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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte TAEHA KIM, HYUNGSUK LEE, HYEJUNG LEE,
SEUNGGI KIM, and SEUNGHYUN CHO

Appeal 2019-000623
Application 14/686,235
Technology Center 1700

Before BEVERLY A. FRANKLIN, LILAN REN, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

MICHAEL G. McMANUS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ seeks review of the Examiner's decision to reject claims 1, 14, 17, 25, and 26. We have jurisdiction under 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 LG Display Co., Ltd. Appeal Br. 1.

BACKGROUND

The present application generally relates to a protective film that may be attached to the cover plate of a display module. Spec. ¶ 2. The protective film is intended to prevent damage to the display module during manufacture. *Id.* ¶¶ 3–4. The Application indicates that the subject protective film embodies an improvement in at least one of “peel-off static, hardness, reflectance and surface roughness.” *Id.* ¶ 10.

The Specification teaches that the protective film includes an anti-static agent and “the anti-static agent can have a coordinate covalent bonding of polyelectrolyte and fluorine-based conductive functional group so as to obtain the peel-off static property required in the process of attaching the protecting film to the cover plate.” *Id.* ¶ 11.

The Specification teaches that the “polyelectrolyte may include [e]thylene glycol (C₂H₄(OH)₂) or [e]thylene [o]xide (C₂H₄O).” *Id.* ¶ 68. The Specification further teaches that the “conductive functional group of fluorine-based ion liquid type may be formed of fluorine-based metallic salts (ex, LiBF₄).” *Id.* ¶ 69.

Claim 14 is illustrative of the subject matter on appeal and is reproduced below with certain limitations bolded for emphasis:

14. A protecting film comprising:
 - an anti-static layer on one surface of a base layer; and
 - an adhesive layer on the other surface of the base layer,wherein the adhesive layer comprises **an anti-static agent that comprises a polyelectrolyte and a fluorine-based conductive functional group that are chemically bonded by coordinate covalent bonding** so as to obtain the peel-off static property required in the process of attaching the protective film

to a cover plate and reduce a problem of elution of the anti-static agent toward the surface of the adhesive layer.

Appeal Br. (Claims App. 1) (emphasis added).

REJECTIONS

The Examiner maintains the following rejections²:

1. Claims 14 and 17 are rejected under 35 U.S.C. § 102(a)(1) as anticipated by Kataoka et al. (US 2012/0202055 A1, published Aug. 9, 2012) (“Kataoka”). Final Act. (Jan. 26, 2018) 6–7.
2. Claims 1, 25, and 26 are rejected under 35 U.S.C. § 103 as unpatentable over Kataoka in view of Sugino et al. (US 2008/0158676 A1, published July 3, 2008) (“Sugino”). *Id.* at 9–11.

DISCUSSION

Rejection 1. The Examiner rejects claims 14 and 17 as anticipated by Kataoka. *Id.* at 6–7. In support of this rejection, the Examiner finds that Kataoka teaches a pressure sensitive adhesive (PSA) sheet including a substrate layer having an antistatic layer on one side and an adhesive layer on the other side. *Id.* at 6. The Examiner further finds that the adhesive layer of Kataoka includes an antistatic agent which may be LiBF₄. *Id.* The Examiner additionally finds that Kataoka teaches that the adhesive layer may contain “compounds having ethylene glycol and/or ethylene oxide

² The Final Action included certain additional rejections. These rejections were mooted by Appellant’s cancellation of claims 16, 19, 20, and 24. *See* Amendment under 37 C.F.R. § 1.116, dated March 26, 2018, entered April 11, 2018.

moieties (para[s.] 0127-0133), which is identical to the presently disclosed compounds for the presently claimed polyelectrolyte.” *Id.* The Examiner determines that “it is clear that the PSA would inherently provide that the polyelectrolyte and the fluorine-based conductive functional group are coordinate covalently bonded to each other.” *Id.* at 6–7. The Examiner further determines that, “given that the reference teaches that the PSA layer contains the presently claimed/disclosed compounds that experience the recited coordinate-covalent bonding, it is reasonable to conclude that disclosed compounds of Kataoka would interact identically.” *Id.* at 24.

