

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROY S. RIEBER, WILLIAM A. MALLOW,
and JESSE R. CONNER

Appeal No. 96-0216
Application 07/842,915¹

ON BRIEF

Before JOHN D. SMITH, ELLIS and OWENS, **Administrative Patent Judges**.

ELLIS, **Administrative Patent Judge**.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3 through 10, and 12 through 18. Claims 19 through 29 are also

¹ Application for patent filed February 27, 1992. According to the appellants, this application is a continuation-in-part of Application 07/483,440, filed February 7, 1990, now abandoned; which is a continuation of Application 07/225,107, filed July 27, 1988, now abandoned.

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pending, but have been withdrawn from consideration by the examiner in accordance with 37 CFR § 1.142(b).

Claims 1 and 9 are illustrative of the subject matter on appeal and read as follows:

1. A method of producing a clear soluble silicate solution free of unreacted silica from biogenetic silica containing metal salts and organic material which could leach into and contaminate and color the soluble silicate solution comprising,

dissolving in a closed container the biogenetic silica in an alkali solution of at least pH 12 in an amount effective to dissolve all of the biogenetic silica and at a temperature not higher than 275°F in the presence of a solid carbonaceous material thereby preventing the metal salts and organic material from leaching into and coloring the resulting soluble silicate solution,

removing the resulting soluble silicate solution from the closed container, and

separating the solid carbonaceous material, the metal salts and organic material from the resulting soluble silicate solution.

9. The method of claim 1 including, frothing the separated resulting soluble silicate solution to form a foam.

The references relied on by the examiner are:

Blardone	1,293,008	Feb. 04, 1919
Nakagawa (Japanese patent publication)	39-27314	Nov. 30, 1964
Mallow et al. (Mallow)	3,856,539	Dec. 24, 1974

Claims 1, 3 through 10 and 12 through 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Nakagawa in view

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of Blardone with claims 8, 9, 17 and 18 standing further rejected in view of Mallow.

We **reverse**.

The claimed invention is directed to a method of making a clear, soluble silicate solution from biogenetic silica. The biogenetic silica is obtained from the burning of biogenetic materials such as

rice hulls, rice stalks, esquitum (horsetail weed), bagasse, certain bamboo palm leaves, particularly palmyra, pollen and the like. The burning of the biogenetic material is done under controlled conditions so that substantially all of the silica is in an amorphous rather than a crystalline state [Specification, p. 6, line 30- p. 7, line 1].

The biogenetic silica is dissolved in a strong alkali solution (pH 12) and heated in a closed container to a temperature not higher than 275EF in the presence of a solid carbonaceous material.

According to the specification, sodium silicate is

conventionally made by fusing high purity soda ash and silica sand in furnaces at temperatures of 1300E to 1500EC and higher to produce a solid glass. The liquid is made by dissolving the glass with steam and hot water. This is known as the open hearth process which is the foundation of all commercial processes for making sodium silicate today [Specification, p. 1, line 32- p. 2, line 7].

Nakagawa discloses a method of making a silicate solution wherein silica sand, silica clay, an alkaline aqueous solution

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such as caustic soda and caustic potash, and an active carbon, are heated in a sealed container at 150E-220EC (392E-410EF) and 10-20 kg/cm pressure. Nakagawa, p. 2, first complete para. Blardone, discloses a process for extracting silica from the hulls of grains. Blardone col. 1, lines 10-14. Blardone describes the boiling of burned rice hulls in a solution of water and sodium hydroxide for several hours, followed by filtration. *Id.*, col. 1, lines 38-45. The mass remaining in the filter is washed with water and the filtrate concentrated, to the extent desired, by boiling. *Id.*, sentence bridging col. 1-2. Mallow discloses a method of making a solidified silica foam product from sodium silicate, potassium silicate, or mixtures thereof. Mallow, col. 1, lines 10-14.

The examiner has primarily based his conclusion of obviousness on the teachings of Nakagawa and Blardone. According to the examiner,

[i]t would have been obvious to one having ordinary skill in the art to employ ash as a source of raw siliceous material for the advantages of low price and availability as a waste product of the rice industry. Applicants' limitation of the upper temperature limit and pressure would have been obvious to one having ordinary skill in the art. This is evidenced by applicants' statement (page 10, lines 30-33 of the instant specification) that by **simple** experiments **optimum** temperature and pressures can be determined. It would have been within the purview of the ordinary artisan to optimize the temperature and pressure of the kinetics of dissolution

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for the advantages of energy conservation and expedient dissolution [Answer, p. 5, second complete para.].

It is well established that the PTO bears the initial burden under 35 U.S.C. § 103 of presenting a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The examiner must establish that the teachings of the applied prior art would have suggested the present method to a person having ordinary skill in the art, and that such persons would have had a reasonable expectation of success of preparing the claimed compositions. *In re O'Farrell*, 853 F.2d 894, 903-904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). This suggestion must be in the prior art, and not in the applicant's disclosure. *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988).

In the case before us, we are unable to discern how the examiner has reached his conclusion of obviousness. As developed in the Brief, the teachings of Nakagawa and Blardone collectively differ in the silica starting material, processing temperatures, and/or procedures (a closed pressurized system *versus* the open hearth method). None of the references teaches or suggests the combination of process steps which involve (i) heating biogenetic

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silica and an alkali solution in a closed container, and (ii) maintaining the temperature of the reaction at less than 275EF. That is, we find no suggestion in the Nakagawa reference to substitute silica sand (a crystalline starting material) for biogenetic silica (an amorphous, organic starting material) derived from burned rice hulls, etc., and to heat said biogenetic silica within the claimed temperature range. Nor do we find any suggestion in Blardone to employ biogenetic silica in the method described by Nakagawa at temperatures not greater than 275EF. On this record, we only find these suggestions in the appellants' disclosure.² Accordingly, we find that the examiner has relied on impermissible hindsight in making his determination of obviousness. ***In re Fritch***, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992); ***Interconnect Planning Corp. v. Feil***, 774

² We find that the examiner has misconstrued the statement on p. 10, lines 29-33 of the specification, with respect to the amount of experimentation necessary to determine the optimum temperature and pressure for making a clear soluble silicate solution. The specification statement is not an admission as to the level of skill in the art but, rather, it is a description of the appellant's invention. It is the appellants who have discovered the critically of not heating the reaction components at temperatures greater than 275E F. See specification examples 4 through 8. The specification statement is merely advising those skilled in the art that, provided they do not exceed the 275E F limitation, it is possible to vary the temperature and pressure conditions, and still produce a clear, soluble silicate solution.

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F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985) ("It is impermissible to engage in hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps.") **W.L. Gore & Assocs. v. Garlock, Inc.**, 721 F.2d 1540, 1553, 220 USPQ 303, 312-313 (Fed. Cir. 1983), **cert. denied**, 469 U.S. 851 (1984) ("To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher").

Accordingly, the rejection over Nakagawa and Blardone is reversed.

The appellants respond on pp. 8-10 of the Brief, to three references (Vail, Goodwin and Shugar) which were made of record, but not relied on for purposes of rejection, by the examiner. Paper No. 5, p. 6; Paper No. 8, p. 6. However, we point out that the examiner's reliance on these references to support his arguments throughout prosecution and in the Answer is inappropriate. It is well established that "[w]here a reference is relied on to support a rejection, whether or not in a 'minor capacity,' there would appear to be no excuse for not positively

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including the reference in the statement of the rejection." ***In re Hoch***, 428 F.2d 1341, 1342, n.3, 166 USPQ 406, 407, n.3 (CCPA 1970). Therefore, references not included in the statement of rejection are not considered by this Board. Consequently, we need not address the issues raised with respect thereto in either the appellants' Brief or the examiner's Answer.

Since we find that the examiner has not established a ***prima facie*** case of obviousness over the Nakagawa and Blardone, it necessarily follows that the further rejection of claim 8, 9, 17 and 18 over Mallow is not sustainable. In view of our discussion above, no further comment is deemed necessary.

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Accordingly, the decision of the examiner is reversed.

REVERSED

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JOHN D. SMITH)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JOAN ELLIS)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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TERRY J. OWENS)	
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