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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ATSUSHI YAMAZAKI,
KYOKO INAGAKI, TAKESHI OOKAWA,
YOSHIHARU MORIHARA, YOUJI TAKATSU,
and MASANORI KOBAYASHI

Appeal 2019-000305
Application 13/991,098
Technology Center 1700

Before MICHAEL P. COLAIANNI, GEORGE C. BEST, and
DEBRA L. DENNETT, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) the final rejections of claims 1–4, 6, 7, 11, 13, 14, 18, and 20. Claims 5, 8–10, 12, 15–17, and 19 are canceled. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Toyobo Co., Ltd. (Br. 1).

STATEMENT OF THE CASE

Appellant's invention is directed to a multilayer film for use in packaging foodstuffs, drugs, industrial products, and similar objects that require limited exposure to gases (Spec. ¶¶ 1, 2). After the described multilayer film is subjected to a retort treatment, the film is said to retain good gas-barrier properties and lamination strength (*id.* at ¶ 1).

Claim 1 is illustrative (emphasis added):

1. A multilayer film obtained by forming *a crosslinked coating layer* on at least one face of a polyester substrate film, wherein

said coating layer is formed from a resin composition comprising an oxazoline group-containing resin, an acrylic resin, and optionally a urethane resin, and has a thickness (D) of 5 to 150 nm,

a relation of the thickness (D) of the coating layer with a ratio (P1/P2) of a peak-intensity (P1) of the peak having an absorption maximum in a region of $1655 \pm 10 \text{ cm}^{-1}$ and a peak-intensity (P2) of the peak having an absorption maximum in a region of $1580 \pm 10 \text{ cm}^{-1}$ in a total reflection infrared absorption spectrum of the coating layer satisfies an equation of a formula $0.035 \leq (P1/P2)/D \leq 0.060$,

the oxazoline group-containing resin is present in an amount of 30 to 50% by mass, the acrylic resin is present in an amount of 30 to 50% by mass, and the urethane resin is present in an amount of 0 to 20% by mass based on 100% by mass in total of said oxazoline group-containing resin, said acrylic resin, and said urethane resin,

the oxazoline group-containing resin is a copolymer of the oxazoline group-containing polymerizable unsaturated monomer and another polymerizable unsaturated monomer,

the acrylic resin comprises a carboxyl group having an acid value of not more than 40 mg[]KOH/g, and

the urethane resin comprises a carboxyl group having an acid value of 10 to 40 mg[KOH]/g.

Appellant appeals the following rejections:

1. Claims 1, 2, 6, 7, and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Yoshida et al. (JP 11179836 A; published July 6, 1999, and relying on a translation dated August 2014, “Yoshida”), in view of Oda et al. (US 5,691,002; issued Nov. 25, 1997, “Oda”) (Final Act. 3–6).
2. Claims 3, 13, and 14 are rejected under 35 U.S.C. § 103(a) as unpatentable over Yoshida, in view of Oda, and further in view of Sakai (JP 2006-052298 A; published Feb. 23, 2006, and relying on a machine translation) (Final Act. 6–7).
3. Claim 4 is rejected under 35 U.S.C. § 103(a) as unpatentable over Yoshida, in view of Oda, and further in view of Hideo et al. (JP 2001026749 A; published Jan. 30, 2001, and relying on a machine translation, “Hideo”) (Final Act. 7–8).
4. Claim 11 is rejected under 35 U.S.C. § 103(a) as unpatentable over Yoshida, in view of Oda, and further in view of Matsuda et al. (US 5,725,958; issued Mar. 10, 1998, “Matsuda”) (Final Act. 8–9).
5. Claim 18 is rejected under 35 U.S.C. § 103(a) as unpatentable over Yoshida, in view of Oda, Sakai, and further in view of Matsuda (Final Act. 9).

FINDINGS OF FACT & ANALYSIS

After review of the respective positions provided by Appellant and the Examiner, we AFFIRM the Examiner’s prior art rejections under 35 U.S.C.

§ 103(a) for the reasons presented by the Examiner and add the following for emphasis.

A. *Rejection of claims 1, 2, 6, 7, and 20 as unpatentable over the combination of Yoshida and Oda*

The Examiner's findings and conclusions regarding Yoshida and Oda are located on pages 3–6 of the Final Office Action.

