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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte QINYUN PENG and PHILIP LINZ

Appeal 2017-009317
Application 14/515,169
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 appeal[1,2,3] under 35 U.S.C. § 134 involving claims to a cosmetic powder composition. The Examiner rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

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[1] Appellants identify the Real Party in Interest as MERCK PATENT GMBH, a subsidiary of MERCK KGAA (*see* App. Br. 1).

[2] We have considered and herein refer to the Specification of Mar. 24, 2015 ("Spec."); Final Office Action of Apr. 15, 2016 ("Final Act."); Appeal Brief of Dec. 19, 2016 ("App. Br."); Examiner's Answer of Apr. 21, 2017 ("Ans."); and Reply Brief of June 21, 2017 ("Reply Br.").

[3] This application is related to US 12/171,969, Appeal 2015-004454, where the Examiner's rejection was affirmed (*see* App. Br. 1).

Statement of the Case

Background

The "eye-catching color travel pigments of normal particle sizes (1-80 μm) is not readily visible in cosmetic powder products or upon application on the skin when a relatively low concentration of the pigments was used" (Spec. 1). The Specification teaches that "using large particle size color travel pigments, it is possible to achieve the color travel effect on the skin using powder applications and the like without using high concentrations of the pigments, unlike their normal particle size counterparts" (*id.*).

The Claims

Claims 1–24 are on appeal. Independent claims 1, 16, and 20 are representative and read as follows:

> 1. A cosmetic powder composition comprising flake-form pigments having a color travel effect, wherein said composition contains a sufficient amount, about 1-30% by weight, of large particle size color travel pigments having a D50 particle size of at least 40 μm up to about 150 μm to retain the color travel effect upon application to skin.
>
> 16. A flake-form color travel pigment having a D50 particle size of at least 40 μm up to about 150 μm.
>
> 20. A cosmetic composition comprising pigments having a color travel effect, wherein said composition contains a sufficient amount of large particle size color travel pigments having a D50 particle size of at least 40 μm up to about 150 μm to retain the color travel effect upon application to skin.

The Issues[4]

A. The Examiner rejected claims 16–24 under 35 U.S.C. § 103(a) as obvious over Rona[5,6] and Meyer[7] (Final Act. 3–5).

B. The Examiner rejected claims 1–15 under 35 U.S.C. § 103(a) as obvious over Rona, Schmidt,[8] and Meyer (Final Act. 5–6).

Because these rejections substantially rely upon the same prior art and depend upon the same issues, and Appellants only separately argue claim 20 (*see* App. Br. 8), we will consider these rejections together.

The Examiner finds "Rona discloses Xirona Color Travel Pigments" (Final Act. 3). The Examiner finds Rona "teaches that choosing a right particle size affects different coloring effects, and states, 'larger sized particles (> 100 microns) create high luster effects, either sparkling or glittering, combined with very high brilliancy and transparency[']" (*id.*).

The Examiner finds that

> given the teaching on the specific visual effects of travel pigments having large particle size, optimization of the concentration of such particles to obtain an expected outcome

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[4] The provisional obviousness-type double patenting rejection over US 12/171,969 is moot in view of the abandonment of that application on Feb. 27, 2017.

[5] Rona, Basics of Success, Ingredients for Cosmetics, Merck, published July 2004 ("Rona").

[6] We note that based on the quoted text the Examiner clearly relied upon the April 2004 Rona document originally cited in an PTO-892 dated July 16, 2009 in the parent application US 12/171,969, not the July 2004 Rona document cited in the PTO-1449 filed May 22, 2015 by Appellants.

[7] Meyer et al., US 6,605,235 B1, issued Aug. 12, 2003 ("Meyer").

[8] Schmidt et al., US 2004/0052743 A1, published Mar. 18, 2004 ("Schmidt").

