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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DANIEL JAMES BROWN and DIANA JORDAN

Appeal 2017-005003
Application 13/635,538[1]
Technology Center 1700

Before JEFFREY T. SMITH, WESLEY B. DERRICK, and MICHAEL G. McMANUS, *Administrative Patent Judges*.

DERRICK, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's maintained rejection under 35 U.S.C. § 103(a) of claims 22–24, 26–28, 44–47, and 52 over GB '011[2] in view of Perlman.[3] We have jurisdiction under 35 U.S.C. § 6.

We REVERSE.

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[1] Appellants identify KUDOS BLENDS LTD. as the real party in interest. Appeal Br. 2.
[2] GB 987,011, published March 24, 1965.
[3] Perlman, US 2009/0092727 A1, published April 9, 2009.

THE INVENTION

The subject matter of the claims on appeal relates to potassium bicarbonate coated with an anionic or amphoteric surfactant to inhibit caking on storage and premature loss of carbon dioxide when mixed with an acidulant. Specification filed September 17, 2012 ("Spec."), Abstract. The stabilized potassium bicarbonate composition of the invention is identified as "for use in baking." Spec. 1, ll. 14–15.

Independent claim 22 is representative.

> 22. Potassium bicarbonate comprising potassium bicarbonate particles, wherein substantially all of said potassium bicarbonate particles have a particle size less than 500 μ, and said potassium bicarbonate particles are coated with a layer of a substantially dry anionic surfactant selected from the group consisting of soaps and alkyl benzene sulphonates, said layer having a contact angle of at least 90°.

Appeal Brief filed September 26, 2016 ("Appeal Br."), 14.

The recited limitation of "having a contact angle of at least 90°" is a measurement indicating an initially hydrophobic coating. Spec. 12, ll. 11–12, 23, ll. 20–21, 24, ll. 2–4.

DISCUSSION[4]

We are persuaded that the Examiner has failed to meet the Office's burden of establishing the unpatentability of the claims. For any ground of rejection, "the [E]xaminer bears the initial burden . . . of presenting a *prima*

[4] In our discussion, we refer to the Specification, the Final Office Action issued March 18, 2016 ("Final Act."), the Appeal Brief, the Examiner's Answer issued November 29, 2016 ("Ans."), and the Reply Brief filed January 30, 2017 ("Reply Br.").

facie case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). We add the following.

Claim 22 requires, *inter alia*, that the "potassium bicarbonate particles are coated with a layer of a substantially dry anionic surfactant . . . having a contact angle of at least 90°."

GB '011 relates to a process for manufacturing dry fire-extinguishing powder based on potassium bicarbonate. The Examiner relies on GB '011 for its disclosure of a mixture comprising potassium bicarbonate and a hydrophobic agent that is ground into a powder, which is then treated with carbon dioxide. Final Act. 2; Ans. 3. GB '011 teaches that contaminating "potassium carbonate, for example of $2K_2CO_3 . 3H_2O$" results in powders that are not sufficiently free-flowing for optimal use as dry fire-extinguishing powder. GB '011, 1, ll. 10–24. The hydrophobic agent included in the powder is characterized as facilitating the removal of water formed upon treatment with carbon dioxide to convert contaminating potassium carbonate into potassium bicarbonate. GB '011, 1, ll. 38–44.

Perlman relates to a dry-milled composition including phytosterol-surfactant conglomerates that is water dispersible. Perlman, Abstract. The Examiner relies on Perlman as "teach[ing] to mill the phytosterol particles with the surfactant particles under high shear conditions to produce conglomerate particles in which the phytosterol particles are intimately associated with the surfactant particles" and that "the high shear conditions are such that significant size reduction is obtained." Final Act. 2–3; Ans. 3. The Examiner finds Perlman discloses that "[t]he size of the particles may be of any of a range of sizes in the range of 1-100 micron for the phytosterol particles and 10-250 microns for the surfactant." Final Act. 4; Ans. 3.

The Examiner concludes that "[i]t would have been obvious to one skilled in the art at the time of the invention to use the high shearing method taught in Perlman to ensure that the fine particle sizes [of Perlman] are obtained" and that "the high shear milling also provides the benefit of . . . providing adhesion between the particles and the surfactant." Final Act. 3; Ans. 4.

The Examiner finds "[t]he contact angle is disclosed to be present by milling the potassium [carbonate] particles with a hydrophobic agent under high shearing." Final Act. 3; Ans. 4. The Examiner maintains both that (1) "[t]he contact angle is an inherent result of the processing step and recognition of an inherent result is not a basis for patentability" and that (2) "the contact angle is not an actual component that is present on the product . . . [and thus] closely parallel[s] . . . an intended use which does not determine the patentability of the product." Final Act. 4; Ans. 4–5.

