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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIN A. STONE, CARMEN M. RAMIREZ,
REBECCA L. ZEHNTNER, and DAVID BROCK

Appeal 2015-004367
Application 13/565,095
Technology Center 1600

Before DEMETRA J. MILLS, JEFFREY N. FREDMAN, and
TIMOTHY G. MAJORS, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal¹ under 35 U.S.C. § 134 involving claims to a hair care composition. The Examiner rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Statement of the Case

Background

“The hair care compositions provided herein can contain any appropriate combination of the ingredients listed herein. For example, a hair care composition provided herein can contain one or more quaternized

¹ Appellants identify the Real Party in Interest as Melaleuca, Inc. (*see* App. Br. 1).

polysiloxanes, one or more zwitterionic surfactants, one or more anionic surfactants” (Spec. 5:11–14).

The Claims

Claims 1–10, 12–14, 16–28, and 30–34 are on appeal. Claims 16 and 30 are representative and read as follows:

16. A hair care composition selected from the group consisting of shampoos, styling gels, aerosol styling sprays, non-aerosol styling sprays, aerosol styling mousses, styling gels, styling pomades, and thermal protection sprays, wherein said hair care composition comprises between about 0.01 percent and about 5 percent of a quaternized polysiloxane, wherein said composition comprises a zwitterionic surfactant and an anionic surfactant in a ratio from about 1:1 to about 1:2.

30. A hair care composition comprising the ingredients set forth in a table selected from the group consisting of Table 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20, wherein each of said ingredients of said hair care composition is present within said hair care composition at a percentage that is within 2 percent of the percentage value set forth in said selected table.

The Issues

A. The Examiner rejected claims 30–34 under 35 U.S.C. § 112, second paragraph as indefinite (Final Act. 3)

B. The Examiner rejected claims 1–10, 12–14, and 16–28 under 35 U.S.C. § 103(a) as obvious over Brain,² Molenda,³ Goddinger,⁴ and de Rijk⁵ (Final Act. 4–9).

² Brain et al., US 2009/0042759 A1, published Feb. 12, 2009 (“Brain”).

A. *35 U.S.C. § 112, second paragraph*

The Examiner finds:

Based on the current wording of claims 30-34, it is unclear whether the Applicants intend to encompass 20 different hair care compositions, where each table represents a different hair care composition, or instead intend to claim hair care compositions where ingredients from Tables 1-20 can be “mixed and matched” to make up different hair care compositions.

(Final Act. 3).

Appellants contend:

A skilled artisan reading the claims would instantly recognize and understand that these tables encompass 20 different, but related, hair care compositions, not compositions formed by mixing and matching ingredients from the different tables. This is clear from the plain language of claim 30, which uses “consisting of” language for the listing of Tables, and specifies that each ingredient “is within 2 percent of the percentage value set forth in said selected table.”

(App. Br. 2).

The issue with respect to this rejection is: Does the evidence of record support the Examiner’s conclusion that claim 30 is indefinite?

³ Molenda et al., US 2009/0041707 A1, published Feb. 12, 2009 (“Molenda”).

⁴ Goddinger et al., US 2010/0047202 A1, published Feb. 25, 2010 (“Goddinger”).

⁵ de Rijk, J., US 2009/0214628 A1, published Aug. 27, 2009 (“de Rijk”).

Findings of Fact

1. The Specification teaches:

The hair care compositions provided herein can contain any appropriate combination of the ingredients listed herein. For example, a hair care composition provided herein can contain one or more quaternized polysiloxanes, one or more zwitterionic surfactants, one or more anionic surfactants, one or more botanical compounds, one or more amino acids, one or more vitamins, or any combination thereof. In some cases, a hair care composition provided herein can lack sulfate. For example, a hair care composition provided herein can be sulfate-free.

(Spec. 5:11–17).

2. The Specification teaches

a hair care composition comprising the ingredients set forth in a table selected from the group consisting of Table 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20, wherein each of the ingredients of the hair care composition is present within the hair care composition at a percentage that is within 2 percent of the percentage value set forth in the table.

(Spec. 4:1–5).

Principles of Law

Miyazaki stated that “if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite.” *Ex parte Miyazaki*, 89 USPQ2d 1207, 1211 (BPAI 2008).

