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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FRASER IAN BELL, STUART KEITH PRATLEY, and
RICHARD SKINNER

Appeal 2012-001149
Application 11/547,577
Technology Center 1600

Before TONI R. SCHEINER, LORA M. GREEN, and
ULRIKE W. JENKS, *Administrative Patent Judges*.

JENKS, *Administrative Patent Judge*

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims directed to a hair treatment composition. The Examiner has rejected the claims for obviousness. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Claims 1, 3, 4, 6-9, and 14-16 are on appeal, and can be found in the Claims Appendix of the Appeal Brief (App. Br. 14-15). Claim 1 is the sole independent claim and is representative of the claims on appeal, and reads as follows:

1. A hair treatment composition comprising from
 - i) 0.05 to 8 wt% of the total composition of a disaccharide that comprises trehalose,
 - ii) a di-acid of the formula:
$$\text{HOOC}-(\text{CH}_2)_n-\text{COOH}$$
where n is an integer from 2 to 8,
 - iii) a source of ammonium ions in which the source of ammonium ions is ammonium carbonate, and
 - iv) an aqueous base, wherein the hair treatment composition has a pH of from 3 to 6.

The following ground¹ of rejection is before us for review:

The Examiner has rejected claims 1, 3, 4, 6-9, and 14-16 under 35 U.S.C. § 103(a) as unpatentable over Cornwell² in view of Tanaka.³

¹ Appellants note the filing of a terminal disclaimer in the Appeal Brief in response to an obvious type double patenting rejection. However, in the Answer the Examiner maintained the obvious type double patenting rejection over co-pending Application No. 11/547,576 (Ans. 4-5), because no terminal disclaimer was received by the Office (Ans. 8). Appellants filed a terminal disclaimer with their Reply Brief on Sept. 1, 2011; and the terminal disclaimer was approved on Nov. 25, 2011.

² Cornwell et al., WO 2004/054526 A1, published July 1, 2004.

³ Tanaka et al., US 6,689,339 B1, issued Feb. 10, 2004.

As Appellants do not argue the claims separately, we focus our analysis on claim 1, and claims 3, 4, 6-9, and 14-16 stand or fall with that claim. 37 C.F.R. § 41.37 (c)(1)(iv).

ISSUE

The Examiner takes the position that “Cornwell et al. teach[es] a hair treatment composition comprising preferably 0.2 to 3% trehalose, cellobiose or mixtures thereof, an aqueous base, and a surfactant.” (Ans. 6.) The Examiner concludes that it would have been obvious to substitute guanidinium carbonate of Cornwell with ammonium carbonate as disclosed in Tanaka to improve hair glossiness. (*Id.* at 7.)

Appellants contend they discovered “unexpected superiority of ammonium salt over guanidi[ni]um salt, the Cornwell reference teaches away from claims of the subject invention by encouraging those of ordinary skill in the art to use guanidi[ni]um salts.” (App. Br. 9.) Appellants contend that the Examiner used hindsight reconstruction by “arbitrarily plucking components from [sic] Tanaka without any specific articulated reason as to why one of ordinary skill would do so (other than that there is, generally, one hair example tucked in among hundred and hundreds of examples which have nothing to do with hair conditioning).” (*Id.* at 10.)

The issue with respect to this rejection is whether the Examiner has set forth a prima facie case of obviousness, and if so, have Appellants provided sufficient evidence of unexpected results to rebut the prima facie case?

FINDINGS OF FACT

FF1. Cornwell disclosed “a hair treatment composition comprising i) from 0.05 wt.% to 49 wt.% of a disaccharide; and ii) a di- acid.” (Cornwell 2, ll. 18-20; Ans. 6.) The disaccharide concentration is “more preferably from 0.2 wt% to 3 wt%, most preferably from 0.5 wt% to 2 wt%.” (Cornwell 3, ll. 18-20; Ans. 6.)

FF2. Cornwell disclosed disaccharides comprised of “pentose or hexose sugars, more preferably the disaccharide comprises of two hexose units. . . . Particularly preferred are trehalose and cellobiose or mixtures thereof.” (Cornwell 3, ll. 7-15; Ans. 6.)

FF3. Cornwell disclosed di-acids “having the formula:



where n is an integer from 2 to 8, more preferably where n equal to 2 or 4 (succinic acid and adipic acid respectively).” (Cornwell 3, ll. 24-31; Ans. 7.)

