

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER H. MARKUSCH,
JAMES W. ROSTHAUSER,
and
ROBERT L. CLINE

Appeal No. 1997-3609
Application No. 08/483,349

ON BRIEF

Before GARRIS, HANLON, and ROBINSON, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-13, all the claims pending in the application. The claims on appeal are directed to an improved method of producing a coated substrate comprising applying a

contact adhesive to a substrate and allowing the contact adhesive to cure, wherein the improvement lies in the contact adhesive used. Claim 1 is illustrative and reads as follows:

1. In a method of producing a coated substrate comprising applying a contact adhesive to a substrate, and allowing the contact adhesive to cure, the improvement wherein said contact adhesive is a polyurethane/urea composition consisting essentially of:

- a) a polyisocyanate or polyisocyanate adduct having a functionality of less than about 4,
- b) a polyol blend consisting of
 - 1) about 95 to 100% by weight, based on 100% by weight of component b), of at least one polyether polyol having a molecular weight of from about 1800 to 12000 and an average functionality of from about 1.5 to about 4,
 - and
 - 2) up to about 5% by weight, based on 100% of component b), of at least one chain extender containing hydroxyl groups, having a molecular weight of from about 60 to 400 and an average functionality of from about 1.5 to about 3,
 - and
- c) at least one polyether having at least two isocyanate-reactive groups, and a molecular weight of from about 1800 to about 12,000, wherein at least 50% of the isocyanate-reactive groups are primary and/or secondary amino groups,

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wherein the weight ratio of component b) to component c) ranges from about 95:5 to about 0:100, and the amounts of components a), b), and c) are such that the equivalent ratio of isocyanate groups to isocyanate-reactive groups is from about 85:100 to about 115:100 and the sum of the urethane group content plus the urea group content is from about 1 to about 12%.

The references relied upon by the examiner are:

Mafoti et al. (Mafoti) 1992	5,141,967	Aug. 25,
Dormish et al. (Dormish) 1993	5,204,439	Apr. 20,
Yilgör et al. (Yilgör)	5,389,430	Feb. 14, 1995

The sole issue in this appeal is whether claims 1-13 were properly rejected under 35 U.S.C. § 103 as being unpatentable over Dormish in view of Mafoti and Yilgör.¹

Discussion

Claim 1 is directed to an improved method of producing a coated substrate wherein the improvement lies in the contact adhesive used. Specifically, the contact adhesive is a polyurethane/urea composition "consisting essentially of" a polyisocyanate or polyisocyanate adduct, a polyol blend and at

¹The examiner relies on the teachings of Mafoti and/or Yilgör in combination with Dormish to reject one or more of dependent claims 2-13. See Answer, p. 3.

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least one polyether having at least two isocyanate-reactive groups.² See In re Janakirama-Rao, 317 F.2d 951, 954, 137 USPQ 893, 896 (CCPA 1963) (in the phrase "consisting essentially of," the word "essentially" opens the claims to the inclusion of ingredients which would not materially affect the basic and novel characteristics of appellant's composition as defined in the claim); see also In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976).

According to the examiner, Dormish discloses a polyurethane adhesive comprising a polyisocyanate, a polyol blend and a polyether as claimed by appellants. However, the adhesive composition disclosed in Dormish also includes diamines and triamines not present in the claimed adhesive composition. See Answer, pp. 2-3. The examiner recognizes that these amines impart flow or "sag" resistance to the adhesive of Dormish. See Answer, p. 4; see also col. 1, lines 16-17 (certain diamines and triamines impart sag resistance to the disclosed polyurethane adhesive); col. 2, line 68; col. 3,

²Claim 1 further recites functionalities, molecular weights and/or percentages based on weight for each of these compounds.

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lines 33-37. Nevertheless, the examiner maintains (Answer, p. 4):

It would have been obvious to one of ordinary skill in the art [at] the time the invention was made to omit the low molecular weight amine compound and filler of Dormish because Dormish teaches using these materials to produce resistance of flow and to prevent sag. In the event that the adhesive is used on a horizontal surface, these components aren't needed.

Appellants urge (Brief, p. 4):

[O]ne or [sic, of] ordinary skill in the art would not alter the polyurethane composition of the Dormish et al reference in the necessary manner to "arrive at" the presently claimed invention. This reference clearly leads one skilled in the art to conclude that these diamines and/or triamines are essential to the invention therein. Without these, the formulations therein would not exhibit "adequate resistance to flow" as described at column 3, lines 33-37 and column 8, lines 30-35.

Specifically, Dormish discloses (col. 2, lines 44-68):

It has now surprisingly been found that a two-component adhesive having advantageous properties can be prepared using a low viscosity polyisocyanate component and a low viscosity curative component containing a blend of a relatively high equivalent weight component, a relatively low equivalent weight diol-containing chain extender or crosslinker, and an amine. In addition, at least one of the two components must contain a filler, preferably talc. Although both components according to the invention are characterized by low viscosities of less than about 15,000 mPa.s, the mixed adhesive exhibits excellent resistance to flow, or "sag." In

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addition, adhesives prepared according to the invention, although used without primer, exhibit excellent high temperature bonding strength.

Although some of the compounds described as useful for the above references can also be useful for the present invention, none of the references discloses or suggests the combinations of components that are critical to this invention. In particular, none discloses the use of a curative component containing a mixture of a relatively high equivalent weight polyether polyol or aromatic amine terminated polyether, a relatively low equivalent weight diol-containing chain extender or crosslinker, and an amine for resistance to sag. [Emphasis added.]

Dormish continues (col. 8, line 61-col. 9, line 2):

Both the isocyanate component and the curative component of the present invention are characterized by low viscosities, a characteristic that facilitates bulk handling. As used herein, the term "low viscosity" refers to a Brookfield viscosity at 25E C. of less than about 15,000 mPa.s. Each component used in the present invention is characterized by viscosities at 25E C. of less than 15,000 mPa.s. Despite the use of such low viscosity components . . . , the mixed adhesive exhibits excellent resistance to sag.

Thus, we agree with appellants that one having ordinary skill in the art would have recognized that the amines are an essential element in the polyurethane adhesive disclosed in Dormish.

Turning to the rejection before us, the examiner arrives at the claimed invention by eliminating the diamine/triamine

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component from the polyurethane adhesive disclosed in Dormish. While we recognize that the examiner has offered a reason as to why one would be "motivated" to omit the amines from the composition of Dormish, the examiner has, nonetheless, failed to establish a prima facie case of obviousness.

We do not doubt that one skilled in this art could remove the diamine/triamine component from the adhesive composition described by Dormish. However, that is not the test under 35 U.S.C. § 103. See In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) ("The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification."). Rather, in order to support a prima facie case of obviousness within the meaning of 35 U.S.C. § 103, there must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would have made the modification required. Manifestly, that knowledge cannot come from the applicants' invention itself. Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 678-79, 7 USPQ2d 1315, 1318 (Fed. Cir. 1988); In re Geiger, 815 F.2d 686, 688, 2

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USPQ2d 1276, 1278 (Fed. Cir. 1987); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985). Furthermore, the extent to which such reason, suggestion, or motivation must be explicit in or may be fairly inferred from the references is decided on the facts of each case, in light of the prior art and its relationship to the invention. It remains impermissible, nevertheless, to simply engage in a hindsight reconstruction of the claimed invention using applicants' specification as a template and selecting elements from references to fill the gaps. In re Gorman, 933 F.2d 982, 986-987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). On this record, the examiner has offered neither evidence nor facts to be found in the prior art which would have led one of ordinary skill in this art to modify the adhesive composition of Dormish in the manner proposed to arrive at the claimed adhesive composition.

For the reasons set forth above, the teachings of Dormish fail to suggest the desirability of the modification proposed by the examiner. Additionally, the teachings of Mafoti and Yilgör fail to cure the deficiencies of Dormish. Therefore,

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we are constrained to reverse the rejection before us.

Other issues

We have decided this case based solely on the issues framed and briefed before us. Namely, appellants argue that the language "consisting essentially of" in claim 1 excludes the diamines and triamines of Dormish. The examiner has not disputed this interpretation of claim 1. Therefore, for purposes of our decision, we have adopted the examiner's and appellants' interpretation of claim 1, i.e., a contact adhesive as claimed which excludes the diamines and/or triamines disclosed in Dormish. However, in the event of further prosecution, the examiner should determine whether the claims do in fact exclude the diamines and/or triamines of Dormish.

The contact adhesive of claim 1 is a polyurethane/urea composition "consisting essentially of" a polyisocyanate or polyisocyanate adduct, a polyol blend and at least one polyether having at least two isocyanate-reactive groups. It is well-settled that in the phrase "consisting essentially of," the word "essentially" opens a claim to the inclusion of ingredients which would not materially affect the basic and

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novel characteristics of an applicant's composition as defined in the claim. Janakirama-Rao, 317 F.2d at 954, 137 USPQ at 896; see also Herz, 537 F.2d at 551-52, 190 USPQ at 463. An applicant bears the initial burden of showing the basic and novel characteristics of a claimed composition. In re De Lajarte, 337 F.2d 870, 874, 143 USPQ 256, 258 (CCPA 1964).

Our reading of appellants' specification appears to suggest that amines similar to the amines disclosed in Dormish may be included in the claimed adhesive composition.³ See Specification, p. 17, lines 3-18. Thus, upon return of this case to the examining group, we would urge the examiner to step back and consider whether the claims, read in light of the above-cited authority, reasonably exclude the presence of a diamine and/or triamine as required by Dormish. In so doing, the examiner should review the specification, the reference and any showing by appellants relating to the basic and novel characteristics of the claimed adhesive to determine

³It further appears that fillers may be included in the claimed adhesive composition. See Specification, p. 18, lines 4-7.

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whether the claims reasonably exclude additional ingredients such as the amines required by Dormish.

It is important that the examiner recognize that our reversal of the rejection before us in this appeal does not preclude the examiner from exploring these newly raised issues and, if appropriate, making another rejection under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 based on the teachings of Dormish. Manifestly, these new issues present a different case of patentability than was before us in this appeal. For instance, the issue of whether it would have been obvious to eliminate the amines from the adhesive disclosed in Dormish becomes irrelevant.

Thus, after interpreting the claims in view of the discussion above, should the examiner conclude that a reasonable basis exists for rejecting the claims, the examiner should issue an Office action setting forth the basis of the rejection and give appellants an opportunity to respond thereto.

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Conclusion

Based on the record before us, we reverse the rejection of claims 1-13 under 35 U.S.C. § 103 as being unpatentable over Dormish in view of Mafoti and Yilgör.

REVERSED

ADRIENE LEPIANE HANLON)
Administrative Patent Judge) BOARD OF PATENT
DOUGLAS W. ROBINSON) APPEALS AND
Administrative Patent Judge) INTERFERENCES

ALP:hh

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GARRIS, Administrative Patent Judge, Dissenting:

I respectfully dissent from that portion of my esteemed colleagues' decision in which they have reversed the examiner's Section 103 rejection of claims 1 through 13 as being unpatentable over Dormish in view of Mafoti and Yilgör. I would affirm this rejection for a number of reasons.

First of all, I do not consider the "consisting essentially of" language of the appellants' independent claim to exclude the diamines or triamines (or for that matter the fillers) of Dormish. For the reasons indicated in the "Other issues" section of the majority opinion, I interpret the appealed claims, consistent with the subject specification, as encompassing rather than excluding these ingredients. This is because the record of this application including particularly the appellants' specification reflects that such ingredients are intended to be included in rather than excluded from the appellants' adhesive composition.

These circumstances militate against the proposition that the ingredients in question would materially affect the basic and novel characteristics of the composition defined in the appealed claims. In re Janakirama-Rao, 317 F.2d at 954, 137

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USPQ at 896. Further, the appellants have proffered no evidence in support of their contrary view. In re De Lajarte, 337 F.2d at 874, 143 USPQ at 258. For these reasons, I believe the examiner's Section 103 rejection is sustainable on the grounds that the appealed claims do not exclude the diamines or triamines of the Dormish patent and therefore do not distinguish over this reference in the manner argued by the appellants.

Even if the appellants' claims were interpreted to exclude the aforementioned amines, I still would sustain the Section 103 rejection advanced on this appeal. This is because I share the examiner's view that it would have been obvious for one with an ordinary level of skill in the art to eliminate from patentee's composition these amines and their attendant function of sag resistance. Concerning this issue, it is generally considered that it would have been obvious to eliminate a component along with its attendant function. In re Thompson, 545 F.2d 1290, 1295, 192 USPQ 275, 277-78 (CCPA 1976); In re Marzocchi, 456 F.2d 790, 793, 173 USPQ 228, 229-30 (CCPA

1972).

According to the majority, "one having ordinary skill in the art would have recognized that the amines are an essential element in the polyurethane adhesive disclosed in Dormish" (Decision, page 6). It would be more complete and accurate to state that the amines are "essential" for obtaining the sag resistance function desired by patentee. As correctly indicated by the examiner and not contested with any reasonable specificity by the appellants, sag resistance is a property which is not required in certain environments such as an environment wherein adhesive is applied to a horizontal surface (i.e., wherein resistance to sag is not necessary). It follows that in this type of environment, the amines of Dormish and their function would serve no useful purpose. On the other hand, the elimination of these amines would have been motivated by the clearly desirable cost savings associated with not using such ingredients when their function is not needed.

Finally, it is appropriate to emphasize that the examiner's obviousness conclusion vis-à-vis eliminating the amines of Dormish is reinforced by patentee's discussion of

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the prior art. This discussion reveals that the prior art included adhesive compositions of the general type under consideration which do not contain the amines of Dormish (e.g., see lines 9 through 16 in column 2 of the patent). The fact that such amine-free adhesive compositions were known in the prior art would have further motivated the artisan to eliminate patentee's amines based upon a reasonable expectation of success. In re O'Farrell, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988).

In light of the foregoing, I would sustain the examiner's Section 103 rejection of the appealed claims as being unpatentable over Dormish in view of Mafoti and Yilgör.

Administrative Patent Judge)
) BOARD OF PATENT
) APPEALS AND
) INTERFERENCES

BRG:hh

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