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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte QING STELLA, BETH ANN SCHUBERT,
and MICHAEL STEPHEN MAILE

Appeal 2020-000837
Application 15/655,075
Technology Center 1600

Before JEFFREY N. FREDMAN, TAWEN CHANG, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal^{1,2} under 35 U.S.C. § 134 involving claims to a hair care composition comprising a metathesized unsaturated polyol ester. The Examiner rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm and enter a new ground of rejection.

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 (*see* Br. 1).

² We have considered the Specification of July 20, 2017 (“Spec.”); Final Office Action of Jan. 22, 2019 (“Final Action”); Appeal Brief of June 14, 2019 (“Br.”); and Examiner’s Answer of Sept. 3, 2019 (“Ans.”).

Statement of the Case

Background

“In order to provide hair conditioning benefits in a cleansing shampoo base, a wide variety of conditioning actives have been proposed. However, including active levels of conditioning agents in shampoos may result in rheology and stability issues, creating consumer trade-offs in cleaning, lather profiles, and weigh-down effects” (Spec. 1:16–19). The Specification teaches “a desire to find a conditioning active that is both derived from a natural source and leads to a stable product comprising a micellar surfactant system” (*id.* 1:27–28).

The Claims

Claims 1, 3, 5, 8, and 11 are on appeal. Claim 1 is sole independent claim, is representative and reads as follows:

1. A hair care composition comprising:
 - (a) from about 0.05% to about 15%, by weight of said hair care composition, of one or more metathesized unsaturated polyol esters, said metathesized unsaturated polyol ester having the following properties:
 - (i) a free hydrocarbon content, based on total weight of metathesized unsaturated polyol ester, of from about 0% to about 5%;
 - (ii) a weight average molecular weight of from about 5,000 Daltons to about 50,000 Daltons; and
 - (iii) an iodine value of from about 30 to about 200;and
 - (b) a gel matrix phase comprising:
 - (i) from about 0.1 % to about 20% of one or more high melting point fatty compounds, by weight of said hair care composition;
 - (ii) from about 0.1 % to about 10% of a cationic surfactant system, by weight of said hair care composition; and

(iii) at least about 20% of an aqueous carrier, by weight of said hair care composition.

The Rejections

A. The Examiner provisionally rejected claims 1, 3, 5, 8, and 11 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over copending Application No. 15/655,038 and Carter³ (Ans. 4–5).

B. The Examiner rejected claims 1, 3, 5, 8, and 11 under 35 U.S.C. § 102(a)(1) as anticipated by Carter (Ans. 6–7).

A. Obviousness-type Double Patenting

Appellant does not dispute the rejection of the claims under obviousness-type double patenting rejections on the merits (*see* Br. 1–3). We therefore summarily affirm the provisional obviousness-type double patenting rejection over copending Application No. 15/655,038 and Carter. *See* Manual of Patent Examining Procedure § 1205.02 (“If a ground of rejection stated by the examiner is not addressed in the appellant’s brief, that ground of rejection will be summarily sustained by the Board.”)

B. 35 U.S.C. § 102(a)(1) over Carter

The Examiner finds

CARTER teaches a hair care (see title) composition comprising of: 0.05-15% of a metathesized unsaturated polyol ester (see title), such as metathesized canola oil, palm oil, and soybean oil (see [0027]; and Appellant’s claim 11) and

³ Carter et al., US 2013/0280193 A1, published Oct. 24, 2013.

SEFOSE® (see [0028]; and Appellant’s [0062]) with an iodine value of about 10-120 (see [0028]); a gel matrix has from about 0.1 % to about 20% of one or more high melting point fatty compounds, from about 0.1 % to about 10% of a cationic surfactant system, and at least about 20% of an aqueous carrier (see abstract).

(Ans. 6). The Examiner finds “when canola oil is metathesized, then CARTER’s metathesized canola oil would have similar chemical/physical properties as claimed by Appellant” (*id.* at 7).

The issue with respect to this rejection is: Does a preponderance of the evidence of record support the Examiner’s conclusion that Carter inherently anticipates the claims?

Findings of Fact

1. Table 11 of the Specification is reproduced below:

Table 11

	Metathesized oils	Mw	IV	Free hydrocarbons, %
Comparative	Hydrogenated soy polyglycerides (and) C ₁₅₋₂₃ alkane ¹	3,900	4.4	6-11
Inventive	Metathesized canola oil ²	3,900	85	0.5
	Metathesized canola oil ³	21,000	Not measured	0.5
	Metathesized canola oil ⁴	10,000	Not measured	0.2
	Metathesized Palm oil ⁵	4,000	43	1.6

¹ Elevance Smooth SC-110, available from Elevance Renewable Sciences, Woodridge, IL.

² Example 1B in Table 4.

³ Example 1C in Table 4.

⁴ Example 1D in Table 4.

⁵ Example 5.

Table 11 provides exemplary metathesized oils including soy, canola, and palm and provides their molecular weights, iodine values, and free hydrocarbon percents (*see* Spec. 64).

