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| EXAMINER |
|---|
| VAN SELL, NATHAN L |

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* NORMAN SCOTT BROYLES,
APRIL RENAE BROWN, ARMAN ASHRAF,
GARY WAYNE GILBERTSON,
and JEFFREY THOMAS GROTHAUS

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Appeal 2019-006524
Application 15/661,033
Technology Center 1700

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Before JEFFREY T. SMITH, GEORGE C. BEST, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

McMANUS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] seeks review of the Examiner's decision to reject claims 1–3, 7–13, 15, and 16. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

[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 The Procter & Gamble Company. Appeal Brief dated Jan. 29, 2019 ("Appeal Br.") 1.

## CLAIMED SUBJECT MATTER

The present application generally relates to "thermoplastic polymer films having a soft tactile impression." Specification filed July 27, 2017 ("Spec.") 1. The Specification teaches that certain products include films that are touched by a user in the normal course of use. *Id.* In such products, the perceived softness of the film is an important attribute for the user. *Id.* The Specification teaches that such products may include diapers, feminine hygiene products, bandages, as well as packaging products. *Id.* The Specification further teaches that the noise a film makes when deformed influences the consumer perception of softness. *Id.*

The Specification teaches that it is desirable to provide a soft touch film incorporating a renewable material, having good tensile properties, which can be made using a blown film process, and which has a micro-textured surface. *Id.* at 2.

The Specification teaches a film layer that has a continuous phase and a discrete phase. *Id.* The continuous phase includes one or more thermoplastic polymers. *Id.* The discrete phase is formed of a thermoplastic starch (TPS). *Id.*

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

> 1. A film layer having a micro-textured surface, the film layer comprising a film layer composition comprising:
>
> (a) a continuous phase comprising:
>
> (i) 20% to 35%, by weight of the film layer composition, of a low-modulus polymer having a 2% secant modulus of less than or equal to 140 MPa and

(ii) 30% to 50%, by weight of the film layer composition, of a high-modulus polymer having a 2% secant modulus of greater than 140MPa; and

(b) a discrete phase comprising 5% to 45%, by weight of the film layer composition, of a thermoplastic starch.

Appeal Br. 8 (Claims App.).

## REFERENCES

The Examiner relies upon the following prior art:

| Name | Reference | Date |
|---|---|---|
| Chen et al. ("Chen") | US 2012/0315416 A1 | Dec. 13, 2012 |
| Wang (et al.) ("Wang") | US 2013/0046262 A1 | Feb. 21, 2013 |

## REJECTIONS

The Examiner maintains the following rejections:

1. Claims 1–3, 9, 10, 13, 15, and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Wang. Final Action dated Aug. 28, 2018 ("Final Act.") 2–5.
2. Claims 7, 8, 11, and 12 are rejected under 35 U.S.C. § 103 as being unpatentable over Wang in view of Chen. *Id.* at 5–7.

## DISCUSSION

**Rejection 1.** The Examiner rejects claims 1–3, 9, 10, 13, 15, and 16 as obvious over Wang. *Id.* at 2–5. In support of the rejection, the Examiner finds that Wang teaches a flexible polymeric film comprising a polyolefin or mixtures of polyolefins. *Id.* at 2. The Examiner finds that Wang teaches a film having "from about 55% to about 95% of a polyolefin or mixtures of polyolefins." *Id.* at 3. The Examiner further finds that Wang teaches that

"the polyolefins that may be incorporated include very low density polyethylene (VLDPE) (i.e., low modulus thermoplastic polymer), linear low density polyethylene (LLDPE), and low density polyethylene (LDPE) (high modulus thermoplastic polymers)." *Id.* As a result, the Examiner determines that "the possible combination of ranges of the low modulus thermoplastic polymer and the high modulus thermoplastic polymers would overlap that of the instant claims" and the claims are prima facie obvious. *Id.*

The Examiner further determines that one of ordinary skill in the art would have known that "by adjusting the blend or mixtures of the thermoplastic polymers and TPS as taught by Wang (para 57, 75) that ultimately the physical properties . . . of the final film formed from the mixture or blend thermoplastic polymers could be optimized." *Id.*

Appellant contends that the rejection should be reversed. Appeal Br. 2–7. Appellant argues that Wang teaches a broad genus of polyolefins and is silent regarding the species recited in independent Claim 1. *Id.* at 3. Appellant argues that Wang draws no distinction between the species of "low modulus polymers" and "high modulus polymers" contained within the genus polyolefin and lacks any guidance that would lead one to select species as claimed. *Id.* at 4. Appellant asserts that Wang's disclosure encompasses both the inventive examples and the comparative examples of the Specification. *Id.*

Appellant additionally argues that Wang fails to teach any distinction between "high modulus thermoplastic polymers" and "low modulus thermoplastic polymers" and, therefore, does not teach that such characteristic is a result-effective variable. *Id.* at 5–6.

