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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREAS PAWLIK, MARTIN WIELPUETZ, and MICHAEL
BEYER

Appeal 2018-004273
Application 13/649,498
Technology Center 1700

Before MARK NAGUMO, JAMES C. HOUSEL, and BRIAN D. RANGE,
Administrative Patent Judges.

RANGE, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner’s decision to reject claims 1–4 and 9–17. We have jurisdiction under 35 U.S.C. § 6(b). The panel heard oral argument on this matter on September 26, 2019.

We AFFIRM IN PART.

CLAIMED SUBJECT MATTER²

Appellant describes the invention as relating to a multilayer film that could be used as a back cover for a solar module. Spec. 1:10–11. One of Appellant’s objects is a film suitable for a photovoltaic module back cover “which has improved pigment and filler dispersion.” *Id.* at 2:13–14. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A multilayer film comprising, in the order listed:
 - a) a first outermost surface layer of a moulding composition, comprising:
 - at least 35% by weight of polyamide; and
 - from 1 to 65% by weight of a light-reflecting filler, wherein the % by weight is based on the weight of the moulding composition of the first outermost surface layer;
 - b) optionally, a layer intermediate to the first outermost surface layer and a second outermost surface layer of a thermoplastic moulding composition; and

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 EVONIK INDUSTRIES AG. Appeal Br. 1.

² In this Decision, we refer to the Final Office Action dated May 3, 2017 (“Final Act.”), the Appeal Brief filed September 29, 2017 (“Appeal Br.”), the Examiner’s Answer dated February 2, 2018 (“Ans.”), and the Reply Brief filed February 23, 2018 (“Reply Br.”).

c) the second outermost surface layer opposite to the first outermost surface layer of a moulding composition which comprises at least 35% by weight of polyamide: and

from 1 to 65% by weight of a light-reflecting filler, wherein the % by weight is based on the weight of the moulding composition of the second outermost surface layer; and

wherein at least one of the first outermost surface layer and second outermost surface layer further comprises from 1 to 25% by weight of the layer composition of a polyamide elastomer which is a polyetheresteramide, a polyetheramide or a combination thereof.

Appeal Br. 14 (Claims App.).

REFERENCES

The Examiner relies upon the prior art below in rejecting the claims on appeal:

Name	Reference	Date
Thill	US 4,883,836	Nov. 28, 1989
Clark	US 5,399,663	Mar. 21, 1995
Ries et al. ("Ries")	US 2002/0119272 A1	Aug. 29, 2002
Fujita et al. ("Fujita")	US 2004/023049 A1	Feb. 5, 2004
Hayes	US 2010/0065109 A1	Mar. 18, 2010
Kliesch et al. ("Kliesch")	US 2010/0288353 A1	Nov. 18, 2010
Nagato et al. ³ ("Nagato")	WO 2010/126000 A1	Apr. 11, 2010

REJECTIONS

The following rejections are before us on appeal:

³ Nagato et al., US 2012/0048352 A1, Mar. 1, 2012, is referenced as an English translation of the Nagato '000 PCT publication.

Rejection 1. Claims 1–3, 9, and 13–15 under 35 U.S.C. § 103 as unpatentable over Hayes in view of Kliesch and Fujita. Ans. 4.

Rejection 2. Claims 1–4, 9, and 13–16 under 35 U.S.C. § 103 as unpatentable over Hayes in view of Nagato, Kliesch, and Fujita. *Id.* at 9.

Rejection 3. Claims 10 under 35 U.S.C. § 103 as unpatentable over Hayes, Kliesch and Fujita or alternatively Hayes, Nagato, Kliesch, and Fujita, and further in view of Ries. *Id.* at 16.

Rejection 4. Claims 11 under 35 U.S.C. § 103 as unpatentable over Hayes, Kliesch and Fujita or alternatively Hayes, Nagato, Kliesch, and Fujita, and further in view of Clark. *Id.* at 17.

Rejection 5. Claims 12 and 17 under 35 U.S.C. § 103 as unpatentable over Hayes, Kliesch and Fujita or alternatively Hayes, Nagato, Kliesch, and Fujita, and further in view of Thill. *Id.* at 18.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”). To the extent we sustain the Examiner’s rejections, we are not persuaded that Appellant identifies reversible error after considering the evidence presented in this Appeal and each of Appellant’s arguments. Where we sustain the Examiner’s rejections,

we do so for the reasons expressed in the Final Office Action, and our discussion is primarily for emphasis.

Appellant separately argues each rejection and presents a distinct argument for claim 10. *See* Appeal Br. 4–13. Appellant otherwise argues the claims as a group. Therefore, consistent with the provisions of 37 C.F.R. § 41.37(c)(1)(iv) (2013), we limit our discussion to claims 1 and 10. All other claims on appeal stand or fall together with claim 1.

A. Rejection 1: Obviousness over Hayes in view of Kliesch and Fujita

The Examiner rejects claim 1 as obvious over Kliesch in view of Fujita. Ans. 4. The Examiner finds that Hayes teaches a solar module comprising a backsheet that may be formed of a polyamide sheet or multiple polyamide sheets. *Id.* (citing Hayes). The Examiner finds that Hayes teaches that its backsheet may include UV absorbers, colorants, or fillers. *Id.* at 5. The Examiner finds that Hayes is silent as to amounts of UV absorbers, colorants, or fillers. *Id.*

The Examiner finds that Kliesch teaches adding titanium oxide to a solar cell module backsheet. *Id.* (citing Kliesch). The Examiner determines that a person of skill in the art would have chosen Kliesch’s titanium oxide to add to Hayes to reflect light back into the module and obtain desired UV properties. *Id.*

The Examiner also finds that Hayes modified Hayes discloses inclusion of reinforcement additives. *Id.* at 6 (citing Hayes ¶ 45). The Examiner finds that Fujita teaches adding polyetheresteramides or polyetheramides to polyamide compositions to improve fatigue resistance. *Id.* at 6 (citing Fujita). The Examiner determines that a person of skill in the

art would have added polyetheresteramides or polyetheramides as taught by Fujita to Hayes to improve fatigue resistance. *Id.* at 7.

Appellant argues that Hayes does not provide examples or an explicit description of polyamide outer layers. Appeal Br. 4. Appellant also argues that the Examiner has not adequately explained why a person of skill in the art would have reached polyamide outer layers given Hayes's "broad generic description" of its multiple polymer layers. Reply Br. 2. This argument is unpersuasive because Hayes explicitly teaches that its outer layers may be polyamides. Hayes ¶ 75; Ans. 19–20. All disclosures of the prior art, including unpreferred embodiments, must be considered. *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976). Although Hayes also teaches other possibilities, the listed possibilities are not so numerous that a person of skill in the art would not have had a reason to choose polyamide outer layers. *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) ("That the '813 patent discloses a multitude of effective combinations does not render any particular formulation less obvious. This is especially true because the claimed composition is used for the identical purpose."). Hayes teaches that polyamide outer layers are appropriate, and, on the present record, choosing polyamide outer layers would have been no more than predictable use of a prior art element according to established function. *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

The authority Appellant cites (Reply Br. 2) is distinguishable because those cases generally address unpredictable selection of a molecular species within the prior art's broad genus of molecules. *See, e.g., In re Baird*, 16 F.3d 380, 384 (Fed. Cir. 1994) (holding that selection of bisphenol A would not have been obvious where art encompassed "more than 100 million

different diphenols, only one of which is bisphenol A” and where art provided no guidance leading a person of skill in the art to bisphenol A). Here, Hayes lists a reasonably limited number of suitable options for its outer layers (Hayes ¶ 75), and a person of skill would have expected that any of the options would predictably be successful.

Appellant also argues that the Examiner errs in finding that Hayes teaches additives in its outer layers. Appeal Br. 4. This argument is unpersuasive because the preponderance of the evidence better supports the Examiner’s position. In particular, Hayes explicitly teaches various additives for “back-sheet encapsulant layers or back-sheets.” Ans. 21 (quoting Hayes ¶ 45).

Appellant argues that Kliesch does not teach polyamide films. Appeal Br. 5. Appellant’s argument is unpersuasive because the Examiner does not rely on Kliesch as teaching such films. Rather, the Examiner relies on Kliesch as teaching that titanium dioxide may be added to a backsheet of a solar module to provide reflectance and increased energy efficiency. Ans. 22. Appellant does not persuasively dispute the Examiner’s findings in this regard, and Appellant does not persuasively dispute the Examiner’s rationale for combining Kliesch’s teaching with the teachings of Hayes. “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Appellant further argues that Fujita is directed to use of a biaxially-orientated film and that its fatigue improvement “is related to the stress applied by the multiple operations employed to form the biaxially-orientated film.” Appeal Br. 5. Appellant argues that Hayes is silent with respect to

biaxially-orientated films. *Id.* Appellant argues that, therefore, it would not have been obvious to include Fujita’s polyetheresteramide and/or polyetheramide fatigue improvers into Hayes. *Id.* This argument is unpersuasive because the preponderance of the evidence supports the Examiner’s finding that Fujita teaches an additive that improves fatigue resistance for a polyamide. Ans. 23. Appellant does not direct us to any portion of Fujita that suggests that its, for example, polyetheramide “improver of resistance to fatigue from flexing” (Fujita ¶¶ 18, 64) would only be beneficial in the context of biaxially-orientated film. To the contrary, Fujita suggests that its additives provide “resistance to fatigue from flexing and operability, and can be provided economically.” Fujita Abstract; *see also id.* ¶ 8. A person of skill in the art would have recognized that the films of Hayes could predictably be improved with such additives in the same way the films of Fujita were improved. *KSR Int’l Co.*, 550 U.S. at 417.

Because Appellant’s arguments do not identify harmful error, we sustain the Examiner’s rejection.

B. Rejection 2: Obviousness over Hayes in view of Nagato, Kliesch, and Fujita

The Examiner rejects claims 1–4, 9, and 13–16 as obvious over Hayes in view of Nagato, Kliesch, and Fujita. Ans. 9. The Examiner provides this rejection as “an alternative interpretation” of the references and makes use of the additional Nagato reference. Ans. 9. The Examiner finds that Nagato teaches a polyamide water vapor barrier layer disposed between a backsheet and encapsulant within a solar module. *Id.* The Examiner determines that it would have been obvious to employ a polyamide backsheet and polyamide

moisture barrier layer based on the combined teachings of Hayes and Nagato. *Id.* at 10.

Appellant argues that neither Hayes nor Nagato provides a technical reason to employ dual layers of polyamide as the Examiner proposes. Appeal Br. 10. While the Examiner adequately explains why a person of skill in the art would have desired adding Nagato's moisture barrier layer to the Hayes device generally (Ans. 26–27), Appellant's argument is persuasive because the Examiner has not adequately explained why a person of skill in the art would have chosen polyamide for Hayes's outer layers while also employing Nagato's polyamide moisture barrier layer adjacent to the polyamide outer layers. In other words, the Examiner has not adequately explained why a person of skill in the art would have chosen to employ dual layers of polyamide in this context.

On this basis, we do not sustain this rejection.

C. Rejection 3: Obviousness over Hayes in view of Nagato, Kliesch, Fujita, and Ries (or alternatively, Hayes, Nagato, Kliesch, Fujita, and Ries)

The Examiner rejects claim 10 as obvious over Hayes in view of Nagato, Kliesch, Fujita, and Ries. Ans. 16. Claim 10 recites that the polyamide outer layers have specific enthalpy characteristics. Appeal Br. 15–16 (Claims App.). The Examiner finds that Hayes does not disclose the type of polyamide to be utilized, but finds that Ries discloses a “low cost, high impact strength and low water absorption” polyamide that meets the enthalpy characteristics of claim 10. Ans. 16 (citing Ries ¶ 4). The Examiner determines that it would have been obvious to choose the Ries

polyamide for the Hayes device due to the beneficial properties Ries teaches.
Id.

Appellant argues that Ries discusses use of its polyamide in motor vehicle tubes and that a person of ordinary skill in the art would not seek instruction from Ries when looking to modify Hayes. Appeal Br. 6–7. Appellant’s argument is unpersuasive because a person seeking to follow the teachings of Hayes would desire a polyamide for the Hayes outer layers and would need to choose a specific polyamide. A person of skill in the art would have looked to references, such as Ries, that teach the benefits of various polyamides in order to make a specific choice. In this sense, Ries is pertinent to the problem of selecting a polyamide for the outer layers of a solar cell. Ans. 24; *see also In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (explaining that prior art qualifies as “analogous” when it is “from the same field of endeavor” or “reasonably pertinent to the particular problem with which the inventor is involved”).

We, therefore, sustain this rejection. For the reasons we provide with respect to the Examiner’s second rejection, however, we do not sustain the Examiner’s alternative rejection that relies on Nagato.

D. Rejections 4 and 5

Appellant does not present any substantively distinct arguments with respect to the Examiner’s fourth and fifth rejections. Appeal Br. 7–8. Rather, Appellant relies on arguments Appellant raised with respect to claim 1. *Id.* We, therefore, sustain these rejections for the reasons we sustained the Examiner’s first rejection. For the reasons we provide with respect to the Examiner’s second rejection, however, we do not sustain the Examiner’s alternative rejections that rely on Nagato.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1-3, 9, 13-15	§ 103 Hayes, Kliesch, Fujita	1-3, 9, 13-15	
1-4, 9, and 13-16	§ 103 Hayes, Nagato, Kliesch, Fujita		1-4, 9, and 13-16
10	§ 103 Hayes, Kliesch, Fujita, Ries	10	
10	§ 103 Hayes, Nagato, Kliesch, Fujita, Ries		10
11	§ 103 Hayes, Kliesch, Fujita, Clark	11	
11	§ 103 Hayes, Nagato, Kliesch, Fujita, Clark		11
12, 17	§ 103 Hayes, Kliesch, Fujita, Thill	12, 17	
12, 17	§ 103 Hayes, Nagato, Kliesch, Fujita, Thill		12, 17
Overall Outcome		1-3, 9-15, 17	4, 16

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TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED IN PART