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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ERNST O. DUEBER and LOUIS MULLER

Appeal No. 95-0192
Application No. 07/914,228[1]

ON BRIEF

Before KIMLIN, PAK and OWENS, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 1 through 11, which are all of the claims pending in the application. Claim 1 has been amended subsequent to final rejection.

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[1] Application for patent filed July 13, 1992. According to the applicant, the application is a continuation of Application 07/594,244, filed October 9, 1990, now abandoned.

The subject matter on appeal is directed to an intermediate composition comprising a liquid organic polyisocyanate containing dispersions of solid fire retardant additives and polyurea particles. See specification, page 2. This intermediate composition is useful for forming fire resistant polymeric materials, such as fire resistant polyurethanes. See specification, pages 1 and 13. This appealed subject matter is adequately illustrated by claims 1 and 2, which read as follows:

1. A fire retardant composition having improved storage stability comprising a dispersion of a solid fire retardant additive in a liquid organic polyisocyanate which contains dispersed polyurea particles.

2. A composition according to claim 1 wherein the solid fire retardant additive is selected from the group consisting of melamine, ammonium polyphosphate and guanidine carbonate.

The references of record relied upon by the examiner are:

Paige et al. (Paige)	3,666,692	May 30, 1972
Nissen et al. (Nissen)	4,469,653	Sep. 04, 1984
Gill et al. (Gill)	4,622,361	Nov. 11, 1986
Hess et al. (Hess)	4,716,182	Dec. 29, 1987
Hughes et al. (Hughes)	4,786,704	Nov. 22, 1988

Claims 1 through 11 stand rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Hughes, Paige, Gill, Nissen and Hess.[2]

We have carefully reviewed the entire record before us, including each of the arguments and comments advanced by the examiner and appellants in support of their respective positions. This review leads us to conclude that the examiner's § 103 rejection is well-founded. Accordingly, we will sustain the examiner's rejection for essentially those reasons expressed in the Answer. We add the following primarily for emphasis.

As a preliminary matter, we note that appellants have initially grouped the appealed claims at page 4 of the Brief as follows:

Group I - claim 1; and

Group II - claims 2 through 11.

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[2] This is the only rejection before us. The examiner has not restated in the Answer all of the rejections based on Hughes alone or Hughes, Nissen, Hess and Gill in the final rejection dated April 26, 1993. Nor has the examiner disputed appellants' assertion that all of the rejections based on Hughes alone or Hughes, Nissen, Hess and Gill have been withdrawn. Compare page 1 of the Reply Brief with both the Answer and the Supplemental Answer in their entirety.

Appellants have not altered this grouping in their Reply Brief. Accordingly, we will address only claims 1 and 2, the broadest claims in each group. See 37 CFR § 1.192(c)(5)(1993); Ex parte Schier, 21 USPQ2d 1016, 1019 (Bd. Pat. App. & Int. 1991).

As indicated supra, the claimed subject matter is directed to an intermediate composition comprising a liquid organic polyisocyanate containing dispersions of a fire retardant additive and polyurea particles. The polyurea particles are said to be added to reduce or prevent sedimentation of the solid fire retardant in the polyisocyanate, thereby improving the stability and pot-life of the polyisocyanate.

As evidence of obviousness of the claimed subject matter, the examiner relies on the combined disclosures of Hughes, Paige, Gill, Nissen and Hess. As indicated by the examiner, Hughes describes at column 1, lines 7-15 and column 4, lines 10-23, employing a liquid organic polyisocyanate containing a dispersion of polyurea particles to produce polyurethanes having improved physical characteristics. See page 4 of the

Answer. Specifically, Hughes states (column 4, lines 16-19) that:

> Polyurethane products are made by reacting a polyisocyanate with a polyol. The urea/polyisocyanate dispersions of the present invention may be used in the same manner as conventional polyisocyanates.

Hughes further discloses employing conventional ingredients, including a solid fire retardant (flame proofing agent, such as phosphates) during production of polyurethanes having improved physical characteristics. See column 4, lines 24-31. However, as recognized by the examiner, Hughes does not mention that its solid fire retardant is dispersed in its polyisocyanate containing polyurea particles.

To remedy this deficiency, the examiner relies on the disclosure of Paige. As acknowledge by appellants at page 9 of the Reply Brief, Paige specifically describes dispersing a solid butene-based flame retardant in an isocyanate prior to mixing the resulting isocyanate with a polyol to form a polyurethane product in example 3 at lines 37-39, column 5. In addition, Paige states (column 4, lines 46-64) that:

> The addition of the fire retardant to the polyol or the isocyanate prior to the preparation of the polyurethane is most convenient and assures essentially uniform distribution of the fire retardant throughout the polyurethane. In the preparation of the polyurethane, the fire retardants do not interfere with the reaction and are ordinarily incorporated physically rather than chemically into the urethane because most of the additives have no functionally reactive sites . . .
>
> . . .
>
> Although the compounds of the invention are effective fire retardants in polyurethanes when used alone, other known additives may be incorporated into the polyurethane in addition to or partial substitution for these fire retardants. Representative examples of other compatible additives include metal ammonium phosphates, antimony oxide, a peroxide or another brominated substrate.

