

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RALPH BAUER, THOMAS E. COTTRINGER
AND MARTIN B. BARNES

Appeal No. 1996-3496
Application No. 08/167,288¹

ON BRIEF

Before HANLON, PAK, and LIEBERMAN, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 through 9 which are all of the claims pending in the application.²

¹ Application for patent filed December 16, 1993.

² As is apparent from the record, appellants' statement "[t]his is an appeal from the Office [a]ction dated August 29, 1995 [sic, September 27, 1995], finally rejecting Claims 1-

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Claims 1 and 8 are representative of the subject matter
on appeal and read as follows:

1. A process for the production of a powdered ceramic material which comprises feeding a mixture comprising carrier particles of an inert material having a particle size of from about 3 to 30 mm and a precursor of the ceramic material in the form of a powder having an average particle size smaller than about 65 microns in a weight ratio of carrier to precursor of from about 3:1 to about 15:1 into a rotary kiln and firing at a temperature sufficient to effect conversion of the precursor to the ceramic material.

8. A process for producing alpha alumina in the form of a powder with an average particle size of from about 5 to about 40 microns which comprises feeding a mixture comprising a powder of a transitional alumina with a particle size less than about 65 microns and carrier particles of alpha alumina with an average particle size of from about 6 to 15 mm, in a carrier to powder weight ratio of from 5:1 to about 10:1, into a rotary kiln maintained at a temperature above the conversion temperature of the precursor [sic, transitional alumina] to alpha alumina and thereafter separating [sic, the resulting] alpha alumina powder from the carrier particles.

As evidence of obviousness, the examiner relies on the
following prior art:

Koppers 1929	1,712,082	May 7,
Clark 1966	3,275,405	Sep. 27,
Shabaker 1971	3,630,501	Dec. 28,

11..." in the first page of the Brief is inadvertent.
Clearly, claims 10 and 11 do not exist in this application.

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Leitheiser et al. (Leitheiser) 1982	4,314,827	Feb. 9,
Bauer et al. (Bauer) 1987	4,657,754	Apr. 14,
Wald et al. (Wald) 1991	5,011,508	Apr. 30,

The appealed claims stand rejected as follows:

(1) Claims 1 through 4 and 6 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Wald and Leitheiser; and

(2) Claims 1 through 9 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bauer, Clark, Shabaker and Koppers.

We reverse.

We begin our consideration of the issues before us by determining the scope of the claimed subject matter. ***Gechter v. Davidson***, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997); ***In re Paulsen***, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). We generally give words in the

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application claims the broadest reasonable interpretation in light of the specification. ***In re Morris***, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). When there is appellants' intent in the specification to utilize those words in a more limited sense, however, we give them limited meaning. **See e.g., Vitronics Corp. v. Conceptronic, Inc.**, 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996); ***Paulsen***, 30 F.3d at 1480, 31 USPQ2d at 1674.

The claimed subject matter is directed to a process for the production of a powdered ceramic material, such as alpha alumina powder. See claims 1 and 8. The process involves, ***inter alia***, firing a mixture of inert carrier particles, such as alpha alumina, having a particle size of 3 to 30 mm and a precursor of the ceramic material (transitional alumina) in the powder form having a particle size smaller than 65 microns in a weight ratio of about 3:1 to about 15:1 in a rotary kiln to convert the precursor to the ceramic powder. ***Id.*** The presence of the inert carrier particles is said to minimize thermal stress and structure failure associated with accumulation of solid powder on the internal wall of a long

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externally heated tube which is part of the rotary kiln. See Specification, pages 1-3. The carrier particles are effective in conveying the powder precursor through the long externally heated tube of the rotary kiln without causing the powder precursor to adhere to the inside wall of the tube. **Id.** Manifestly, appellants' purpose in the specification is to limit the application of the claimed process to those rotary kilns having a long externally heated tube. Moreover, we limit the meaning of "carrier particles of an inert material" in the claims in accordance with appellants' intent in the written description at page 3 of the specification, which states in relevant part:

It is found that the powder particles become coated on the larger carrier particles and are carried along with them as they move through the furnace. At the end of the firing they can be readily removed by washing, shaking or by air blowing the carrier particles.

