims Appendix at Appeal Br. 18. For the reasons discussed above for claims 11, the Examiner finds the additional requirement of claim 13 met by the combination of Narita, Tokiwa and Sawai. Final Act. 4.

Appellants urge first that Narita teaches away from having the weight percentage of D-lactic acid as claimed. Appeal Br. 15. Specifically, "[A]ppellant[s] do[] not understand why one of ordinary skill in the art would increase the D-lactic acid when Narita is suggesting using PLA with less than **2% D-lactic repeat units.**" *Id.* Appellants also reiterate the argument above that "Sawai is requiring that the L-lactic acid content is less than 5% and preferably less than 3% by weight." Therefore, argues Appellants, "the feature that the PLA **contains 80–90%, by weight of L lactic acid units** and **10–18% by weight of D lactic acid units** has not been shown being present by the combination of Narita and Sawai." *Id.*

Appellants' arguments reveal no error by the Examiner. Claim 13, similar to claim 11, simply narrows the weight percentage of D-lactic acid units from 10–20% by weight (claim 11) to 10–18% by weight (claim 13). This narrowed range similarly falls within the teachings of Sawai. Therefore, for the reasons discussed above for claim 11 (Group I), Appellants' arguments are not persuasive.

Group III — Obviousness (claims 19 and 28)

The Examiner rejects claims 19 and 28 as obvious over Narita, Tokiwa, Sawai, and in view of Haedt. Final Act. 5. Claims 19 and 28 additionally require that "the thickness of the peelable top layer is from 3 to

10μm." Claims Appendix at Appeal Br. 18 and 19. In addition to the findings relating to Narita, Tokiwa, and Sawai discussed above (*see supra* pp. 3–4), the Examiner further finds that "Haedt teaches a polyester releasable layer having a thickness of between 0.1–0.3 mil (2.54–7.62μm) (paragraphs 0001 and 0048). Final Act. 5. The Examiner reasons that it would have been obvious to one skilled in the art to make the top layer of the Narita, Tokiwa and Sawai combination with a thickness as taught by Haedt, "to achieve predictable result of saving money on material of the peelable layer by using less material to form the layer, as in claims 19 and 28." *Id.* at 5–6.

Appellants urge that "Haedt does not disclose [that the] **PLA contains 80–90% by weight of L lactic acid units and 10–20% by weight of D lactic acid units**" and therefore, "[t]he Examiner is picking and choosing from the references" to arrive at the invention through impermissible hindsight. Appeal Br. 16.

Appellants do not persuade us of reversible error. We find no evidence that the Examiner relies on impermissible hindsight reasoning as the Examiner's reasons for combining the teachings of Narita and Haedt are supported by the prior art disclosures themselves. *Sensonics*, 81 F.3d at 1570. In addition to the findings discussed above relating to Narita, the Examiner finds that Haedt teaches a multilayer, peelable film suitable for packaging applications. Final Act. 5; *see also* Haedt ¶ 1. We also note that the polymer of the Haedt peelable film may be polylactic acid. Haedt ¶ 10. The Examiner reasons that the skilled artisan would have reason to adjust the thickness of the top layer, as taught by Haedt, because using less material yields greater cost-savings. Final Act. 5–6. We find no evidence of reliance

on impermissible hindsight reasoning, and Appellants have not identified evidence of record that suggests the Examiner committed reversible error.

CONCLUSION

The Examiner did not reversibly err in rejecting claims 11, 13, 17, 21, 23–27, and 29–33, under 35 U.S.C. §103(a), as being unpatentable over Narita in view of Tokiwa and in further view of Sawai as evidenced by Ouchi.

The Examiner did not reversibly err in rejecting claims 19 and 28, under 35 U.S.C. §103(a), as being unpatentable over Narita in view of Tokiwa, in further view of Sawai and Haedt.

DECISION

For the above reasons, the Examiner's decision to reject claims 11, 13, 17, 19, 21, and 23–33 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)(1).

AFFIRMED