Analysis

We find that the Examiner has the better position. As *Zletz* notes “during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.” *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989). Here, instant claim 30 is reasonably open to two conflicting interpretations where the ingredients are either selected from a single table in the list or are composed of selections made from multiple tables in the list. The Specification expressly recognizes that the compositions may “contain any appropriate combination of the ingredients listed” (FF 1). The Specification does not clearly explain that the composition may be composed of ingredients only in one table or alternatively clearly explain that the composition may be composed of ingredients from different tables (FF 2).

We do not find Appellants’ arguments persuasive. In particular, we do not agree that the “consisting of” or “a table” language in claim 30 constrains the claim to selection from a single table because “[a]s a general rule, the words ‘a’ or ‘an’ in a patent claim carry the meaning of ‘one or more.’ . . . That is particularly true when those words are used in combination with the open-ended antecedent ‘comprising.’” *TiVo, Inc. v. EchoStar Communications Corp.*, 516 F.3d 1290, 1303 (Fed. Cir. 2008).

In addition, the “within 2 percent of the percentage” limitation simply constrains the amount of the particular ingredient based on the source table, but does not provide any limitation on the number of tables that can be used for ingredient selection.

The Examiner identified language to overcome this indefiniteness issue (*see* Final Act. 3) that was included in the After-Final amendment filed April 7, 2014, but not entered by the Examiner due to the addition of new claims 35 and 36 to “sulfate-free” compositions.

Conclusion of Law

The evidence of record supports the Examiner’s conclusion that claim 30 is indefinite.

B. 35 U.S.C. § 103(a) over Brain, Molenda, Goddinger, and de Rijk

The Examiner finds Brain teaches “shampoos comprising less than 10 wt% of a silicone material such as a quaternized polysiloxane” and “inclusion of zwitterionic surfactants and anionic surfactants” (Final Act. 4). The Examiner finds Molenda teaches “shampoos comprising 0.01 to 10 wt% of a silicone material such as a quaternized polysiloxane” and “inclusion of zwitterionic surfactants and anionic surfactants” (Final Act. 4–5).

The Examiner acknowledges that neither Brain nor Molenda “teach the claimed ratio (about 1:1 to about 1:2) of zwitterionic surfactant to anionic surfactant” (Final Act. 6). The Examiner finds that

De Rijk teaches hair care compositions such as shampoos and conditioners (*see* paragraph [0162]). De Rijk teaches the inclusion of fatty alcohols as surfactants in their compositions (*see* paragraphs [0311]-[0313]). De Rijk also teaches the inclusion of quaternary nitrogen in the form of ammonium groups as preservatives or antimicrobial compounds in their compositions

(Final Act. 7-8).

The Examiner finds it obvious to “include fatty alcohols and quaternary nitrogen in the hair care compositions of Brain et al. or Molenda

et al. for their respective surfactant and preservative properties” (Final Act. 8). The Examiner finds “[r]egarding the claimed ratio range (about 1:1 to about 3:1) of fatty alcohol to quaternary nitrogen . . . it would have been well within the ordinary level of skill in the art at the time of the invention to achieve the claimed ratios via routine experimentation and optimization” (Final Act. 8).

The issues with respect to this rejection are:

(i) Does the evidence of record support the Examiner’s conclusion that the prior art renders claim 16 obvious?

(ii) If so, have Appellants presented evidence of secondary considerations, that when weighed with the evidence of obviousness, is sufficient to support a conclusion of non-obviousness?

Findings of Fact

3. Brain teaches “preferred products that use the cationic coated polymer encapsulated fragrance of the present invention include, without limitation, hair and pet shampoos, hair conditioners” (Brain ¶ 10).

4. Brain teaches “incorporation of a silicone or a siloxane material into a product that contains encapsulated fragrances of the present invention . . . Also included in the definition of silicone materials are the cationic and quaternized of the silicones . . . Suitable silicone materials include . . . silicone quaternium-12” (Brain ¶ 80, 83).

5. Brain teaches “preferred anionic surfactants” and a “more preferred class of surfactants for use in the present invention was zwitterionic surfactants” (Brain ¶ 70).

6. Brain teaches that the “level of surfactant is preferably less than about 30, more preferably less than about 20 and most preferably less than about 10 weight percent of the product base” (Brain ¶ 68).

