

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SUDHANGSHU BOSE

Appeal No. 2002-0181
Application No. 08/476,497

HEARD: February 5, 2003

Before WALTZ, DELMENDO, and POTEATE, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2002) from the examiner's final rejection of claims 1 through 7 and 16 through 22, which are all of the claims pending in the above-identified application.¹

¹ Contrary to the appellant's statement that "[t]here are no other appeals or interferences known to Appellant, Appellant's legal representative, or Assignee which directly affect or will be directly affected by or have a bearing on the Board's decision" in this appeal (appeal brief filed Jan. 4,

The subject matter on appeal relates to a high temperature capability composite material. Further details of this appealed subject matter are recited in representative claims 1, 19, 21, and 22 reproduced below:

1. A high temperature capability composite material consisting essentially of:
a matrix formed from a powder material having a particle size in the range from about 1 to 100 nanometers;
a plurality of reinforcing fibers embedded within said matrix, said reinforcing fibers comprising from about 20% to about 40% volume of said composite material; and
said composite material being characterized by the substantial absence of voids between adjacent ones of said fibers.

19. The composite material of claim 1 wherein said reinforcing fibers are silicon fibers.

21. A high temperature capability composite material for use in jet engine applications, said composite material consisting essentially of:
a matrix formed from a powdered ceramic material having a particle size in the range of about 1 to 100 nanometers, said powdered ceramic material being selected from the group consisting of refractory oxides with ionic bonds and nitrides and carbides with covalent bonds;
a plurality of reinforcing fibers embedded within said matrix, said reinforcing fibers comprising from

2001, paper 22, pp. 2-3), we note that parent application 08/261,600, filed Jun. 17, 1994, contains a decision by a merits panel of the Board of Patent Appeals and Interferences affirming the examiner's rejections of claims directed to the method of making the here claimed high temperature capability composite materials. Nevertheless, we consider this misstatement harmless because the appellant has specifically directed our attention to the earlier decision. (Appeal Brief, p. 3.)

about 20% to about 40% volume of said composite material;

said reinforcing fibers having a diameter less than or equal to about 10 microns and a length equal to or greater than 5 microns; and

said reinforcing fibers being oriented in a uniaxial direction.

22. A high temperature capability composite material consisting essentially of a matrix formed from a powdered nano-sized ceramic material having particle sizes solely in the range of about 1 to 100 nanometers, and a plurality of reinforcing fibers embedded within said matrix, said reinforcing fibers comprising from about 20% to about 40% volume of said composite material, and said nano-sized ceramic material penetrating into internal spaces between said reinforcing fibers.

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

Toibana et al. (Toibana)	4,507,224	Mar. 26, 1985
Singh et al. (Singh)	5,132,155	Jul. 21, 1992

Claims 19, 21, and 22 on appeal stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. (Examiner's answer mailed Mar. 21, 2001, paper 23, unnumbered page 3.) Also, claims 1 through 5, 7, 16 through 20, and 22 on appeal stand rejected under 35 U.S.C. § 102(b) as anticipated by Singh. (Id. at pages 3-4, unnumbered page 2 and misnumbered page 2.)

Further, claims 1 through 7, 16, 18, 21, and 22 on appeal stand rejected under 35 U.S.C. § 102(b) as anticipated by Toibana. (Id. at pages 4-5, misnumbered pages 2-3.)

We reverse these rejections and remand the application for further proceedings not inconsistent with this decision.

Rejection under 35 U.S.C. § 112, ¶2

With respect to claim 19, the examiner states: "It is clear from applicants [sic] remarks and the instant disclosure that elemental silicon fibers are not intended but fibers of silicon compounds, which said compounds are not considered to be encompassed by the claimed terminology 'silicon fibers'."

(Answer, unnumbered page 3.)

It is well settled, however, that an inventor can be his own lexicographer and even give terms uncommon meanings provided that the specification contains sufficient notice to one of ordinary skill in the art. In re Paulsen, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674, (Fed. Cir. 1994); Cf. Hormone Research Foundation Inc. v. Genentech Inc., 904 F.2d 1558, 1563, 15 USPQ2d 1039, 1043 (Fed. Cir. 1990) ("It is a well-established axiom in patent law that a patentee is free to be his or her own lexicographer...and thus may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings.") (citation omitted).

Here, the examiner appears to acknowledge that the specification indicates to one skilled in the relevant art that the term "silicon fibers" is not intended to encompass fibers of elemental silicon but rather fibers of silicon compounds. Accordingly, we cannot uphold the rejection of appealed claim 19 on this ground.

With respect to claims 21 and 22, the examiner states: "It is not clear if the closed 'consisting of' and 'consisting essentially of' or the open 'comprising' terminology controls the scope of the components in the composite material of the claims." (Answer, unnumbered page 3.)

