

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in support of the decision being entered today: (1) was not written for publication in a law journal; and (2) is not binding precedent of the Board.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 31

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES PRITCHARD,
WILLIAM HUMPHREY, and WAYNE SALISBURY,

Appeal 1999-2534
Application 08/577,915¹

ON BRIEF

Before: OWENS, LIEBERMAN, and NAGUMO, Administrative Patent Judges.

NAGUMO, Administrative Patent Judge.

Decision on appeal under 35 U.S.C. § 134

The appeal is from a decision of a primary examiner rejecting claims 1–3, 5, 7–9, and 12, which are all the claims remaining in the application. We reverse.

A. Findings of fact

The record supports the following findings by at least a preponderance of the evidence.²

The invention

¹ Application for patent filed December 21, 1995. According to Appellants, the real party in interest is Davidson Textron, Inc. (Brief at 1.)

² To the extent these findings of fact discuss legal issues, they may be treated as conclusions of law.

The invention relates to foam trim panels. (Specification at 1, ll.15–18.) More specifically, Appellants seek to protect a method of making trim panels comprising impregnating a foam panel with a urethane-containing polymer that has no free isocyanate (-NCO) groups due to reaction with an organic silicon containing material, and then shaping and curing the panel. (*Id.* at 2, ll.15–32.) The absence of isocyanate groups reduces the reactivity of the uncured polymer to moisture and premature curing. (*Id.* at 1, l.33, to 2, l.11.)

The claims

Appellants state that the claims stand or fall together. (Br. at 3.) Accordingly, we shall restrict our consideration to independent claim 1, which reads as follows:

A method for forming a trim panel comprising the steps of:

providing a foam trim panel and impregnating the foam trim panel with a binder composition to form an impregnated foam trim panel, the binder composition is a urethane containing polymer which has been reacted with an organofunctional silaceous material resulting in no free –NCO groups present in the binder composition during the impregnating of the foam trim panel, and

shaping and curing the impregnated foam trim panel to a desired configuration by passing the impregnated panel into a mold maintained at a temperature of at least 250° F so that the organofunctional silaceous material reacts and cures to assist the impregnated foam trim panel in obtaining the desired configuration.

The prior art

Usifer et al. (Usifer) (claims benefit of priority under 35 U.S.C. § 120 to January 26, 1994)	U.S. Patent No. 5,484,864	January 16, 1996
Doerer et al. (Doerer)	U.S. Patent No. 5,089,328	February 18, 1992
Berger et al. (Berger)	U.S. Patent No. 4,374,237	February 15, 1983

The examiner's rejections

The examiner has rejected claims 1–3, 5, 7–9, and 12 under 35 U.S.C. § 103(a) over the combined teachings of Doerer, Usifer, and Berger.

Doerer

Doerer teaches a method of making foam panels comprising impregnating a foam layer with a heat-activatable hardener comprising isocyanates. (Doerer at col. 3, ll.30–47.) The panel further comprises layers of other materials, such as thermoplastic films and various fibers. (See, e.g., *id.* at figures 1–3 and corresponding text at col. 2, l.65, through col. 3, l.19.) The impregnated panel is placed in a press and heated, the thermoplastic films melt and adhere to adjacent elements, and the impregnating urethane solution hardens. (*id.* at col. 5, ll.55–67.) As the examiner notes, Doerer does not teach organofunctional silaceous materials or silanes. (Answer at 5.) Nor does Doerer teach reacting such silicon-containing materials with urethane polymers to eliminate free isocyanate groups. (Answer at 7.)

Usifer

Usifer relates to urethane (meth)acrylate compositions that can be cured with ultraviolet radiation. (Usifer at col. 2, ll.28–30.) According to Usifer, such monomers are useful as adhesives for a variety of materials. (*Id.* at col. 1, l.64, through col. 2, l.2.) Usifer teaches that organofunctional silanes may be added to the inventive compositions as adhesion promoters. (*Id.* at col. 5, ll.27–48.) Free-radical forming agents such as peroxides or azonitriles may be added to facilitate secondary thermal curing of the adhesive compositions. (*Id.* at col. 5, ll.21–26.) Usifer does not teach reacting the silanes with the urethane containing monomers prior to further reaction, nor does Usifer teach impregnation of foams or similar materials with the inventive compositions.

