

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(2) is not binding precedent of the Board.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. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MICHAEL B. PURVIS,  
ANTHONY A. PARKER, PAUL A. HOLMES,  
JULIA B. MAC LACHLAN, JOHN R. SCOTT,  
and YASUO NEGISHI

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Appeal No. 1997-0218  
Application 08/182,757

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ON BRIEF

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Before HANLON, WARREN, and LIEBERMAN, Administrative Patent  
Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134  
from the final rejection of claims 42-47, 49-51, 66, 77 and  
78. Claims 40, 41, 52-65 and 67-71 are also pending and have

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been finally rejected. However, according to the Brief on appeal, "Applicants will not maintain the appeal of the rejection of claims 40, 41, 52-65 and 67-71" (Brief, p. 4). Therefore, the appeal is dismissed with respect to claims 40, 41, 52-65 and 67-71.

The claims on appeal are directed to a laminated glazing unit. Claims 42 and 49 are representative of the subject matter on appeal and read as follows:

42. A laminated glazing unit, comprising sequentially:

- a) a glass sheet;
- b) a layer of an adhesion promoter comprised of a mercapto-functional silane;
- c) a plasticized polyvinyl chloride containing film;
- d) a layer of an adhesion promoter comprised of a mercapto-functional silane; and
- e) a glass sheet.

49. A laminated glazing unit, comprising sequentially:

- a) an inboard glass sheet;
- b) a first layer of an adhesion promoter comprised of an organofunctional silane;
- c) a plasticized polyvinyl chloride containing film;

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d) a second layer of an adhesion promoter comprised of an organofunctional silane; and

e) an outboard glass sheet;

wherein the level of adhesion between said inboard glass sheet and said plasticized polyvinyl chloride containing film is greater than the level of adhesion between said outboard glass sheet and said plasticized polyvinyl chloride containing film.

The references relied upon by the examiner are:

Williams et al. (Williams)	4,218,513	Aug. 19, 1980
Beckmann et al. (Beckmann)	4,277,538	Jul. 7, 1981
Baudin et al. (Baudin)	4,362,587	Dec. 7, 1982
Kawakubo et al. (Kawakubo)	4,513,061	Apr. 23, 1985
Miyata et al. (Miyata)	4,751,261	Jun. 14, 1988
Kobayashi et al. (Kobayashi)	4,861,816	Aug. 29, 1989
Tadenuma et al. (Tadenuma)	5,004,776	Apr. 2, 1991

Plueddemann, "Silanes, in Bonding Thermoplastic Polymers to Mineral Surfaces," Applied Polymer Symposium, No. 19, pp. 75-90 (1972).

Modern Plastics Encyclopedia (Modern Plastics), "Plasticizers," p. 200 and 668 (1990).

The sole issue in this appeal is whether claims 42-47, 49-51, 66, 77 and 78 were properly rejected under 35 U.S.C. § 103 as being unpatentable over Beckmann in view of Baudin, Plueddemann, Williams, Miyata, Kawakubo, Tadenuma, Kobayashi and Modern Plastics.<sup>1</sup>

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<sup>1</sup>Claims 42-47, 49-51, 66, 77 and 78 were finally rejected  
(continued...)

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### Grouping of claims

According to appellants, claims 42-47, 49-51, 66, 77 and 78 do not stand or fall together (Brief, p. 9). Therefore, for purposes of this appeal, the patentability of each of claims 42-47, 49-51, 66, 77 and 78 will be addressed below.

