

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Customer No.: 1923
	)	
Andrew Stephens, et al.	)	Confirmation No.: 1690
	)	
Serial No.: 15/245,948	)	Art Unit: 1783
	)	
Filed: August 24, 2016	)	Examiner: Daniel P. Dillon
	)	
For: WOOD-GRAINED POLYMER SUBSTRATE	)	

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

As required under 37 C.F.R. § 41.37(a), this brief is filed after the Notice of Appeal filed in this case on March 4, 2019, and is in furtherance of said Notice of Appeal. This is an appeal to the Patent Trial and Appeal Board from the Examiner's rejection of claims 1-15 and 17-25 in the Office Action dated January 2, 2019.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.02:

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| I. | Real Party in Interest |
| II | Related Appeals, Interferences, and Trials |
| III. | Summary of Claimed Subject Matter |
| IV. | Argument |
| V. | Claims Appendix |

I. REAL PARTY IN INTEREST

The real party in interest is TANGENT TECHNOLOGIES LLC, the assignee of the above-identified patent application. The assignment assigning rights to Tangent Technologies LLC is recorded on January 18, 2017 in the United States Patent and Trademark Office (“USPTO”) at Frame 0721 of Reel 041010.

II. RELATED APPEALS, INTERFERENCES, AND TRIALS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. SUMMARY OF CLAIMED SUBJECT MATTER

Although citations and reference characters are inserted below in accordance with 37 C.F.R. 41.37(c)(1)(iii), these citations and reference characters are merely examples of where support may be found in the specification for the terms used in this section of the brief. There is no intention to suggest in any way that the terms of the claims are limited to the examples in the specification. Nor does this exercise provide a mechanism for circumventing the law precluding reading limitations into the claims from the specification. In short, the reference characters and specification citations are not to be construed as claim limitations or in any way used to limit the scope of the claims.

The claimed subject matter of independent claims 1, 10, 21, and 25 relate to simulated natural wood-grained polymer substrates and boards. Independent claim 1 is directed to a simulated natural wood-grained polymer board having a first side and a second side spaced apart from the first side, the spacing between the first and second sides defining one of a width or a height of the board, the first and second sides extending along a length direction between a first end and a second end, the first and second ends defining a length of the board. *See* Figs. 6, 7, and 9, refs. 10, 11, 13; *See* paragraphs [0047], [0049]. The board includes a first set of polymer layers extending along the length direction and containing a first colorant. *See* Figs. 6, 7, and 9, refs. 10, 16; *See* paragraphs [0011], [0031], [0048]. A majority of the first set of polymer layers extends along the length of the entire board. *See* Fig. 9, refs. 10, 16; *See* paragraph [0048]. A second set of polymer layers extends along the length direction and containing a second colorant different than the first colorant. *See* Fig. 9, refs. 10, 16; *See* paragraphs [0011], [0033], [0048]. A majority of the second set of polymer layers extends along the length of the entire board. *See* Fig. 9, refs. 10, 16;

See paragraph [0048]. A plurality of individual layers of the first and second sets of polymer layers alternate within the board and extend along a substantially uninterrupted curvilinear path originating proximate the first side of the board and terminating proximate the second side of the board. *See* Figs. 6 and 9, refs. 10, 16; *See* paragraph [0050].