FF4. Cornwell disclosed that the formulation has a pH in the range of “pH 3 to pH 6, more preferably used at pH 3-5.” (Cornwell 4, ll. 13-14; Ans. 6.)

FF5. Cornwell disclosed the use of a guanidinium salt in the composition and “[p]articularly preferred is guanidinium carbonate. Guanidinium salts are best used at levels from 0.01 wt% w to 5wt.% of the total formulation, more preferably at 0.1wt% w to 2wt%.” (Cornwell 4, ll. 21-24; Ans. 6.)

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FF6. Tanaka disclosed a carbon dioxide formulation for the treatment of “loss of hair glossiness.” (Tanaka col. 2, l. 21.)

FF7. Tanaka disclosed carbon dioxide containing composition by mixing an acid with a carbonate to create carbon dioxide. (Tanaka col. 3, ll. 14-17.) The acid can be selected from a group including adipic acid and the carbonate can be selected from a group including ammonium carbonate. (Tanaka 3, ll. 18-38; Ans. 7.)

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. It is proper to “take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418. *See also id.* at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

In addition, like our appellate reviewing court, “[w]e will not read into a reference a teaching away from a process where no such language exists.” *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1364 (Fed. Cir. 2006).

ANALYSIS

Appellants contend that the Cornwell reference teaches away from the claims because the reference encourages the use of guanidinium salt (App. Br. 9).

We are not persuaded by this argument. A prior art reference is said to teach away from an Applicants' invention "when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). "The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed." *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). The disclosure by Cornwell of more than one guanidinium salt, with the particularly preferred salt being guanidinium carbonate, would not lead the ordinary artisan away from using another salt or carbonate as suggested by Appellants.

Appellants contend that "[t]he Examiner seems to argue that it would be obvious to use the [Tanaka] reference because there is mention that cosmetic compositions can be used to ameliorate loss of hair gloss (see col. 6, lines 20-21 or col. 13, lines 20-23 of Tanaka)." (App. Br. 11; Reply Br. 5.) Appellants assert that Tanaka's disclosure is insufficient because "[t]he only example which even mentions hair seems to be test Example 6 at column 46 which refers in turn to Example 18. Example 18 uses sodium

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carbonates. There is no suggestion that there is anything special about ammonium carbonate.” (App. Br. 12; Reply Br. 6.)

We are not persuaded. The Examiner finds

that the prior art (i.e. Cornwell and Tanaka) recognizes carbonate salts for use in hair care compositions where both references teach the carbonate salt to be combined with adipic acids. Not only does Tanaka teach the 9 different carbonates (including ammonium carbonate) as functional equivalents, Tanaka even mentions that the carbonates can be combined with one another.

(Ans. 10.)

Appellants contend that one of ordinary skill would not be specifically drawn to combinations of ammonium carbonate and di-acid except by random chance (Reply Br. 7). At the same time Appellants acknowledge that “all of the multiple combinations [of Tanaka] are indeed functional in that their only purpose is to produce carbon dioxide, e.g., to relieve itching.” (*Id.* at 7.)

We are not persuaded. We agree with the Examiner’s reason for the combination of Cornwell and Tanaka, because mixing of “di -acids with carbonates such as ammonium carbonates improves the glossiness of the hair. . . . There would have been a reasonable expectation of success for adding ammonium carbonate into the composition of Cornwell as both Cornwell and Tanaka teach cosmetic formulations for improvement of the hair.” (Ans. 7.) Additionally, the combination of a carbonate with an acid would predictably result in the production of carbon dioxide bubbles as

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acknowledged by Appellants (Reply Br. 7) and it is the carbon dioxide bubbles that provide the therapeutic benefits disclosed in Tanaka (FF7). It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. *See, e.g., In re Kahn*, 441 F.3d 977, 987 (Fed. Cir. 2006).

Appellants' contend that "[t]here is absolutely no link between the necessary use of di-acids and specifically ammonium carbonates in Tanaka. The only thing of criticality in Tanaka is the formation of carbon-dioxide containing formulation." (Reply Br. 5.)