7. Molenda teaches “a conditioning composition for hair comprising at least one arylated silicone and at least one silicone quaternium compound” (Molenda ¶ 1).

8. Molenda teaches “[c]ompositions of the present invention comprise at least one silicone quaternary compound selected from . . . silicone quaternium-12 . . . Concentration of at least one silicone quaternary compound is in the range of 0.01 to 10% . . . and most preferably 0.1 to 3% by weight calculated to total composition” (Molenda ¶¶ 14–15).

9. Molenda teaches “[c]leansing conditioning compositions of the present invention comprise at least one surfactant selected from anionic, non-ionic and/or amphoteric or zwitterionic surfactants at a concentration range of 5 to 50%” (Molenda ¶ 45).

10. Molenda teaches:

the compositions according to the invention can also contain amphoteric or zwitterionic surfactants, for example in an amount from about 0.5% to about 15%, preferably from about 1 % to about 10%, by weight, calculated to the total composition. It has especially been found out that addition of zwitterionic or amphoteric surfactants enhances foam feeling in terms of creaminess, foam volume and as well as skin compatibility is improved. For achieving milder formulations anionic surfactant, especially of sulphate types, to amphoteric surfactant ratio should be in the range of 10:1 to 1:1, preferably 5:1 to 1:1.

(Molenda ¶ 69)

11. de Rijk teaches “hair product compositions (shampoo, rinse, hair conditioner and hair gel)” (de Rijk ¶ 162).

12. de Rijk teaches “amphoterics, sometimes classified as zwitterionics, such as betaines can also be used in the present invention” (de Rijk ¶ 301).

13. de Rijk teaches: “Surface active agents (detergents) useful in cosmetic compositions include anionic surface active agents . . . Amphoteric surface active agents include . . . betaines . . . Mixtures of two or more of the above surface active agents can be employed in the composition” (de Rijk ¶ 219).

14. de Rijk teaches:

The amount of benefit agent to be combined with the skin conditioning composition or the emulsion may vary depending upon, for example, the ability of the benefit agent to penetrate through the skin, hair or nail, the specific benefit agent chosen, the particular benefit desired, the sensitivity of the user to the benefit agent, the health condition, age, and skin, hair, and/or nail condition of the user, and the like. In sum, the benefit agent is used in a “safe and effective amount,” which is an amount that is high enough to deliver a desired skin, hair or nail benefit or to modify a certain condition to be treated, but is low enough to avoid serious side effects, at a reasonable risk to benefit ratio within the scope of sound medical judgment. Unless otherwise expressed herein, typically the benefit agent is present in the skin conditioning system in an amount, based upon the total weight of the system, from about 0.01 percent to about 20.0 percent

(de Rijk ¶ 134).

15. de Rijk teaches the “concentration of the surfactant system may vary with the purpose the surfactants are intended to serve, the cleaning or

lather performance desired, the surfactants incorporated into the surfactant system, the desired product concentration, the presence of other components in the composition, and other factors well known in the art” (de Rijk ¶ 298).

16. de Rijk teaches “[s]uitable traditional preservatives for compositions of this invention are . . . quaternary ammonium compounds . . . Preservatives are employed in amounts ranging from about 0% to about 5%” (de Rijk ¶ 239).

17. de Rijk teaches “alkylene oxide esters of fatty alcohol” (de Rijk ¶ 220) in amounts “from about 0.05% to about 15%” (de Rijk ¶ 219).

18. de Rijk teaches “suitable hair conditioners nonexclusively include . . . hydrogenated polydecene” (de Rijk ¶ 118).

19. Goddinger teaches

the color stability of the dyeing result is improved by additionally using mild anionic surfactants, in particular alkyl and/or alkenyl oligoglycoside carboxylates, sulfates, phosphates and/or isoethionates. In particular, this effect is achieved in the event of application to stressed hair. The washing fastness of dyed stressed hair is also improved.

(Goddinger ¶ 307).

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). “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *Id.* at 417. As noted by the Supreme Court in *KSR*, “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 421.

Analysis

We adopt the Examiner's findings of fact and reasoning regarding the scope and content of the prior art (Final Act. 4–9; FF 3–19) and agree that the claims would have been obvious over Brain, Molenda, Goddinger, and de Rijk. We address Appellants' arguments below.