Independent claim 10 is directed to a simulated natural wood-grained polymer substrate extending along a first direction, the substrate having a first side and a second side spaced apart from the first side along a second direction different than the first direction, the first and second sides defining a width of the substrate, the first and second sides extending along the first direction, a core of the substrate extending between the first and second sides and along the first direction. *See* Figs. 6, 7, and 9, refs. 10, 11, 13, 14; *See* paragraph [0049]. The substrate includes a first set of polymer layers extending along the first direction and containing a first colorant. *See* Figs. 6, 7, and 9, refs. 10, 16; *See* paragraphs [0011], [0031], [0048]. A majority of the first set of polymer layers being substantially continuous along the first direction. *See* Fig. 9, refs. 10, 16; *See* paragraph [0048]. A second set of polymer layers extending along the first direction and containing a second colorant different than the first colorant. *See* Fig. 9, refs. 10, 16; *See* paragraphs [0011], [0033], [0048]. A majority of the second set of polymer layers being substantially continuous along the first direction. *See* Fig. 9, refs. 10, 16; *See* paragraph [0048]. Individual layers of the first and second sets of polymer layers alternate within the core of the substrate to form a natural wood-grained appearance throughout the core of the substrate. *See* Figs. 6 and 9, refs. 10, 14, 16; *See* paragraphs [0011], [0053]. A plurality of the individual layers of one of the first and second sets of polymer layers extend along a substantially uninterrupted curvilinear path in the second direction originating proximate the first side and terminating proximate the second side. *See* Figs. 6 and 9, refs. 10, 16; *See* paragraph [0050].

Independent claim 21 is directed to a simulated natural wood-grained polymer substrate having a length defined along a first direction, a width defined along a second direction perpendicular to the first direction, and a height defined along a third direction perpendicular to both the first and second directions. *See* Figs. 6, 7, and 9, refs. 10, 11, 13; *See* paragraph [0049]. The substrate includes a first set of polymer layers extending along the first direction and containing a first colorant. *See* Figs. 6, 7, and 9, refs. 10, 16; *See* paragraphs [0011], [0031], [0048]. A majority of the first set of polymer layers being substantially continuous along the first direction. *See* Fig. 9, refs. 10, 16; *See* paragraph [0048]. *See* Fig. 9, refs. 10, 16; *See* paragraphs [0011], [0033], [0048]. A second set of polymer layers extending along the first direction and containing a second colorant different than the first colorant. A majority of the second set of polymer layers being substantially continuous along the first direction. *See* Fig. 9, refs. 10, 16; *See* paragraph [0048]. Individual layers of the first and second sets of polymer layers alternate within the substrate along the third direction to form a natural wood-grained appearance throughout the substrate. *See* Figs. 6 and 9, refs. 10, 16; *See* paragraphs [0011], [0053]. A plurality of the individual layers of one of the plurality of the first and second sets of polymer layers extend along a substantially uninterrupted curvilinear path in the second direction originating proximate an outer surface of a first portion of the substrate and terminating proximate an outer surface of a second portion of the substrate. *See* Figs. 6 and 9, refs. 10, 16; *See* paragraph [0050].

Independent claim 25 is directed to a simulated natural wood-grained polymer board. The board includes a polymer core having a first side and a second side spaced apart from the first side, spacing between the first and second sides defining one of a width or a height of the core, the first and second sides extending along a length direction of the core between a first end and a second end, the first and second ends defining a length of the core. *See* Figs. 6, 7, and 9, refs. 10, 11, 13,

14; *See* paragraphs [0047], [0049]. The board includes a first set of polymer layers extending along the length direction and containing a first colorant. *See* Figs. 6, 7, and 9, refs. 10, 16; *See* paragraphs [0011], [0031], [0048]. A majority of the first set of polymer layers extending along the entire length of the core. *See* Figs. 6 and 9, refs. 10, 14, 16; *See* paragraph [0048]. A second set of polymer layers extending along the length direction and containing a second colorant different than the first colorant. *See* Fig. 9, refs. 10, 16; *See* paragraphs [0011], [0033], [0048]. A majority of the second set of polymer layers extending along the entire length of the core. *See* Figs. 6 and 9, refs. 10, 14, 16; *See* paragraph [0048]. A plurality of individual layers of the first and second sets of polymer layers alternate within the core and extend along a substantially uninterrupted curvilinear path originating from proximate the first side of the core and terminating proximate the second side of the core. *See* Figs. 6 and 9, refs. 10, 14, 16; *See* paragraph [0050].

