

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte NARUHISA HIRAI

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Appeal No. 2000-2177  
Application No. 08/912,229

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ON BRIEF

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Before WARREN, LIEBERMAN, and KRATZ, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 1 through 20, which are all the claims pending in this application.

THE INVENTION

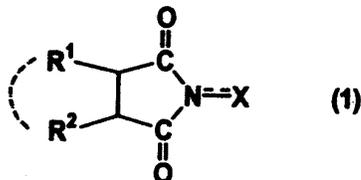
The invention is directed to a method of separating an oxidation catalyst from an oxidation reaction product. The separation occurs in the presence of a mixed solvent comprising an aqueous solvent and a non-water-soluble solvent. The oxidation reaction

product is distributed in the aqueous solvent. Additional limitations are disclosed in the following illustrative claim.

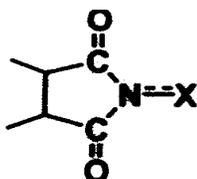
### THE CLAIM

Claim 1 is illustrative of appellant's invention and is reproduced below:

1. A process for separating an oxidation reaction product and an oxidation catalyst from a reaction mixture obtained by oxidation of a substrate selected from the group consisting of an hydrocarbon, an alcohol, an aldehyde, a ketone, an amine, an heterocyclic compound, a thiol and a sulfide in the presence of an imide compound shown by the formula (1) as the oxidation catalyst, which comprises using an aqueous solvent containing at least water and a non-water-soluble solvent separable from said aqueous solvent, thereby distributing the oxidation reaction product by phase separation into a layer of the aqueous solvent and the oxidation catalyst into an immiscible layer of the non-water-soluble solvent,



wherein R<sup>1</sup> and R<sup>2</sup> independently represent a hydrogen atom, a halogen atom, an alkyl group, an aryl group, a cycloalkyl group, a hydroxyl group, an alkoxy group, a carboxyl group, an alkoxy carbonyl group, or an acyl group, or R<sup>1</sup> and R<sup>2</sup> may bond together to form a double bond, or an aromatic or non-aromatic ring, and the aromatic or non-aromatic ring formed by R<sup>1</sup> and R<sup>2</sup> may have 1 or 2 of an imide unit shown by the following formula:



and X indicates an oxygen atom or a hydroxyl group and said aromatic or non-aromatic ring may have substituents R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> wherein each represents a hydrogen atom, an alkyl group, an hydroxyl group, an alkoxy group, a carboxyl group, an alkoxy carbonyl group, a acyl group, a nitro group, a cyano group, an amino group, or a halogen atom.

### THE REFERENCE OF RECORD

As evidence of obviousness, the examiner relies upon the following reference:

Ishii et al. (Ishii)	08-38909	Feb. 13, 1996
(published Japanese Patent Application)		

### THE REJECTION

Claims 1 through 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishii.<sup>1</sup>

### OPINION

We have carefully considered all of the arguments advanced by the appellant and the examiner, and agree with the appellant that the rejection of claims 1 through 20 over Ishii is not well founded. Accordingly, we reverse this rejection.

### The Rejection Under Section 103(a)

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The examiner relies upon a

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<sup>1</sup>We rely on the English language translation of record.

single reference to reject the claimed subject matter and establish a prima facie case of obviousness. It is the examiner's position that, "Ishii et al. teach a process for separating an oxidation reaction product and an oxidation catalyst from a reaction mixture obtained by oxidation of a substrate in the presence of an imide compound {see pages 34-37 and page 1 of the instant specification}." See Answer page 3. Furthermore, it is the examiner's position that solvents such as alcohol are known to have water present. Accordingly, water is present in the reaction of Ishii. See Answer, page 4. We disagree.

Although it is well known that alcohol is miscible with water, the miscibility does not make it an aqueous solvent as required by the claimed subject matter. The examiner has otherwise found no suggestions that water may be present in the reaction phase of Ishii's process. Indeed, we find that the solvents disclosed in the paragraph bridging pages 34-35 of Ishii fail to suggest or disclose the presence of water. Furthermore, there is no express discussion of separating the oxidation catalyst from an oxidation reaction product except as to a single statement on page 1 of the specification that separation is commonly by distillation. However, that process is not the process of the claimed subject matter.

Based upon the above analysis, we have determined that the examiner's legal conclusion of obviousness is not supported by the facts. "Where the legal conclusion [of obviousness] is not supported by [the] facts[,] it cannot stand." In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968), reh'g denied, 390 U.S. 1000 (1968).

DECISION

The rejection of claims 1 and 9 through 15 under 35 U.S.C. § 103(a) as being unpatentable over Ishii is reversed.

The decision of the examiner is reversed.

REVERSED

CHARLES F. WARREN  
Administrative Patent Judge

PAUL LIEBERMAN  
Administrative Patent Judge

PETER F. KRATZ  
Administrative Patent Judge

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BIRCH, STEWART, KOLASCH & BIRCH  
P.O. BOX 747  
FALLS CHURCH, VA 22040-0747