

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MAGNUS QUIST,  
PETER MILLER, and JAN ERICSSON

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Appeal 2008-1183  
Application 10/471,865  
Technology Center 1700

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Decided: April 30, 2008

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Before CHARLES F. WARREN, JEFFREY T. SMITH, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner rejecting for at least the second time claims 1 through 28 and 30 through 34 in the Office Action mailed July 19, 2006. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2006).

The appeal was heard April 8, 2008.

We affirm the decision of the Primary Examiner.

Claim 1 illustrates Appellants' invention of a process for the manufacturing of decorative board with an abrasion resistant surface and edges with joining functionality, and is representative of the claims on appeal:

1. A process for the manufacturing of decorative boards with an abrasion resistant surface and edges with joining functionality, the process comprising the steps:

a) in a first step, cutting a carrier board having an upper surface to the desired dimension and making edges with at least one joining element, thereafter

b) applying radiation curable dry acrylic lacquer powder to the upper surface of the board,

c) heating the acrylic lacquer so that it melts,

d) curing the acrylic lacquer by means of radiation, the radiation being selected from the group consisting of UV-radiation and electron beam radiation.

The Examiner relies upon the evidence in these references (Ans. 3):

Buckley	US 3,247,047	Apr. 19, 1966
Iverson	US 3,904,791	Sep. 9, 1975
Duffy	US 5,571,323	Nov. 5, 1996
Biller	US 5,824,373	Oct. 20, 1998
Krebsbach	US 5,993,915	Nov. 30, 1999
Moriau	US 6,006,486	Dec. 28, 1999
Mårtensson	US 6,101,778	Aug. 15, 2000
Chen	US 6,291,078 B1	Sep. 18, 2001

Appellants request review of the grounds of rejection under 35 U.S.C.

§ 103(a) advanced on appeal (App. Br. 2):

claims 1, 2, 4, 6, 10 through 16, 21, 22, 25, 26, and 30 through 34 as unpatentable over Moriau in view of Biller (Ans. 4);

claim 3 as unpatentable over Moriau in view of Biller, further in view of Buckley (Ans. 7);

claim 5 as unpatentable over Moriau in view of Biller, further in view of Iverson (Ans. 8);

claims 7 through 9 and 17 through 20 as unpatentable over Moriau in view of Biller, further in view of Chen (Ans. 8);

claim 24 as unpatentable over Moriau in view of Biller, further in view of Duffy (Ans. 9);

claims 27 and 28 as unpatentable over Moriau in view of Biller, further in view of Krebsbach (Ans. 10); and

claims 30 and 31 as unpatentable over Moriau in view of Biller, further in view of Mårtensson (Ans. 10).

Appellants argue the first ground of rejection on the basis of claims 1 and 6. App. Br. 3. Appellants further argue the fourth ground of rejection on the basis of claim 7. App. Br. 6. Appellants argue the third ground of rejection with specificity. App. Br. 5. Appellants rely on arguments made with respect to the first ground of rejection with respect to the remaining grounds of rejection. App. Br. 4, 6, and 7. Thus, we decide this appeal based on independent claim 1 and claims 5, 6, and 7 dependent thereon. 37 C.F.R. § 41.37(c)(1)(vii) (2006).

The issues in this appeal are whether the Examiner has carried the burden of establishing a prima facie case of obviousness in the grounds of rejection advanced on appeal.

The plain language of independent claim 1 specifies a process for manufacturing any manner of “decorative board” with any manner of abrasion resistant surface and any manner of edges with any manner of joining functionality, comprising at least the steps of, among other things, cutting any manner of “carrier board” to desired dimensions and forming edges with at least one joining element; and applying any manner of radiation curable acrylic lacquer powder to any manner of “upper surface” of

the board. Thus, claim 1 encompasses any manner of “upper surface” of any “carrier board” in the first and second step of the claimed process, and there is no limitation in this claim on the nature of the surface of the board to be processed with respect to any decorative layer(s) or other layers which may be present. Thus, as claimed, the carrier board can be cut and then have any decorative material added at any point in the process, even after the coating steps. The transitional term “comprising” opens claim 1 to include processes wherein the acrylic lacquer powder is also applied to the joining element on the edges of the board. *See, e.g., In re Baxter*, 656 F.2d 679, 686 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”).