Berger

Berger relates to curable isocyanate prepolymers in which all or some of the isocyanate groups have been reacted with a secondary amine-containing silane monomer having two trialkoxysilane groups. (Berger abstract; col. 2, l.10, to col. 3, l.3.) According to Berger, the multiplicity of hydrolyzable $-\text{Si}(\text{OR})_3$ groups permits a large number of sites for bonding to substrates through the resultant hydroxyl groups as well as reinforced bonding via bridging between the $-\text{Si}(\text{OR})_3$ groups. (*Id.* at col. 13, ll.47–55; col. 2, ll.1–3.) Berger characterizes the examples as “moisture curable” sealants that cure under ambient conditions. (*Id.* at cols. 7–13.)

The examiner's rationale and Appellants' argument

The examiner urges that the absence of teachings of silaceous materials reacted with urethanes to remove free isocyanate groups in Doerer is made up by the teachings of Usifer regarding the addition of organofunctional silanes to urethane polymer compositions to promote adhesion to various substrates, including foams, and by the teachings of Berger, which teaches reacting urethanes with silanes to transform some or all of the isocyanate groups. (Answer at 5–8.)

Appellants urge that the references are not properly combinable. Appellants argue that Usifer relates to UV-curable adhesives, and that there is no motivation to combine the silanes taught by Usifer with the heat-cured urethane resins taught by Doerer. (Brief at 6–8.) Appellants also argue that Berger relates to moisture-curable adhesives and caulks, and that, again, there is no motivation to modify the urethanes of Doerer in the manner taught by Berger. (*Id.* at 8–9.) Appellants urge that even if a *prima facie* case of obviousness has been established, the declaration of filed by co-inventor William Humphrey (Paper No. 13, June 1, 1998) shows that the compositions of Usifer are inoperable in the claimed process because they are too viscous to be impregnating compositions. (Brief at 10.)

We refer the reader to the examiner's answer and to Appellants' Brief and Reply Brief for the full exposition of their respective positions.

B. Discussion

In a rejection for obviousness, the burden is on the USPTO to establish that all of the limitations of the claimed invention are taught in the prior art; if the prior art relied on does not teach all the limitations, the obviousness rejection must fall. *In re Zurko*, 258 F.3d 1379, 1385–86, 59 USPQ2d 1693, 1697-98 (Fed. Cir. 2001). Moreover, if all the limitations are disclosed, but in different references, the burden is on the USPTO to show that there is a reason, teaching, suggestion, or motivation arising out of the prior art such that one of ordinary skill in the art would combine the teachings and arrive at the claimed invention. *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (“there must be some teaching, suggestion or motivation in the prior art to make the specific combination that was made by the applicant.”); *Oetiker*, 977 F.2d at 1447, 24 USPQ2d at 1446 (“there be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant’s invention itself.”) This inquiry is factual, and must be supported by substantial evidence in the record. *In re Gartside*, 203 F.3d 1305, 1316, 53 USPQ2d 1769, 1776 (Fed. Cir. 2000) (“The presence or absence of a motivation to combine references in an obviousness determination is a pure question of fact.”)

We find that the examiner’s reliance on Usifer is faulty because Usifer does not teach or suggest the required step of reacting the silanes taught to be useful as

adhesion promoters with the urethane-containing polymers such that there are no free isocyanate groups present when the foams are impregnated. Thus, the rejection set out at page 5, which is based on Doerer and Usifer alone, must fall.

We find that the examiner's reliance on Berger is faulty because the examiner has made no findings of fact that show that one of ordinary skill in the art would have had a reason to use silanes taught to be useful in moisture-cured adhesives in the impregnating compositions taught by Doerer, which rely exclusively on heat-curing. Thus, the rejection set out in the examiner's answer at pages 7–8, which relies exclusively on the combination of the teachings of Doerer and Berger, must fall.

We have reviewed the additional arguments of the examiner regarding the dependent claims (Answer at 5–7) as well as the examiner's arguments in rebuttal to Appellants' arguments (*id.* at 8–10), but we find that they do not cure the deficiencies we have identified.

C. Decision

Upon consideration of the appeal, and solely for the reasons given, the examiner's rejection is reversed.

Appeal No. 1999-2534
Application No. 08/577,915

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

REVERSED

_____)	
TERRY J. OWENS)	
Administrative Patent Judge)	
)	
)	
_____)	
PAUL LIEBERMAN)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
_____)	
MARK NAGUMO)	
Administrative Patent Judge)	

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cc (via First Class mail):

WILLIAM J SCHRAMM
REISING ETHINGTON BARNARD & PERRY
PO BOX 4390
TROY MI 48099-9998