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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FABIO CAMPANILE, HANS RUDOLPH GYGAX, HARRY RENES, and SOPHIE DAVODEAU

Appeal 2019-001825
Application 13/748,021
Technology Center 1700

Before MICHAEL P. COLAIANNI, GEORGE C. BEST, and DEBRA L. DENNETT, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) the final rejections of claims 1, 5–8, 10–17, 19, 20, and 22–28. Claims 2–4, 9, 18, and 21 are canceled. We have jurisdiction over the appeal pursuant to 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 Givaudan S.A. (Appeal Br. 3).

STATEMENT OF THE CASE

Appellant's invention is directed to aroma enhancement of compositions in which the composition's aroma is an important factor (Spec. 1:10–11). Such compositions include those to which perfume is normally added, such as cleaning products and cosmetics (*id.* at 1:13–15). Suitable compositions for aroma enhancement are said to also include foodstuffs and beverages (*id.* at 1:16–17). According to the Specification, the addition of 2,4-nonadiene[2] to these compositions enhances the perception of each composition's aroma (*id.* at 1:24–25; 2:1).

Claims 1, 5, 6, and 8 are illustrative (emphasis added):

> 1. A method of enhancing the aroma of a non-consumable aroma composition comprising fragrant materials, comprising the addition to the composition of *an aroma-enhancing quantity of 2,4-nonadiene, in which the 2,4-nonadiene is present in the composition in a concentration of from 1 ppb to 10 ppm*.
>
> 5. A non-consumable aroma-providing composition comprising fragrant materials and *an aroma-enhancing quantity of 2,4-nonadiene, in which the 2,4-nonadiene is present in the composition in a concentration of from 1 ppb to 10 ppm*.
>
> 6. An aroma-enhancing composition comprised in a consumable composition, comprising base components of the consumable composition, at least one aroma ingredient and *an aroma-enhancing quantity of 2,4-nonadiene, in which the 2,4-nonadiene is present in the composition in a concentration of from 1 ppb to 10 ppm*.
>
> 8. A method of enhancing the aroma of an aroma composition comprised in a consumable composition comprising base components of the consumable composition, the method comprising the addition to the consumable composition of *an aroma-enhancing quantity of 2,4-nonadiene,*

[2] Specifically, the trans, trans isomer of 2,4-nonadiene.

> *in which the 2,4-nonadiene is present in the composition in a concentration of from 1 ppb to 10 ppm*.
> AppealBr. 22. (Claim App.) (emphasis added).

Appellant appeals the following rejections:

1. Claim 6 is rejected under 35 U.S.C. § 103(a) as unpatentable over K. Umano et al., *Analysis of Headspace Volatiles from Overheated Beef Fat*, J. Agric. Food Chem. 35(1) 14–18 (1987) ("Umano") (Final Act. 3).

2. Claims 1, 5–8, 10–17, 19, 20, and 22–28 are rejected under 35 U.S.C. § 103(a) as unpatentable over Tatsuro et al. (JP 2002-180080 A; published June 26, 2002, and relying on a machine translation) ("Tatsuro") (Final Act. 4–8).

FINDINGS OF FACT & ANALYSIS

After review of the respective positions provided by Appellant and the Examiner, we REVERSE the Examiner's prior art rejections of claims 1, 5–8, 10–17, 19, 20, and 22–28 under 35 U.S.C. § 103(a) for the reasons presented by Appellant. We add the following.

A. Rejection of claim 6 as unpatentable over Umano

The Examiner's findings and conclusions regarding Umano are located on page 3 of the Final Office Action.

The Examiner finds that Umano's beef fat renders obvious each limitation of the aroma-enhancing composition recited in independent claim 6, except that Umano does not disclose that 2,4-nonadiene is present therein in the requisite amount (Final Act. 3). The Examiner, however, concludes that determining this amount would have only involved "routine

experimentation that is well within the ordinary skill in the art" (*id.*). The Examiner determines that "[i]t would have been obvious for one of ordinary skill in the art" at the time of the invention was made to have adjusted "the amount of 2,4-non[a]diene[,] depending on the desired aroma strength of the composition" (*id.*).

Appellant argues, *inter alia*, that "Umano is completely silent about aroma enhancement" and "*any* possible use for 2,4-nonadiene" (Appeal Br. 11). Appellant further argues that Umano fails to provide one of ordinary skill in the art, at the time the invention was made, any reason to: (i) "single out and select 2,4-nonadiene from among the 87 volatile compounds Umano identified in headspace extract of overheated beef fat and," or (ii) "use it in an aroma-providing or aroma-enhancing composition, in any amount" (*id.* at 12; *see also* Umano Abstract, Table 1, Fig. 1). Appellant asserts that the peak area % of 2,4-nonadiene extracted from Umano's overheated beef fat is less than 0.02%, "which the ordinary skilled person would [have] consider[ed] unlikely to affect aroma perception" (Appeal Br. 11; *see also* Umano Table 1). Thus, Appellant essentially argues that Umano's teachings would not have motivated one of ordinary skill in the art to derive an aroma-enhancing quantity of 2,4-nonadiene (Appeal Br. 10).

The Examiner responds by asserting that beef "fat is known to have some sort of aroma" (Ans. 9). The Examiner argues that the instantly claimed subject matter encompasses Umano's beef fat because claim 6 "does not specify any type or amount of aroma" for the recited consumable composition (*id.*). With respect to Appellant's contention that Umano's 2,4-nonadiene is present only in trace amounts, the Examiner replies that

"[A]ppellant has not shown that the claimed concentration is critical" (*id.* at 10).