The Examiner finds that Yoshida renders obvious each component and limitation of the multilayer film recited in independent claim 1, except that Yoshida does not teach the acid values of the acrylate and urethane resin's carboxylic groups (Final Act. 3–6). The Examiner finds Oda teaches that the acid values of an acrylate and urethane resin's carboxylic groups should be 15–50 KOH mg/g in order to improve a coating film's water dispersability (*id.* at 4). The Examiner determined that it would have been obvious for one of ordinary skill in the art at the time of the invention to have modified Yoshida's acrylic and urethane resins to exhibit Oda's acid values "in order to ensure good water dispe[r]sability" of a multilayer film (*id.*).

Appellant does not contest the Examiner's proposed combination of Yoshida and Oda (*see, e.g.*, Br. 11; Ans. 17). Rather, Appellant argues that the Examiner has not established a prima facie case of obviousness because Yoshida's teachings are deficient (*see* Br. 10–11). Specifically, Appellant contends that "Yoshida . . . discloses relatively broad ranges for (i) the oxazoline group-containing resin, acrylic resin, and urethane resin contents and (ii) the coating layer thickness, which ranges overlap the ranges for these features set forth in the appealed claims, but does not disclose (iii) (P1/P2)/D values" (*id.* at 10). Appellant argues that it would have been

“*sheer happenstance if any of*” Yoshida’s choices for the oxazoline group-containing resin, acrylic resin, and urethane resin amounts; the coating layer thickness; and “other variables that . . . provide a $(P1/P2)/D$ value within the [recited] ranges” resulted in the claimed multilayer film (*id.* at 11).

Appellant’s arguments are not persuasive.

There is no dispute that the claimed oxazoline group-containing resin range of 30–50% by mass overlaps Yoshida’s oxazoline copolymer range of 10–80% by mass (*see* Br. 12; Final Act. 3 (citing Yoshida ¶ 15)). There is similarly no dispute that the claimed acrylic resin range of 30–50% by mass overlaps Yoshida’s acrylate range of 10–80% by mass (*see* Br. 12; Final Act. 3 (citing Yoshida ¶ 15)). Likewise, it is undisputed that: (i) the claimed urethane resin range of 0–20% overlaps Yoshida’s urethane resin range of 10–70% (*see* Br. 12; Final Act. 3 (citing Yoshida ¶ 15)); and (ii) the claimed coating layer thickness (D) range of 5–150 nm overlaps Yoshida’s coating layer thickness range of 10–5,000 nm (*see* Br. 12; Final Act. 3 (citing Yoshida ¶ 57)). The overlapping ranges of the proportions of Yoshida’s components and the overlapping thickness range of Yoshida’s coating layer are sufficient to have rendered the claimed subject matter obvious. *See In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003) (holding that a prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art).

Appellant argues that “*Yoshida . . . does not inherently provide a multilayer film with a $(P1/P2)/D$ value that is within the claimed range recited in the appealed claims.*” (Br. 14.)

We are not persuaded by this argument because the Specification describes, *inter alia*, that the claimed infrared peak absorption intensity (P1)

is affected by the oxazoline group content (Spec. ¶ 28 *see also* Br. 4). As set forth above, Appellant does not dispute that Yoshida's ranges for the oxazoline group content and coating layer thickness (D) overlap each of these presently claimed ranges (*see* Br. 12; Final Act. 3 (citing Yoshida ¶¶ 15, 57)).

The Specification further describes that the claimed infrared peak absorption intensity (P2) is affected by the polyester substrate (Spec. ¶ 28; *see also* Br. 4). We note Yoshida teaches that the polyester substrate may be constructed from polyethylene terephthalate, which is a preferred material for the claimed multilayer film's substrate (*compare* Yoshida ¶ 10; Spec. ¶ 19).

In view of the prior art's teachings, Appellant has not identified reversible error in the Examiner's findings that "every aspect of the present application that results in the claimed property is disclosed in the overlapping embodiments of the prior art[,] which is a proper basis for inherency[.]" (Ans. 14). We, therefore, agree with the Examiner that Yoshida's overlapping ranges for the claimed components' contents and the thickness of Yoshida's coating layer comprising these components will necessarily result in the claimed property of $0.035 \leq (P1/P2)/D \leq 0.060$.

