

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEPHEN A. DIBIASE, LARRY W. ARNDT,
GREGORY M. STANSFIELD and LOUIS A. RENBAUM

Appeal No. 94-3371
Application 07/986,878¹

ON BRIEF

Before JOHN D. SMITH, WEIFFENBACH and ELLIS, Administrative Patent Judges.

WEIFFENBACH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 2-7, 9-17 and 73, which are

¹Application for patent filed December 4, 1992. According to appellants, this application is a continuation of Application 07/659,411 filed March 11, 1991, now abandoned, which is a continuation of Application PCT/US90/00815 filed February 21, 1990, which is a continuation-in-part of Application 07/470,431 filed January 24, 1990, now abandoned, which is a continuation of Application 07/319,011 filed March 3, 1989, now abandoned.

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all of the claims remaining in the application.² We affirm-in-part.

The Claimed Subject Matter

The claims on appeal are directed to a process for the separation and recovery of isocyanate monomers. Claim 73 is illustrative of the claimed subject matter:

73. A process for the separation and recovery of isocyanate monomers from isocyanate concentrates formed in the production of isocyanates and comprising a volatile isocyanate monomer and by-products which comprises the steps of:

(A) preparing a mixture comprising

(A-1) the isocyanate concentrate; and

(A-2) an oil solution comprising:

(A-2-a) a major amount of hydrocarbon oil,
and

(A-2-b) a minor amount of at least one dispersant selected from the group consisting of (1) a carboxylic dispersant prepared by reacting a

²Appellants have included new claims 74-77 in Appendix A of their Brief along with rejected claims 2-7, 9-17 and 73. Appellants state on page 1 of their Brief that "[c]laims 74-77 have been submitted with the Amendment After Final" which was filed concurrently with the Brief. Appellants were notified via the Examiner's Answer that the claims had not been entered. In the Reply Brief, appellants noted that the examiner's refusal to enter the new claims and requested that the new claims be entered. The examiner's refusal to enter claims is a petitionable matter, and not reviewable by the Board Patent Appeals and Interferences. See 37 CFR 1.181(a)(3) and Sections 706.01 and 1002.02(c)(4) of the Manual of Patent Examining Procedure, 6th Edition, Rev. July 1996. Accordingly, claims 74-77 are not before us for consideration.

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substituted carboxylic acid or derivative thereof with an amine having present within its structure at least one >NH group, or a basic inorganic material, (2) an amine dispersant prepared by reacting an aliphatic or alicyclic halide with an amine, (3) a Mannich dispersant, and (4) a product obtained by post-treating (1), (2), or (3) with a member selected from the group consisting of urea, thiourea, carbon disulfide, an aldehyde, a ketone, a carboxylic acid, a hydrocarbon-substituted anhydride, a nitrile, an epoxide, a boron compound, and a phosphorus compound, provided that the dispersant is not an ester obtained by reacting at least one substituted succinic acylating agent with at least one alcohol of the general formula



wherein R_3 is a monovalent or polyvalent organic group joined to the OH groups through carbon bonds, and m is an integer of from 1 to about 10, and

(B) heating the mixture to an elevated temperature whereby isocyanate monomer is distilled and recovered, leaving a liquid residue.

The Prior Art and Rejections

The examiner relies upon the following prior art references to support the rejections of the claims:

Nadler	2,810,681	Oct. 22, 1957
DiBiase et al. (DiBiase)	5,043,470	Aug. 27, 1991

The appealed claims stand rejected as follows:

1. Claims 2-7, 9-17 and 73 stand rejected under 35 U.S.C. § 103 as obvious over Nadler.

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2. Claims 2-7, 9-17 and 73 stand rejected under 35 U.S.C. § 112, first paragraph, on the ground that "the disclosure is enabling only for claims limited to the specifically disclosed 'dispersant'."