It is well understood that "[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). The fact that a reference may be modified to reflect features of the claimed invention does not make the modification, and hence the claimed invention, obvious unless the prior art suggested the desirability of such modification. *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990).

In this instance, the Examiner has not provided adequate reasoning to explain why one of ordinary skill in the art would have specifically selected 2,4-nonadiene from among the 87 volatile compounds that Umano identified in the headspace extract of overheated beef fat. Furthermore, even assuming that Umano would have provided sufficient motivation to select 2,4-nonadiene, the Examiner has not adequately explained why a person of skill in the art would have varied the amount of 2,4-nonadiene from a mere trace to enhance Umano's beef fat's aroma. Therefore, the Examiner's conclusion that Umano's teachings would have motivated the ordinarily skilled artisan to adjust the amount of 2,4-nondiene, depending on the desired aroma strength of the beef fat, is not supported by the preponderance of the evidence. Rather, the preponderance of the evidence supports Appellant's position that Umano would not have provided any reason to select an aroma-enhancing quantity of 2,4-nonadiene as claimed.

B. Rejection of claims 1, 5–8, 10–17, 19, 20, and 22–28 as unpatentable over Tatsuro

The Examiner's findings and conclusions regarding Tatsuro are located on pages 4–8 of the Final Office Action.

The Examiner finds that Tatsuro's addition of fragrant flavor components comprising 2,4-nonadiene to pasta discloses or suggests each limitation of: (i) the methods of enhancing the aroma of an aroma composition recited in independent claims 1 and 8; and (ii) the aroma-providing and aroma-enhancing compositions recited in independent claims 5 and 6, respectively (Final Act. 4–6).

The Examiner finds that although Tatsuro does not explicitly disclose the claimed amount of 2,4-nonadiene, Tatsuro teaches that "the flavor components can be in an amount of 0.03 ppm to 200 ppm" (*id.* at 4 (citing Tatsuro ¶ 12)). The Examiner concludes that "one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Tatsuro overlap the instantly claimed proportions" of 1 ppb to 10 ppm (Final Act. 4). The Examiner determines that "[i]t would have been obvious for one of ordinary skill in the art" at the time of the invention was made to have adjusted "the amount of 2,4-non[a]diene[,] depending on the desired aroma strength of the composition" (*id.* at 5).

Appellant argues, *inter alia*, that "Tatsuro discloses *a multi-component product*," which cannot disclose or suggest the claimed aroma-enhancing quantity of 2,4-nonadiene by itself (Appeal Br. 14; *see also* Reply Br. 7). Appellant asserts that Tatsuro's flavoring agent actually "comprises (1) one or more kinds of aliphatic aldehydes[,] (2) one or more kinds of

aliphatic hydrocarbons, and (3) one or more kinds of substituted furans" (Appeal Br. 14). In particular, Appellant contends that

> Tatsuro's disclosure of 2,4-nonadiene is submerged deep in a laundry list of compounds in three chemical classes, where Tatsuro is silent on any reason to select 2,4-nonadiene as a flavoring agent from the hundreds of other compounds listed in the broad class of aliphatic hydrocarbons of general formula II: $R^{[2]}H$ where $R^{[2]}$ is a 3–10[C] straight-chain or branched alkyl chain or alkenyl group.

(Reply Br. 6; *see also* Tatsuro ¶¶ 5–11; Abstract). Appellant further argues that Tatsuro's multi-component product cannot teach or suggest the claimed "aroma-enhancing quantity of 2,4-nonadiene . . . in a concentration of from 1 ppb to 10 ppm" because the Examiner's relied upon disclosure "is directed to the amount of the flavors, ***and not the amount of 2,4-nonadiene by itself,*** used per 1 kg of pasta raw materials" (Reply Br. 7 (citing Tatsuro ¶ 12)).

Appellant's arguments are persuasive.

The Examiner has not provided any findings showing that 0.03–200 ppm of Tatsuro's multi-component flavoring agent specifically contains a aliphatic hydrocarbon in a concentration range, which overlaps the claimed concentration range for 2,4-nonadiene (*see* Final Act. 4 (citing Tatsuro ¶ 12)). We find Tatsuro discloses that the preferred weight ratio range for each component in the multi-component flavoring agent is 20–45:40–70:1–10 for aliphatic aldehyde(s):aliphatic hydrocarbon(s):substituted furan(s), respectively (Tatsuro ¶ 11). Even assuming that Tatsuro's teachings allow for the calculation of a weight range of an aliphatic hydrocarbon, which overlaps the claimed concentration range for 2,4-nonadiene, the Examiner has failed to provide any reasoning supported by adequate facts to explain why a person of ordinary skill in the art would have selected 2,4-nonadiene

from the hundreds of aliphatic hydrocarbons listed therein (*see* Tatsuro ¶ 9). *See In re Baird*, 16 F.3d 380, 382 (Fed. Cir. 1992) (holding that "[t]he fact that a claimed species may be encompassed by a prior art genus, is not by itself, sufficient to establish a prima facie case of obviousness.").

Thus, the Examiner has not established a prima facie case of obviousness based upon articulated reasoning with rational underpinnings. *See KSR*, 550 U.S. at 418.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
6	103(a)	Umano		6
1, 5–8, 10–17, 19, 20, 22–28	103(a)	Tatsuro		1, 5–8, 10–17, 19, 20, 22–28
Overall Outcome				1, 5–8, 10–17, 19, 20, 22–28

REVERSED