### Discussion

#### A. Claims 42 and 43

Claim 42 is directed to a laminated glazing unit comprising a plasticized polyvinyl chloride film disposed between two glass sheets. A layer of a mercapto-functional

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(...continued)

under 35 U.S.C. § 103 as being unpatentable over Beckmann in view of Baudin, Plueddemann, Miyata, Kawakubo, Tadenuma, Kobayashi and Modern Plastics. This rejection was not maintained by the examiner in the Answer, and therefore, is not before us in this appeal. See MPEP § 1208 (7th ed., Rev. 1, Feb. 2000). However, the following two new grounds of rejection are set forth in the Answer: (1) claims 52, 56 and 78 are rejected under 35 U.S.C. § 112, second paragraph, and (2) claims 42-47, 49-51, 66, 77 and 78 are rejected under 35 U.S.C. § 103 as being unpatentable over Beckmann in view of Baudin, Plueddemann, Williams, Miyata, Kawakubo, Tadenuma, Kobayashi and Modern Plastics. The first new ground of rejection is no longer at issue since claims 52 and 56 have not been maintained on appeal (Reply Brief, p. 2), and an amendment to claim 78 has overcome the rejection under 35 U.S.C. § 112, second paragraph. See Paper Nos. 19 and 21. Therefore, the sole issue remaining in this appeal is the second new ground of rejection.

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silane is further disposed on either side of the polyvinyl chloride film and acts as an adhesion promoter between the film and the glass sheets.

Beckmann discloses a laminated safety glass comprising a plasticized polyvinyl chloride film bonded on each side to a glass plate with the aid of an organofunctional silane. Preferred silanes include "alkylene alkoxy silanes containing amino and/or imino or epoxy groups, one or both of the hydrogen atoms of the amino group being replaced by an amino or hydroxyalkyl or polyamino moiety" (col. 5, lines 38-43). However, in Example 5, for purposes of comparison, Beckmann discloses a laminated glass wherein the plasticized polyvinyl chloride film is bonded on each side to a glass plate using a gamma mercaptopropyltrimethoxysilane (see Table III; see also Example 14). Therefore, the teachings of Beckmann alone satisfy the limitations of claim 42. See In re Gurley, 27 F.3d 551, 553, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) ("A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.").

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Claim 43 further specifies that the mercapto-functional silane comprises a gamma mercapto propyl triethoxy silane. The mercapto-functional silane disclosed in Beckmann is a gamma mercaptopropyltrimethoxysilane. Nevertheless, one having ordinary skill in the art would have expected other closely related mercapto-functional silanes, such as the claimed gamma mercapto propyl triethoxy silane, to have the same or similar properties as the gamma mercaptopropyltrimethoxysilane disclosed in Beckmann. Therefore, based on the record before us, it would have been obvious to one having ordinary skill in the art to use a gamma mercapto propyl triethoxy silane as an adhesion promoter in the laminated safety glass disclosed in Beckmann. See In re Hoch, 428 F.2d 1341, 1343-44, 166 USPQ 406, 409 (CCPA 1970) (where prima facie case of obviousness is based on the expectation that compounds which are very similar in structure will have similar properties, applicant bears the burden of establishing that there is an actual difference in properties).

For the reasons set forth above, the rejection of claims 42 and 43 is affirmed.

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B. Claim 47

Claim 47 is directed to a laminated glazing unit comprising a plasticized polyvinyl chloride film disposed between two glass sheets wherein the polyvinyl chloride film has been subjected to a corona discharge treatment of at least about 20 watts/m<sup>2</sup>/minute. A layer of an organofunctional silane is further disposed on either side of the polyvinyl chloride film and acts as an adhesion promoter between the film and the glass sheets.

According to appellants (Brief, p. 11):

Applicants have been unable to find any discussion of corona discharge treatment in any of the references. Until the third and final action, the Examiner had not specifically indicated the nature of the rejection of claim 47. In the action finally rejecting claim 47, the Examiner indicated only that "it is well known in the polymer art that the corona, flame, chemical, etc. treatment improves adhesion of polymer to the substrate." The Examiner has not offered any evidence to support this conclusion. Even if supported, however, such a broad statement would not teach one skilled in the art to subject a PVC containing interlayer of a glass laminate to a corona discharge treatment of at least about 20 watts/m<sup>2</sup>/minute, as defined in claim 47.

To the extent that the examiner was correct in his statement that "[r]egarding corona treatment, it is well known in the polymer art that the corona, flame, chemical, etc.

