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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MAREK SOBOTA and ANNE ALBER
(Applicant: WACKER CHEMIE AG)

Appeal 2018-006498
Application 14/907,957
Technology Center 1700

Before BEVERLY A. FRANKLIN, N. WHITNEY WILSON, and MERRELL C. CASHION, JR., *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] requests our review under 35 U.S.C. § 134(a) of the Examiner's decision rejecting claims 11–13 and 15–27. We have jurisdiction over the appeal under 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(a). Appellant identifies the real party in interest as Wacker Chemie AG. Appeal Br. 1.

STATEMENT OF THE CASE

Claim 11 is illustrative of Appellant's subject matter on appeal and is set forth below:

> 11. A process for preparing trichorosilane (TCS), comprising reacting metallurgical silicon (mg-Si) having a titanium content of 0.08 wt% to 0.12 wt. %, and a phosphorus content ≥ 30 ppmw with HC1.

The Examiner relies on the following prior art references as evidence of unpatentability:

Sakata	U.S. 5,871,705	Feb. 16, 1999
Kutsovsky	U.S. 2007/0248521 A1	Oct. 25, 2007
Gupta	U.S. 2012/0189501 A1	Jul. 26, 2012

T. Lobreyer et al., *Silicon For Trichlorosilane Production Basic Research And Development*, *Silicon for the Chemical Industry III*, Norwegian University of Science and Technology, Trondheim, NO, June 1996, pp. 147–155.

THE REJECTIONS

1. Claims 11–13 and 15–27 are rejected under 35 U.S.C. § 103 as being unpatentable over Lobreyer in view of Kutsovsky, optionally further in view of Gupta.
2. Claims 11–13, and 15–27 are rejected under 35 U.S.C. § 103 as being unpatentable over Sakata in view of Kutsovsky, and optionally further in view of Gupta.

ANALYSIS

Upon consideration of the evidence and each of the respective positions set forth in the record, we find that the preponderance of evidence supports Appellant's position in the record. Therefore, we reverse the Examiner's decision to reject the appealed claims essentially for the reasons provided by Appellant in the record, and add the following for emphasis. We focus on the dispositive issue in this case: whether Kutsovsky provides sufficient teachings/motivation for one skilled in the art to arrive at the claimed amount of phosphorous and titanium.

The Examiner relies upon Lobreyer as discussed on pages 2–4 of the Answer. Therein, the Examiner recognizes that Lobreyer does not mention the presence of phosphorus in the mg-Si source (Appellant's claim requires an amount greater than 30 ppm), and that Lobreyer's amount of titanium falls short of the claimed range. Ans. 2, 4. The Examiner relies upon Kutsovsky for teaching an mg-Si source that has an amount of phosphorous of 5ppm or more (for example from 5–100ppm) and 100ppm or more of titanium. Kutsovsky, [0010]. Ans. 4. It is the Examiner's position that "the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness." Ans. 4.

Appellant argues, *inter alia*, that Kutsovsky discloses broad general ranges for phosphorus and titanium contents which *might* be present in metallurgical grade silicon [emphasis added]. Appeal Br. 10. Beginning on page 13 of the Reply Brief, Appellant reiterates this point. Therein, Appellant argues that on page 4 of the Answer, the Office refers to Kutsovsky as disclosing ranges of impurities which "overlap" the claimed ranges. Appellant emphasizes that Kutsovsky does not even mention all of the impurities known to exist in metallurgical grade silicon, nor do the ranges expressed correspond to the actual maximum or minimum ranges experienced in metallurgical grade silicon. Appellant argues that whether one

might select, out of all the possible impurities and impurity ranges disclosed by Kutsovsky, a range of phosphorus of 30 ppm or more, and a range of titanium of 0.08-0.12 weight percent, one might just as easily select ranges of phosphorus and calcium, of boron and carbon, of oxygen and phosphorus, of magnesium and manganese, of vanadium and chromium, of iron and chromium, of molybdenum and carbon, or any other of the numerous permutations and combinations of both the impurities cited by Kutsovsky and the amounts of these impurities. Reply Br. 13–14. We are persuaded by this line of argument. As the Examiner even admits on page 11 of the Answer, unpurified mg-Si "may" include higher content of metal impurities. This statement by the Examiner supports Appellant's point, discussed, *supra*, that Kutsovsky does not even mention all of the impurities known to exist in metallurgical grade silicon, nor do the ranges expressed correspond to the actual maximum or minimum ranges experienced in metallurgical grade silicon. This undermines the Examiner's reason to combine set forth at the top of page 5 of the Answer. Furthermore, Lobreyer specifically calls for "specially prepared" test samples of mg-Silicon with various Fe and Al content (p. 149), and the rejection is silent as to whether the proposed modification is suitable for Lobreyer's purposes. Thus, we are persuaded that the Examiner has not set forth a factual basis which is sufficient to support a *prima facie* case of obviousness. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art"). In view of the above, we reverse Rejections 1 and 2 (Rejection 2 involves the same reliance upon Kutsovsky as in Rejection 1).

CONCLUSION

In summary:

Claim(s) Rejected	Basis	Affirmed	Reversed
11–13, 15–27	§ 103 Lobreyer, Kutsovsky, Gupta		11–13, 15–27
11–13, 15–27	§ 103 Sakata, Kutsovsky, Gupta		11–13, 15–27
Overall Outcome			11–13, 15–27

DECISION

Each rejection is reversed.

ORDER

REVERSED