Given these teachings, we agree with the examiner that it would have been prima facie obvious to disperse either a solid butene-based flame retardant or other useful conventional solid flame retardants in the isocyanate solution containing polyurea particles described by Hughes with a reasonable expectation of successfully imparting improved physical characteristics and flame retardant property to the resulting

polyurethane products. The conventional solid flame retardants for polyurethane include those recited in claim 2. See Answer, page 5, referring to Hess and Nissen. Although none of these prior art references, as argued by appellants, discloses appellants' reason for combining polyurea particles and a solid flame retardant with a liquid organic polyisocyanate, i.e., solving a sedimentation problem, we note that such reason need not be disclosed to establish a prima facie case of obviousness as long as the prior art references themselves provide a suggestion to combine polyurea particles and a solid flame retardant with a liquid organic polyisocyanate within the meaning of 35 U.S.C. § 103. See In re Kemp, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996) (the suggestion to combine ingredients need not be identical to that of appellants to establish a prima facie case of obviousness);

In re Wiseman, 596 F.2d 1019, 1023, 201 USPQ 658, 661 (CCPA 1979)(the discovery of a problem does not necessarily result in a patentable invention especially where the claimed solution is obvious from the prior art).

Appellants argue that the prior art references relied on by the examiner are not relevant to each other and to the claimed subject matter. This argument, however, is not convincing. From our perspective, these prior art references are relevant inasmuch as they are all directed to either the same area of art as the claimed subject matter, or the problem to be solved in the art. In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-1 (Fed. Cir. 1992); In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979). As is apparent from the examiner's discussion of the prior art in the Answer and appellants' own description of the prior art in the Brief and the Reply Brief, the prior art references in question, like the claimed subject matter, discuss ingredients useful for forming polyurethane products, i.e., the same area of art as the claimed subject matter. Moreover, they all discuss solving problems associated with improving polyurethane products or improving processes for making polyurethane products, i.e., the problem to be solved in the art.

Appellants rely on the showing in the 37 CFR § 1.132 declaration of Dueber, one of the inventors of the present application, (hereinafter referred to as "the Dueber Declaration") to overcome the prima facie case of obviousness established by the examiner. The showing in the Dueber declaration is directed to a comparison between a mixture containing particular amounts of a particular polyisocyanate and a particular flame retardant supposedly representative of the prior art subject matter and a mixture containing particular amounts of a particular polyisocyanate, a particular flame retardant and particular polyurea particles supposedly representative of the claimed subject matter. The comparison is said to show that the rate of sedimentation is "fast" for the prior art mixture but "slow" for the claimed subject matter. This showing, according to appellants, demonstrates that the claimed subject matter imparts unexpected results over that of the prior art.

In assessing the sufficiency of the showing in the Dueber declaration, we are mindful that appellants have the burden of proof. See In re Soni, 54 F.3d 746, 750, 34 USPQ2d 1684, 1687 (Fed. Cir. 1995); In re Klosak, 455 F.2d 1077, 1080, 173 USPQ

14, 16 (CCPA 1972); In re Heyna, 360 F.2d 222, 228, 149 USPQ 692, 697 (CCPA 1966). Upon making a factual, evidentiary inquiry, see In re Johnson, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984), we are convinced that appellants have not met their burden.

Initially, we find that the showing in the Dueber declaration is factually deficient. It fails to indicate the types of analysis techniques employed to determine the rate of sedimentation, the acceptability of the analysis techniques employed in the art, the margin of error applicable to the analysis techniques employed and the meaning of the "fast" and "slow" results. Absent such evidentiary foundation, the significance of the results demonstrated cannot be ascertained.

Secondly, we find that the showing in the Dueber declaration is not reasonably commensurate in scope with the degree of protection sought by the appealed claims. See In re Kulling, 897, F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990);

In re Greenfield, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978). While the showing in the Dueber declaration is limited to a mixture containing specific amounts of a specific polyisocyanate, a specific flame retardant and a specific polyurea, the appealed claims are not so limited. The appealed claims include multifarious mixtures containing varying amounts (including inert amounts) of chemically different polyisocyanates, polyureas and flame retardants. Appellants, however, have not offered any evidence to support the conclusion that the demonstrated results based on a single mixture can reasonably be extrapolated to the plethora of multifarious mixtures embraced by the appealed claims.

Thus, having considered all of the evidence of record, it is our determination that the evidence of obviousness proffered by the examiner, on balance, outweighs the evidence of nonobviousness offered by appellants. Hence, we agree with the examiner that the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art. Accordingly, we affirm the examiner's decision to reject claims 1 through 11 under 35 U.S.C. § 103.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

EDWARD C. KIMLIN Administrative Patent Judge	)
CHUNG K. PAK Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
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APPEAL NO. 95-0192 - JUDGE PAK
APPLICATION NO. 07/914,228

APJ PAK

APJ OWENS

APJ KIMLIN

DECISION: **AFFIRMED**

Typed By: Jenine Gillis

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FINAL TYPED: