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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NAM HYUN KIM, CHAN GYUN SHIN,
SANG HYUN HONG, and JEE KWON PARK

Appeal 2019-006874
Application 15/222,254
Technology Center 1700

Before MICHAEL P. COLAIANNI, MONTÉ T. SQUIRE, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

SQUIRE, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellant² appeals under 35 U.S.C. § 134(a) from the Examiner's decision to finally reject claims 1, 2, and 4–11.³ We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ This Decision refers to the Specification filed July 28, 2016 (“Spec.”); Final Office Action dated Nov. 14, 2018 (“Final Act.”); Advisory Action dated Jan. 24, 2019 (“Advisory Act.”); Appeal Brief filed May 21, 2019 (“Appeal Br.”); Examiner’s Answer dated July 30, 2019 (“Ans.”); and Reply Brief filed Sept. 23, 2019 (“Reply Br. “).

² We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Lotte Advanced Materials Co. as the real party in interest. Appeal Br. 3.

³ Claim 3 is cancelled and claim 12 is withdrawn. Appeal Br. 5.

CLAIMED SUBJECT MATTER

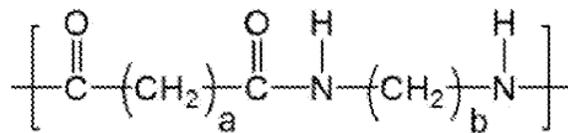
The invention relates to a polyamide resin composition and a molded article formed of the same. Spec. 1; Abstract. Claim 1 illustrates the subject matter on appeal and is reproduced below from the Claims Appendix to the Appeal Brief:

1. A polyamide resin composition comprising:

a base resin comprising an aliphatic polyamide resin including a repeat unit represented by the following Formula 1 and having a terminal amine group and a terminal carboxyl group, wherein the concentration of the terminal amine group is about 10 $\mu\text{eq/g}$ to about 40 $\mu\text{eq/g}$ and the concentration of the terminal amine group is about 0.1 times to about 0.3 times the concentration of the terminal carboxyl group and an aromatic polyamide resin including a repeat unit represented by the following Formula 2; and

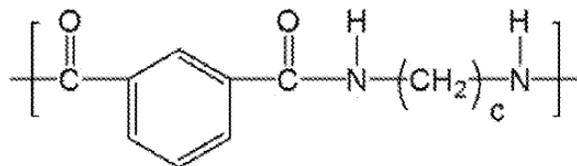
inorganic fillers:

[Formula 1]



wherein a is an integer from 4 to 10, and b is an integer from 6 to 12;

[Formula 2]



wherein c is an integer from 6 to 12.

Appeal Br. 32.

REFERENCES

The Examiner relies on the following prior art references as evidence in rejecting the claims on appeal:

Name	Reference	Date
Sawada et al. ("Sawada")	US 2003/055210 A1	Mar. 20, 2003
Ono et al. ("Ono")	US 2005/0234180 A1	Oct. 20, 2005
Kumazawa et al. ("Kumazawa")	US 2010/0227122 A1	Sept. 9, 2010
Namkung et al. ("Namkung")	US 2011/0155948 A1	June 30, 2011
Orange et al. ("Orange")	US 2011/0241249 A1	Oct. 6, 2011
Washio	WO 2014/073219 A1	May 15, 2014

REJECTIONS

On appeal, the Examiner maintains (Ans. 3) the following rejections:

1. Claims 1, 2, 5, and 9–11 are rejected under 35 U.S.C. § 103 as being unpatentable over Namkung in view of Orange ("Rejection 1").

Ans. 3.

2. Claims 1, 2, 5, and 9–11 are rejected under 35 U.S.C. § 103 as being unpatentable over Ono in view of Orange ("Rejection 2"). Ans. 5.

3. Claims 4 and 8 are rejected under 35 U.S.C. § 103 as being unpatentable over Ono in view of Orange, Washio, and Sawada ("Rejection 3"). Ans. 7.

4. Claims 6 and 7 are rejected under 35 U.S.C. § 103 as being unpatentable over Ono in view of Orange and Kumazawa ("Rejection 4").

Ans. 8.

OPINION

Rejection 1

The Examiner rejects claims 1, 2, 5, and 9–11 under § 103 as obvious over Namkung and Orange. Ans. 3–5. In response, Appellant presents argument for the patentability of claims 1, 2, 5, and 9–11 as a group, claims 10 and 11 as a group, and additional argument for claim 2, which we address in turn below.

