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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte RANGASAMY PITCHAI
and
THOMAS S. ZAK

_____

Appeal No. 95-3754
Application 08/138,780[1]

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ON BRIEF

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Before GARRIS, PAK and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal from the examiner's refusal to allow claims 1-20 as amended after final rejection. These are all of the claims in the application.

THE INVENTION

[1] Application for patent filed October 18, 1993.

Appellants claim a process for making a mixture of 1,4-butanediol and 2-methyl-1,3-propanediol which contains less than specified amounts of tetrahydrofuran and isobutyl alcohol. The product is formed by hydrogenating an aqueous mixture of 4-hydroxybutanal and 3-hydroxy-2-methylpropanal in the presence of a catalyst which consists essentially of platinum and ruthenium on (-alumina. Claim 1 is illustrative and reads as follows:

1. A process which comprises hydrogenating an aqueous mixture of 4-hydroxybutanal and 3-hydroxy-2-methylpropanal in the presence of a catalyst system that consists essentially of platinum and ruthenium supported on (-alumina to produce 1,4-butanediol, 2-methyl-1,3-propanediol, less than about 0.1 moles of tetrahydrofuran per mole of 1,4-butanediol, and less than about 0.1 moles of isobutyl alcohol per mole of 2-methyl-1,3-propanediol.

THE REFERENCE

Stemmler et al. (Stemmler)[2] (European patent)	0,007,101	Jan. 23, 1980

THE REJECTION

Claims 1-20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Stemmler.

[2] Citations herein are to the English translation of this reference, which is of record.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, this rejection will be reversed.

Stemmler discloses a process for making low molecular weight polyalcohols by catalytic hydrogenation of what Stemmler calls “formose”, which is a mixture of various low molecular weight hydroxyaldehydes, hydroxyketones and possibly multivalent alcohols, which result from the self condensation of formaldehyde (page 2). The formose can be mixed with sugars, aldehydes, ketones, alkanals or alcohols (pages 11-12). The hydrogenation catalyst preferably is ruthenium (page 10), and can be mixed with a co-catalyst which can be, *inter alia*, platinum (page 14). The catalyst carrier can be either inorganic or organic, and the listed carriers include aluminum oxide (page 15).

The examiner argues that appellants’ starting materials and those of Stemmler are analogous and that both processes produce the same kinds of products (answer, pages 3-4). Thus, the examiner argues, in reliance upon *In re Durden*, 763 F.2d 1406, 226 USPQ 359 (Fed. Cir. 1985), appellants’ claimed process would have been obvious to one of ordinary skill in the art over Stemmler (answer, pages 3-4).

The examiner reached his conclusion of obviousness of appellants’ claimed invention based on a *per se* rule that use of a new starting material in a prior art

process would have been obvious to one of ordinary skill in the art. As stated by the Federal Circuit in *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995), "reliance on *per se* rules of obviousness is legally incorrect and must cease." The court further stated:

> Mere citation of *Durden, Albertson*, or any other case as a basis for rejecting process claims that differ from the prior art by their use of different starting materials is improper, as it sidesteps the fact-intensive inquiry mandated by section 103. In other words, there are not "*Durden* obviousness rejections" or "*Albertson* obviousness rejections," but rather only section 103 obviousness rejections. 71 F.3d at 1570, 37 USPQ2d at 1132.

When an examiner is determining whether a claim should be rejected under 35 U.S.C. § 103, the claimed subject matter as a whole must be considered. *See Ochiai*, 71 F.3d at 1569, 37 USPQ2d at 1131. The subject matter as a whole of process claims includes the starting materials and product made. When the starting and/or product materials of the prior art differ from those of the claimed invention, the examiner has the burden of explaining why the prior art would have motivated one of ordinary skill in the art to modify the materials of the prior art process so as to produce the particular product recited in appellants' claims. *See Ochiai*, 71 F.3d at 1570, 37 USPQ2d at 1131.

The examiner argues that one of ordinary skill in the art would have been motivated to use appellants' starting materials due to the reasonable expectation of obtaining the corresponding known useful product (answer, page 4). The examiner has

provided no evidence, however, that the product recited in appellants' claims was known.

In order for a *prima facie* case of obviousness of appellants' claimed invention to be established, the prior art must be such that it would have provided one of ordinary skill in the art with both a suggestion to carry out appellants' claimed process and a reasonable expectation of success in doing so. *See In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991)*; In re Dow Chemical Co*., 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988) ("Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure."). The mere possibility that the prior art could be modified such that appellants' process is carried out is not a sufficient basis for a *prima facie* case of obviousness. *See In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); *Ochiai*, 71 F.3d at 1570, 37 USPQ2d at 1131.

The examiner has not explained, and we do not independently find, where Stemmler would have provided one of ordinary skill in the art with a suggestion to hydrogenate the particular starting material recited in appellants' claims such the product recited in the claims is formed. Thus, we conclude that the examiner has not carried his burden of establishing a *prima facie* case of obviousness of appellants' claimed invention.

DECISION

The rejection of claims 1-20 under 35 U.S.C. § 103 as being unpatentable over Stemmler is reversed.

REVERSED

BRADLEY R. GARRIS Administrative Patent Judge	)
CHUNG K. PAK Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
TERRY J. OWENS Administrative Patent Judge	)

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