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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NIGEL GRECH and JOHN PETERSON

Appeal 2015-004681
Application 11/248,373
Technology Center 1700

Before JAMES C. HOUSEL, DONNA M. PRAISS, and
BRIAN D. RANGE, *Administrative Patent Judges*.

PRAISS, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ This decision makes reference to the Specification filed Oct. 11, 2005 (“Spec.”), the Final Office Action mailed Jan. 22, 2014 (“Final Act.”), the Appeal Brief filed Dec. 15, 2014 (“Br.”), and the Examiner’s Answer mailed Jan. 16, 2015 (“Ans.”).

STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1–50, 62–64, and 66. We have jurisdiction under 35 U.S.C. § 6(b).

The subject matter of this appeal relates to fertilizer concentrate compositions including composite materials including calcium phosphite. Spec. ¶¶ 62, 67. Claim 1, the sole independent claim, is illustrative (disputed elements italicized):

1. A fertilizer concentrate comprising:

a suspension of calcium phosphite

wherein said calcium phosphite is present in an amount of about 0.125 kg of calcium phosphite/kg of fertilizer concentrate or greater, and said suspension is a member selected from an aqueous suspension and a non-aqueous suspension; and

an organic acid.

Appellants² appeal the following rejections under 35 U.S.C. § 103(a): (1) claims 1, 9, 10, 12, 13, 26, and 27 over Thizy,³ (2) claims 1–4, 6, 7, 38, 39, 41–43, 49, 50, and 66 over Hsu,⁴ and (3) claims 5, 8, 9–50, and 62–64 over Hsu in combination with various secondary references. Appellants support their arguments with the Declaration of Nigel M. Grech, Ph.D., dated March 2, 2011 (“Grech Decl.” or “Grech Declaration”). Appellants argue the subject matter of independent claim 1 and rely on those same arguments for the dependent claims. Br. 10–29. In accordance with 37 C.F.R. § 41.37(c)(1)(iv), and based upon the lack of arguments directed to the subsidiary rejections, claims 2–50, 62–64, and 66 will stand or fall

² Appellants identify the real party in interest as Verdesian Life Sciences U.S., LLC. Br. 3.

³ Thizy et al., US 4,075,324, issued Feb. 21, 1978 (“Thizy”).

⁴ Hsu, US 6,168,643 B1, issued Jan. 2, 2001 (“Hsu”).

together with independent claim 1 from which they depend directly or indirectly. *See In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) (holding that the Board reasonably interpreted 37 C.F.R. § 41.37 (c)(1) as requiring “more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art”).

For purposes of this appeal only, the Examiner entered an amendment cancelling claim 2 and incorporating claim 2 (which further claims an organic acid) into claim 1. Br. 10; Advisory Action mailed May 27, 2014. The amendment has not been entered in the application, however. Advisory Action mailed May 27, 2014. Appellants assert that the amendment of claim 1 moots the rejection over Thizy in this appeal. Br. 10. The Examiner does not include Thizy among the rejections “applicable to the appealed claims.” Ans. 2–17. The rejection based on Thizy, therefore, is not before us in this appeal for at least the reason that there is no rejection of amended claim 1 (or dependent claim 2) over Thizy for us to review.

OPINION

The dispositive issues for the rejections based on Hsu are:

1. Did the Examiner reversibly err in finding that Hsu discloses a phosphorous acid salt within the claimed amount?
2. Did the Examiner reversibly err in finding that Hsu’s disclosure of a precipitate is adequate disclosure of the solubility properties of calcium phosphite forming a suspension?
3. Did the Examiner reversibly err in finding that the Grech Declaration is insufficient to overcome the rejections?

After review of the arguments and evidence presented by both Appellants and the Examiner, we affirm the stated rejections.

It is the Examiner's position that Hsu suggests the subject matter of claim 1 for the reasons stated on pages 2, 3, and 14–19 of the Answer and pages 5 and 15–19 of the Final Action.

In the Appeal Brief, Appellants argue that because Hsu teaches that the solution form is critical and precipitates are undesirable, Hsu teaches away from a suspension. Br. 10–12. Appellants also argue that modifying Hsu's solution to be a suspension would change the principle of operation and render it unsatisfactory for its intended purpose as a phosphorous fertilizer. *Id.* at 12–13.

Appellants also contend that the Examiner's finding that Hsu discloses an amount of phosphorous acid salt (such as calcium phosphite) in an amount equal to 0.318 kg/kg total fertilizer based on Hsu's Example II is flawed because "no calcium phosphite can possibly be generated in this process [of Hsu's Example II]." *Id.* at 13–14. Appellants additionally contend that the Examiner's calculations produce "the amount of phosphorous acid relative to total fertilizer, not the amount of phosphorous acid salt (here, potassium phosphite produced by the reaction of the potassium hydroxide and phosphorous acid)." *Id.* at 14–15 (emphasis omitted).

