UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HAO A. CHEN
and RICHARD JUDD

Appeal No. 2005-2175
Application 10/104,383

ON BRIEF

Before WARREN, JEFFREY T. SMITH and PAWLIKOWSKI, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner at least twice rejecting claims 35 and 47 through 69 (*see* answer, pages 2-3). Claim 36 is also of record and have been withdrawn from consideration by the examiner under 37 CFR § 1.142(b).

Claims 35, 67 and 68 illustrate appellants' invention of a thermoplastic flooring plank, and are representative of the claims on appeal:

35. A thermoplastic flooring plank comprising:

a core comprising at least one thermoplastic material, wherein said core has a top surface, a bottom surface, and opposing sides;

a thermoplastic layer located on said top surface of said core wherein said layer comprises at least one thermoplastic material with at least one pigmented compound, with the proviso that no backing layer is present on the bottom surface of said core.

67. A thermoplastic flooring plank comprising:

a core comprising at least one thermoplastic material, wherein said core has a top surface, a bottom surface, and opposing sides;

a thermoplastic layer located on said top surface of said core wherein said layer comprises at least one thermoplastic material with at least one pigmented compound; and

wherein the core has a groove located on at least two opposing sides of said core, and wherein no side of the core has a male edge.

68. A thermoplastic flooring plank comprising:

a core comprising at least one thermoplastic material, wherein said core has a top surface, a bottom surface, and opposing sides, and wherein the core is made by extrusion; and

a thermoplastic layer located on said top surface of said core wherein said layer comprises at least one thermoplastic material with at least one pigmented compound, and wherein the layer is made by extrusion on the top surface of said core simultaneous with or subsequent to extrusion of the core.

The references relied on by the examiner are:

Kraayenhof	4,226,064	Oct. 7, 1980
Haid	4,599,841	Jul. 15, 1986
Pollock	5,613,339	Mar. 25, 1997
Davis	5,647,184	Jul. 15, 1997
Pitman et al. (Pitman)	5,724,909	Mar. 10, 1998
Roesch et al. (Roesch)	6,004,417	Dec. 21, 1999 (filed Jan. 20, 1998)
Nelson	6,324,809	Dec. 4, 2001 (filed Nov. 25, 1997)

The examiner has advanced the following grounds of rejection on appeal:

claims 35, 47 through 51, 53 and 58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pollock in view of Pitman (answer, page 6);

claims 54, 63 and 64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pollock in view of Pitman as applied to claims 35, 47 through 51, 53 and 58, and further in view of Davis (answer, page 7);

claims 52, 55, 59, 61, 68 and 69 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pollock in view of Pitman as applied to claims 35, 47 through 51, 53 and 58, and further in view of Nelson (answer, pages 7-8);

claim 57 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Pollock in view of Pitman as applied to claims 35, 47 through 51, 53 and 58, further in view of Nelson and further in view of Kraayenhof (answer, page 9);

claim 62 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Pollock in view of Pitman as applied to claims 35, 47 through 51, 53 and 58, further in view of Nelson and further in view of Roesch (answer, pages 9-10);

claims 56, 60 and 65 through 67 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pollock in view of Pitman as applied to claims 35, 47 through 51, 53 and 58, further in view of Nelson and further in view of Haid (answer, page 10);

claim 68 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nelson in view of Pollock and Pitman (answer, page 11); and

claim 67 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nelson in view of Pollock and Pitman as applied to claim 68 above and further in view of Haid (answer, pages 11-12).

Appellants group the appealed claims into nine groups in which the grouped claims "stand or fall together" (brief, page 5). We observe that five groupings include claims that are rejected on different grounds. The applicable rule provides that the claims can be grouped "[f]or each ground of rejection." Thus, we decide this appeal based on appealed independent claims 35, 67 and 68 and on appealed claims 52, 54, 56, 57 and 62, all directly or ultimately dependent on claim 35, as representative of the grounds of rejection. 37 CFR § 1.192(c)(7) (2003); *see also* 37 CFR § 41.37(c)(1)(vii) (2005).

We affirm the grounds of rejection of appealed claims 67 and 68, and we reverse the grounds of rejection of the remaining appealed claims as set forth below. Thus, the decision of the examiner is affirmed-in-part.

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the answer and to the brief and reply brief for a complete exposition thereof.

Opinion

In order to review the examiner's application of prior art to the claimed invention encompassed by appealed claims 35, 52, 54, 56, 57, 62, 67 and 68, we first interpret the claims by giving the terms thereof the broadest reasonable interpretation in their ordinary usage as they would be understood by one of ordinary skill in the art in light of the written description in the specification, unless another meaning is intended by appellants as established in the written description of the specification, and without reading into the claims any limitation or particular embodiment disclosed in the specification. *See*, *e.g.*, *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Each of the independent claims is drawn to "[a] thermoplastic flooring plank" (emphasis supplied). We determine that when the term "flooring" in the preambular clause is considered in

the context of the claim language as a whole as well as in light of the written description in appellants' specification, it merely reflects the intended use of the "plank" comprising at least any "core" comprising at least one thermoplastic material with the specified sides and any "thermoplastic layer" comprising at least one thermoplastic material with at least one pigment and located in any manner on top of the core, and adds no additional limitation(s) to the specified core and layer and to the ingredients therein. *See generally, Corning Glass Works v. Sumitomo Elect. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); *In re Stencel*, 828 F.2d 751, 754-55, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987); *In re Tuominen*, 671 F.2d 1359, 213 USPQ 89 (CCPA 1982). Indeed, the written description in the specification states that "[t]he thermoplastic planks of the present invention can be used in a variety of applications, including, but not limited to, wall panels, ceiling panels, flooring surfaces, decks, patios, furniture surfaces, shelving, and other surfaces coverings or parts thereof," and discloses "a thermoplastic plank for surface coverings, such as flooring," without specifying that a change in structure of the plank is necessary for any particular application(s) (page 22, ll. 23-25, and page 20, ll. 20-25). To the extent that the cited claim language is intended by appellants as a "method or process of use" limitation (*see* reply brief, page 2), such a limitation has no place in a product claim. *See In re Wiggins*, 397 F.2d 356, 359 n.4, 158 USPQ 199, 201-02 n.4 (CCPA 1968).

The independent claims 35, 67 and 68 specify that the "thermoplastic layer" is "located on said top surface of said core" There is no limitation in claims 35 and 47 through 69 with respect to the manner of attachment of the "thermoplastic layer" to the core. We determine that claim 68, couched in product-by-process format, specifies that "the core is made by extrusion" and the "thermoplastic layer . . . is made by extrusion on the top layer surface of said core simultaneously with or subsequent to extrusion of the core," *see generally, In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985), but does not require that the extrusion or coextrusion step includes adhering the "thermoplastic layer" to the "core." The plain language of appealed claim 67 specifies that any manner of "groove" is "located on at least two opposing sides of said core" and that "no side of the core has a male edge."

The open-ended term "comprising," whether used as a transitional term or in the body of the claim, opens the claims to include any manner of additional structure and ingredients in addition to those specified, including, for example, conductive polymers and fillers as well as a

print layer, with and without an overlay, on top of the thermoplastic layer and any other layers, such as a tie layer between the "thermoplastic layer" and the "top surface" of the "core" and one or more "bottom feet" layers on the "bottom surface" of the "core" as encompassed by appealed claim 57 (specification, e.g., page 7, ll. 9-11 and 15-21, and page 14, l. 24, to page 16, l. 14). *See generally, Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) ("The claimed composition is defined as comprising - meaning containing at least - five specific ingredients."); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (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.").

In reaching these determinations, we are mindful that appealed claim 35 specifies "the proviso that no backing layer is present on the bottom surface of said core," which language does not appear in appealed claims 67 and 68. This limitation was inserted into claim 35 as originally filed, by the amendment filed March 4, 2003, in which appellants did not set forth the basis in the written description in the specification for the amendment (pages 2, 3 and 4). We cannot find the term "backing layer" in the written description in the specification as filed, including the disclosure involving the presently claimed planks (specification, e.g., page 5, ll. 18-27, page 20, ll. 20-25, and originally filed claim 35). The term "backing layer" has various meanings in the laminated product arts, whether extruded, coextruded or otherwise manufactured. The only layer disclosed for the "bottom surface" of the "core" in the specification are "bottom feet" which can be "soft thermoplastic material . . . post-extruded onto the bottom surface of the plank," "can have any dimensions," and "can also assist in controlling sound transmissions . . . [as well as] insure that migration from any mold, mildew, and/or stain which may be part of the sub-floor or substrate can be minimized if not eliminated" (page 14, ll. 1-12). We find that embodiments wherein such "bottom feet" are extruded on the "bottom surface" of a thermoplastic "core" could be considered by one of ordinary skill in the art to be a "backing layer" under some definition of the term used in the art, and, in this respect, would appear to be encompassed by and thus at variance with the language of appealed claim 57 which, of course, is limited by claim 35 on which it is dependent.

Thus, we find that the written description in the specification and the language of the appealed claims do not convey the meaning of the term "backing layer" to one of ordinary skill in this art. We find no further guidance to a definition of the term in the record before us. Appellants submit that "[i]t is conventional in the art to use a balance layer or backing layer to counteract the forces resulting from the top laminate layer," arguing that "[t]he cited art relied upon by the examiner shows this conventional backing layer" which is avoided "by a certain treatment as described at pages 25 and 26 and this avoids a need for a backing layer" (brief, page 3). Appellants further describe "a decorative layer on both the upper and the lower surfaces of the core" of Nelson as "a top layer and a backing layer," arguing that Nelson requires a "backing layer" while admitting that Pollock does not (*id.*, page 14; original emphasis deleted). Appellants cite no authority establishing that the term "backing layer" has a common, ordinary meaning to one of ordinary skill in this the art consistent with the meaning of the term as argued, and we find no support for appellants' position in the written description in the specification which does not disclose that the heat treatment described at pages 25 and 26 is an alternative to the "need for a backing layer." Furthermore, Nelson does not describe any layer having characteristics that appellants contend constitutes a "backing layer." Indeed, Nelson does not require any manner of layer on the "bottom surface" of "a core" or describe a "decorative layer" that can be used on the lower surface as a "backing layer" within appellants' use of the term (e.g., col. 2, ll. 20-21, col. 2, l. 52, to col. 3, l. 7, col. 4, ll. 32-33, col. 5, ll. 20-23, and **FIG. 4**), and Pollock (col. 12, ll. 17-50) does describe, require or prohibit a layer of any kind on such surface.

Therefore, on this record, we find that when the language of appealed claim 35 and of appealed claims 52, 54, 56, 57 and 62 and the other appealed claims dependent on claim 35, is considered as a whole as well as in view of the written description in the specification as it would be interpreted by one of ordinary skill in the art, the claims in fact fail to set out and circumscribe a particular area with a reasonable degree of precision and particularity, *see In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971), such that "those skilled in the art would understand what is claimed when the claim is read in light of the specification." *See The Beachcombers, Int'l. v. WildeWood Creative Prods.*, 31 F.3d 1154, 1158, 31 USPQ2d 1653, 1656 (Fed. Cir. 1994) (*quoting Orthokinetics, Inc v. Safety Travel Chairs Inc.*, 806 F.2d

1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986)); *see also In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

Accordingly, we determine that claim language of appealed claim 35 and the appealed claims dependent thereon raises the issue of whether appealed claims 35, 47 through 66 and 69 comply with the provisions of 35 U.S.C. § 112, second paragraph. On this record, we find it virtually impossible to ascertain the propriety of the grounds of rejection of these appealed claims under 35 U.S.C. § 103(a). This is because the scope of these claims is unclear and we will not make unsupported, speculative assumptions as to that scope thereof. It is well settled that when the metes and bounds of a claimed invention are sufficiently unclear as to require speculation as to the meaning of terms found therein, a rejection under 35 U.S.C. § 103 cannot be supported. *See In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970); *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962).

Therefore, on this record, we reverse the grounds of rejection of appealed claims 35, 47 through 66 and 69 under 35 U.S.C. § 103 *pro forma*.[1]

We have carefully reviewed the record on this appeal and based thereon find ourselves in agreement with the supported position advanced by the examiner that, *prima facie*, the claimed thermoplastic flooring plank encompassed by appealed claims 67 and 68 would have been obvious over the combined teachings of Pollock, Pitman, Nelson and Haid (sixth and eight grounds of rejection in the answer, pages 7-8 and 11) and of Pollock, Pitman and Nelson (third and seventh grounds of rejection in the answer, pages 10 and 11-12), respectively, to one of

[1] We decline to exercise our authority under 37 CFR § 41.50(b) (2005) and enter a new ground of rejection of appealed claims 35, 47 through 66 and 69 under 35 U.S.C. § 112, second paragraph, leaving this matter to the examiner to consider upon any further prosecution of the appealed claims subsequent to the disposition of this appeal. Our analysis of these claims and the alleged basis therefor in the specification raises the further issue of whether these claims comply with the provisions of 35 U.S.C. § 112, first paragraph, written description requirement. *See generally, In re Alton*, 76 F.3d 1168, 1172, 1175-76, 37 USPQ2d 1578, 1581, 1583-84 (Fed. Cir. 1996) (a *prima facie* case of non-compliance with the written description requirement of § 112, first paragraph, is established by showing that an applicant "claims embodiments of the invention that are completely outside the scope of the specification"); *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir 1984) (a negative limitation which does not appear in the written description of the specification as filed violates the written

ordinary skill in this art at the time the claimed invention was made. Accordingly, we again evaluate all of the evidence of obviousness and nonobviousness based on the record as a whole, giving due consideration to the weight of appellants' arguments in the brief. *See generally*, *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We find that Pollock would have disclosed to one of ordinary skill in this art[2] a plank embodiment comprising a solid core plank member, that can be extruded from a blend of recycled plastic resin or other resin, and a cover, that can be extruded PVC, wherein the cover can include hooks which engage flanges on the plank member to obtain the article illustrated in Pollock **FIG. 17** (col. 12, ll. 17-50). Pollock further would have disclosed that other plank members and covers can be extruded from polyvinyl chloride (PVC) or other suitable resin, with "the colors desired," the choice of which is within the ordinary skill in the art (col. 6, ll. 12-19). We find that Pollock would have led one of ordinary skill in this art to select PVC for the solid core plank member and the cover for that member, and to "color" the cover and/or core as desired with coloring agents well known in the art for PVC, such as pigments. We further find that in disclosing this embodiment, Pollock would not have taught or suggested any specific means to secure the covered, solid core plank of **FIG. 17** to supports to form decks or specified the positioning of the planks in forming a deck. We find that the plank of **FIG. 17** is of different construction than other embodiments described and illustrated by Pollock (e.g., **FIG. 3**). In this respect, Pollock would have taught that the planks can be "installed in a manner similar to conventional lumber deck planks," that the planks can be "installed side-by-side . . . spaced sufficiently close together such that persons wearing high heel shoes will not be in danger of having their heels entrapped in the gap between the planks" and that planks can be positioned or

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description requirement of § 112, first paragraph, if it introduces new concepts). We suggest that the examiner consider these issues under § 112 together.

[2] It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

adopted to provide a solid surface (col. 2, ll. 39-44, col. 9, ll. 50-51, col. 10, ll. 3-6 and col. 12, ll. 17-50).

We find that Pitman would have disclosed to one of ordinary skill in this art a lighting system that includes a support **5** having a cover **8** that hides base **4**, wherein these parts can be extruded from, for example, PVC compositions containing "color pigments" (e.g., col. 4, ll. 55-63, col. 5, ll. 51-53, col. 6, ll. 61-65, col. 7, ll. 30-48, and **FIG. 1**).

We find that Nelson would have disclosed to one of ordinary skill in this art a laminated article which is a central core with interlocking male and female edges, a planar decorative surface and a lower planar surface, that can be used as flooring, wall coverings and ceilings, and wherein two sections of the flooring can be joined to form "a gapless seam" (e.g., col. 2, ll. 13-28, col. 4, ll. 29-34, col. 5, ll. 20-23). Nelson would have taught that the decorative layer can be formed from any material that can be attached to the central core, such as conventional polymeric solid surfacing laminates, wherein the decorative layer can be attached to the core by coextrusion of the core and decorative layer, wherein the extrusions can include an optional tie layer (col. 2, l. 52, to col. 3, l. 7, and col. 3, ll. 42-44). Nelson further would have taught that "it is possible to bevel the planar decorative surfaces of each of the male and female edges to provide an angled surface down to the point where the planar decorative surface meets the central core" which "would provide a grooved or notched seam upon joining adjacent sections" (col. 5, ll. 26-31).

We find that Haid would have disclosed to one of ordinary skill in this art a panel structure comprising boards which can be used for, among other uses, a floor, in which a particular "T" shaped molding is used to join pairs of boards having grooves in opposing edges, wherein the "boards" can be made of "plastics" (e.g., col. 1, l. 41, to col. 2, l. 2, col. 3, ll. 19-55, col. 4, ll. 58-63, and **Fig. 1**).

The examiner determines, with respect to appealed claims 67 and 68, that it would have been *prima facie* obvious to one of ordinary skill in this art "to color the cover layer of Pollock[, disclosed at col. 12, ll. 17-50,] with pigments as [Pitman] teaches the use of pigments to produce color in PVC layers" with respect to both claims (answer, page 6); to form the cover layer and the core of Pollock by coextrusion as taught by Nelson with respect to claim 68 (*id.*, page 8); to join the planks of Pollock with the T-shaped molding of Haid for ease of installation with respect

to claim 67 (*id.*, page 10); to make the decorative cover layer of Nelson from PVC with a pigment to form a colored layer as Pollock teaches PVC as a cover for a plank and Pitman teaches providing color with a pigment with respect to claim 68 (*id.*, page 11); and to use the grooves and molding system of Haid to join the planks of Nelson with respect to claim 67 (*id.*, page 12).

With respect to appealed claims 67 and 68 and the references applied thereto, appellants first contend that Pollock would have taught a deck plank which is held to deck supports by screws, citing col. 6, ll. 12-66 (brief, page 7). We observe that the numerals cited by appellants in this respect are used by Pollock in describing Pollock **FIGs. 3** and **5** at cols. 4-6 in illustrating plank embodiments having a different core and cover assembly than the covered, solid core plank disclosed in col. 12 and **FIG. 17** relied on by the examiner. Appellants further contend that Pollock describes securing a solid core deck plank using a method which, as described by appellants (brief, pages 7-8), appears to us to be the method illustrated in Pollock **FIGs. 7**, **8** and **10**A-**10**E, as described at col. 3, l. 64, to col. 4, l. 9, col. 4, ll. 13-16, and col. 10, l. 6, to col. 11, l. 29, for the particular purposes of using the plank as a step or to dress up the sides of a boat dock, again with embodiments having a different core and cover assembly (col. 10, ll. 6-13). In any event, we fail to find any disclosure in Pollock which would have taught in any respect that the covered, solid core plank embodiment must be used in either of the ways found by appellants to be taught by Pollock, and indeed, Pollock does not specify any manner of attaching the covered, solid core plank to a substrate in disclosing the embodiment relied on.

Appellants submit that Pollock does not teach a thermoplastic cover layer with a pigment, "the design of Pollock would make it impossible to form a connected flooring system" and Pitman is non-analogous prior art as it does not relate to floor planks and thus not to the subject matter of Pollock, arguing that the references are thus not combinable by one of ordinary skill in the art (brief, pages 8-9 and 28). Appellants further submit that Nelson and Pollock are not combinable because "Nelson is for a floating floor surface and certainly does not teach or suggest securing directly to joists as Pollock" and "shows a backing layer in all embodiments whereas Pollock does not use any backing layer" (brief, page 14 and 28-29). In the latter respect, appellants contend that Nelson discloses that "a decorative layer" must be "on both the upper and lower surfaces of the core" (*id.*, pages 14-15; original emphasis deleted), and that

Pollock and Nelson use different technologies because Pollock secures the plank directly to support members and the floor covering of Nelson has a decorative surface on the bottom surface (*id.*, pages 16-17 and 29).

Appellants contend that there is no justification for modifying the plank of Pollock in order to join such planks using the T-shaped molding of Haid because Pollock attaches planks to supports using screws, Pitman is directed to pathway marking systems and Nelson discloses a completely different type of flooring system using a tongue and groove joining system (*id.*, pages 21-23, 24-25 and 31). Appellants further contend that Nelson teaches away from Haid because Nelson teaches that the bottom and top surfaces of the flooring "are flat (not beveled)" and thus form a gapless seam, with no more than "a hint" in the reference that "the edge surfaces may not form a completely gapless seam" (*id.*, pages 23, 25 and 30).

The examiner responds that Pitman is analogous prior art because it "deals with the common problem in both Pollock and in the instant invention of how to color PVC and is relied upon by the examiner only for the solution of using pigments" (answer, pages 12-13). The examiner further argues that the planks of Pollock can be secured to supports using other means than screws, and with respect to Nelson, that the means of securing the flooring has nothing to do with a backing layer (*id.*, pages 14-15). With respect to a "gap" in the flooring of Nelson, the examiner contends that while "Haid teaches that the bevel (col. 4, lines 25-35) is decorative," [t]here is nothing in Nelson that would preclude a small surface gap if it were deemed a desirable decorative feature," pointing out that "[t]he main function of the groove system of Nelson is to preclude separation of the planks, which is the purpose of the spline of Haid" (*id.*, pages 17-18 and 19). The examiner further contends that the difference in the connection systems of Pollock and Nelson argued by appellants does not preclude the "transfer of the teachings of PVC being an effective decorative layer in a floor panel [or] the transfer of a teaching of how to color a PVC molding," arguing that references in the same art area can be relied on for the teachings therein even if the subject matter is structurally different, and that appellants have not established that the teachings relied on are "taught away from by the reference being modified or would destroy the function of the reference being modified" (*id.*, pages 20-21).

Appellants reply that "Pollock clearly relates to a deck plank, not a flooring plank" as claimed, and, in this respect, "the planks of Pollock are used in a spaced-apart configuration,"

citing col. 1, line 27 and Pollock Fig. 19, arguing that "the reference does not teach or suggest any physical features that would realistically allow the planks to be joined together to make a surface such as flooring" because "[a]s seen from Figs. 1, 6, 7, and 12-18, the structure disclosed in Pollock is not amendable to any such joining" (reply brief, page 3; see also pages 2 and 6-7). Appellants contend that there is no motivation in Pollock to use the planks therein "to form a flooring, since a spaced-apart configuration is what is needed for the uses described in Pollock" which require "a gap" (*id.*, pages 3-4). Appellants further contend that the combination of Pollock and Pitman does not "overcome the failure of Pollock" to teach "a flooring plank that is capable of connecting with other planks to form a floor covering" (*id.*, page 4).