Claims 5 and 6 specify applying any decorative foil and printing any manner of décor, respectively, on the upper surface of the board at any point in the process before applying the acrylic lacquer. Claim 7 specifies the step of melting the acrylic lacquer in claim 1 includes forming a bonding layer within the stated acrylic lacquer amount range, and sprinkling particles selected from the group consisting of, among other things, aluminum oxide on the bonding layer.

We find Moriau would have disclosed to one of ordinary skill in this art board 1 which can have decorative surface 55 and joining functionality 4, 5 on edges 2, 3. Moriau, e.g., col. 5, ll. 23-43, col. 8, l. 65 to col. 9, l. 3, and Figs. 1, 2, and 8. Decorative layer 56 can be made from paper imprinted with patterns. Moriau, col. 8, l. 65 to col. 9, l. 3. Decorative surface 55 is protected by top layer 56, which can be a transparent layer saturated with

resin, such as melamine resin. Moriau, e.g., col. 8, ll. 65-67, col. 9, ll. 4-6, and Figs. 2 and 8. Joining functionality 4, 5 can be formed on edges 2, 3 with milling cutters, and “[d]uring these processing [sic], the floor panels 1 preferably are put with their decorative layer directed downward.” Moriau, e.g., col. 4, ll. 7-28, and col. 9, ll. 16-28. Edges 2, 3 can be treated with a surface densifying agent which hardens the surface, such as “lacquers, resins,” to form impregnation 88. Moriau, e.g., col. 13, ll. 15-25, and Fig. 22.

We find Biller would have disclosed to one of ordinary skill in this art a method of applying radiation curable dry top coating powder to wood and wood-related products electrostatically, heating the applied powder to cause the coating to flow into a uniform coating of the substrate, and curing the top coating by UV-radiation. Biller, e.g., col. 1, ll. 8-16, col. 12, l. 50 to col. 13, l. 19, and col. 14, l. 13 to col. 15, l. 20; *see also* col. 5, l. 63, to col. 6, l. 37. The curable dry coating powder can include acrylourethane resins, and Biller acknowledges that UV-radiation cured liquid coatings containing acrylates, including urethane acrylates, were known in the prior art. Biller, e.g., col. 5, ll. 14-26, col. 12, ll. 50-55, and col. 15, ll. 46-65. The electrostatic deposition of the powder results in top coating all regions of the workpiece, including textured surfaces as well as hard-to-access regions. Biller, e.g., col. 28, ll. 10-21; *see also* col. 7, ll. 32-39.

We find Iverson would have acknowledged to one of ordinary skill in this art that it was known in the art to produce wood grain patterns on substrates “by printing or engraving methods, such as hot stamping foils and roll printing.” Iverson further describes the prior art methods as having “the

disadvantage that the same pattern is reproduced over and over, contrary to the never-ending variations found in nature, and the graining is of minute thickness such that it is readily removed, for example if the surface is sanded or accidentally damaged.” Iverson col. 1, ll. 38-48.

We find Chen would have acknowledged to one of ordinary skill in this art that wear and/or stain resistance of surface coverings, such as floor coverings and wallpaper, can be improved by sprinkling aluminum oxide particles into “still ‘wet’ or uncured” wear layer top coats for such substrates prepared with UV-curable urethane based acrylates, as well as acrylics, melamines, and acrylate melamines. Chen, e.g., abstract, col. 1, ll. 6-10, col. 2, ll. 14-16, col. 2, l. 48 to col. 3, l. 3, and col. 4, l. 39 to col. 5, l. 13. Chen teaches that “[d]epending on the product specification, the amount of alumina and the thickness of the coating can be varied.” col. 4, ll. 49-62.

A discussion of Buckley, Duffy, Krebsbach, and Mårtensson is not necessary to our decision.

Considering first the ground of rejection of claims 1 and 6, we determine the combined teachings of Moriau and Biller, the scope of which we determined above, provide convincing evidence supporting the Examiner’s case that the claimed invention encompassed by the claims, as we interpreted them above, would have been prima facie obviousness to one of ordinary skill in the board fabrication arts familiar with methods of forming durable, decorative boards with joining elements. We agree with the Examiner that Moriau teaches a process in which the decorative layer of a flooring board is formed before the board is milled to form joining

elements that are then coated with a lacquer. Ans. 6 and 11-12. We further agree with the Examiner that the combined teachings of the references would have reasonably suggested to one of ordinary skill in this art that the joining elements can be formed and then the entire board can be top coated using an acrylourethane in powder form applied following the electrostatic powder coating process of Biller which would also coat the joining elements as suggested by Moriau. Ans. 6-7 and 12-13.

Indeed, this person would recognize that Moriau does not specify that the surface of the board must be decorated, but suggests that if the board has a decorative layer, that surface should be placed downward so that the decorative surface is protected during the milling step. This person would further recognize that top coating of the entire board, upper surface and edges with joining elements, as taught by Biller would provide not only a top coat for the surface, or a transparent protective top coat layer for the decorative layer if present, but also a hardened impregnated layer for the joining elements as taught by Moriau, thus reducing the number of processing steps. This person would also recognize that a top coat layer can be applied over any “protective layer” that can be present on the decorative layer.

We further agree with the Examiner that claim 6 includes providing a printed layer on the surface of the board prior to coating, and, prima facie, Moriau teaches applying a decorative layer of pattern imprinted paper before applying a protective top coat. Ans. 13.

Accordingly, we are of the opinion that, prima facie, one of ordinary skill in this art routinely following the combined teachings of Moriau and

Billier would have reasonably arrived at the claimed processes encompassed by claims 1 and 6 without resort to Appellants' Specification. *See, e.g., KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-41 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[A]nalysis [of whether the subject matter of a claim would have been obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“ [T]he test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”); *In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969) (“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘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.’”); *see also In re O’Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988) (“For obviousness under § 103, all that is required is a reasonable expectation of success.” (citations omitted)).

Upon reconsideration of the record as a whole in light of Appellants' contentions, we are of the opinion that Appellants have not successfully rebutted the prima facie case based on the combined teachings of Moriau and Billier. We disagree with Appellants' contention the Examiner has not established a prima facie case of obviousness because Moriau and the other

applied reference do not teach treating the surface of “a cut board” with an acrylic lacquer powder, arguing that Moriau treats only the joining functionality. App. Br. 3; Reply Br. 3-4. Indeed, Biller discloses applying acrylourethane resin to an entire board which one of ordinary skill in this art would consider to be encompassed by the term “cut boards.” We further are not persuaded by Appellants’ argument with respect to claim 6, since one of ordinary skill in the art would have recognized from Moriau and Biller that a decorative layer can be applied before the board is top coated. App. Br. 3-4.

Appellants further rely on the following testimony in the Eriksson Declaration:<sup>1</sup>

4. At all times since the introduction of laminate flooring, Pergo has manufactured the flooring elements by first applying any desired coatings, and only thereafter, forming desired joining elements.

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6. No commercial laminate flooring manufacturer, today or at any time, has manufactured laminate flooring elements by forming joining elements on boards prior to applying coatings.

Eriksson Declaration p. 1 (original emphasis omitted). Appellants contend, on this basis, “it cannot be said that it would have been ‘common sense’ or ‘common knowledge’ to do what no commercial manufacturer has done.” App. Br. 4; Reply Br. 2-3.

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<sup>1</sup> Declaration of Christina Eriksson filed April 27, 2006. *See* 37 C.F.R. § 1.132 (2005).

The Examiner contends that contrary to the testimony in the Eriksson Declaration, Moriau teaches forming joining elements and then coating the same. Ans. 14.

On this record, we find the testimonial evidence in the Declaration to be entitled to little, if any, weight. *See, e.g., In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (citing *Velander v. Garner*, 348 F.3d 1359, 1371 (Fed. Cir. 2003); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985)) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”). The extent of Declarant Eriksson’s opinion testimony is that “no commercial . . . manufacturer” has ever formed joining elements on the board before “applying coatings,” without specifying the extent of the coating on the board. We find no testimonial or documentary evidence in the declaration which supports Declarant Eriksson’s all-encompassing broad statement. *Cf., e.g., In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315 (CCPA 1979); *In re Lindner*, 457 F.2d 506, 508 (CCPA 1972). Indeed, contrary to Declarant Eriksson’s statement, Moriau forms joining elements and then coats the elements with a lacquer, as the Examiner points out.