The Examiner additionally finds that “Kataoka discusses that the inclusion of the (poly)alkylene oxide compound may inhibit the bleeding of the antistatic component, which is a benefit analogous to the elution property presently claimed/disclosed.” *Id.* at 23 (citing Kataoka ¶ 119).

In the Answer, the Examiner determines that LiBF_4 is specifically listed as “one of the ten **preferred** lithium salts.” Answer 10 (citing Kataoka ¶ 101) (emphasis in original). The Examiner further finds that Kataoka specifically teaches use of the two exemplary polyelectrolytes listed in the Specification. *Id.* In this regard, the Examiner relies, in part, upon the following portion of Kataoka:

In a preferable aspect, the (poly)alkylene oxide compound is a compound that has a (poly)**ethylene oxide** chain in at least a portion thereof. Mixing of this compound ((poly)ethylene oxide chain-containing compound) improves compatibility between the base polymer and the antistatic component, and allows the obtaining of a PSA composition having a low degree of pollution in which bleeding to the adherend is preferably inhibited.

Kataoka ¶ 131 (emphasis added).

In regard to the Examiner's finding that Kataoka inherently teaches that the LiBF_4 and (poly)ethylene oxide containing (poly)alkylene oxide would have formed a coordinate covalent bond (Final Act. 6–7; Answer 4), the Examiner determines as follows:

given that Kataoka conspicuously teaches a PSA composition that comprises antistatic compound(s) and (poly)electrolyte compound(s) that are identical to those presently disclosed for the presently claimed compounds that undergo coordinate covalent bonding, it is the presence of these compounds in the same composition that provides the inherent “reason or rationale” or “technical reasoning”, and not some “logical leap”, for said compounds with their “own unique functional properties” to combine with each to form “into one new chemical compound with its own unique functional properties.”

Answer 11.

Appellant argues that one of ordinary skill in the art would not have been led to the claimed invention. Appeal Br. 5–6. Appellant argues that Kataoka discloses “thousands of possible compounds that could be included in the pressure-sensitive adhesive layer (PSA).” *Id.* at 5. Appellant further argues that Kataoka lacks any teaching to “chemically bond these particular compounds together by coordinate covalent bonding.” *Id.* Appellant cites to precedent requiring that a theory of inherency must be supported by facts or reasoning sufficient to shown that the allegedly inherent characteristic necessarily flows from the prior art. *Id.* at 6. Appellant argues that “there are no facts or technical reasoning that supports the determination that the inherent chemical structure necessarily flows from the teachings of Kataoka.” *Id.*

We are not persuaded of error in the Examiner's rejection. Federal Circuit law provides that specific enumeration of a claim element may be a

sufficient teaching for purposes of anticipation. The Court has “reject[ed] the notion that [an] ingredient[] cannot anticipate because it appears without special emphasis in a longer list.” *Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1376 (Fed. Cir. 2005); *see also Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989) (“That the [reference] discloses a multitude of effective combinations does not render any particular formulation less obvious.”).

Here, Kataoka teaches a PSA layer that “contains an acrylic polymer as a base polymer and an ionic compound as an antistatic component.” Kataoka ¶ 67. Kataoka further teaches that “[t]ypically, the PSA layer contains at least one of an ionic liquid and an alkaline metal salt as the ionic compound.” *Id.* In the portion of Kataoka concerning alkaline metal salts, the reference teaches that “[t]ypical examples of the alkaline metal salt include lithium salts, sodium salts and potassium salts” and that “[p]referable specific examples of lithium salts include . . . LiBF₄.” *Id.* ¶ 101.

Kataoka also teaches that “[i]n a preferable aspect of the technology disclosed herein, the PSA layer contains a (poly)alkylene oxide chain.” *Id.* ¶ 119. Kataoka further teaches that “[i]n a preferable aspect, the (poly)alkylene oxide compound is a compound that has a (poly)ethylene oxide chain in at least a portion thereof.” *Id.* ¶ 131.

Accordingly, Kataoka includes a clear teaching to use LiBF₄ as an antistatic agent thereby teaching the “fluorine-based conductive functional group” of claim 1. Kataoka further includes a clear teaching to use a compound that has a (poly)ethylene oxide chain.

The Examiner sets forth a rational basis why the LiBF_4 and (poly)ethylene oxide would be “chemically bonded by coordinate covalent bonding” as recited by claim 1. Specifically, the Examiner reasons that Kataoka teaches to use the same compounds as taught by the Specification. Final Act. 24. As a consequence, “it is reasonable to conclude that [the] disclosed compounds of Kataoka would interact identically.” *Id.* The Examiner bolsters this reasoning by pointing out that the Specification teaches that “when the anti-static agent is formed by the coordinate covalent bonding of the ion type conductive functional group to the polyelectrolyte, it is possible to minimize elution of the anti-static agent toward the surface of the adhesive layer.” Spec. ¶ 70. This is similar to Kataoka’s teaching that it is possible that “bleeding of the antistatic component is inhibited by the presence of a (poly)alkylene oxide chain.” Kataoka ¶ 119. We discern no error in the foregoing.

Accordingly, Appellant has not shown reversible error in the rejection of claims 14 and 17 as anticipated by Kataoka.

Rejection 2. The Examiner rejects claims 1, 25, and 26 as obvious over Kataoka in view of Sugino. Final Act. 9–11.

Appellant argues that such rejection is in error for essentially the same reasons advanced in regard to its appeal of the rejection of claims 14 and 17. Appeal Br. 8–9. As we have not found such arguments to be persuasive, we determine that Appellant has not shown error in the rejection of claims 1, 25, and 26 on this basis.

Appellant additionally argues that it has demonstrated unexpected results relative to the prior art. *Id.* at 9. Appellant relies upon a document

titled “Experimental Document 1” as demonstrating “that an EAS anti-static additive, which is a fluorine-based ion liquid having a coordinate covalent bond, exhibited a lower resistance and better anti-static effect as compared to an HAS anti-static additive, which is a normal ion liquid without a coordinate covalent bond.” *Id.* (underscoring in original). Appellant further asserts that “[s]ince the EAS anti-static agent represents the closest embodiment of Kataoka, Appellant has demonstrated unexpected results over the closest prior art of record.”

The Examiner determined that this argument is not persuasive because Appellant’s showing is not commensurate with the scope of the claims. Answer 19–20. The Examiner further determined that such argument is not relevant to an anticipation analysis. *Id.* at 20.

Rebuttal evidence may include evidence of “secondary considerations,” such as “commercial success, long felt but unsolved needs, [and] failure of others.” *Graham v. John Deere Co.*, 383 U.S. 1, 694 (1966). Rebuttal evidence may also include evidence that the claimed invention yields unexpectedly improved properties not present in the prior art. *In re Fenn*, 639 F.2d 762, 765 (CCPA 1981) (“Although it is well settled that comparative test data showing an unexpected result will rebut a prima facie case of obviousness, the comparative testing must be between the claimed invention and the closest prior art.”).

The burden of establishing unexpected results rests on the Appellant. Appellant may meet this burden by establishing that the difference between the claimed invention and the closest prior art was unexpected. *See In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972). A showing of unexpected results supported by factual evidence must be reasonably commensurate in

scope with the degree of protection sought by the claims on appeal. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035 (CCPA 1980); *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 965 (Fed. Cir. 2014) (“It is the established rule that objective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.”) (citations omitted).

Here, as best understood, Appellant argues that testing of the resistance and antistatic properties of a single compound is sufficient to demonstrate that any compound falling within the scope of the term “a polyelectrolyte and a fluorine-based conductive functional group that are chemically bonded by coordinate covalent bonding” would exhibit superior properties relative to the prior art. Given the breadth of the claim term at issue, Appellant has failed to adduce factual evidence reasonably commensurate in scope with the degree of protection sought by the claims.

Accordingly, Appellant has not shown reversible error in the rejection of claims 1, 25, and 26 as obvious over Kataoka in view of Sugino.

CONCLUSION

In view of the findings and analysis set forth by the Examiner in the Final Action and the Answer as well as the reasoning set forth above, the rejections of claims 1, 14, 17, 25, and 26 are affirmed.

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In summary:

Claims Rejected	Basis	Affirmed	Reversed
14 and 17	§ 102(a)(1), Kataoka	14 and 17	
1, 25, and 26	§ 103, Kataoka and Sugino	1, 25, and 26	
Overall Outcome		1, 14, 17, 25, and 26	

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

AFFIRMED