IV. ARGUMENT

**(A) THE 35 U.S.C. §103 REJECTIONS OVER U.S. PATENT NO. 7,204,944 FAIL TO
MAKE A *PRIMA FACIE* CASE OF OBVIOUSNESS**

The 35 U.S.C. §103 rejections of claims 1, 10, 21, and 25 are improper and therefore fail to make a *prima facie* case of obviousness. In the final Office Action (“Office Action”) dated January 2, 2019, claims 1, 10, 21, and 25 were rejected under 35 U.S.C. §103 as allegedly unpatentable over U.S. Patent No. 7,204,944 to Piedboeuf (“Piedboeuf”). Piedboeuf, however, does not teach each and every element of these claims.¹ While the Office Action relies on supposed similarities in the *processes* of Piedboeuf and the present application as evidence that the resulting structures formed by the cited processes would be the same as the claimed *structure*, it is noted, however, that the present application does not currently claim any process. Instead, the present claims are directed to “simulated natural wood-grained polymer” boards and substrates of a particular structure. It is clear that the presently claimed “simulated natural wood-grained polymer” boards and substrates include particular arrangements and structures not expressly taught by Piedboeuf.

Office Action Relies on Process as Evidence of Claimed Product

The Office Action incorrectly relies upon the processes of Piedboeuf as evidence of obviousness of the claimed products of “simulated natural wood-grained polymer” boards and substrates. Such reliance on the processes of Piedboeuf as evidence of obviousness of the claimed

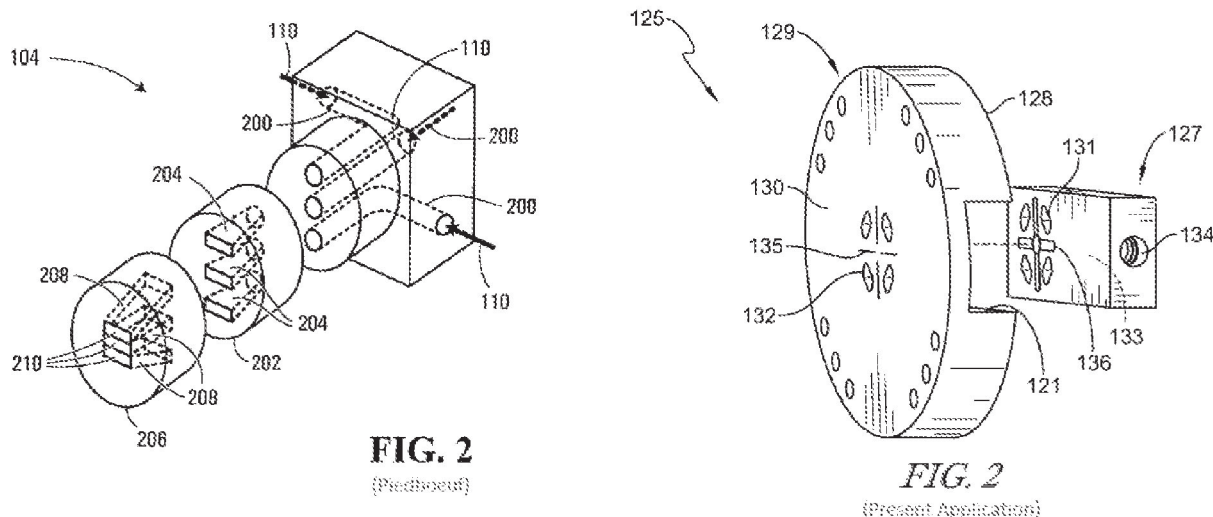
¹ See page 5 of the Final Office Action dated January 2, 2019 (“Piedboeuf is silent with respect to the formation of the sheet such that the colors of the polymer layers entering the system are those that resemble and result in a sheet that simulates a natural wood-grained appearance”).

products, however, is misplaced. The United States Supreme Court summarized this concept over 150 years ago:

“A machine may be new, and the product or manufacture proceeding from it may be old. In that case the former would be patentable and the latter not. The machine may be substantially old and the product new. In that event the latter, and not the former, would be patentable. Both may be new, or both may be old. In the former case, both would be patentable; in the latter neither.”