Prima Facie Obviousness – Claim 18

Appellants contend a “skilled artisan would not have receive[d] any direction from paragraph 134 [of de Rijk] that would indicate that the ratio of ‘a fatty alcohol and a quaternary nitrogen’ should be modified to change the thermo protection (or any other property) of a composition” (App. Br. 3). Appellants also contend “the Examiner fails to point to any disclosure or suggestion in the prior art that indicates that a skilled artisan would achieve the claimed amount of hydrogenated polydecene in the claimed composition based on routine experimentation” (App. Br. 4).

We do not find these arguments persuasive because each of the cited references teaches optimizing the amounts of components including surfactants (FF 6, 10, 14). In particular, de Rijk teaches optimization of known components (FF 14) including polydecene (FF 18) and teaches, as the Examiner notes, the use of quaternary nitrogen and fatty alcohols in ranges of 0% to 5% and 0.05% to 15% respectively (FF 16–17), and therefore “clearly encompasses the claimed ratio of about 1:1 to about 3:1 fatty alcohol to quaternary nitrogen” (Ans. 4). The polydecene ranges also overlap those in claim 18. *See In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003) (“A prima facie case of obviousness typically exists when the

ranges of a claimed composition overlap the ranges disclosed in the prior art.”)

We further note that simply because Appellants optimize amounts of both quaternary nitrogen and fatty alcohols as a ratio does not render optimization of the ratio of the two components nonobvious. *See In re Applied Materials*, 692 F.3d 1289, 1298 (Fed. Cir. 2012) (“The mere fact that multiple result-effective variables were combined does not necessarily render their combination beyond the capability of a person having ordinary skill in the art.”) Here, the prior art teaches that both components may be optimized, rendering their combined optimization obvious (FF 16–17).

Secondary Considerations – Claim 18

Appellants contend:

It was the Applicants who discovered that using the claimed ratios of “a fatty alcohol and a quaternary nitrogen” when combined with a quaternized polysiloxane can allow for the quaternized polysiloxane to provide superior thermo protection. The improved thermo protection is shown in Table 42 on page 54 of the specification, which compares a competing conditioner to the Conditioners of Examples 11-14.

(App. Br. 3).

We do not find this argument persuasive. While Table 42 shows slight changes in the thermal protection numbers that are identified as significantly different for Examples 11, 12, and 14 (Spec. 54:13–15), Appellants do not identify which specific components in Examples 11, 12, and 14 constitute the fatty alcohols and quaternary nitrogen compounds at issue. Indeed, the Specification only refers to this combination twice (Spec.

3:13–14 and 3:29–30) without specifically identifying any particular fatty alcohols or quaternary nitrogen compounds.

Also, Appellants do not explain the ratios of quaternium nitrogen and fatty alcohol compounds in these examples (*see, e.g.*, Example 11; Spec. 22:10 to 23:3 which comprises quaternium-80 and silicone quaternium-22 in 0.5% amounts, 2.5% of a mixture of quaternium-91 with cetearyl alcohol but no specific amounts of either as well as cetearyl alcohol in other components and additional alcohols including stearyl alcohol at 2.133 % and cetyl alcohol at 1.290 %). Appellants do not establish that the ratio of fatty alcohol to quaternary nitrogen falls within a 1:1 to 3:1 range in any of the examples. Therefore, the evidence of Table 42 is not commensurate in scope with claim 18 because Appellants have not established that the evidence relates to a composition that actually falls within the scope of claim 18. “[O]bjective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support”). *In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971).

Moreover, Appellants do not explain why an increase in thermal protection from a value of 151.7 for the control conditioner to the highest value of 153.6 for Example 14 represents a difference in kind not degree. *Harris* found that a “32-43% increase in stress-rupture life, however, does not represent a ‘difference in kind’ that is required to show unexpected results.” *In re Harris*, 409 F.3d at 1344. Here, where there is only a 1.2% increase in thermal protection, the evidence is not sufficient to demonstrate “a new and unexpected result which is different in kind and not merely in

degree from the results of the prior art.” *In re Huang*, 100 F.3d 135, 139 (Fed. Cir. 1996) (quoting *In re Aller*, 220 F.2d 454, 456 (CCPA 1955)).

Prima Facie Obviousness – Claim 16

Appellants contend that the “rejection, as applied to independent claim 16, is in clear error because none of the cited references disclose or suggest ‘a ratio from about 1:1 to about 1:2’ of ‘a zwitterionic surfactant and an anionic surfactant’” (App. Br. 4).