We are not persuaded. The test for obviousness is what the combined teachings of the references as a whole would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). The Examiner finds, and Appellants do not contest, that Cornwell disclosed a hair treatment composition having a pH from 3-6, comprising trehalose, a di-acid, and guanidinium carbonate (FFs 1-5). The Examiner finds that "Tanaka teach[es] the 9 different carbonates (including ammonium carbonate) as functional equivalents." (Ans. 10.) "In *United States v. Adams*, . . . [t]he Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR*, 550 U.S. at 416. As acknowledged by Appellants, the ordinary artisan would recognize that the combination of a carbonate with a di-acid predictably results in carbon-dioxide production (Reply Br. 5). We agree with the Examiner's position that it would have

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been obvious to substitute the guanidinium carbonate of Cornwell (FF5) for any one of the nine listed carbonate salts, including ammonium carbonate, listed in Tanaka (FF7) to arrive at the predictable result of producing carbon-dioxide bubbles as disclosed in Tanaka. “Express suggestion to substitute one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d 297 301 (CCPA 1982).

Appellants assert that data provided in the Specification “highlight how applicants' claims show unexpected advantages and are commensurate in scope with the teachings.” (Reply Br. 8.)

[T]he Examiner respectfully submits that Appellants' have not provided evidence demonstrating that ammonium carbonate is superior to guanidinium [sic] carbonate. “[u]nsupported statements in the specification ... cannot support a finding of unexpected results.” *Tyco Healthcare Group LP v. Mutual Pharmaceutical Co.* (Fed Cir, 2010-1513, 6/22/2010), citing *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). In fact, Appellants' specification appears to demonstrate that such salts are functional equivalents over one another as both salts demonstrate an increase in oscillation during post-treatment. Such increase in oscillation results in more softer and supple hair.

(Ans. 11-12.)

In the Appeal Brief, as well as all prior responses, Appellants assert that the “invention demonstrates the unexpected superiority of ammonium salt over guanidi[ni]um salt” without any further explanation (App. Br. 9). The first time Appellants discuss the actual results presented in the Specification in any kind of detail is in the Reply Brief. (Reply Br. 7.)

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Ordinarily, “[a]ny bases for asserting error, whether factual or legal, that are not raised in the principal brief are waived.” *Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (informative). *See also Optivus Tech., Inc. v. Ion Beam Appl'ns. S.A.*, 469 F.3d 978, 989 (Fed. Cir. 2006) (“[A]n issue not raised by an appellant in its opening brief . . . is waived.”) (citations and quotation marks omitted).

Appellants Reply Brief appears to respond to the Examiner's rebuttal to Appellants' unexpected results arguments made in the Appeal Brief. The Examiner finds that “[t]here appears to be no significant difference between the two functionally equivalent salts in the specification” (Ans. 9). With respect to the results disclosed in the Specification table (Spec. 24) Appellants opine that “[i]f we consider a change of 0.004 [up] or down to be about the ‘same’, with change > 0.004 upwards being increase in oscillation period (associated with decrease in torsional stiffness, a positive) and change >0.004 downward being decrease in oscillation period (associated with increase in torsional stiffness, a negative);” for guanidine chloride there are 18 data points of which 10 are up and 8 are the same or down, while for ammonium carbonate with 20 data points 18 are up and 2 are the same or down (Reply Br. 8). Appellants, however, have not explained why one of ordinary skill in the art would place the arbitrary cut off at 0.004 units, as opposed to 0.4, 0.04, 0.001 or less in making a determination of whether there is a positive, negative or no effect based on the tested composition. Here, the Examiner has considered this same evidence and found that “[t]here appears to be no significant difference between the two functionally

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equivalent salts in the specification.” (Ans. 9, 11-12.) What is missing from Appellants’ arguments, and the record, is a showing of evidence that a measurement of 0.004 units in the oscillation period is understood by one of ordinary skill in the hair care art to be a significant difference to the hair structure so that the full scope of the data can be appreciated. As is, the argument of using the arbitrary cut off of 0.004 has never been presented to the Examiner, and thus has not been evaluated by the Examiner. The Examiner has considered the evidence in the Specification during prosecution and has concluded that the data presented shows these salts to be functional equivalents (Ans. 9, 11-12).

We conclude that the preponderance of the evidence of record supports the Examiner’s conclusion that the combination of Cornwell and Tanaka renders obvious the hair care product of claim 1. We thus affirm the rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious, as claims 3, 4, 6-9, and 14-16 stand or fall with that claim, we affirm the rejection as to those claims as well. 37 C.F.R. § 41.37 (c)(1)(iv).

SUMMARY

We affirm the rejection of claims 1, 3, 4, 6-9, and 14-16 under 35 U.S.C. § 103(a) as unpatentable over Cornwell in view of Tanaka.

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TIME PERIOD FOR RESPONSE

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

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