We disagree. It is clear from the text of claims 21 and 22 that the composite material consists essentially of (claim 21) or consists of (claim 22) the recited components. On the other hand, the term "comprising" only modifies the amount of the reinforcing fibers present in the composite material. On this point, we further note that the composite material contains materials other than the reinforcing fibers. Thus, the use of the term "comprising" to define the amount of the reinforcing fibers is not inconsistent with the use of the transitional phrases "consisting essentially of" or "consisting of." Cf. Mannesmann Demag Corp. v. Engineered Metal Products Co., Inc., 793 F.2d 1279, 1282, 230 USPQ 45, 46 (Fed. Cir. 1986).

It follows then that we also cannot uphold the examiner's rejection of appealed claims 21 and 22 on this ground.

Rejection under 35 U.S.C. § 102(b): Singh

The examiner points out that Singh describes composite materials having a porosity less than 1% by volume and including fibrous materials and a matrix material. (Answer, unnumbered page 3.) In response to the appellant's argument that Singh does not teach the use of a powder material having a particle size in the range of about 1 to 100 nanometers (appeal brief, page 8), the examiner states: "The nano-sized particle sizes are drawn to the starting materials used to produce the claimed product." (Answer, page 4, misnumbered as page 2.)

We disagree with the examiner's analysis. Singh describes, as the most preferred embodiment, a sintered ceramic phase having an average grain size "less than about 10 microns."² (Column 9, lines 13-20.) The examiner has not identified any evidence or scientific reasoning to establish that a powder material having a particle size in the range of about 1 to 100 nanometers is capable of forming a sintered ceramic phase having an average grain size "less than about 10 microns" when subjected to the forming conditions encompassed by the appealed

² Less preferred embodiments are said to have even greater average grain sizes in the sintered ceramic phase.

claims. Stated differently, the examiner has not established on this record that the claim element "matrix formed from a powder ceramic material having a particle size in the range of about 1 to 100 nanometers" would encompass, or read on, any of Singh's sintered ceramic phase.

For this reason, we cannot uphold the examiner's rejection on this ground.

Rejection under 35 U.S.C. § 102(b): Toibana

The examiner finds that Toibana teaches a ceramic composite including 5 to 50% silicon carbide fibers having a diameter of 0.1 to 10 microns and a length of 10 to 500 microns in a matrix having a density of 100%. (Answer, page 4, misnumbered as page 2.) In response to the appellant's argument that Toibana does not teach the use of a powder material having a particle size in the range of about 1 to 100 nanometers (appeal brief, page 10), the examiner states: "[T]he nano-sized particles of the starting materials once sintered would not maintain their original structure but become a matrix which is not distinguishable from the matrix taught in Toibana et al." (Answer, page 4, misnumbered as page 2.)

However, the examiner has not identified any evidence or scientific reasoning to establish that the matrix recited in the appealed claims "is not distinguishable" from the matrix

Appeal No. 2002-0181
Application No. 08/476,497

described in Toibana. Because the examiner's rejection is based strictly on conjecture, we cannot affirm.

Remand Order

The examiner is required to consider the following rejections.

The examiner should consider rejecting claim 19 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement of the statute. Specifically, the term "silicon fibers" does not appear anywhere in the specification as originally filed. Although the specification as originally filed describes silicon carbide and silicon nitride fibers, there is no description that would support the genus of "silicon fibers." See In re Lukach, 442 F.2d 967, 968, 169 USPQ 795, 796 (CCPA 1971) ("[W]here an applicant claims, as here, a class of compositions, he must describe that class in order to meet the description requirement of the statute.").

The examiner and the appellant should consider the patentability of the claims of the present application over the same prior art references applied in affirmed rejections in the

Appeal No. 2002-0181
Application No. 08/476,497

parent application, in combination with any other prior art,
under 35 U.S.C. § 102 and/or under 35 U.S.C. § 103.³

Summary

In addition to a remand, we reverse the rejection under 35 U.S.C. § 112, second paragraph, of appealed claims 19, 21, and 22 as indefinite. We also reverse the rejection under 35 U.S.C. § 102(b) of appealed claims 1 through 5, 7, 16 through 20, and 22 as anticipated by Singh. Additionally, we reverse the rejection under 35 U.S.C. § 102(b) of appealed claims 1 through 7, 16, 18, 21, and 22 as anticipated by Toibana.

The decision of the examiner is reversed.

³ We attach copies of these references for the examiner's convenience. See Ex parte Bose, Appeal No. 1996-4112 (Aug. 30, 2000) (copy attached).

Appeal No. 2002-0181
Application No. 08/476,497

This application, by virtue of its "special" status, requires an immediate action. See MPEP § 708.01(D) (8th ed., Aug. 2001). Thus, it is important that the Board be promptly informed of any action affecting the appeal in this case.

REVERSED & REMANDED

Thomas A. Waltz)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
Romulo H. Delmendo)	
Administrative Patent Judge)	APPEALS AND
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Linda R. Poteate)	
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Appeal No. 2002-0181
Application No. 08/476,497

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