Providence Rubber Co. v. Goodyear, 76 U.S. 788, 796, 19 L. Ed. 566 (1869).

The Office Action contends, on page 5, that “the system taught by Piedboeuf is nearly identical to the system which forms the simulated natural wood-grained polymer board as claimed by the applicant.” Applicant notes that the Office Action makes this conclusory contention without providing any support. A brief comparison of the feed block of Piedboeuf depicted in its FIG. 2, reproduced below, with the flow adapter depicted in FIG. 2 of the present application, also reproduced below, shows that the systems are not identical.



Even if the systems are “nearly identical,” and Applicant is not conceding this point, the Office Action merely makes a blanket conclusion, without support, that the result of the process

described in Piedboeuf “would ultimately result” in the claimed structures of the present application. Yet, further on page 5, the Office Action admits that Piedboeuf is “silent with respect to the formation of the sheet such that the colors of the polymer layers entering the system are those that resemble and result in a sheet that simulates a natural wood-grained appearance” and, conspicuously, does not use the product of Piedboeuf as evidence of obviousness.

Office Action Reliance on *In re Maloney* is Misplaced

The Office Action argues on pages 27-28 that “while what is being claimed is a product, during examination of the product, a process of forming the product may be relevant in determining obviousness” and cites MPEP 2144.09(IV) and *In re Maloney*, 411 F.2d 1321, 1323, 162 USPQ 98, 100 (CCPA 1969). This argument is misplaced.

In particular, the appellant of *In re Maloney* argued that “the Patent Office has failed to establish that one of ordinary skill in this art would know how to prepare the claimed ethylene/acid chloride copolymers” even though such copolymers were suggested by the reference, an argument that was ultimately rejected by the court in that case. *See In re Maloney*, 411 F.2d at 1323-25. In other words, the reference suggested a compound but no process for producing the compound. The relevant question then is not whether certain systems or processes are available to create the claimed products, but whether the claimed products themselves are obvious from the teachings of the cited reference(s). This is not the situation in the present application as the claimed products are not the same, and have not been shown to be the same, as what is disclosed in the cited references. More applicable is where the court of *In re Maloney* emphasized that “claims to compositions of matter may be separately patentable whether or not process claims drawn to the method of making those compositions are patentable.” *Id.* at 1323 (citations omitted); *see also*

Providence Rubber Co. v. Goodyear, 76 U.S. 788, 796, 19 L. Ed. 566 (1869) ("The machine may be substantially old and the product new. In that event the latter, and not the former, would be patentable."). Accordingly, reliance on supposed similarities between systems and processes in rejecting the claimed products is improper and unsupported by the MPEP or the cited case.

No Evidence of Obviousness

The Office Action does not include any evidence or reasoning to support a finding by a person of ordinary skill, with the cited art before him, that it would be obvious to create the products claimed in independent claims 1, 10, 21, and 25. Specifically, the Office Action fails to describe how one skilled in the art could arrive at the claimed products simply by reviewing the systems and processes of the cited references without undue experimentation or the benefit of impermissible hindsight bias from the disclosure of the present application. The Supreme Court has provided guidance to the analysis of obviousness in *KSR* in instructing that "[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *See KSR Int'l J. Co. v. Teleflex. Inc. et al.*, 550 U.S. 398, 127 S.Ct. 1727, 1742 (2007) (emphasis in the original). The Court also previously explained "that the invention seems simple after it is made does not determine the question [of obviousness]; if this were the rule, many of the most beneficial patents would be stricken down." *Loom Co. v. Higgins*, 105 U.S. 580, 591 (1881).

