

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.*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. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* CLINT W. CARPENTER and ZENON P. CZORNIJ

MAILED

SEP 30 1996

PAT & TM OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Appeal No. 94-0929  
Application 07/751,027<sup>1</sup>

ON BRIEF

Before KIMLIN, WEIFFENBACH and OWENS, *Administrative Patent Judges.*

WEIFFENBACH, *Administrative Patent Judge.*

**DECISION ON APPEAL**

This appeal is from the examiner's final rejection of claims 1 and 3-16, the only claims remaining in this application. We reverse.

<sup>1</sup> Application for patent filed August 28, 1991.

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The invention is directed to a process for preparing modified copolymers as pigment dispersants for coating compositions. Claim 1 is illustrative of the claimed invention and reads as follows:

1. A process for the preparation of modified copolymers as pigment dispersants for coating compositions, comprising the steps of

a) polymerizing

i) an ethylenically unsaturated monomer containing an isocyanate group with

ii) an ethylenically unsaturated monomer having no functional group capable of undergoing a reaction with said isocyanate group to form a copolymer with isocyanate groups and

b) reacting stepwise or simultaneously said isocyanate groups with

iii) a polyalkyleneglycol monoalkyl ether or amine terminated polyalkylene glycol monoalkyl ether and

iv) optionally, a compound having one primary or one secondary amino group or another alcohol.

The examiner relies on the following references:

Graulich et al. (Graulich)	2,978,432	Apr. 4, 1961
Melamed	2,980,634	Apr. 18, 1961
Honig et al. (Honig I)	3,684,758	Aug. 15, 1972
Honig et al. (Honig II)	3,705,164	Dec. 5, 1972

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Claims 1 and 3-16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Honig I in view of Melamed and as being unpatentable over Honig II in view of Graulich.

### Opinion

We have carefully reviewed the application record which led to this appeal and the respective positions advanced by appellants and the examiner for patentability of the appealed claims. Our review leads us to the conclusion that neither of the examiner's rejections are sustainable for the following reasons.

Under 35 U.S.C. § 103, the initial burden of establishing a *prima facie* case of obviousness rests on the examiner. *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1967); *In re Piasecki*, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788 (Fed. Cir. 1984). This burden is satisfied by showing that the prior art would have suggested the claimed invention. *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984). This suggestion must be found in

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the prior art, not in applicant's disclosure. *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

The examiner found that Honig I "discloses a process for making dispersions with polyurethane polymer together with blocks of vinyl polymers" and that Melamed "discloses amino alkyl vinyl ethers with appropriate advantages."<sup>2</sup> The examiner then concluded that

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use ethers of Melamed in Honig [I] and produce the process for the preparation of modified copolymers as pigment dispersions because each reference suggests improved properties with vinyl monomers in dispersions and they would be expected to function equivalently, especially since no criticality of process steps are noted and in claim 1 the reaction can be step wise [sic, stepwise] or simultaneous.<sup>[3]</sup>

Honig I teaches grafting a cationic polyurethane from an aqueous dispersion onto an ethylenically unsaturated monomer.<sup>4</sup> The

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<sup>2</sup> Page 3, lines 8-13 of the examiner's answer.

<sup>3</sup> Page 3, lines 14-21 of the examiner's answer.

<sup>4</sup> Column 2, lines 4-13 of Honig I.

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polyurethane is prepared by mixing a polythioether, polyether or a polyglycol with tolylene diisocyanate.<sup>5</sup>

While we agree with appellants that the stepwise process as recited in the claims on appeal is not specifically taught or suggested by Honig I, the claim is open to the simultaneous reaction of a mixture of an ethylenically unsaturated monomer, an ethylenically unsaturated monomer containing an isocyanate group and either a polyalkyleneglycol monoalkyl ether or an amine terminated polyalkylene glycol monoalkyl ether. However, Honig I does not suggest or teach mixing the ingredients to make the polyurethane with a vinyl monomer prior to forming the polyurethane dispersion.<sup>6</sup> Moreover, Honig I teaches away from the claimed invention in that the isocyanate employed to make the polyurethane dispersion, tolylene diisocyanate, is not an ethylenically unsaturated monomer.

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<sup>5</sup> Column 6, line 51 to column 7, line 67 of Honig I.

<sup>6</sup> Claim 1 of Honig I.

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Melamed's invention is directed to forming quaternary ammonium compounds of aminoalkyl vinyl ethers. There is no disclosure in Melamed that the aminoalkyl vinyl ethers or their quaternary ammonium derivatives could be used to make polyurethanes. Appellants argue in the brief that Melamed's compounds "would not work as an amino substituted polyalkylene glycol ether, because there is no electron pair to react with the -NCO- in a quaternary compound."<sup>7</sup> The examiner did not respond to this argument and we find appellants' argument to have merit. Accordingly, we conclude that Melamed is not properly combinable with Honig I and would not suggest modifying Honig I.