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treatment improves adhesion of polymer to the substrate"  
(Answer, p. 9), we agree with appellants that the evidence of record fails to render "a corona discharge treatment of at least about 20 watts/m<sup>2</sup>/minute" obvious. Therefore, the rejection of claim 47 is reversed. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992) (the examiner bears the initial burden of presenting a prima facie case of unpatentability).

C. Claim 44-46 and 49

Claims 44 and 45 are directed to a laminated glazing unit as described above wherein at least one of the layers of organofunctional silane is applied to only a portion of the interface between the polyvinyl chloride film and the adjacent glass sheet. Claim 46, which is dependent on claim 45, and independent claim 49 are further directed to a laminated glazing unit as described above wherein the level of adhesion between the inboard glass sheet and the polyvinyl chloride film is greater than the level of adhesion between the outboard glass sheet and the polyvinyl chloride film.

According to Beckmann, "[l]aminated safety glasses of controlled adhesion can be used, for example, in the

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transportation industry as glazing materials for automobiles, rail cars, farm tractors, boats, aircraft etc." (col. 7, lines 35-38). Baudin further teaches that "the thicker the coating and the more silicon organo-functional silane present, the stronger will be the bond between the glass sheet and the polyvinyl-chloride" (col. 10, lines 21-24). The examiner concludes that "[v]ariation in level of adhesion by varying primer thickness, or applying primer coating to only portion of interface, etc. would have been a simple matter of optimization" (Answer, p. 10).

Appellants argue that Beckmann fails to suggest that the adhesive strength can be altered so that the level of adhesion between the inboard glass sheet and the film is greater than the level of adhesion between the outboard glass sheet and the film. See Brief, p. 12. Appellants further argue that neither Beckmann nor Baudin suggests applying the silane coating to certain portions of the interface between the film and the glass sheet and not to others. See Brief, p. 14.

First, Baudin recognizes that adhesion is a result effective variable. Accordingly, it would have been obvious to one having ordinary skill in the art to adjust the level of

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adhesion between one or both of the inboard and outboard glass sheets and the polyvinyl chloride film in order to achieve desired properties such as increased safety and impact resistance. See In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) (discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art). Second, adjusting the level of adhesion by either varying the thickness of the adhesive coating or selective placement of the adhesive is well within the skill of the ordinary artisan, as anyone who has glued two pieces of paper together would know. See In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969) (a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference); In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962) (one of ordinary skill in the art must be presumed to know something about the art apart from what the references expressly disclose).

Therefore, for the reasons set forth above, the rejection of claims 44-46 and 49 is affirmed.

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D. Claims 50, 51 and 66

Claims 50, 51 and 66 are directed to a laminated glazing unit comprising at least two layers of a plasticized polyvinyl chloride film disposed between two glass sheets wherein adjacent layers of polyvinyl chloride film have different levels of plasticization.

According to the examiner, it would have been obvious to one of ordinary skill in the art to vary the level of plasticizer in the polyvinyl chloride film(s) to achieve desired properties. See Answer, p. 9. However, appellants (Brief, p. 16):

[S]trongly disagree with the Examiner's assertion that the use of multilayered plasticized PVC containing film with different hardness layers is "within the skill of art to optimize for an intended application." There is nothing in the references to suggest this. In the response filed April 3, 1995, applicants specifically requested that the Examiner provide any specific information which might support this conclusion in an affidavit as required by 37 CFR 1.107(b) [(1995)]. No such affidavit had been introduced.

Based on the record before us, appellants timely requested that the examiner provide support for the conclusion that the use of a multilayered plasticized polyvinyl chloride film having different levels of plasticization would have been

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obvious to one having ordinary skill in the art. However, the record is devoid of an appropriate response by the examiner. Therefore, the application is remanded for resolution of the following issues:

(1) On this record, it is unclear whether the examiner's conclusion of obviousness is based on (1) personal knowledge or (2) official notice. If the examiner is relying on personal knowledge, 37 CFR § 1.104(d)(2)<sup>2</sup> is controlling and reads as follows:

When a rejection in an application is based on facts within the personal knowledge of an employee of the Office, the data shall be as specific as possible, and the reference must be supported, when called for by the applicant, by the affidavit of such employee, and such affidavit shall be subject to contradiction or explanation by the affidavits of the applicant and other persons. [Emphasis added.]