Principles of Law

The Examiner bears the initial burden of establishing a prima facie case of anticipation. *In re King*, 801 F.2d 1324, 1326–27 (Fed. Cir. 1986). Anticipation under 35 U.S.C. § 102 requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999).

Analysis

Appellant contends “the Office Action fails to point to disclosure that teaches each and every element of the claims, either expressly or inherently” (Br. 3).

The Examiner responds that “the rejection is based on CARTER’s teaching of metathesized canola oil” and “[metathesized] canola oil would have similar/same chemical/physical properties as claimed by Appellant, such as ‘. . . molecular weight of about 5,000-50,000 Dalton . . . ’” (Ans. 7–8).

We find that Appellant has the better position because the evidence in Table 11 of the Specification does not support the Examiner’s inherency position that metathesized canola oil necessarily has molecular weights falling within the claimed range of 5,000 to 50,000 Daltons. Table 11 shows three examples of metathesized canola oil, two of which have molecular weights within the claimed range and one of which has a molecular weight of 3,900 Daltons, below the claimed range.

“Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.” *MEHL/Biophile Int’l. Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999). As applied to the instant facts, while metathesized canola oil may have a molecular weight within the claimed range, the evidence of Table 11 shows that metathesized canola oil can have a molecular weight of 3,900 Daltons, outside the claimed range. Therefore, the Examiner’s inherency argument fails because metathesized canola oil does not necessarily have a molecular weight falling within the claimed range. “To establish inherency, the extrinsic evidence “must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference[’].” *Robertson*, 169 F.3d at 745 (emphasis added).

Conclusion of Law

A preponderance of the evidence of record does not support the Examiner’s conclusion that Carter inherently anticipates the claims.

C. New Ground of Rejection

Under the provisions of 37 C.F.R. § 41.50(b), we enter the following new ground of rejection.

We reject claims 1, 3, 5, 8, and 11 under 35 U.S.C. § 103(a) as obvious over Carter and Lynch⁴.

Findings of Fact

2. Carter teaches, regarding element (a) of claim 1, “hair care composition comprising: (a) from about 0.05% to about 15% of one or more

⁴ Lynch et al., US 2015/0313803 A1, published Nov. 5, 2015.

oligomers derived from metathesis of unsaturated polyol esters, by weight of said hair care composition” (Carter ¶ 8).

3. The Specification teaches, regarding element (a)(i) of claim 1, that the “term ‘free hydrocarbon’ refers to any one or combination of unsaturated or saturated straight, branched, or cyclic hydrocarbons in the C₂ to C₂₄ range” (Spec. 3:25–26).

4. Carter teaches, regarding element (a)(i) of claim 1, that “examples of unsaturated polyol esters include diesters such as those derived from ethylene glycol or propylene glycol, esters such as those derived from pentaerythritol or dipentaerythritol, or sugar esters . . . such sucrose polyesters have a chain length of about C₁₂ to C₂₀” (Carter ¶ 28).

5. Carter teaches, regarding element (a)(ii) of claim 1, that the “unsaturated polyol ester is an unsaturated ester of glycerol. Sources of unsaturated polyol esters of glycerol include . . . canola oil” (Carter ¶ 27).

6. Carter does not teach molecular weight averages for the metathesized unsaturated polyol ester but does teach that molecular weight is an important consideration in many of the hair composition components including: a “first polysiloxane” (Carter ¶ 58); a “second polysiloxane” (Carter ¶ 62); nonionic polymers such as polyalkylene glycol polymer (Carter ¶ 107); cationic polymers (Carter ¶ 118); and copolymer (Carter ¶ 161).

7. Carter teaches, regarding element (a)(iii) of claim 1, that “polyesters may have a saturation or iodine value (‘IV’) of about 3 to about 140” (Carter ¶ 28).

8. Carter teaches, regarding element (b)(i) of claim 1, including “(b) a gel matrix phase comprising: (i) from about 0.1% to about 20% of one

or more high melting point fatty compounds, by weight of said hair care composition” (Carter ¶ 8).

9. Carter teaches, regarding element (b)(ii) of claim 1, including “from about 0.1 % to about 10% of a cationic surfactant system, by weight of said hair care composition” (Carter ¶ 8).

10. Carter teaches, regarding element (b)(iii) of claim 1, including “at least about 20% of an aqueous carrier, by weight of said hair care composition” (Carter ¶ 8).

11. Lynch teaches consumer products such as shampoos (Lynch ¶ 2) and teaches “to obtain rheological properties, such as shear viscosity, elongational viscosity, and elasticity of the processing mixture desirable for fiber formation” and “to optimize the ratio of the high and low weight-average molecular weight polyethylene oxide to obtain desirable rheological properties” (Lynch ¶ 36).

Principles of Law

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”
KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 416 (2007).

Analysis

Carter teaches a hair care composition comprising a metathesized unsaturated polyol ester (FF 2) composed of hydrocarbons in the range cited by the Specification as including free hydrocarbons (FF 3–4).