Claims 1, 2, 5, and 9–11

Appellant presents argument for the patentability of claims 1, 2, 5, and 9–11 as a group. Appeal Br. 14, 18. We select claim 1 as representative of this group and claims 2, 5, and 9–11 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

The Examiner determines that the combination of Namkung and Orange suggests a polyamide resin composition satisfying the limitations of claim 1 and concludes the combination would have rendered the claim obvious. Ans. 3–5, 9–11. On this appeal record, we determine a preponderance of the evidence and sound technical reasoning support the Examiner’s findings regarding the teachings of the cited art and the Examiner’s conclusion that the combination would have rendered the composition of claim 1 obvious to a person having ordinary skill in the art. Namkung, Abstract, ¶¶ 18, 26, 32, 33, 35–37, 89 (Table 1, Example 5); Orange, Abstract, ¶¶ 6, 16, 22, 24, 25.

Appellant argues the Examiner’s rejection of claim 1 should be reversed because a person of ordinary skill in the art would not have combined Namkung and Orange. Appeal Br. 14–16; Reply Br. 1–3. Appellant argues that, because Namkung and Orange propose different

solutions to different problems, there is no motivation or suggestion to combine the references. Appeal Br. 15 (arguing Namkung solved the problems of thermal conductivity and whiteness by using a heat conductive filler and Orange addresses impregnation problems associated with the use of high viscosity thermoplastic polymers or monomers or pre-polymers); *see also* Reply Br. 2 (arguing Namkung and Orange have taken different approaches to address different problems).

Appellant further argues that there is no motivation to modify Namkung's composition in view of Orange's disclosure because Namkung requires a thermoplastic resin with a high average molecular weight and Orange teaches away from the use of high molecular weight polymers. Appeal Br. 15–16.

Appellant also argues the Examiner's rejection of claim 1 should be reversed because the cited art does not teach or suggest an aliphatic polyamide resin having a terminal amine group and a terminal carboxyl group, as claimed. *Id.* at 16–18. In particular, Appellant contends "Namkung does not teach or suggest any terminal amine group concentration and/or terminal carboxylic group concentration of any polyamide" and "Orange also does not teach an aliphatic polyamide with a terminal amine group concentration and a terminal carboxylic group concentration recited in claim 1." *Id.* at 17; *see also* Reply Br. 3 (arguing Orange does not teach "a polyamide having both amine terminal groups and carboxylic terminal groups in amounts as claimed").

We do not find Appellant's arguments persuasive of reversible error in the Examiner's rejection based principally on the fact-finding and reasoning the Examiner provides at pages 3–5 and 9–11 of the Answer. As

the Examiner finds (Ans. 3–4, 9, 10), Namkung discloses a polyamide resin composition, which falls within the scope of each of the limitations of claim 1, except that Namkung is silent with respect to “the concentration of the terminal amine group is about 10 $\mu\text{eq/g}$ to about 40 $\mu\text{eq/g}$ ” and “the concentration of the terminal amine group is about 0.1 times to about 0.3 times the concentration of the terminal carboxyl group” limitations.

Namkung, Abstract, ¶¶ 18, 26, 32, 33, 35–37, 89 (Table 1, Example 5).

As the Examiner further finds (Ans. 4, 11), Orange teaches polyamide resins having a concentration of terminal amine groups of less than or equal to 20 meq/kg (20 $\mu\text{eq/g}$) (Orange ¶ 24), which overlaps the claimed range and suggests the concentration of terminal amine groups is 0.2 times the concentration of the terminal carboxyl groups (*id.* ¶¶ 24–25), which falls within the claimed range, which we find a preponderance of the evidence supports. It is well-settled that where claimed ranges “overlap or lie inside ranges disclosed by the prior art,” a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 267 (CCPA 1976).

The Examiner also provides a reasonable basis why one of ordinary skill in the art would have had reason to combine the teachings of Namkung and Orange to arrive at the claimed composition. Ans. 4, 12 (explaining it would have been obvious to one of ordinary skill in the art to modify Namkung’s composition to add an aliphatic polyamide, as Orange teaches, to obtain articles having good mechanical strength properties); Namkung ¶¶ 35–37; Orange ¶¶ 6, 16, 22. *See also KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 420 (2007) (explaining that any need or problem known in the art can provide a reason for combining the elements in the manner claimed).