Appellants further contend that the Examiner did not properly weigh the Declaration evidence and mischaracterized the evidence of record by referring to calcium phosphate instead of calcium phosphite in one instance. *Id.* at 15–17 (citing Office Action mailed Jan. 22, 2014, 18:10–12). Appellants also assert that the Examiner's finding that the Declaration

evidence is not commensurate in scope with the claimed invention disregards evidence of surprising results containing additional components that fall within the scope of the claims. *Id.* at 17–21. According to Appellants, “[c]omparison data was provided for the calcium phosphite formulations of the present invention against their potassium phosphite or ammonium phosphite counterparts when applied to citrus trees, red cabbage, or citrus seedlings.” *Id.* at 19 (citing Grech Decl. 2–6). Appellants also argue that their discovery and solution of a “previously unknown problem” of phytotoxicity of prior art phosphite fertilizers also weighs in favor of non-obviousness of the claims. *Id.* at 21. Finally, Appellants argue that inclusion of a negative proviso reciting any and all phytotoxic elements in the art is not warranted. *Id.* at 22–23.

The Examiner responds that Hsu’s preference for a solution instead of a suspension does not alter Hsu’s disclosure “that a mixture of calcium phosphite with water causes material to precipitate” and would have “lead one of skill to expect a calcium phosphite suspension.” Ans. 12; *see id.* at 11 (citing Hsu, 2:1, 3:1–3, 3:52, 4:10–11 for disclosure of low solubility of phosphite in water and support for fertilizer composition of Hsu not being present as a fully dissolved solution). Regarding Hsu’s disclosure of the amount of phosphorous salt in its fertilizer, the Examiner responds:

[w]hile the Hsu reference does not explicitly teach the molar amount of potassium phosphite producible from the reaction, the amount of phosphorous component present in the formulation is comparable to other phosphorous salts which Hsu recited such as calcium phosphite [See Column 3, lines 9–10]. The substitution of one phosphorous acid salt taught in the Hsu reference for another phosphorous acid salt (calcium phosphite) taught in the Hsu reference is within the level of one of skill in the art.

Id. at 12–13. The Examiner finds that “Hsu also teaches, in the other Examples, formulations with about 30 wt. % of the phosphorous acid component” and “one of skill in the art would expect similar values when utilizing any of the other disclosed phosphorous salts.” *Id.* at 13.

Regarding the Grech Declaration, the Examiner responds “[w]hile the demonstration and experimental results show the variable levels of phytotoxicity, this does not overcome the teachings of the prior art which anticipate or make obvious the claimed composition.” *Id.* at 14. The Examiner also responds that the evidence of record regarding unexpected results is not commensurate in scope with independent claim 1 because the evidence does not address the impact of including mancozeb and not including ammonium phosphite and potassium phosphite in the calcium phosphite formulation tested. *Id.* at 14–15.

We are not persuaded that the Examiner erred in finding that Hsu’s disclosure of a precipitate in phosphorous fertilizer compositions suggests a suspension to one of skill. We also are not persuaded that the Examiner erred in finding the amount of phosphorous salt in Hsu’s composition would have been expected to be a similar value for the other disclosed phosphorous salts. In addition, we are not persuaded that the Examiner erred in considering the secondary evidence of non-obviousness.

Appellants’ arguments are not persuasive for a number of reasons. First, Appellants do not dispute that the presence of precipitates constitutes a suspension as required by claim 1. Instead, Appellants contend that because Hsu teaches that precipitates are undesirable, Hsu teaches away from a suspension. Br. 11–12. “A reference may be said to teach away 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 Examiner’s undisputed finding, which is supported by the record, is that Hsu discloses that precipitates exist in its formulations and form in known phosphorous fertilizers. Ans. 11–12; Final Act. 15–16 (citing Hsu col. 1:38–45, 3:52, 4:10–11).

Second, the Examiner’s finding that Hsu teaches a fertilizer concentrate containing a phosphorous acid salt within the claimed amount and multiple substitutable phosphorous acid salts, including calcium phosphite, is supported by the record. Hsu, col. 3:1–3, 3:9–10, 3:56–67; Ans. 2–3, 12–13; Final Act. 5. Appellants do not dispute that Hsu teaches the interchangeability of the phosphorous acid salts listed therein in column 3, including calcium phosphite. Nor do Appellants dispute that Hsu’s Example II teaches a concentrate containing a phosphorous acid salt within the range claimed. Appellants only dispute the Examiner’s calculations, but not the finding that the phosphorous acid salt in Hsu’s example meets the claimed amount. Additionally, the Examiner finds that the Appellants’ arguments regarding the calculation of total fertilizer components available after reaction is a temporal argument not reflected in the claim language. Ans. 13. Appellants have not filed a Reply Brief in this appeal to address this point.