Carter also teaches an overlapping range of the gel matrix phase including the high melting point fatty compounds (FF 8), the cationic surfactant (FF 9) and the aqueous carrier (FF 10). Carter teaches an overlapping range for iodine values (FF 7). *See In re Peterson*, 315 F.3d

1325, 1329 (Fed. Cir. 2003) (“In cases involving overlapping ranges, we and our predecessor court have consistently held that even a slight overlap in range establishes a prima facie case of obviousness.”)

As to the requirement for hydrocarbon content between 0% and 5%, the evidence supports the Examiner’s position that the metathesized canola oil disclosed by Carter (FF 5) inherently has a “free hydrocarbon” content within the claimed range based on Table 11 of the Specification, which shows that all metathesized canola oils fall within the claimed range (FF 1).

We note that inherency may be relied upon in obviousness determinations. *See In re Best*, 562 F.2d 1252, 1255 (CCPA 1977) (“Where, as here, the claimed and prior art products are identical or substantially identical. . . . the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. . . . Whether the rejection is based on “inherency” under 35 U.S.C. § 102, on “prima facie obviousness” under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products.”).

While Carter does teach ranges for molecular weights for many of the hair care composition components (FF 6), Carter does not expressly teach optimizing the molecular weight of the metathesized canola oil.

Lynch teaches, in the same hair care field of endeavor, that the ordinary artisan would routinely optimize polymer molecular weights in order to obtain desirable rheological properties (FF 11).

We therefore find it would have been prima facie obvious to the person of ordinary skill at the time the invention was made to combine the

optimization teaching of Lynch with Carter's metathesized canola oil hair care composition in order to optimize the rheology of the hair care composition. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456 (CCPA 1955).

Regarding claim 3, we note that the evidence of Table 11 shows canola oil inherently falls within the claimed range (FF 1).

Regarding claim 5, we rely on the optimization rationale discussed above.

Regarding claim 8, we note that Carter's disclosed iodine value overlaps the claimed 30 to 120 range (FF 9).

Regarding claim 11, Carter teaches the use of metathesized canola oil (FF 5).

We have considered Appellant's argument relying upon the Stella⁵ Declaration that:

The Carter reference has chemistries with similar properties as those of the Comparative Example in the Specification (See Table 7 [sic 11]⁶ of the Specification). The Hydrogenated soy polyglycerides (and) C15-23 alkane of the comparative example (IV value is 4.4, MW is 3900 and free hydrocarbons are 6-11%) does not have the same properties as claimed in the inventive examples (IV value is greater than 30 and free hydrocarbons are less than 5%).

(Br. 3).

⁵ Declaration of Qing Stella, dated March 12, 2019.

⁶ We assume that Appellant intended Table 11, as the recited Table 7 does not teach any of the information recited.

We find the argument unpersuasive for several reasons. First, while the soy compositions tested in Table 11 of the Specification may differ in free hydrocarbon from the requirements of claim 1, we and the Examiner rely upon metathesized canola oil as expressly disclosed in Carter (FF 5). Second, while we agree with Appellant that Carter does not anticipate the molecular weight range recited in claim 1, our new ground of rejection for obviousness over Carter and Lynch above explains why an ordinarily skilled artisan would have understood the molecular weight to be an optimizable variable (FF 5, 11) and therefore subject to optimization. Appellant provides no evidence of unexpected results or other secondary considerations to demonstrate that the claimed range is unobvious. Third, Carter discloses the use of overlapping iodine value ranges (FF 7), and Table 11 shows that such ranges necessarily and inherently include the values for metathesized canola oil (FF 1). We therefore find the claims obvious over Carter and Lynch for the reasons given above.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed	New Ground
1, 3, 5, 8, 11	Obviousness-type double patenting	US application 15/655,038, Carter	1, 3, 5, 8, 11		
1, 3, 5, 8, 11	102	Carter		1, 3, 5, 8, 11	
1, 3, 5, 8, 11	103	Carter, Lynch			1, 3, 5, 8, 11

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed	New Ground
Overall Outcome			1, 3, 5, 8, 11		1, 3, 5, 8, 11

We entered a new ground pursuant to 37 C.F.R. § 41.50(b). Section 41.50(b) provides “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.” Section 41.50(b) also provides:

When the Board enters such a non-final decision, the appellant, within two months from the date of the decision, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new Evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the prosecution will be remanded to the examiner. The new ground of rejection is binding upon the examiner unless an amendment or new Evidence not previously of Record is made which, in the opinion of the examiner, overcomes the new ground of rejection designated in the decision. Should the examiner reject the claims, appellant may again appeal to the Board pursuant to this subpart.

(2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same Record. The request for rehearing must address any new ground of rejection and state with particularity the points believed to have been misapprehended or overlooked in entering the new ground of rejection and also state all other grounds upon which rehearing is sought.

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Further guidance on responding to a new ground of rejection can be found in the Manual of Patent Examining Procedure § 1214.01.

AFFIRMED; 37 C.F.R. § 41.50(b)