We are not persuaded. Molenda specifically teaches ratios of anionic to amphoteric surfactants “should be in the range of 10:1 to 1:1” (FF 10). Because zwitterionic surfactants are a subset of amphoteric surfactants taught by Molenda (FF 10), the ordinary artisan would have recognized the ratio is a results optimizable variable for ratios of zwitterionic and anionic surfactants (*see* Ans. 7).

Thus, the skilled artisan reading Molenda and de Rijk would have recognized that the amounts and ratios of the two surfactants are results optimizable variables (FF 9, 10, 13, 14). “[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). This rule is limited to cases in which the optimized variable is a “result-effective variable.” *In re Applied Materials, Inc.*, 692 F.3d 1289, 1295 (Fed. Cir. 2012) (*citing In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)).

Secondary Considerations – Claim 18

Appellants contend:

Applicants unexpectedly found that the claimed ratio of a zwitterionic surfactant to an anionic surfactant when combined

with a quaternized polysiloxane can allow for the quaternized polysiloxane to provide superior color protection. The improved color protection is shown in Table 41 on page 53 of the specification, which compares a competing shampoo to the Shampoos of Examples 5, 6, and 7.

(App. Br. 4).

We do not find this evidence persuasive. While Examples 5, 6, and 7 each use the zwitterionic surfactant Cocamidopropyl Betaine and particular anionic surfactants in an apparent 1:1.3 ratio (*see, e.g.*, Spec. 16:5–9), that single example is not commensurate in scope with the use of any zwitterionic surfactant and any anionic surfactant in any ratio between “about 1:1 to about 1:2” as recited in claim 16. *See Harris*, 409 F.3d at 1344 (Unexpected results must also be “commensurate in scope with the degree of protection sought by the claimed subject matter.”).

Moreover, the Specification only identifies Example 6 as significantly different in Table 41 (*see* Spec. 53:15–18). Here, where there is at best a 14.1% reduction in color fastness between the control at -4.29 and Example 6 at -3.76 after 10 cycles, the evidence is not sufficient to demonstrate “a new and unexpected result which is different in kind and not merely in degree from the results of the prior art.” *Huang*, 100 F.3d at 139.

We recognize, but find unpersuasive, Appellants’ contention that “De Rijk’s discussion in paragraph 298 about the concentration of the surfactant system varying with the purpose of the surfactants does not disclose or suggest that the ratio of the different surfactants should be optimized to achieve a particular result, instead it just discusses how the total

concentration of surfactants can be adjusted depending on the particular use” (App. Br. 5).

Instead, we interpret de Rijk’s teaching of optimization of surfactant amounts for “factors well known in the art” (FF 14–15) to encompass known factors such as color stability taught by Goddinger based upon particular surfactants (FF 18). Thus, we agree with the Examiner that “it would have been well within the ordinary level of skill in the art at the time of the invention to achieve the claimed ratios via routine experimentation and optimization based on at least the teachings of de Rijk in combination with the other cited art of record” (Ans. 7–8).

We recognize, but find unpersuasive, Appellants’ contention, regarding claim 17, that “a skilled artisan would not have had any reason to treat the ratio of a fatty alcohol and a quaternary nitrogen as a result effective variable” (App. Br. 6). We find that the ratio elements are both results optimizable. *Applied Materials*, 692 F.3d at 1298 (“The mere fact that multiple result-effective variables were combined does not necessarily render their combination beyond the capability of a person having ordinary skill in the art.”) We do not find the evidence in the Specification persuasive of any secondary consideration for claim 17 for the reasons given.

Conclusion of Law

(i) The evidence of record supports the Examiner’s conclusion that the prior art renders claims 16–18 obvious.

(ii) Appellants have not presented evidence of secondary considerations, that when weighed with the evidence of obviousness, is sufficient to support a conclusion of non-obviousness.

SUMMARY

In summary, we affirm the rejection of claims 30–34 under 35 U.S.C. § 112, second paragraph as indefinite.

We affirm the rejection of claims 16–18 under 35 U.S.C. § 103(a) as obvious over Brain, Molenda, Goddinger, and de Rijk. Claims 1–10, 12–14, and 19–28 fall with claims 16–18.

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