Appellant's arguments do not reveal reversible error in the Examiner's factual findings, analysis, and conclusions in this regard. Appellant's argument that Namkung and Orange address different problems (Appeal Br. 15; Reply Br. 2) is not persuasive of reversible error because prior art references need not address the same problem to be combined under § 103. *KSR*, 550 U.S. at 420; *cf. also In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (explaining that a prior art reference qualifies as analogous art if it is from the same field of endeavor as the claimed invention regardless of the problem addressed). Appellant's disagreement as to the Examiner's factual findings and reasons for combining the references, without more, is insufficient to establish reversible error. *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1320 (Fed. Cir. 2006) (“[M]ere statements of disagreement . . . as to the existence of factual disputes do not amount to a developed argument.”).

Appellant's teaching away argument (Appeal Br. 15–16) is not persuasive because Appellant does not identify evidence sufficient to support it, and we will not read into the references a teaching away where no such language exists. *Cf. DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1364 (Fed. Cir. 2006); *see also In re Fulton*, 391 F.3d 1195, 1201 (finding that there is no teaching away where the prior art's disclosure “does not criticize, discredit, or otherwise discourage the solution claimed”).

Moreover, as the Examiner points out (Ans. 4–5, 10), the fact that Orange discusses embodiments of polyamide resins having a certain molecular weight, without more, does not negate or teach away from Orange's broader disclosure regarding use of aliphatic polyamide resins to obtain articles having good mechanical properties (Orange, Abstract, ¶¶ 6,

16, 22) or Namkung’s disclosure regarding polyamide resin compositions including an aromatic polyamide and aliphatic polyamide (Namkung ¶¶ 35–37), and what those disclosures would have reasonably suggested to one of ordinary skill. *In re Susi*, 440 F.2d 442, 445-46 (CCPA 1971) (explaining that disclosure of particular preferred embodiments does not teach away from a prior art reference’s broader disclosure); *see also In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012) (“A reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.”).

Appellant contends that the claimed invention yields unexpected results. Appeal Br. 8–9. In particular, Appellant contends that the claimed polyamide resin composition has “a surprising balance of properties” and “not only has good modulus but unexpectedly also has excellent flowability and impact strength.” *Id.* at 8 (citing Spec. 2, 10–14).

In attempting to overcome a prima facie case of obviousness by showing unexpected results, the burden rests with Appellant to establish that: (1) the alleged unexpected results presented as being associated with the claimed invention are, in fact, unexpected; (2) the comparisons are to the disclosure of the closest prior art; and (3) the supplied evidentiary showing is commensurate in scope with the claimed subject matter. *See In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972).

Appellant’s alleged showing of unexpected results does not satisfy the requisite burden. Appellant does not sufficiently establish that the results it presents and alleges as being associated with the claimed invention are, in fact, unexpected. For example, Appellant does not adequately show or explain why the alleged “surprising balance of properties” (Appeal Br. 8) is

considered unexpected, as opposed to simply typical results that one of ordinary skill would have reasonably expected, or how that is reflected or shown in the data. *Klosak*, 455 F.2d at 1080 (“[T]he burden of showing unexpected results rests on [the party] who asserts them.”). Appellant’s statements at pages 8–9 of the Appeal Brief are not persuasive because Appellant does not provide a persuasive technical explanation or direct us to experimental results sufficient to support them. *De Blauwe*, 736 F.2d at 705 (“It is well settled that unexpected results must be established by factual evidence. Mere argument or conclusory statements in the specification does not suffice.”).

Appellant also does not provide evidence sufficient to show that there is actually difference between the balance of properties of the claimed compositions and those of the closest prior art. *Klosak*, 455 F.2d at 1080. For example, Appellant does not specify or discuss how any of the compositions Appellant relies on for showing unexpected results compare to the prior art compositions of Namkung.

We, therefore, sustain the Examiner’s rejection of claim 1.

Claims 10 and 11 and Claim 2

Appellant presents additional arguments for the patentability of claims 10 and 11 as a group, and claim 2, respectively, at pages 24–25 and 28–29 of the Appeal Brief, and pages 4–7 of the Reply Brief.

With respect to claims 10 and 11, Appellant contends that the Examiner’s rejection should be reversed because

[n]one of the cited documents teach a composition including all of the recited elements, including an aliphatic polyamide with both the terminal amine group and the terminal carboxyl group concentrations recited in claim 1 (from which claims 10 and 11 depend).

Appeal Br. 24–25; *see also* Reply Br. 6 (same). Appellant also contends neither Namkung nor Orange teach a composition with either the recited spiral length flow or FDI strength and the skilled artisan would not have a reasonable basis to expect the composition to have the recited properties. Appeal Br. 25; *see also* Reply Br. 5 (arguing “there cannot be any reasonable expectation that the hypothetical composition . . . would have the recited properties”).

With respect to claim 2, Appellant contends the claim is patentable for the same reasons as claim 1. *See* Appeal Br. 28–29. Appellant also contends the Examiner improperly concludes that the amount of aliphatic polyamide recited in claim 2 is obvious as a result-effective variable. Reply Br. 5–6.

We do not find Appellant’s contentions in this regard persuasive of error in the Examiner’s rejection because they are conclusory and Appellant does not identify evidence in the record or provide an adequate explanation sufficient to support them. Attorney argument is not evidence. *De Blauwe*, 736 F.2d at 705; *see also In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (explaining that mere lawyer’s arguments or conclusory statements, which are unsupported by concrete factual evidence, are entitled to little probative value).

Appellant’s contentions in this regard are also not well-taken because they repeat and/or rely on many of the same arguments Appellant discusses and presents above in response to the Examiner’s rejection of claim 1.

Thus, based on the fact-finding, conclusions, and analysis the Examiner provides in this appeal record, and for principally the same reasons discussed above for sustaining the Examiner’s rejection of claim 1, we sustain the Examiner’s rejection of claims 2, 10, and 11.

Accordingly, we affirm the Examiner's rejection of claims 1, 2, 5, and 9–11 under 35 U.S.C. § 103 as obvious over Namkung and Orange.

Rejection 2

The Examiner rejects claims 1, 2, 5, and 9–11 under § 103 as obvious over Ono⁴ and Orange. Ans. 5–6 (citing Ono, Abstract, ¶¶ 32–34, 48, 51, Table 1 (Example 1); Orange, Abstract, ¶¶ 6, 16, 22, 24, 25). In this rejection, the Examiner relies on and applies Ono in essentially the same way the Examiner relies on and applies Namkung in Rejection 1.

In response to this rejection, Appellant does not present any additional substantive arguments. Rather, Appellant repeats and relies on essentially the same arguments it previously discusses and presents above in response to the Examiner's Rejection 1. *Compare* Appeal Br. 19–23, 26–27 (Rejection 2), *with* Appeal Br. 14–18, 24–25 (Rejection 1).

Thus, based essentially on the fact-finding, conclusions, and analysis the Examiner provides in this appeal record, and for principally the same reasons we discuss above for sustaining the Examiner's rejection of claims 1, 2, 5, and 9–11 under 35 U.S.C. § 103 as obvious over Namkung and Orange, we affirm the Examiner's rejection of claims 1, 2, 5, and 9–11 under 35 U.S.C. § 103 as obvious over Ono and Orange.

Rejections 3 and 4

The Examiner rejects claims 4 and 8 under § 103 as obvious over Ono, Orange, Washio, and Sawada (Rejection 3) and claims 6 and 7 under

⁴ Ono relates to molded articles comprising polyamide resin compositions and includes disclosures similar to disclosures in Namkung. *Compare* Ono ¶¶ 32–35, 48, 51 *with*, Namkung ¶¶ 18, 23, 26, 32–27.

§ 103 as obvious over Ono, Orange, and Kumazawa (Rejection 4). Ans. 7–9. In response to these rejections, Appellant does not present any additional substantive arguments. Rather, Appellant relies principally on the same arguments it previously discusses and presents above in response to the Examiner’s rejection of claims 1, 2, 5, and 9–11 under § 103 as obvious over Ono and Orange (Rejection 2). *See* Appeal Br. 19.

Thus, based essentially on the fact-finding and reasoning the Examiner provides in this appeal record, and for principally the same reasons we discuss above for affirming the Examiner’s Rejection 2, we affirm the Examiner’s rejection of claims 4 and 8 under 35 U.S.C. § 103 as obvious over Ono, Orange, Washio, and Sawada (Rejection 3); and claims 6 and 7 under 35 U.S.C. § 103 as obvious over Ono, Orange, and Kumazawa (Rejection 4).

CONCLUSION

In summary:

Claim(s) Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 5, 9–11	103	Namkung, Orange	1, 2, 5, 9–11	
1, 2, 5, 9–11	103	Ono, Orange	1, 2, 5, 9–11	
4, 8	103	Ono, Orange, Washio, Sawada	4, 8	
6, 7	103	Ono, Orange, Kumazawa	6, 7	
Overall Outcome			1, 2, 4–11	

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