On this record, the Examiner has failed to meet the requisite burden to establish a prima facie case. As to GB '011, the Examiner makes no factual finding as to how, or if, the potassium bicarbonate and hydrophobic agent in the mixture are associated together in the same particles either before or after it is ground into a powder. *See generally* Final Act. and Ans. Further, the Examiner fails to set forth a reasonable basis for concluding that potassium bicarbonate and surfactants would adhere in a similar manner as the phytosterols and surfactants in Perlman despite the manifest differences in the properties of potassium bicarbonate and phytosterols. *See generally* Final Act. and Ans.

Even assuming *arguendo* that one of ordinary skill in the art at the time of the invention would have looked to Perlman for a method of

grinding to obtain fine particle sizes as contended by the Examiner, the Examiner has failed to establish that Perlman's "high shear" grinding or milling are such that the recited contact angle is an inherent result of the processing step.

Appellants contend that grinding or milling conditions sufficient to obtain the requisite fine particles do not necessarily provide the required contact angle and the Examiner thus errs in finding it inherent. Appeal Br. 3–12. Appellants rely on evidentiary support in the declaration of Daniel James Brown dated June 19, 2015 ("Decl.") as establishing that "[o]nly after prolonged or intense shearing . . . a coating with an obtuse contact angle could be obtained" (Decl. ¶ 9) and that preparation of particles meeting the size limitation of the claims by micronisation, which can be accomplished with or without high sheer conditions, only exhibit an obtuse contact angle when prepared under high shear conditions (*id.* at ¶ 11).

As highlighted by Appellants (Appeal Br. 7–8), Perlman teaches that "[i]n the context of milling the present materials [phytosterols and surfactants], the term 'high shear conditions' . . . indicates that the milling conditions are such that significant size reduction of 250 micron . . . dry surfactant (e.g., binary surfactant) particles" will occur (Perlman ¶ 49).

Appellants argue, in effect, that Perlman's "high shear milling" is not necessarily high shear milling sufficient to, in fact, provide particles according to the claims with an obtuse contact angle.

The Examiner responds that Appellants have "not submitted any factual evidence to show that the high shearing milling in Perlman is in fact not high shear milling." Ans. 6. The Examiner further maintains that "the declaration states the blends are micronized" and that because "[m]icronize

means breaking a substance into very fine particles . . . there is no difference between the high shear stated in the declaration and the high shear disclosed in Perlman." Ans. 7.

The Examiner's response to Appellants' argument is not well-founded because what Perlman defines to be a "high shear condition" is only that which is required to break the substance into very fine particles (Perlman ¶ 49) and the declaration establishes this can be accomplished using both low and high shear conditions (*see* Decl. ¶ 11). Further, as to the Examiner's reasoning that there is no difference in the high shear conditions of the declaration and Perlman because both micronize the material, by this same reasoning, there would also be no difference with the low shear conditions of the declaration because they also micronize the material.

As to the Examiner's further reliance on Perlman's disclosure of hammer milling, including comparison of disclosed rotor speeds to those of an air classifier mill in the Specification (Ans. 7–8 (citing Perlman ¶¶ 92, 94; Spec. 17, l. 20–18, l. 7 (Example IV))), there is no sufficient explanation how the different machines, and their disclosed operating conditions, relate to one another to establish that Perlman's hammer mills are necessarily high shear mills like those used in the practice of the invention. Further, assuming *arguendo* that the disclosed mills were capable of operating at high shear conditions, Perlman's required level of sheer—the level required to obtain the requisite fine particles—is not necessarily the high sheer condition required to obtain particles with the recited obtuse contact angle.

On this record, accordingly, the Examiner has failed to establish that the milling process used in Perlman is substantially identical to that which the evidence of record establishes is *required* to obtain particles having the

purported inherent property of "having a contact angle of at least 90°." It cannot be said, therefore, that the result is inherent to the prior art process. *In re Montgomery*, 677 F.3d 1375, 1379-80 (Fed. Cir. 2012) ("The inherent result must inevitably result from the disclosed steps; '[i]nherency . . . may not be established by probabilities or possibilities.'") (citations omitted). Accordingly, the Examiner erred reversibly in rejecting the claims on the basis that the contact angle is an inherent result of the processing step.

The Examiner's further reasoning that "the contact angle is not an actual component that is present on the product . . . [and thus] closely parallel[s] . . . an intended use which does not determine the patentability of the product" (Final Act. 4; Ans. 4–5) is also reversible error. The reasoning wholly ignores a claim limitation, the recited contact angle. While the contact angle is the measure of a property or characteristic of the product when contacting a water droplet, it is manifestly the measure of that product's property.

On this record, for the reasons above, the Examiner's articulated reasoning falls short of that necessary for a prima facie case. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not . . . resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis."); *In re Sporck*, 301 F.2d 686, 690 (CCPA 1962); *see also Oetiker*, 977 F.2d at 1445.

We decline to scour the record in the first instance for facts that might support a prior art rejection of the claim on appeal, as our primary role is review, not examination *de novo*.

DECISION

The Examiner's decision rejecting claims 22–24, 26–28, 44–47, and 52 is reversed.

REVERSED