

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL HALG, UDO BUCHHOLZ, PAUL ROHRER,
CURTIS L. VOLKMANN and ULRICH TRIBELHORN

Appeal No. 1998-1737
Application No. 08/318,702

ON BRIEF

Before KIMLIN, WARREN and OWENS, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3, 5, 7, 10, 11, 14, 15, 22 and 54-59. Claims 1 and 57 are illustrative:

1. Storable modular component comprising a modular component and a profiled strip of adhesive of a latently reactive adhesive disposed along the edge of the modular component which adhesive comprises:

one or more polyurethanes with blocked isocyanate groups;

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one or more polyurethane prepolymers consisting of polyols and/or polyamines and encapsulated polyisocyanates; or

one or more polyurethane prepolymers with radically polymerizable groups;

wherein the adhesive strip at ambient temperature is solid and does not deform when handled; has an activation temperature of 70°C to 180°C, and has a softening point at temperature of 25°C to 80°C wherein the adhesive strip is tacky and non-flowing and plastically deformable for a time sufficient for assembly and the modular component can be stored for 1 to 3 months.

57. Latently reactive polyurethane adhesive which comprises:

one or more polyurethanes with blocked or free isocyanate groups;

one or more polyurethane preproducts consisting of polyols and/or polyamines and encapsulated polyisocyanates; or

one or more polyurethanes with radically polymerizable groups;

wherein up to about 20 weight percent of the polyols used to prepare the polyurethanes are solid crystallizing polyester polyols which in the adhesive display a melting point of 35°C to 80°C while the remainder of the polyols are polyether polyols.

The examiner relies upon the following references as evidence of obviousness:

Hoeschele	3,933,759	Jan. 20, 1976
Hung	5,063,269	Nov. 05, 1991
Münzmay et al. (Münzmay)	5,100,995	Mar. 31, 1992

Backus et al., "Polyurethanes," 13 Encyclopedia of Polymer Science and Engineering 243-303

Appellants' claimed invention is directed to a storable modular component comprising a strip of a latently reactive

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adhesive, and the latently reactive polyurethane adhesive, per se. The adhesive strip is solid at ambient temperature and does not deform when handled. A particular modular component of the present invention is a glass pane which is stored with the adhesive strip lined directly on its edge.

Appealed claims 1, 3, 5, 7, 10, 11, 14, 15, 22, 54 and 55 stand rejected under 35 U.S.C. § 112, second paragraph. Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over Hoeschele. Claims 3, 5, 7, 10, 11, 14, 15, 22, 55 and 56 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hoeschele in view of Hung and Münzmay. Also, claims 54 and 57-59 stand rejected under 35 U.S.C. § 103 as being unpatentable over Münzmay in view of the Encyclopedia of Polymer Science and Engineering.

According to the grouping of claims set forth at page 3 of the principal brief, the following groups of claims stand or fall together:

(1) claims 3, 6 and 10; (2) claims 7 and 11; (3) claims 55, 56 and 22; and (4) claims 54 and 57.

We have thoroughly reviewed the respective positions advanced by appellants and the examiner. In so doing, we will not sustain the examiner's rejections under 35 U.S.C. § 112,

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second paragraph. Nor will we sustain the examiner's § 103 rejections based on Hoeschele. We will, however, sustain the examiner's § 103 rejection of claims 54 and 57-59 based on Münzmay.

We consider first the examiner's rejections under § 112, second paragraph. We do not subscribe to the examiner's position that the claim 1 language "the adhesive strip . . . does not deform when handled" is indefinite because "it is not clear under what force the material maintains its shape" (page 4 of Answer, first paragraph). We concur with appellants that the examiner has not established that, when the claim language is read in light of the specification, one of ordinary skill in the art of adhesives for placing glass modules in window frames would not understand that the module would maintain its shape during normal handling.

As for the "low molecular solid compounds" of claims 11 and 15, appellants have provided sufficient evidence in their Reply Brief that one of ordinary skill in the art would be able to reasonably ascertain the scope of the claimed isocyanates when the specification and state of the prior art are taken into consideration.

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We now turn to the § 103 rejections over Hoeschele. We must agree with appellants that the cited prior art fails to teach or suggest the claimed storable modular component comprising a solid strip of latently reactive adhesive disposed on its edge. It was not until the Supplemental Answer that the examiner addressed appellants' argument that the claims at issue are directed to a modular component comprising a solid strip of adhesive, and not to an adhesive composition. As explained by appellants, Hoeschele discloses a powder composition, not a solid strip, that may be coated upon a substrate and heated to form a polyurethane film. While Hoeschele teaches that the powder composition is suited for coating techniques, such as fluidized bed, electrostatic spray, powder flow coating and heat-fusion, the examiner has not established that such techniques would have been suitable for forming a solid strip on the edge of a modular component. The examiner's statement that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to place the adhesive composition on the substrate wherever it was meant to bond to a second material" is no substitute for a teaching in the prior art that adhesive strips of the type claimed are formed from latently reactive polyurethane powder compositions (see page 2 of Supplemental Answer, second

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paragraph). The examiner's reliance on Hung and Münzmay for disclosing polyurethane adhesive compositions for bonding fiberglass-reinforced polyester substrates does not remedy the basic deficiency of Hoeschele.

The examiner's rejection of claims 54 and 57-59 over Münzmay in view of the Encyclopedia of Polymer Science and Engineering is another matter. Appellants maintain that:

The Münzmay reference does not teach or suggest a polyurethane adhesive wherein the polyol component used to prepare the polyurethane prepolymer contains up to 20 percent crystalline polyester polyol and the remainder of the polyol is a polyether polyol, nor does the reference teach that the polyester polyol should have a melting point or softening point of from 35°C to 80°C.

(Page 10 of principal brief, second paragraph). However, claim 57 on appeal recites that such a mixture of polyester polyols and polyether polyols is an alternative embodiment (the word "or" precedes the relevant recitation). As apparently conceded by appellants, Münzmay discloses a latently reactive polyurethane adhesive comprising a polyurethane with blocked isocyanate groups and polyurethane preproducts of polyols and polyamines. Appealed claim 59, as well, does not require the argued mixture of polyester and polyether polyols. Rather, claim 59 encompasses a latently reactive polyurethane adhesive comprising one or more polyurethanes with free isocyanate groups. Although Münzmay

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discloses a polyurethane prepolymer containing masked isocyanate groups, there is no teaching that all the isocyanate groups are masked or blocked. Since Münzmay discloses that the equivalent ratio of isocyanate groups to blocking agents can be 1.15:1, it is reasonable to conclude that the polyurethane prepolymer of Münzmay contains free isocyanate groups in addition to the masked isocyanate groups. Moreover, even if the claimed alternative regarding a maximum of 20 weight percent of polyester polyol was not optional, we concur with the examiner that it would have been obvious for one of ordinary skill in the art to formulate a polyurethane adhesive composition comprising the claimed amounts of polyester and polyether polyols in order to achieve a desired balance of mechanical properties at room temperature, impact strength at low temperature, and stiffness at high temperature. Concerning the melting point of 35-80°C of the optional component, the examiner has correctly noted that Münzmay discloses crystallizing polyester polyols that have a melting point within the claimed range.

Finally, pertaining to the § 103 rejection of claims 54 and 57-59, appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

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In conclusion, based on the foregoing, the examiner's § 112, second paragraph, rejections are reversed, as are the examiner's § 103 rejections based on Hoeschele. The examiner's § 103 rejection of claims 54 and 57-59 is sustained. Accordingly, the examiner's decision rejecting the appealed claims is affirmed-in-part.

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

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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CHARLES F. WARREN)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
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