The carrier particles are inert in the sense that they do not react with the powder particles that they are transporting. It is also desirable that they retain their dimensional and compositional integrity during passage through the rotary kiln and the separation of the fired powder. Most preferably the carrier particles have the same composition as the powder after firing is complete but this is not essential. Thus, for example, transitional aluminas are

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preferably carried on alpha alumina and unfired zirconia powders are carried on fired zirconia carriers.

This interpretation is consistent with appellants' suggestion at pages 4 and 5 of the Brief.

Having determined the scope and meaning of the claims, we turn to the examiner's rejection of claims 1 through 4 and 6 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Wald and Leitheiser. The examiner acknowledges that Wald describes, among other things, firing a mixture of two differently sized alpha alumina precursor particles, one portion of which being larger than the other, in a rotary kiln. See Answer, page 4. The examiner recognizes that Wald does not specifically mention "carrier particles of an inert material", especially those having the claimed particle sizes. See Answer, pages 4 and 5. To remedy such a deficiency, the examiner determines the term "carrier particles of an inert material" as including large alpha alumina precursor particles. **Id.** The examiner then, relying on Leitheiser's teaching regarding the particle sizes of its alpha alumina precursor particles, concludes that it would have been obvious to one of ordinary skill in the art to use alpha alumina

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precursor particles (inert carrier particles) having the claimed particle size in the ceramic making process of Wald. See Answer, page 5.

As is apparent from our interpretation above, the examiner has improperly construed the claimed "carrier particles of an inert material" as including the large alpha alumina precursor particles. Appellants correctly determine that the large alpha alumina precursor particles do not have any physical and/or functional attributes of the claimed inert carrier particles. See Brief, pages 17-22. The large alpha alumina precursor particles, unlike the claimed "carrier particles of an inert material", react with other smaller precursor particles during sintering (conversion) to form permanent bond therebetween, thus producing ceramic particles larger than the large alpha alumina precursor particles. See Wald, column 3, lines 5-19. There simply is no recognition in either Wald or Leitheiser of the importance of using the claimed "carrier particles of an inert material" for the purpose of conveying the resulting ceramic powder. Accordingly, we cannot sustain the examiner's § 103 rejection

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of claims 1 through 4 and 6 over the combined disclosures of Wald and Leitheiser.

We turn next to the examiner's rejection of claims 1 through 9 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bauer, Clark, Shabaker and Koppers. The examiner takes the position that it would have been obvious to employ the solid balls of ceramic materials (inert particles) described in Clark, Shabaker and Koppers as a heat source in the ceramic powder making process described in Bauer. See Answer, pages 6-8. We cannot agree with the examiner for essentially those reasons set forth by appellants at pages 23 through 31 of the Brief. We find that the examiner has not supplied sufficient facts to explain why firing a mixture of the solid balls of ceramic material described in Clark, Shabaker and Koppers and the ceramic precursor particles described in Bauer would have been suggested to one of ordinary skill in the art. When solid powder, such as those precursor particles described in Bauer, is already primarily heated with the solid balls of ceramic materials, as taught by Clark, Shabaker and Koppers, there appears to be no incentive on the part of one of ordinary

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skill in the art for firing (fired by burner) the mixture. Moreover, the examiner has not supplied sufficient facts to explain why one of ordinary skill in the art would have employed the solid balls of ceramic material described in Clark, Shabaker and Koppers as a heat source for the rotary kiln of Bauer. When the rotary kiln and those heaters described in Clark, Shabaker and Koppers operate differently due to using different heat medium, the examiner must supply sufficient facts to demonstrate why and/or how one of ordinary skill in the art would employ the solid balls of ceramic material (heating source) used in the heater described in Clark, Shabaker and Kopper in the rotary kiln of the type described in Bauer. Contrary to the examiner's assertion, Shabaker, for example, does not teach or suggest using the solid balls of ceramic material as a heat source for rotary kilns. Rather, Shabaker teaches away from using rotary kilns to heat solid powder. See column 1, lines 4-32.

In view of the foregoing, the decision of the examiner is reversed.

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

REVERSED

ADRIENE LEPIANE HANLON)	
Administrative Patent Judge)	
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)	
)	
)	BOARD OF PATENT
CHUNG K. PAK)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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PAUL LIEBERMAN)	
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CKP:lp

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DECISION: REVERSED
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s):

Prepared: December 5, 2000

Draft Final

3 MEM. CONF. Y N

OB/HD GAU

PALM /ACTS 2/BOOK
DISK FOIA)/REPORT