Third, Appellants’ declaration evidence was considered by the Examiner and is not entitled to substantial if any weight for several reasons. Whether an invention has produced unexpected results is a question of fact. *In re Mayne*, 104 F.3d 1339, 1343 (Fed. Cir. 1997). “[T]here is no hard-and-

fast rule for determining whether evidence of unexpected results is sufficient to rebut a *prima facie* case of obviousness.” *Kao Corp. v. Unilever U.S., Inc.*, 441 F.3d 963, 970 (Fed. Cir. 2006); *see also In re Dillon*, 919 F.2d 688, 692–93 (Fed. Cir. 1990) (“[e]ach situation must be considered on its own facts.”). However, a party asserting unexpected results as evidence of nonobviousness has the burden of proving that the results are unexpected. *In re Geisler*, 116 F.3d 1465, 1469–70 (Fed. Cir. 1997). “[I]t is not enough to show that results are obtained which differ from those obtained in the prior art: that difference must be shown to be an *unexpected* difference.” *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972). Moreover, “when an inventor tries to distinguish his claims from the prior art by introducing evidence of unexpected ‘synergistic’ properties, the evidence should at least demonstrate ‘an effect greater than the sum of the several effects taken separately.’” *Merck & Co. v. Biocraft Lab., Inc.*, 874 F.2d 804, 808 (Fed. Cir. 1989). Furthermore, an applicant attempting to establish unexpected results must do so with clear and convincing evidence. *In re Heyna*, 360 F.2d 222, 228 (CCPA 1966) (“It was incumbent upon appellants to submit clear and convincing evidence to support their allegation of unexpected . . . property.”). *See also McClain v. Ortmayer*, 141 U.S. 419, 429 (1891) (conclusive evidence needed to establish new function).

Appellants’ evidence that “the mixtures of the calcium phosphite formulations of the invention and mancozeb are more effective in suppressing fungal growth than the mixture of potassium ammonium phosphite with mancozeb” is limited to a single sentence in paragraph 3 of the Grech Declaration that is (1) conclusory, (2) not supported by any data, and (3) made by a named inventor. Grech Decl. ¶ 3. One’s expertise, even

draped with a skilled-artisan veil, does not entitle a naked opinion to much weight. *See Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) (“Lack of factual support for expert opinion going to factual determinations . . . may render the testimony of little probative value in a validity determination.”). Moreover, the Grech Declaration lacks any support for what would have been expected from formulations containing calcium phosphite and mancozeb, apart as well as in combination, and provides only a conclusory statement that “nor would a skilled artisan assume that the mixtures of the calcium phosphite formulations of the invention and mancozeb are more effective in suppressing fungal growth than the mixture of potassium ammonium phosphite with mancozeb.” Grech Decl. ¶ 4. Furthermore, the Grech Declaration does not establish that the calcium phosphite formulations tested are formulations that meet the requirements of claim 1. The Grech Declaration is silent as to whether the formulation included a solution or suspension of calcium phosphite, the amount of calcium phosphite in the concentrate, and whether it included an organic acid to meet the requirements of claim 1.

The Grech Declaration is also insufficient because it does not provide support for the claimed range of “about 0.125 kg of calcium phosphite/kg of fertilizer concentrate or greater.” *In re Harris*, 409 F.3d 1339, 1344 (Fed. Cir. 2005) (“[T]he record does not show that the improved performance would result if the weight-percentages were varied within the claimed ranges. Even assuming that the results were unexpected, Harris needed to show results covering the scope of the claimed range.”). The Grech Declaration merely provides a general observation that a known fertilizer

component, calcium phosphite, performs better than other known fertilizer components, potassium phosphite and ammonium phosphite, with regard to one property, phytotoxicity. The Declaration does not provide any measure of how much “more effective” the composition with calcium phosphite component performed with respect to fungal growth. The Declaration also does not establish the alleged unexpected result for fungal growth suppression and phytotoxicity across the claimed range of calcium phosphite in the concentrate or even if the concentrate was tested. Because the Declaration indicates “the phosphites were applied at equivalent PO_3^{-2} concentration of 1.5% w/w by foliar sprays completely covering the canopy of citrus trees” (Grech Decl. ¶ 5), it appears that the claimed concentrate was not tested, but, rather, a dilution or solution was tested.

It also is well settled that an applicant relying on comparative tests to rebut a prima facie showing of obviousness must compare his claimed invention to the closest prior art. *See In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). Neither Appellants nor the Grech Declaration establish that the formulations tested were compared to the closest prior art. Here, the closest prior art is Hsu’s composition containing calcium phosphite. Absent a comparison to the closest prior art, that is, a prior art calcium phosphite formulation, Appellants’ evidence of unexpected results is entitled to little weight.

“For objective evidence of secondary considerations to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (quotation, emphasis, and alteration omitted). Where the offered secondary consideration actually

results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention. *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1369 (Fed. Cir. 2011) (“If commercial success is due to an element in the prior art, no nexus exists.”) Based on the evidence of record, Appellants have not established any results that are claimed and novel in the claim. Appellants’ evidence of alleged unexpected results, which do not show any significance of the amount of calcium phosphite present, also undermine Appellants’ arguments distinguishing Hsu’s compositions based on the amount of calcium phosphite/kg of fertilizer concentrate.

For the foregoing reasons, we affirm all of the Examiner’s rejections under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED