

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(2) is not binding precedent of the Board.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. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIROKI SAWADA, HIROSHI NAGUMO,
TOYOMI KOIKE, AKIO KIMURA, and AKIRA YAMAMURO

Appeal No. 95-0565
Application 07/867,089¹

HEARING: March 7, 1997²

Before WINTERS, GRON, and SPIEGEL, Administrative Patent
Judges.

GRON, Administrative Patent Judge.

¹ Application for patent filed April 14, 1992. According to applicants, this application is a continuation of U.S. Application 07/494,367, filed March 16, 1990, abandoned.

² Administrative Patent Judges Winters, Gron, and Weimar heard appellants' oral argument on March 7, 1997. Judge Weimar has since left the Board. Her seat on the panel reviewing this appeal has been taken by Judge Spiegel.

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DECISION ON APPEAL UNDER 35 U.S.C. § 134

This is an appeal under 35 U.S.C. § 134 from an examiner's rejection of Claims 1-11, all claims pending in this application.

Introduction

Claims 1-11 stand finally rejected under 35 U.S.C. § 103 as being unpatentable in view of the combined teachings of McDaniel et al. (McDaniel '729), U.S. Patent 4,557,729, issued December 10, 1985; McDaniel et al. (McDaniel '918), U.S. Patent 4,762,918, issued August 9, 1988; and Broze et al. (Broze), U.S. Patent 4,800,038, issued January 24, 1989. All claims stand or fall together with independent Claim 1 (Appellants' Brief On Appeal (Br.), p. 3, last line). Claim 1 reads:

1. A process for the production of an alkyl glycoside stable in hue and odor, which comprises the steps of (1) reacting a sugar with alcohol to obtain an alkyl glycoside reaction product containing a higher alcohol, (2) decoloring the alkyl glycoside reaction product with hydrogen peroxide, (3) contacting the decolorized alkyl glycoside with a metal/hydrogen complex represented by formula (I)



wherein M is an alkali metal, Ca, Zn or $(CH_3)_4N$; and z is 1 when M is an alkali metal or $(CH_3)_4N$ and z is

2

when M is Ca or Zn;

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to substantially eliminate residual hydrogen peroxide,
and
then (4) decomposing the remaining metal/hydrogen complex
with an acid.

We reverse the examiner's holding that Claims 1-11 on
appeal are unpatentable under 35 U.S.C. § 103 in view of the
combined teachings of McDaniel '729, McDaniel '918, and Broze.
Our discussion follows.

Discussion

The Patent Office has the initial burden under 35 U.S.C.
§ 103 to establish a *prima facie* case of obviousness. In re
Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir.
1988). Here, as in Fine, the examiner points to nothing in
the cited references which would have suggested or taught the
process appellants claim, i.e., no prior teachings, considered
alone or in combination, which reasonably would have suggested
to a person having ordinary skill in the art to contact an
alkyl glycoside reaction product with an alkali metal, Ca, Zn
or ammonium borohydride after the alkyl glycoside reaction
product has been decolorized with hydrogen peroxide.

We hold that the combined prior art teachings of McDaniel
'729, McDaniel '918, and Broze do not establish that the
process appellants claim would have been *prima facie* obvious

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to a person having ordinary skill in the art at the time the invention was made. Accordingly, we need not consider whether the Declarations

Under 37 CFR § 1.132 of Yukinaga Yokota (Paper No. 28, filed March 16, 1993) and Akira Yamamuro (Paper No. 23, filed June 12, 1992), of record, are sufficient in rebuttal.

McDaniel '729 decolors an alkyl glycoside reaction product with hydrogen peroxide, contacts the mixture of alkyl glycoside and hydrogen peroxide with a source of sulfur dioxide, and recovers the decolored reaction product (McDaniel '729, col. 2, l. 55-65). McDaniel '729 exposes the mixture of alkyl glycoside and hydrogen peroxide to a source of sulfur dioxide, even though he acknowledges that persons skilled in the art were aware that other reducing agents such as phosphorous, hypophosphorous, sulfurous, hyposulfurous, nitrous and hyponitrous acids may be utilized in processing alkyl glycosides (McDaniel '729, col. 1, l. 51-61; citing EP 0077167, published April 20, 1983).

McDaniel '918 states at column 1, lines 36-49:

It has also been suggested that the color bodies present in a glycoside composition may be eliminated by treatment with various reducing acids. The acid reduction has its limitations in that the acidic material must be neutralized or removed from the end products. . . .

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For a description of the use of reducing acids to produce glycosides see . . . [EP] 0 077 167[, published] on Apr. 20, 1983.

McDaniel '918 also states (McDaniel '918, col. 2, l. 3-8):

It is also known that glycosides may be decolorized by using a bleaching material. Suitable bleaches include materials such as hydrogen peroxide for bleaching. It has been observed, however, that upon exposure to high temperature, a bleached glycoside product can revert to a darker color product upon standing.

The invention McDaniel '918 describes includes neither the step of contacting the alkyl glycoside with a hydrogen peroxide bleach nor the step of contacting the alkyl glycoside with an acid reducing agent. McDaniel '918 "discovered that the catalytic hydrogenation of a glycoside composition can substantially reduce the color" (McDaniel '918, col. 2, l. 16-18). Moreover, McDaniel '918 expressly states (McDaniel '918, col. 2, l. 18-24):

The hydrogenation of the glycoside composition of the present invention allows for considerably greater stability after color removal than does bleaching. That is, the hydrogenation of the color forming bodies in the glycoside composition leads to a more stable product than does the bleaching which gives products capable of reversible reactions.

As the examiner explains the rejection (Examiner's Answer (Ans.), pp. 5-6, bridging para.):

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify McDaniel et al's '729 process for preparing a color

stabilized glycoside which involves the use of hydrogen peroxide by incorporating a metal/hydrogen complex such as sodium borohydride to stabilize the glycoside product as taught in the McDaniel et al '918 reference since both of the McDaniel et al References realize the importance of producing glycoside products which have stable color properties.

In an apparent attempt to be more specific, the examiner states (Ans., pp. 6-7, bridging sentence):

It would be obvious to one of ordinary skill in the art having both references before him to substitute one of said processes for the other in order to produce a glycoside product with stable color properties since the steps for producing a color stable glycoside product in both references are well known in the art.

The examiner seemingly argues that it is *prima facie* obvious to use two processes, each of which is taught by the prior art to be useful for the same purpose, in order to form a third process useful for the very same purpose. Compare In re Kerkhoven,

626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). While appellants concede that McDaniel '918 teaches that "[t]he source of hydrogen . . . may be . . . sodium borohydride (McDaniel '918, col. 4, l. 63-66), they emphasize that "McDaniel '918 teaches contacting with hydrogen gas in the

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presence of a hydrogenation catalyst (i.e., chemical reduction) to decolor the alkyl glycoside" (Br., p. 7, second full para.), not "contacting the decolorized alkyl glycoside with a metal/hydrogen complex" such as sodium borohydride as the claims on appeal require. Appellants urge (Br., pp. 8-9, bridging para., emphasis added):

Although sodium borohydride might be used as a source of the hydrogen, the sodium borohydride of McDaniel '918 is not contacted with the glycoside composition as required by present claim 1. This is clearly seen by reference to Example I of McDaniel '918 at columns 7-8.

The examiner does not deny that McDaniel '918 does not expressly contact his glycoside composition with sodium borohydride. Rather, the examiner argues (Ans., p. 7, para. bridging pp. 7-8):

Even-though the sodium borohydride . . . is not in physical contact with the glycoside of example 1 of the McDaniel '918 reference, the chemical reaction which takes place in the McDaniel '918 reference is within the scope of the process set forth in the instant claims, that is, the sodium borohydride of the instant process generates hydrogen gas which reacts with the alkyl glycoside.

We simply cannot follow the examiner's latest turn.

While we do not deny that a reaction of sodium borohydride and acid in the process appellants claim most likely would produce

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hydrogen gas, McDaniel '918 decolorizes alkyl glycosides by treatment with hydrogen gas in the presence of an hydrogenation catalyst, i.e., by catalytic hydrogenation.

Thus, the examiner's finding that

"the chemical reaction which takes place in the McDaniel '918 reference is within the scope of the process set forth in the instant claims" is based more on speculation than objective evidence.

Moreover, other than the teaching in appellants' own specification, we find no evidence which reasonably would have suggested contacting a mixture of alkyl glycosides and hydrogen peroxide with sodium borohydride to persons having ordinary skill in the art. To the contrary, McDaniel '918 teaches away from the addition of reducing acids to an alkyl glycoside composition because "the acidic material must be neutralized or removed from the end products" (McDaniel '918, col. 1, l. 38-40). We find in McDaniel '918 no reason or incentive to contact a mixture of alkyl glycosides and hydrogen peroxide with an alkali metal, Ca, Zn, or ammonium borohydride. Nor has the examiner pointed to any prior art evidence which reasonably would have led persons skilled in the art to modify the decolorization process McDaniel '918

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discloses, a process which appears to be designed to avoid contacting glycosides with contaminating reducing agents, to contaminate the glycoside composition with borohydride without any apparent functional improvement over the process McDaniel '918 describes and exemplifies.

As said in In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988):

There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure.

Because we find no reason or suggestion in the prior art to select the procedure appellants claim, we reverse the examiner's rejection.

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Conclusion

We reverse the examiner's rejection of Claims 1-11 under 35 U.S.C. § 103 as being unpatentable in view of the combined teachings of McDaniel '729, McDaniel '918, and Broze.

REVERSED

	Sherman D. Winters)	
	Administrative Patent Judge)	
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	Teddy S. Gron)	BOARD OF
PATENT)	
	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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)	
	Carol A. Spiegel)	
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