

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(2) is not binding precedent of the Board.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. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HITOSHI MAKI

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Appeal No. 95-0262  
Application 07/924,606<sup>1</sup>

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HEARD: Feb. 6, 1998

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Before MARC L. CAROFF, EDWARD C. KIMLIN and JOHN D. SMITH,  
Administrative Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the final  
rejection of claims 6, 7, and 10 through 14.

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<sup>1</sup>Application for patent filed July 27, 1992. According to  
appellant, this application is a continuation of application  
07/668,474, filed March 13, 1991, which is a continuation of  
07/501,763, filed March 30, 1990, now abandoned.

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The subject matter on appeal is directed to a process for the production of 2, 2'-dichlorohydrazobenzene via the catalytic reduction of o-chloronitrobenzene with hydrogen in a sodium hydroxide or potassium hydroxide aqueous solution and in the presence of a platinum catalyst and a quinoid compound co-catalyst. Importantly, the reduction reaction takes place in the presence of tetralin<sup>2</sup>. Independent claim 14 is representative of the claims on appeal and is reproduced below:

14. A process for the production of 2,2'-dichlorohydrazobenzene, which comprises catalytically reducing o-chloronitrobenzene with hydrogen in a sodium hydroxide or potassium hydroxide aqueous solution and tetralin in the presence of platinum-carbon support catalyst or a palladium-carbon support catalyst and a quinoid compound cocatalyst having a basic skeleton formed of 1 to 3 aromatic rings at a high temperature under a high pressure.

The references of record relied upon by the examiner are:

Werner et al. (Werner)	3,156,724	Nov. 10, 1964
Wollensak	3,931,298	Jan. 06, 1976
Planker et al. (Planker)	4,217,307	Aug. 12, 1980
Herrmann	4,326,078	Apr. 20, 1982
Mestroni (European Patent)	EP 0 91 383	Dec. 10, 1983

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<sup>2</sup>Tetralin® is a registered tradename for 1, 2, 3,4-Tetrahydronaphthalene. See The Merck Index, 12th Edition, p 1575, ©1996, copy attached.

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The appealed claims stand rejected under 35 U.S.C. § 103 in view of the above references.

We reverse.

The examiner's prima facie case of obviousness is predicated on the contention that it would have been obvious to substitute tetralin for the organic solvents, particularly cyclohexane, utilized in the process of Herrmann, which process, according to the examiner, corresponds identically to the claimed process with the exception of the requirement regarding tetralin. In support of his conclusion, the examiner further states that cyclohexane and tetralin are taught to be interchangeable as reducing agents in an "analogous" process described in Wollensak and are therefore expected to be equally useful in the catalytic hydrogenation of nitrobenzene, "which in turn has shown to be promoted by the employment of a reducing agent" as described in Mestroni. See the examiner's answer at page 5.

Although the examiner's rejection is not without merit, we agree with appellant that a prima facie case of obviousness has not been established for the claimed process herein. That Wollensak discloses the use of reducing solvents such as cyclohexane and tetralin for the reduction of an hydroxy aromatic material to its corresponding cyclohexanone does not, by itself,

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either teach or provide a reasonable expectation that cyclohexane and tetralin are equivalent reducing solvents for the catalytic reduction of o-chloronitrobenzene to produce 2, 2'-dichlorohydrozobenzene as claimed herein. Absent the disclosure of the present invention, Wollensack's teachings would not have suggested to one of ordinary skill in the art the proposed modification of the Herrmann method. This is because, in our view, the reactions in question are too dissimilar.

We also observe, as emphasized by appellant, that Herrmann requires organic solvents which are inert to the action of hydrogen under the Herrmann reaction conditions. See Herrmann at column 3, lines 5 through 40, particularly, lines 6 and 7. In contrast, the organic solvent required for the presently claimed process, tetralin, reacts with hydrogen. Indeed, because of the presence of a reducing catalyst in the claimed reaction system, part of the tetralin solvent is advantageously reduced by hydrogen to produce a mixture of tetralin and decalin. Generally, see the specification at pages 10 and 11.

For the reasons stated above, we agree with appellant that a prima facie case of obviousness has not been established for the subject matter defined by the claims on appeal. This being the

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case, we do not find it necessary to further consider the comparative data of record in the Rule 132 declarations referred to in appellant's briefs..

The decision of the examiner is reversed.

**Reversed**

MARC L. CAROFF	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
EDWARD C. KIMLIN	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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JOHN D. SMITH	)	
Administrative Patent Judge	)	

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