When the Examiner establishes a prima facie case of obviousness, "[t]he burden then shifts to the applicant, who then can present arguments and/or data to show that what appears to be obvious, is not in fact that, when the invention is looked at as a whole." *In re Dillon*, 919 F.2d 688, 696 (Fed. Cir. 1990) (en banc). Thus, "the burden of showing unexpected results rests on [the party] . . . who asserts them." *In re Klosak*, 455 F.2d 1077, 1080

(CCPA 1972). For the reasons set forth below, Appellant has not met his burden of showing unexpected results.

Appellant argues that the Specification's Examples demonstrate unexpected "retention of low oxygen permeability, low water vapor permeability, and/or good lamination strength after exposure to harsh conditions, e.g., a retort treatment," and, thus, rebuts any established prima facie case of obviousness (Br. 21; *see also id.* at 7). In particular, Appellant argues that data provided in the Specification demonstrates that "a multilayer film prepared *with the claimed features* can effectively maintain low oxygen permeability after . . . a retort treatment . . . compared to comparative films [with features] *outside the scope of the appealed claims*" (*id.* at 9 (emphasis added); *see also generally id.* at 6–9 (citing Spec. Tables 1–3)).

We, however, agree with the Examiner that these results are not probative evidence of unexpected results (Ans. 18–20). For example, Appellant has not demonstrated criticality of the claimed thickness (D) range because the Comparative Examples: (i) failed to test a coating layer with a thickness below the claimed range and (ii) only tested one sample with a thickness of 200 nm, which is outside of the claimed range of 5–150 nm (*see* Spec. Tables 1–3; Br. 8, 16). The proffered Examples, moreover, fail to demonstrate criticality of the claimed oxazoline resin content range because the Comparative Examples only tested amounts of 10, 90, or 100% oxazoline resin, which are an insufficient number of tests outside the claimed endpoints of 30 and 50% (*see* Spec. Tables 1–3; Br. 8).

Thus, Appellant has not established with a sufficient number of tests that other components inside the claimed ranges also have the unexpected

property while other components outside the critical ranges do not have the unexpected property. *See Peterson*, 315 F.3d at 1330; *In re Harris*, 409 F.3d 1339, 1344 (Fed. Cir. 2005); *In re Hill*, 284 F.2d 955, 958–59 (CCPA 1960).

Furthermore, the showing of unexpected results is not commensurate in scope with the degree of protection sought by claim 1 because the Examples only tested one type of each of the claimed “urethane” and “acrylic” resins (*see* Spec. ¶ 105; Tables 1, 2). Moreover, the two types of oxazoline resins tested are not commensurate in scope with the types and amounts of “a copolymer of the oxazoline group-containing polymerizable unsaturated monomer and another polymerizable unsaturated monomer” encompassed by claim 1 (*see id.* ¶¶ 103, 104; Tables 1, 2).

Therefore, Appellant’s results do not rebut the Examiner’s established *prima facie* case of obviousness.

Thus, based on this record, we sustain this rejection.

Rejections of claims 3, 4, 11, 13, 14, and 18 as unpatentable over the combination of Yoshida and Oda; with Sakai, Hideo, or Matsuda; or with Sakai and Matsuda

Appellant does not separately argue for reversal of these rejections to claims 3, 4, 11, 13, 14, and 18 (*see* Br. 3, 11, 20, 22). Rather, Appellant relies on the unpersuasive arguments made for reversal of the rejection of claim 1.

Thus, based on this record, we sustain these rejections.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 2, 6, 7, 20	103(a)	Yoshida, Oda	1, 2, 6, 7, 20	
3, 13, 14	103(a)	Yoshida, Oda, Sakai	3, 13, 14	
4	103(a)	Yoshida, Oda, Hideo	4	
11	103(a)	Yoshida, Oda, Matsuda	11	
18	103(a)	Yoshida, Oda, Sakai, Matsuda	18	
Overall Outcome			1-4, 6, 7, 11, 13, 14, 18, 20	

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