On the other hand, if the examiner is taking official notice that the use of a multilayered plasticized polyvinyl chloride film having different levels of plasticization is known in the art, MPEP § 2144.03 (7th ed., Rev. 1, Feb. 2000) is instructive and provides:

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<sup>2</sup>Effective December 1, 1997, the subject matter of 37 CFR § 1.107(b) was transferred to 37 CFR § 1.104(d)(2). See 62 Fed. Reg. 53,132 (1997).

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If the knowledge is of such notorious character that official notice can be taken, it is sufficient so to state. . . . If the applicant traverses such an assertion the examiner should cite a reference in support of his or her position.

(2) Upon return of this application to the jurisdiction of the examiner, the examiner is to indicate whether the rejection of claims 50, 51 and 66 will be maintained or withdrawn in view of appellants' traverse. In the event that the rejection is maintained, the examiner is to specify whether the conclusion of obviousness is based on facts within the personal knowledge of the examiner or facts of which the examiner has taken official notice and respond to appellants' traverse in the appropriate manner, i.e., by affidavit or citation to a reference(s), respectively.

E. Claims 77 and 78

Claim 77 is directed to a laminated glazing unit comprising a plasticized polyvinyl chloride film and a layer of an ultraviolet radiation absorbing material disposed between two glass sheets. Claim 78 further specifies that the

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ultraviolet radiation absorbing material includes a benzophenone or benzotriazole.<sup>3</sup>

Kawakubo discloses a "primer composition utilizable on glass surfaces as an undercoating for a rubber or resin composition coating, such as for example, elastic sealant on a glass surface" (col. 1, lines 9-12). The primer composition comprises a film forming substance such as polyvinyl chloride and an ultraviolet light absorbing substance such as benzophenone (col. 1, lines 52-57; col. 2, lines 47-49; col. 3, lines 32-35).

Appellants argue that Kawakubo does not teach or suggest interposing a layer of an ultraviolet radiation absorbing material between a polyvinyl chloride containing film and a glass sheet since the ultraviolet radiation absorbing material and polyvinyl chloride are contained in the same layer. We disagree. One having ordinary skill in the art would have recognized that applying an ultraviolet radiation absorbing material directly to the polyvinyl chloride film, rather than

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<sup>3</sup>In an amendment received in the Patent and Trademark Office on September 19, 1996 (Paper No. 19), and entered by the examiner, claim 78 was amended to delete the word "derivative."

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preparing a separate composition comprising the ultraviolet radiation absorbing material and polyvinyl chloride, would reduce production time and decrease costs. See In re Thompson, 545 F.2d 1290, 1294, 192 USPQ 275, 277 (CCPA 1976) (economic factors alone would have motivated one of ordinary skill in the art to use the claimed invention). Therefore, based on the teachings of Beckmann and Kawakubo and the knowledge of one having ordinary skill in the art, it would have been obvious to one having ordinary skill in the art to provide a laminated glazing unit with a separate layer of an ultraviolet radiation absorbing material as in the claimed invention. The rejection of claims 77 and 78 is affirmed.

#### Conclusion

For the reasons set forth herein, the rejection of claims 42-46, 49, 77 and 78 is affirmed, and the rejection of claim 47 is reversed. The application is further remanded to the examiner for resolution of the issues identified herein relating to claims 50, 51 and 66.

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This application, by virtue of its "special" status, requires an immediate action. MPEP § 708.01(D) (7th ed., Rev. 1, Feb. 2000). It is important that the Board be informed promptly of any action affecting the appeal in this case.

AFFIRMED-IN-PART and REMANDED

	Adriene Lepiane Hanlon	)	
	Administrative Patent Judge	)	
		)	
		)	
		)	
	Charles F. Warren	)	BOARD OF
PATENT		)	
	Administrative Patent Judge	)	APPEALS AND
		)	INTERFERENCES

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