> would have been obvious to one of ordinary skill of the art. The skilled artisan would have had a reasonable expectation of successfully producing a collection of large sized particles as manipulating the particle size distribution, by sieving, for example, is a well-known technique. See Meyer, col. 29, lines 47-53.

(Final Act. 4–5).

The issue with respect to this rejection is: Does the evidence of record support the Examiner's conclusion that the prior art renders claim 16 obvious?

Findings of Fact

1. The Specification teaches "'large particle size' pigments are defined as having a median particle size (D50) of 40 μm or higher, preferably 60 μm or higher" (Spec. 1).

2. The Specification teaches the "desired particle sizes of the pigments are obtained by conventional methods, e.g. sieving or sedimentation" (Spec. 7).

3. Rona teaches:

> **Xirona® Color Travel Pigments**
> - Color changing effects depending on the viewing angle
> - Interference pigments based on mica or silica coated with titanium dioxide or iron oxide

(Rona 1).

4. Rona teaches:

> Different coloring effects can be achieved by the right choice of pearl luster pigments depending on their particle size. Small particles (< 15 μm) create silky and satin effects and will opacify the mass. They enhance the hiding power of formulations and provide a high coverage as well. Larger sized particles (> 100 μm) create high luster effects, either sparkling

> or glittering, combined with very high brilliancy and transparency.

(Rona 2).

5. Rona teaches:

Color effect versus particle size

large particles -> good reflection -> maximum luster
small particles -> many light scattering centers -> maximum hiding

Particle size	*Gloss effect and coverage in formulation and application*		
< 15 µm	Low luster	>>	High hiding power
5 – 25 µm	Silky luster	>>	Strong hiding power
10 – 60 µm	Pearl luster	>>	Medium hiding power
10 – 125 µm	Shimmering luster	>>	Low hiding power
20 – 150 µm	Sparkling luster	>>	Transparent
45 – 600 µm*	Glittering luster	>>	Very transparent

* Very large-sized particles (> 150 µm) not permitted in US products.

(Rona 3).

6. Meyer teaches that cosmetic material such as "pigments can subsequently be classified in order to narrow the particle-size distribution, for example by means of a sieving process" (Meyer 29:51–53).

7. Schmidt teaches cosmetics with pigments within the range of 1 to 30 % by weight (*see* Schmidt ¶ 76).

Principles of Law

"If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Analysis

We adopt the Examiner's findings of fact and reasoning regarding the scope and content of the prior art (Final Act. 3–5; FF 1–7) and agree that claims 1, 16, and 20 are rendered obvious by Rona and Meyer (with Schmidt for claims 1–15). We address Appellants' arguments below.

Appellants contend that:

> both the present Office Actions and the decision in the co-pending application erroneously interpret "particle size" as that value is used in the Rona reference to be coextensive with D_{50}. It is again emphasized that particle *size* does not correlate to particle size *distribution*, not even median distribution D_{50}. The only time when the particle size and particle distribution would be the same is when the distribution is symmetrical. However, this is not the case in many particle distributions. It is for this reason that the commercial Rona pigments as demonstrated in the Declaration under 37 CFR §1.132 (filed November 23, 2015), do not have a D_{50} which is the same as their particle "size" as disclosed in the reference. Modification of the particle *size* is taught in Rona, but contrary to the conclusion in the Office Actin [sic] and the decision of the PTAB, modifying the height of the peak does not suggest modifying the particle size *distribution*, e.g., D_{50} in an organized, coherent or understood manner. Changing the particle size itself may change the distribution, but if the distribution is asymmetrical and skewed towards the lower end, reducing the particle size would actually *increase* the D_{50} since in that case more particles would be above the mean.

(App. Br. 3–4).

We do not find this argument persuasive for several reasons. First, claims 1 and 16 do not recite the word "distribution" but simply refer to a "D50 particle size of at least 40 µm up to about 150 µm" (*see, e.g.*, Claim 16). Therefore, the argument is not directed at a limitation that actually appears in the claim. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) ("[A]ppellant's arguments fail from the outset because . . . they are not based on limitations appearing in the claims.").

Second, the Specification does not support Appellants' interpretation of the claim as requiring a "distribution" because the Specification defines "large particle size" as a particular "median particle size" (FF 1), not a particular size distribution.

Third, Rona expressly recognizes that specific ranges of particle sizes that are reasonably understood as a distribution of particles, have different effects in cosmetic applications (FF 5). For example, Rona explains that particle size distributions between 5 and 25 µm have strong hiding power while particle sized in distributions between 20 and 150 µm are transparent (FF 5).

Fourth, Meyer evidences that the ordinary artisan was aware that specific particle size distributions were obtainable by sieving (FF 6). Meyers specifically explains that "pigments can subsequently be classified in order to narrow the particle-size distribution, for example by means of a sieving process" (FF 6).

Thus, in this obviousness analysis, the ordinary artisan interested in obtaining particular effects regarding luster or hiding power would have recognized that the particle size distributions represent a results optimizable variable as expressly demonstrated by Rona (FF 4, 5) and Meyer (FF 6). *See*

In re Applied Materials, Inc., 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, Rona establishes reasons to optimize particle size, stating "[d]ifferent coloring effects can be achieved by the right choice of pearl luster pigments depending on their particle size" (FF 4) and Meyer, as discussed above, teaches to control the particle size distribution (FF 6).

Appellants contend that:

> the present D_{50} range of 40-150 μm is comparatively narrow inasmuch as 50% of the particles must be above the D_{50}, and 50% below. The size range of Rona could have the 50% dividing line anywhere within the stated range, and thus, as shown, a D_{50} well outside the claims.

(App. Br. 4). Appellants contend a "median value, defined as the value where half of the particle population resides above the point, and half resides below the point, is called a 'D_{50}'. See Horiba, at page 3" (App. Br. 3).

We find this argument unpersuasive for several reasons. First, as already noted, claims 1 and 16 do not recite a specific size distribution. The Horiba[9] discussion of median particle size demonstrates that multiple different median values may be calculated, as Horiba teaches "Dv50 (or Dv0.5) is the median for a volume distribution, Dn50 is used for number distributions, and Ds50 is used for surface distributions" (Horiba 3). Neither

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[9] Horiba Scientific, *Understanding and Interpreting Particle Size Distribution Calculations*, http://www.horiba.com/scientific/products/particle-characterization/education/general-information/data-interpretation/understanding-particle-size-distribution-calculations/ (accessed Sept. 13, 2016).

the Specification nor the claims identify whether the median used is a "volume distribution," a "number distribution," or a "surface distribution." Consequently, to the extent that Horiba provides a general teaching, consistent with the Specification (FF 1) that the word median has its ordinary meaning of a midpoint of a frequency distribution of observed values, we agree. However, to the extent that Appellants contend this distinguishes the ranges of Rona, which specifically overlap the claimed D_{50} ranges, we are not persuaded. *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."). Appellants provide no evidence that a D_{50} range of Rona using the particle size range chart disclosed by Rona (FF 5), would not fall within the range claimed.

Moreover, the instant rejection is for obviousness, not anticipation. Thus, the issue is not whether Rona teaches a specific composition anticipating the D_{50} particle size required by claim 1 but rather whether Rona when combined with Meyer renders the recited D_{50} particle size obvious as a matter of routine optimization (FF 3–5). As already noted, we conclude that it does. Appellants provide no evidence of a secondary consideration that overcomes the Examiner's prima facie case of obviousness.

Appellants contend that:

> the teaching of values in Rona, even though the particle *size* is given, does not teach one of ordinary skill in the art to modify the distribution . . . what Rona actually teaches is that large particles have a good reflection and maximum luster and that small particles have many light scattering centers and maximum hiding. . . . The present invention is not desirous of obtaining sparkling or glittering effects by the use of larger size

> particles, but to provide cosmetic compositions having color travel effects.