3. Claims 2-7, 9-17 and 73 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-55 of DiBiase.

Opinion

Appellants state that the claims do not stand or fall together. On pages 6 and 7 of the Brief, appellants argue that ... neither Nadler nor Irwin et al³ alone or in combination disclose or suggest a process which uses a dispersant and an overbased material as in Appellants' claims 10 through 14.

Further, neither cited reference alone or in combination disclose or suggest a process which uses a dispersant and at least one metal salt of a dihydrocarbyldithiophosphoric acid as in Appellants' claims 15 through 17.

The examiner contends that claims 10-17 stand or fall together because appellants' arguments for separate patentability over the

³The original final rejection under 35 U.S.C. § 103 included Irwin et al. (Patent No. 3,729,386). However, the examiner withdrew the reference as being cumulative.

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applied prior art are merely conclusions "without any substantial reasons given" (Answer, page 2).⁴

We note that appellants have not presented any arguments for separate patentability for claims 2-7 and 9. In the absence of such arguments, claims 2-7 and 9 are considered to stand or fall together with independent claim 73. In re Nielson, 816 F.2d 1567, 1571, 2 USPQ2d 1525, 1527 (Fed. Cir. 1987); In re Wood, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978); Ex parte Schier, 21 USPQ2d 1016, 1018 (Bd. Pat. App. & Int. 1991). As for claims 10-17, these claims will stand or fall separately to the extent that separate patentability of these claims has been argued by appellant in accordance with 37 CFR §§ 1.192(c)(5) and (c)(6)(iv)(1993).

We have carefully considered the respective positions advanced by both appellants and the examiner for patentability of the appealed claims. In so doing, we will affirm the rejection for obviousness of claims 2-7, 9 and 73 over Nadler, but reverse the rejection for obviousness with respect to claims 10-17. We further find ourselves in agreement with appellants with regard

⁴While the examiner contends that the appellants' arguments for separate patentability of claims 10-17 are not substantial, on page 7 of the Answer, it is noted that the examiner did respond to appellants' arguments.

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to the obviousness-type double patenting and non-enabling rejections that these rejections should be reversed.

Rejection for Obviousness

The examiner rejected claims 2-7, 9-17 and 73 as being obvious over Nadler. Nadler relates to a method of recovering toluene-2,4-diisocyanate (TDI) from a reaction mass (a tar residue) which forms during the preparation of TDI (col. 1, lines 14-19). Although TDI is distilled from the reaction mass, according to Nadler, "an appreciable quantity [of TDI] remains in the concentrated viscous tar, from which complete removal by simple distillation techniques is difficult" (col. 1, lines 27-31).

To solve this problem, Nadler mixes the reaction mass with an oil solution containing a hydrocarbon oil and a minor amount of a dispersant (col. 1, lines 56-70). The amount of dispersant in the oil solution is from 0.05% to 3.0% based on the weight of the oil. The dispersant comprises a reaction product of two components (col. 1, lines 18-29). The first component is amine free and includes long chain alkyl methacrylates or unsaturated dicarboxylic acid derivatives such as laurylethyl maleate or laurylfumarate (col. 3, lines 30-39). The second component contains a basic nitrogen and includes compounds such as

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diallylamine and "any other basic amino-nitrogen compound including ... secondary ... amines ..." (col. 3, lines 40-49). According to Nadler, the oil solution is mixed with an isocyanate concentrate (crude reaction mixture) and then the mixture is heated to an elevated temperature to distill and recover isocyanate monomer from the concentrate (col. 1, line 70 to col. 2, line 38 and col. 2, line 60-66). In view of these teachings, we find that Nadler would have suggested to one having ordinary skill in the art the dispersants and the process claimed by appellants in claims 2-9 and 73.

Appellants argue Nadler's process differs from the claimed process in that Nadler is using addition type copolymer polyacrylate or polymethacrylates. As discussed supra, Nadler discloses compounds other than alkyl acrylates or methacrylates such as unsaturated dicarboxylic acid derivatives, which compounds come within the scope of appellants' claimed (A-2-b-1) substituted carboxylic acid component. By the same token, the amine component of Nadler's dispersant is not limited to compounds such as beta-diethylaminoethyl methacrylate. A secondary amine such as diallylamine is also suggested. We find that the teachings of Nadler would have suggested to one of ordinary skill in the art reacting an amine such as diallylamine

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with a dicarboxylic acid derivative (e.g. lauryl fumarate) to form the claimed dispersant (col. 3, lines 18-50). Accordingly, we will sustain the rejection of claims 2-7, 9 and 73 over Nadler. However, we agree with appellants that Nadler does not teach or suggest a process which uses a dispersant containing a metal salt as set forth in appellants' claims 10-17.

The examiner determined that claims 10-14 only require "minor amounts" which can be interpreted as including "trace amounts" of a metal salt. From this, the examiner concluded that "Nadler includes dispersants produced from materials such as carboxylic esters which are neutral acidic organic compounds and it would be reasonable to assume that a minor amount, which includes trace amounts, of the starting materials used to produce the dispersants would remain therein" (Answer, page 7). We do not agree.

The examiner has not provided any evidence or an analysis of the prior art to support his conclusion. Cf. In re Brouwer, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1996); In re Ochiai, 71 F.3d 1565, 1569-72, 37 USPQ2d 1127, 1131-33 (Fed. Cir. 1995). Moreover, original claim 60 in appellants' specification recites the amount of the metal salt added to be "from about 0.1 to about 20% by weight." This amount would hardly be considered

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by a person skilled in the art to be a "trace amount." For these reasons, the examiner's rejection of claims 10-14 over Nadler under 35 U.S.C. § 103 is reversed.

As for claims 15-17, these claims require the dispersant to include a "minor amount" of an additional component comprising a metal salt of a dihydrocarbyldithiophosphoric acid. The examiner's position is that "the presence of 'a minor amount' of an additional component is given no patentable significance since 'a minor amount' include trace amounts which would not materially effect [sic, affect] the process" (Answer, page 7). Again, we do not agree.

While claims are to be given their broadest reasonable interpretation consistent with the specification, the claim language should be read in light of the specification as it would be interpreted by one having ordinary skill in the art. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983).

On page 84 of the specification, appellants disclose that

[t]he oil solutions ... also may contain other useful additives including metal dihydrocarbyl dithiophosphates, viscosity improvers, including those having dispersant or detergent properties, compositions generally referred to as friction modifiers when added to oils, etc. When included in the oil solution, these additives are present in amounts of from about 0.1 to about 20%, more generally from 0.1 to about 10% by weight. [Emphasis ours.]

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Again, an amount comprising about 0.1 to about 20% can hardly be considered a "trace amount." The examiner has not presented any scientific reasoning to conclude that a "minor amount" of a metal salt of a dihydrocarbyldithiophosphoric acid would not materially affect the claimed process. Accordingly, for the reasons given above the rejection of claims 15-17 under 35 U.S.C. § 103 over Nadler is reversed.

Non-Enablement Rejection

The examiner has found the claims to be non-enabling under the first paragraph of 35 U.S.C. § 112 on the ground that "the disclosure is enabling only for claims limited to the specifically disclosed dispersant" (Answer, page 5). The examiner concluded that undue experimentation would be required because "the specification presents no correlation between structure and function which would enable one of ordinary skill in the art to reasonably predict which of the myriad dispersants included by the claims would be useful and which would not be useful" (Answer page 5). We will reverse this rejection for essentially those reasons expressed in appellants' Brief. The examiner's conclusion lacks supporting scientific reasoning and/or evidence to persuade us that a correlation, or the lack thereof, between structure and function is required to enable one

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skilled in the art to practice the invention. Appellants have cited numerous patents in their specification for making the claimed dispersants which we consider to be more than adequate to convey to one skilled in the art how to make the dispersants and to make a determination of which dispersants would be useful to practice the invention. For these reasons, we are unpersuaded that undue experimentation would be required to make such a determination.