The examiner has not explained how the teachings of Honig I and Melamed would suggest improved properties with vinyl monomers in dispersions and how the references suggest or teach that the vinyl monomers would be expected to function equivalently so as to render the claimed invention obvious.

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<sup>7</sup> Page 5 of appellants' brief.

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For all of the reasons above, we conclude that the examiner has failed to make out a *prima facie* case of obviousness over Honig I in view of Melamed.

The examiner also rejected the claims for obviousness over Honig II in view of Graulich. The examiner found that "Honig [II] suggests a process for the making of dispersions with polyurethane polymers with blends of vinyl polymers" and that "Graulich" suggests methyl ether compounds in coatings."<sup>8</sup> The examiner concluded that

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the alkyl ethers of Graulich in Honig [II] and produce the process for the preparation of modified copolymers as pigment dispersants because each reference suggests urethanes and ethers [sic, ethers] in coating dispersions and they would be expected to function equivalently especially since applicant's [sic, applicants'] claimed process can be step wise [sic, stepwise] or simultaneously be reacted. No criticality of process steps are noted.<sup>[9]</sup>

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<sup>8</sup> Page 4 of the examiner's answer.

<sup>9</sup> Id.

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Honig II teaches a process substantially the same as that set forth in Honig I, but using an anionic polyurethane dispersion instead of a cationic polyurethane dispersion.<sup>10</sup> Graulich teaches a process for producing polymers and copolymers containing methylolether groups.<sup>11</sup>

For reasons similar to those given with regard to Honig I, Honig II alone does not teach or suggest the claimed stepwise or simultaneous process for preparing modified copolymers. Honig II also does not employ an ethylenically unsaturated monomer containing an isocyanate group as is required by appellants' claimed process. The isocyanates disclosed by Honig are tolylene diisocyanate and 1,6-hexane diisocyanate, neither of which are an ethylenically unsaturated monomer.

We agree with appellants that Graulich does not suggest or teach that the ether compound formed therein can be reacted with compounds having isocyanate groups to form a polyurethane or with

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<sup>10</sup> Column 3 line 39 to column 4, line 55 of Honig II.

<sup>11</sup> Claims 1, 3 and 5-7 of Graulich.

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isocyanate groups on an acrylic polymeric as set forth in the appealed claims. The examiner's reference to the fact that the references disclose urethanes and ethers as being capable of forming coating dispersions is not seen to be relevant to modifying the Honig II process by the teachings of Graulich to establish that the claimed process herein would have been obvious to one having ordinary skill in the art. Appellants argue that

The Honig [II] process for an anionic polyurethane dispersion reacts the urethane with carboxylate groups or sulfonate groups. This anionic character facilitates the dispersibility of pigments added directly to the polyurethane dispersion. The reference teaches away from using the ether polymers of Graulich with the polyurethane, because the stability of the dispersion toward pigments depends on the anionic character of the dispersion (col. 7, l. 6-10, referring to anionic sulfonate groups). This anionic character would be altered by the addition of nonionic ether polymers. The present invention is a nonionic dispersant and the polymer is not reacted with carboxylate groups or sulfonate groups.<sup>[12]</sup>

At column 7, lines 6-10, Honig II discloses that

A special useful property [of the vinyl modified polyurethane formed by Honig II] is their stability towards a variety of pigments. Especially the

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<sup>12</sup> Paragraph bridging pages 6 and 7 of the appeal brief.

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dispersion types with sulphonate groups may be pigmented with up to about 600 parts of pigments based on 100 parts of the vinylmodified polyurethane.

The examiner did not respond to appellants' argument, and we have no reason based on the record before us to doubt the technical merit of appellants' argument. Accordingly, we must conclude that the Honig II process could not be modified by the teachings of Graulich as suggested by the examiner and, therefore, Graulich is not properly combinable with Honig II.

For the foregoing reasons, we conclude that the examiner has not made out a *prima facie* case of obviousness for rejecting the claims over Honig II in view of Graulich.

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**Conclusion**

The examiner's rejections of the claims on appeal for obviousness are reversed.

**REVERSED**

*Edward C. Kimlin*  
EDWARD C. KIMLIN )  
Administrative Patent Judge)

*Cameron Weiffenbach*  
CAMERON WEIFFENBACH )  
Administrative Patent Judge)

*Terry J. Owens*  
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