Turning now to the ground of rejection of claim 5, we determine the combined teachings of Moriau, Biller, and Iverson, the scope of which we determined above, provide convincing evidence supporting the Examiner’s case that the claimed invention encompassed by the claim, as we interpreted this claim above, would have been prima facie obviousness to one of

ordinary skill in the board fabrication arts familiar with methods of forming durable, decorative boards with joining elements. As the Examiner contends, prima facie, Iverson acknowledges applying a decorative foil to a board and Moriau suggests applying a decorative layer before applying a protective top coat. Ans. 8. Thus, prima facie, the combined teachings of Moriau, Biller, and Iverson would have led one of ordinary skill in the art to use Iverson's foil as the decorative layer on Moriau's board prior to the application of Biller's top coat in the reasonable expectation of obtaining a decorative board. *See, e.g., KSR*, 127 S. Ct. at 1740-41 (*quoting Kahn*, 441 F.3d at 988); *Keller*, 642 F.2d at 425; *Sovish*, 769 F.2d at 743; *Bozek*, 416 F.2d at 1390; *see also O'Farrell*, 853 F.2d at 903-04.

Upon further reconsideration of the record as a whole in light of Appellants' contentions, we are of the opinion that Appellants have not successfully rebutted the prima facie case based on the combined teachings of Moriau, Biller, and Iverson. We disagree with Appellants that Iverson's desire for a varying grain pattern rather than a repetitive grain pattern constitutes the kind of disclosure that would lead one of ordinary skill in the art away from using the method of decorating a board known in the art. App. Br. 5. *See, e.g., Kahn*, 441 F.3d at 985-89 ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." (quoting *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994))); *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (prior art "disclosure does not criticize, discredit, or otherwise discourage the solution claimed").

Furthermore, contrary to Appellants contentions (App. Br. 5), we agree with the Examiner that in substituting the prior art stamping foil for Moriau's illustrative resin impregnated paper layer as the decorative layer, this person would have reasonably predicted achieving similar decorative results. Ans. 14-15. *See, e.g., KSR*, 127 S.Ct. at 1740 (“when a patent claims a structure already known in the prior art that is altered by mere substitution of one element for another known in the field, the combination must do more than yield a predictable result”); *cf. In re Siebentritt*, 372 F.2d 566, 567-68 (CCPA 1967) (express suggestion to interchange methods which achieve the same or similar results is not necessary to establish obviousness).

With respect to the ground of rejection of claim 7, we determine the combined teachings of Moriau, Biller, and Chen, the scope of which we determined above, provide convincing evidence supporting the Examiner's case that the claimed invention encompassed by the claim, as we interpreted this claim above, would have been prima facie obviousness to one of ordinary skill in the board fabrication arts familiar with methods of forming durable, decorative boards with joining elements. We determine, prima facie the combined teachings of Moriau, Biller, and Chen would have led one of ordinary skill in the art to apply aluminum oxide particles to the layer of melted acrylourethane powder prior to curing the powder in Biller's process in the reasonable expectation of applying a wear-resistant top coat to Moriau's decorative board. *See, e.g., KSR*, 127 S. Ct. at 1740-41 (*quoting Kahn*, 441 F.3d at 988); *Keller*, 642 F.2d at 425; *Sovish*, 769 F.2d at 743; *Bozek*, 416 F.2d at 1390; *see also O'Farrell*, 853 F.2d at 903-04. In doing so, this person would have known from Chen that the amount of aluminum

oxide and the thickness of the coating can be selected as desired, contrary to Appellants' contentions. App. Br. 6. *See, e.g., In re Aller*, 220 F.2d 454, 456-58 (CCPA 1955) (it is not inventive to discover by routine experimentation optimum or workable ranges for general conditions disclosed in the prior art).

We noted above that Appellants rely on arguments made with respect to the combined teachings of Moriau and Biller with respect to the grounds of rejection further combining this combination with each of Buckley, Duffy, Krebsbach, and Mårtensson with respect to claims 3, 24, 27, 28, 30, and 31. App. Br. 4, 6, and 7; *see above* p. 3.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Moriau and Biller alone and as further combined with each of Buckley, Iverson, Chen, Duffy, Krebsbach, and Mårtensson with Appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1 through 28 and 30 through 34 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed.

Appeal 2008-1183  
Application 10/471,865

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

tf/lr

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