Obviousness-Type Double Patenting Rejection

Claims 2-7, 9-17 and 73 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-55 of the DiBiase patent. Appellants contend that the patent "teaches the use of a dispersant which is a carboxylic ester prepared from a succinic acylating agent and an alcohol" and that the claims herein "are directed to specific dispersants which do not include the ester dispersants of DiBiase et al." (Brief, page 9). The examiner concedes that the "conflicting claims are not identical," but that "they are not patentably distinct from each other because the 'dispersant' is so broad in the instant claims as to include homologs of the excluded 'dispersant' which are claimed in the patent" (Answer, paragraph bridging pages 3 and 4). We will not

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sustain this rejection because the following negative limitation in claim 73 appears to exclude the only dispersant recited in the claims of DiBiase:

... provided that the dispersant is not an ester obtained by reacting at least one substituted succinic acylating agent with at least one alcohol of the general formula



wherein R_3 is a monovalent or polyvalent organic group joined to the OH groups through carbon bonds, and m is an integer of from 1 to about 10

The examiner has failed to provide any reasons for concluding that the breadth of the claims on appeal would "include homologs of the excluded 'dispersant'."

For the foregoing reasons, will reverse the examiner's rejection under the judicially created doctrine of obviousness-type double patenting. However, we note that the negative limitation in claim 73 excluding an ester obtained by reacting at least one substituted succinic acylating agent with at least one alcohol appears to be subject matter which may not comply with the written description and best mode requirements of the first paragraph of 35 U.S.C. § 112.

The negative limitation in claim 73 is not part of the original disclosure, but was added by amendment during the prosecution of the application. See Amendment A, Paper No. 6.

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While a negative limitation is not impermissible per se, it must be definite and must comply with the written description requirement of 35 U.S.C. § 112, first paragraph. Chisum on Patents, Vol. 3, Chapter 8.06[3], page 8-144 (1997). See Ex parte Hradcovsky, 214 USPQ 554, 555 (Bd. App. 1982); In re Duva, 387 F.2d 402, 408, 156 USPQ 90, 95 (CCPA 1967); In re Bankowski, 318 F.2d 778, 782-783, 138 USPQ 75, 79 (CCPA 1963). We do not find the limitation to be indefinite, but it would appear that it may not satisfy the written description requirement of 35 U.S.C. § 112, first paragraph.

To comply with the written description requirement, it is not necessary that the invention be claimed using the same words as in the specification. All that is required is that the specification reasonably convey to a person of ordinary skill in the art that as of the filing date of the application, the inventors had possession of the subject matter later claimed. In re Edwards, 568 F.2d 1349, 1351-1352, 196 USPQ 465, 467 (CCPA 1978); In re Wertheim, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976); In re Lukach, 442 F.2d 967, 969, 169 USPQ 795, 796 (CCPA 1971). The determination as to whether the specification provides support for the newly claimed subject matter is primarily factual and depends on the nature of the invention and

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the amount of knowledge imparted by the disclosure to those of ordinary skill in the art. In re Wertheim, supra.

On pages 3, 4, 14 and 15, Appellants describe a dispersant in the hydrocarbon oil mixture, which according to appellants is a preferred embodiment of the invention. This dispersant is identical to the dispersant set forth in the negative limitation recited in claim 73, supra. Because claim 73 appears to exclude the preferred embodiment of the invention, a question arises as to whether the inventors had possession of an invention excluding the preferred embodiment at the time the application was filed. Therefore, upon return of this application to the examiner, the examiner should make a determination as to whether the negative limitation set forth in claim 73 violates the written description requirement of the first paragraph of 35 U.S.C. § 112 and whether claims 2-7, 9-17 and 73 should be rejected thereover.

Conclusion

For the foregoing reasons, the decision of the examiner is affirmed-in-part.

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

AFFIRMED-IN-PART

JOHN D. SMITH)	
Administrative Patent Judge))	
)	
)	
CAMERON WEIFFENBACH)	BOARD OF PATENT
Administrative Patent Judge))	APPEALS AND
)	INTERFERENCES
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