

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID L. MORGAN and VLADIMIR CUKAN

Appeal No. 1999-0121
Application 08/635,581

HEARD: October 24, 2001

Before WARREN, LIEBERMAN, and PAWLIKOWSKI,
Administrative Patent Judges.

PAWLIKOWSKI, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 17, 19, and 21-24.

We **Reverse**.

BACKGROUND

Appellants' invention is represented by claims 17 and 24 set forth below:

17. A method of preparing a compound selected from the group consisting of silicon carbide and silicon nitride comprising the steps of providing a solution

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of a coal-derived material in a dipolar, aprotic solvent, the coal-derived material having a composition, free of solvent, of 70 to 91% by mass of carbon, 2 to 6% by mass of hydrogen and 3 to 20% by mass of oxygen, and silicon oxide in particulate form, causing the coal-derived material, in solution or as a precipitate, and the silicon oxide in particulate form to interact, removing the solvent to form a precursor and heat treating the precursor to produce the compound.

24. A method of making a compound selected from the group consisting of silicon carbide and silicon nitride comprising the steps of providing a solution of a coal-derived material in a dipolar, aprotic solvent, the coal-derived material having a composition, free of solvent, of 70 to 91 percent by mass carbon, 2 to 6 percent by mass of hydrogen and 3 to 20 percent by mass of oxygen, and a source of silicon oxide in solution, adding the source of silicon oxide solution to the coal-derived material solution to cause a co-precipitate of the coal-derived material and a silicon oxide precursor to form, removing the solvent to form a precursor of the compound and heat treating the precursor of the compound to produce the compound.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Yamaguchii et al. (Yamaguchi)	4,396,587	Aug. 02, 1983
Mueller	4,541,833	Sep. 17, 1985
Reichl	4,762,528	Aug. 09, 1988
Morgan	5,120,430	Jun. 09, 1992

Claims 17, 19, 21, 22, and 24 stand rejected under

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35 U.S.C. § 103 as being unpatentable over Yamaguchi in view Reichl and Mueller.

Claim 23 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view Reichl and Mueller, and further in view of Morgan.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer, for the examiner's complete reasoning in support of the rejections, and to the appellants' brief and reply brief for appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by appellants and the examiner. As a consequence of our review, we make the determinations which follow.

With respect to independent claim 17, appellants indicate that claim 17 requires, *inter alia*, (1) providing a solution of a coal-derived material and (2) silicon oxide in particulate form, (brief, page 4).

Appellants argue that Yamaguchi utilizes a solution of a liquid silicic acid rather than silicon oxide in particulate form as recited in claim 17. (brief, page 5).

The examiner argues that comparative example 1 in column 9 of Yamaguchi uses silica powder. We find, however, that an

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aqueous suspension of silica powder is disclosed in this comparative example, which differs from silicon oxide in particulate form (column 19, lines 31-36). The examiner also argues that column 7, lines 35-40 of Yamaguchi teaches precipitated silicic acid, and that therefore a particulate form is taught by Yamaguchi. (Answer, page 4). However, as pointed out by appellants on page 3 of their reply brief, the silicic acid of Yamaguchi is in liquid form when contacting the carbon source. Thereafter, precipitation occurs.

Hence, we find that Yamaguchi does not provide a teaching of utilizing silicon oxide in particulate form, as required by claim 17.

Appellants further argue that Yamaguchi does not suggest the use of coal as the carbon source (brief, page 6). The examiner argues that column 5, line 3 of Yamaguchi teaches "coarse carbon particles", and states that this disclosure encompasses coal. (answer, page 4). We find that this disclosure of Yamaguchi refers to activated carbon which is entirely different from coal.

We do note that column 5, lines 11-16 of Yamaguchi indicates that the term "precursor of carbon" means a substance which produces carbon at elevated temperatures, namely, an organic substance which converts into a carbonaceous residue when it is heated to a temperature falling within the range of from 200° to 1500°C. Nowhere on this record, however, has the examiner presented evidence that coal, for example, the coal disclosed in the applied reference of Reichl or Mueller, is encompassed by this term. Hence, we

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find that the combination of references does not teach the limitation found in claim 17 and in claim 24 of utilizing a coal-derived material having a composition of 70 to 91 percent by mass carbon, 2 to 6 percent by mass of hydrogen, and 3 to 20 percent by mass of oxygen.

Therefore, we find that the examiner has not presented a *prima facie* case of obviousness, and we reverse the rejection of claims 17, 19, 21, 22, and 24 under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view Reichl and Mueller.

We note that the reference of Morgan does not cure the aforementioned deficiencies of the other applied references. Hence, we also reverse the rejection of claim 23 under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view Reichl and Mueller, and further in view of Morgan.

CONCLUSION

To summarize, the decision of the examiner to reject claims 17, 19, 21, 22 and 24 under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view Reichl and Mueller is reversed. Also, the decision of the examiner to reject claim 23 under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view Reichl and Mueller and further in view of Morgan is reversed.

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

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REVERSED

CHARLES F. WARREN)	
Administrative Patent Judge)	
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PAUL LIEBERMAN)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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Beverly Pawlikowski)	
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