In the Answer, the Examiner responds that "Wang specifically suggests the species of the instant claims, i.e., very low density polyethylene (VLDPE) (i.e., low modulus thermoplastic polymer) and low density polyethylene (LDPE) (high modulus thermoplastic polymers)." Examiner's Answer dated May 16, 2019 ("Ans.") at 9 (emphasis omitted). The Examiner further finds that Wang teaches "that by adjusting the blend or mixtures of the thermoplastic polymers and TPS that ultimately the physical properties (e.g., ultimate strength in the MD [machine direction] and 2% secant modulus in the MD direction) of the final film formed from the mixture or blend thermoplastic polymers could be optimized." *Id.* at 10 (citing Wang ¶¶ 57, 75). The Examiner further finds that Wang teaches that the films should remain soft while having increased modulus. *Id.*

In regard to Appellant's argument that Wang does not recognize the low and high modulus properties of polyolefins as result-effective, the Examiner finds that differences in concentration will not support patentability over the prior art unless the concentration is critical; that Wang specifically teaches a low modulus polymer and a high modulus polymer as polyolefins that may be incorporated; and that Wang suggests that by adjusting the blend or mixtures of the thermoplastic polymers and TPS that ultimately the physical properties of the final film may be optimized. *Id.* at 11–12.

The Examiner relies upon Wang's teachings regarding mixtures of polyolefins disclosing a range that overlaps the "low-modulus polymer" and "high-modulus polymer" limitations of claim 1. Final Act. 3. The rejection is further predicated on optimization of the physical properties to achieve the

recited composition. *Id.* at 3–4. In this regard, Federal Circuit precedent offers guidance as follows:

> The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages. *See In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) ("[D]iscovery of **an optimum value of a result effective variable** in a known process is ordinarily within the skill of the art." (citations omitted)).

*In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (emphasis added). Thus, *Peterson* teaches that its reasoning is predicated upon the discovery of an optimum value of a result-effective variable. This is consistent with both preceding and subsequent caselaw. *See, e.g.*, *In re Applied Materials*, 692 F.3d 1289, 1295 (Fed. Cir. 2012) ("This rule is limited to cases in which the optimized variable is a 'result-effective variable.'").

We accept the Examiner's finding that Wang's teaching of a mixture of polyolefins and its specific enumeration of very low density polyethylene (a low modulus thermoplastic polymer) and low density polyethylene (a high modulus thermoplastic polymer) overlaps the "low-modulus polymer" and "high-modulus polymer" limitations of claim 1. The Examiner's finding that Wang teaches the modulus properties of the polyolefins to be result-effective, however, is less well-founded.

A result-effective variable is one which is known to affect "the relevant property or result." *E.I. DuPont de Nemours & Co. v. Synvina C.V.*, 904 F.3d 996, 1009 (Fed. Cir. 2018). In finding the modulus properties of the polyolefins to be result-effective, the Examiner finds that Wang "suggests that by adjusting the blend or mixtures of the thermoplastic polymers and TPS that ultimately the physical properties (e.g., ultimate

strength in the MD direction and 2% secant modulus in the MD direction) of the final film formed from the mixture or blend thermoplastic polymers could be optimized." Ans. 12. The Examiner, however, is unable to cite to any portion of Wang that teaches that the modulus properties of the components of the polyolefin mixture are known to affect any particular result. Accordingly, the Examiner has not shown that a person of ordinary skill in the art would have been led to use the claimed amounts of low and high modulus polymers in a film layer composition.

As a consequence, the Examiner has not shown that Wang teaches or suggests the "low-modulus polymer" and "high-modulus polymer" limitations of claim 1. In view of the foregoing, Appellant has shown error in the rejection of claim 1. As all other pending claims depend from claim 1, Appellant has shown error in the rejection of all claims.

## CONCLUSION

The Examiner's rejections are reversed.

In summary:

| Claims Rejected | 35 U.S.C. § | Reference(s)/Basis | Affirmed | Reversed |
|---|---|---|---|---|
| 1–3, 9, 10, 13, 15, 16 | 103 | Wang | | 1–3, 9, 10, 13, 15, 16 |
| 7, 8, 11, 12 | 103 | Wang, Chen | | 7, 8, 11, 12 |
| **Overall Outcome** | | | | 1–3, 7–13, 15, 16 |

REVERSED