(App. Br. 5). Appellants contend that "[b]y the use of tailor-made color travel pigments which have a particle size distribution D_{50} of 40 μm or higher it is possible to obtain a readily visible color travel effect even at low concentrations due to the higher hiding power" (*id.*).

We are not persuaded because Rona expressly teaches "color travel pigments" (FF 3) (emphasis omitted) and provides specific guidance regarding tradeoffs between gloss and hiding effect based upon particle size (FF 4). Thus, the ordinary artisan would have been aware, based on Rona, of the elements necessary to select gloss or hiding effect as well as the elements necessary to obtain a color travel pigment (FF 3). Rona neither teaches away nor renders unobvious any specific particle size distribution. To the extent that Appellants are contending that there is an improvement in the color travel effect, Appellants provide no evidence whatsoever of any such improvement relative to Rona. *See In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995) ("'It is well settled that unexpected results must be established by factual evidence. Mere argument or conclusory statements . . . [do] not suffice.'"). In addition, Appellants do not compare their compositions with the closest prior art nor provide any of the other data necessary to establish an unexpected result. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991) ("[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with the closest prior art.").

Appellants contend that "from the Rona reference a person skilled in the art was not able to choose the right particle size distribution to achieve

the present effects" (App. Br. 6). Appellants contend "Meyer does not provide any information which ranges of the particle size distribution are necessary in order to obtain highly improved cholesteric pigments with a high hiding power" (*id.*).

We do not find these arguments persuasive. First, Appellants' argument that selection of particle sizes for a color travel effect taught by Rona (FF 3) within the particle size range expressly taught by Rona (FF 5) would not have been within the ability of the artisan to routinely optimize represents attorney argument without evidentiary basis. However, "attorney argument [is] not the kind of factual evidence that is required to rebut a prima facie case of obviousness." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997). This argument is also effectively rebutted by Rona's teaching that effects "can be achieved by the right choice of pearl luster pigments depending on their particle size" (FF 4). Rona is directly suggesting optimization based on particle size, recognizing that coloring effects may be "achieved by the right choice of pearl luster pigments depending on their particle size" (FF 4).

Claim 20

Appellants contend "[f]rom the presentation of Dr. Peng . . . it was not at all obvious that large particles are suitable for cosmetic applications due to their less smooth skin feeling and limited or lessened hiding power" (App. Br. 8). Appellants contend "it is not at all obvious to find the right particle size *distribution* for color travel pigments" (*id.*).

We find this argument unpersuasive. The Peng Declaration[10] does not provide specific evidence comparing skin feel with particular particle size distributions, instead simply stating "the discovery that color travel pigments having a D_{50} value that is comparatively large, i.e., greater than 60 microns, would be suitable for cosmetics . . . is highly unexpected" (Peng Decl. 2). In addition, Appellants provide no persuasive evidence of any unexpected result regarding skin feel and particle size. No comparison with specific products of Rona or other prior art references is provided in the Peng Declaration. *See In re Baxter Travenol Labs.*, 952 F.2d at 392.

No supporting evidence, only PowerPoint slides presenting summary information, is provided by the Peng Declaration. We therefore find the Declaration unpersuasive of unexpected results. *See In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) ("[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroborations warrants discounting the opinions expressed in the declarations.").

Conclusion of Law

The evidence of record supports the Examiner's conclusion that the prior art renders claims 1, 16, and 20 obvious.

SUMMARY

In summary, we affirm the rejection of claims 16 and 20 under 35 U.S.C. § 103(a) as obvious over Rona and Meyer. Claims 17–19 and 21–24 fall with claims 16 and 20.

We affirm the rejection of claim 1 under 35 U.S.C. § 103(a) as obvious over Rona, Schmidt, and Meyer. Claims 2–15 fall with claim 1.

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[10] Declaration of Dr. Qinyun Peng, dated Dec. 2, 2013.

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