In the same manner, appellants argue that there is no motivation to combine Pollock and Nelson because "the deck plank of Pollock is specifically intended for uses wherein an empty gap between planks is desired" and does not teach or suggest that such planks can be joined as flooring, pointing out that the plank of Pollock Fig. 17 has "outwardly sloping side flanges" such that "it would not be physically possible to join the deck planks . . . to form flooring surfaces" even in views of the "teachings of Nelson regarding grooved edges or glue" (*id.*, page 7). Appellants further contend that the combination of Pollock, Nelson and Haid "does not overcome the fact that it would be physically impossible to combine the deck plank of Pollock with the alleged teachings of Nelson regarding grooved edges because the edges of the deck plank of Pollock are not physically configured to be joined with other deck planks," and there is no motivation to join the planks of Pollock with the T-shaped molding of Haid because "an empty gap between deck planks is desired" by Pollock (*id.*, pages 11-12). Appellants argue that there is no motivation to combine Nelson, Pollock and Pitman because the decorative covering layer of Nelson would not be used with "a boat dock or a hog house" as in Pollock, and Pitman teaches "photoluminescent pigments" which would not be used in the cover layer of Nelson or Pollock (*id.*, pages 13-14). Appellants point out that appealed claim 67 excludes a plank having "a male edge" which is contained by the articles of Nelson, and that the modification of Nelson to remove such an edge "would completely change the principle of operation of the article of Nelson" (*id.*, pages 14-15).

Contrary to appellants' arguments, we find substantial evidence in the record supporting the examiner's position. We disagree with appellants that Pitman as relied on by the examiner

constitutes non-analogous art, because, as the examiner points out, this reference addresses the problem of extruding a PVC composition containing a "color pigment" to form a cover of colored PVC, which is the problem that appellants and Pollock address. *See In re Clay*, 966 F.2d 656, 658, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) (an analogous reference "is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem"). Indeed, Pollock would have taught that the PVC thermoplastic cover can be "colored as desired," which we find would have led one of ordinary skill in the art to use coloring agents customarily used to color PVC, including color pigments, *see B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996) ("When obviousness is based on a particular prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. [Citation omitted.] This suggestion or motivation need not be expressly stated. [Citation omitted.]"), and Pitman would have thus commended itself in this respect, the structural difference in the substrate being covered notwithstanding. *See In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.").

We are also not persuaded by appellants that one of ordinary skill in this art would not have combined Pollock and Nelson in the manner relied on by the examiner. We find no requirement in Nelson that a decorative layer must be on the top *and* the bottom surface as the illustrative embodiments do not control the teachings of a reference. *See generally*, *In re Lamberti*, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976) ("[T]he fact that a specific [embodiment] is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered."). We further find that the manner in which one of ordinary skill in this art would attach extruded cores with covers thereon to each other and to a support substrate in constructing the flooring of a deck structure does not control whether this person would have considered the manner in which Nelson forms the extruded solid core and cover with respect to the formation of the extruded solid core and cover by Pollock.

Indeed, the common method of formation by extrusion and the common core and cover structure would have reasonably suggested the combination of Pollock and Nelson to this person. *See Keller*, 642 F.2d at 425, 208 USPQ at 881.

We agree with appellants that the manner in which the planks of col. 12 and **FIG. 17** of Pollock and the manner in which the articles of Nelson are attached to each other and to support substrate in constructing flooring, whether for a deck or other structure, would have been considered by one of ordinary skill in this art with respect to combining Pollock with Haid and combining Nelson with Haid. We found above that Pollock did not disclose any particular manner of securing the planks to a support substrate in constructing the flooring of a deck structure, teaching that the planks disclosed therein can be "installed in a manner similar to conventional lumber deck planks," including side-by-side installation. We know of no authority, building code regulations or otherwise, which specifies that deck planks must always be secured to a substrate separated by a "gap" in addition to that formed by the shape of the sides of the planks, and appellants have cited no such authority. Indeed, we take notice that it is common practice to attach deck planks to each other to prevent liquids and solids from falling through a "gap," see, e.g., col. 10, ll. 3-6, of Pollock, and the flooring of a deck is often graded to control drainage in a particular direction. We find no teaching in Pollock which requires that the planks of col. 12 and **FIG. 17** thereof must be installed otherwise.

Thus, we determine that one of ordinary skill in this art would have reasonably been motivated to join the planks of col. 12 and **FIG. 17** of Pollock buy forming a groove in each side to accept the T-shaped molding as taught by Haid in the reasonable expectation of attaching the planks to each other, the manner in which the so attached planks are secured to support substrate in constructing flooring, whether on for a deck or other structure, notwithstanding.

Furthermore, we recognize that, as pointed out by appellants, Nelson would have taught one of ordinary skill in the art that the invention therein involves a modified tongue and groove arrangement for constructing flooring as an alternative to the well known tongue and groove arrangement for the same purpose acknowledge by Nelson at cols. 1 and 2 and in **FIGs. 1** and **2**. We find that Haid would have taught this person a similar arrangement wherein the tongue is replaced with a groove and the function of the tongue is provided by the T-shaped molding. We agree with appellants that the modification of Nelson by replacing the tongue and groove in the

article thereof with a groove to accept the T-shaped molding of Haid would change the principle of operation of the articles of Nelson. However, we found above that Haid would have taught that the joined "planks" can be "plastic," and determine that one of ordinary skill in this art would have been motivated by the combined teachings of Nelson and Haid to form a plank having a colored thermoplastic cover and a solid core having a groove on opposing sides thereof in the reasonable expectation of joining such a plank with the T-shaped molding of Haid to take advantage of the alternative method of joining articles to form flooring taught by Haid. *See Keller*, 642 F.2d at 425, 208 USPQ at 881; *In re Siebentritt*, 372 F.2d 566, 567-68, 152 USPQ 618, 619 (CCPA 1967) (express suggestion to interchange methods which achieve the same or similar results is not necessary to establish obviousness).

Accordingly, we determine that one of ordinary skill in the art routinely following the combined teachings of Pollock, Pitman, Nelson and Haid and of Pollock, Pitman and Nelson would have arrived at the claimed thermoplastic flooring plank encompassed by appealed claims 67 and 68, respectively, including each and every limitation thereof arranged as required therein, without recourse to appellants' disclosure. *See, e.g., Pro-Mold & Tool Co. v. Great lakes Plastics Inc.*, 75 F.3d 1568, 1573, 37 USPQ 1626, 1629-30 (Fed. Cir. 1996) ("In this case, the reason to combine [the references] arose from the very nature of the subject matter involved, the size of the card intended to be enclosed."); *In re Gorman*, 933 F.2d 982, 986-87, 18 USPQ2d 1885, 1888-89 (Fed. Cir. 1991) ("The extent to which such suggestion [to select elements of various teachings in order to form the claimed invention] 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 applicant's invention."); *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988) ("The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the claimed] process should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. [Citations omitted] Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure."); *Keller*, 642 F.2d at 425, 208 USPQ at 881; *Siebentritt*, 372 F.2d 566, 567-68, 152 USPQ 618, 619; *see also In re O'Farrell*, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988) ("Obviousness does not require absolute predictability of success. . . . There is always at least a possibility of unexpected results,

that would then provide an objective basis for showing the invention, although apparently obvious, was in law nonobvious. [Citations omitted.] For obviousness under § 103, all that is required is a reasonable expectation of success. [Citations omitted.]").

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 Pollock, Pitman, Nelson and Haid and of Pollock, Pitman and Nelson with appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 67 and 68 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The examiner's decision 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)(1)(iv) (2005).

AFFIRMED-IN-PART

CHARLES F. WARREN Administrative Patent Judge	)	
JEFFREY T. SMITH Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
BEVERLY A. PAWLIKOWSKI Administrative Patent Judge	)	

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