Indeed, hindsight bias in this case is documented as "knowledge gleaned only from applicant's disclosure" is used in the rejections of the claims. MPEP 2145(X)(A); *see also* MPEP § 2142 ("impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art."). Specifically, the Office Action concludes,

incorrectly, that "the system taught by Piedboeuf is nearly identical to ... the system as **defined by applicant's specification**" as evidence that Piedboeuf's system must be capable of producing the claimed products. However, the presently claimed products are only taught in the present application, and, in any event, there are distinct differences between the systems and processes of Piedboeuf and those of the present application as evident through a comparison of the same. For example, as illustrated below, the feed block of Piedboeuf depicted in its FIG. 2 is different than the flow adapter depicted in FIG. 2 of the present application. The configuration of the present application's flow adapter, which is different than Piedboeuf, affects the configuration, location, size, and shape of the claimed polymer layers.

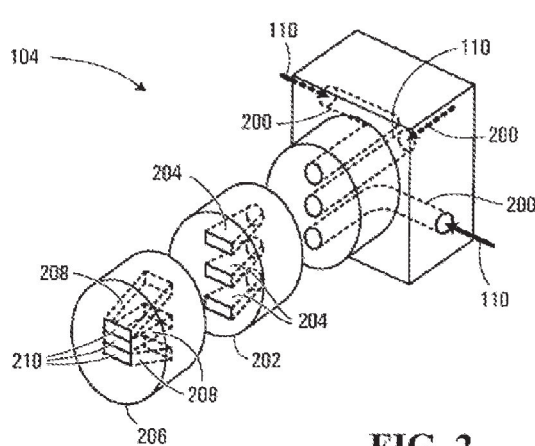


FIG. 2
{Piedboeuf}

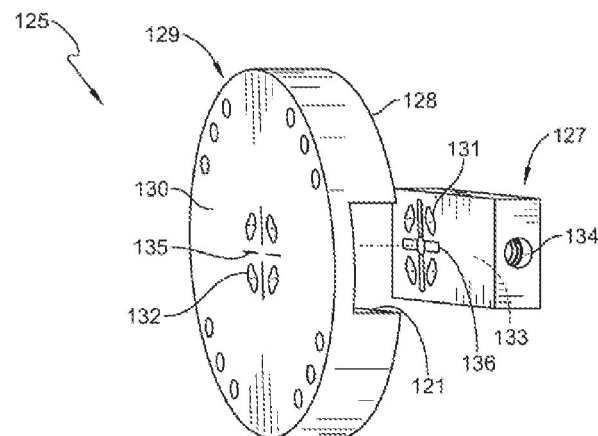


FIG. 2
{Present Application}

To be clear, no system or process is presently claimed and should not be seen as limiting of the currently pending claims, and the above discussion is provided merely to rebut the erroneous comparisons of the systems and processes in the Office Action.

Prior Art Does Not Inherently Teach the Claimed Product

The Office Action improperly substitutes the obviousness analysis with one of inherency, but such analysis still fails. In particular, the Office Action repeatedly states that "the process for forming an extrudate material [in Piedboeuf] is similar to that described in applicant's specification and as such **would result in** the claimed product being a wood-grained polymer board." See Office Action at pages 27-28 (emphasis added); see also *id.* at pages 4, 5, 7-11, 15, 16, 18, 21, 22, and 26. The Office Action also implies that the process of Piedboeuf would be "optimizable" to create the claimed product. See *id.* at page 28. However, this analysis runs contrary to the guidance of MPEP 2112(IV):

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323,326 (CCPA 1981)....

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients). The examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the preform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." *Id.* at 1462 (emphasis in original). The examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

It is immediately apparent that Piedboeuf does not inherently teach the claimed product as the product produced by the system and process of Piedboeuf is vastly different than the products

claimed, as illustrated in at least Figs. 6A and 6B of Piedboeuf, and, as such, the claimed product does not "necessarily flow[]" from the process disclosed in Piedboeuf. For example, as shown below in the reproduced figures, the product of Piedboeuf depicted in its Figs. 6A is clearly different than the claimed product as depicted, for example, in FIG. 11 of the present application.

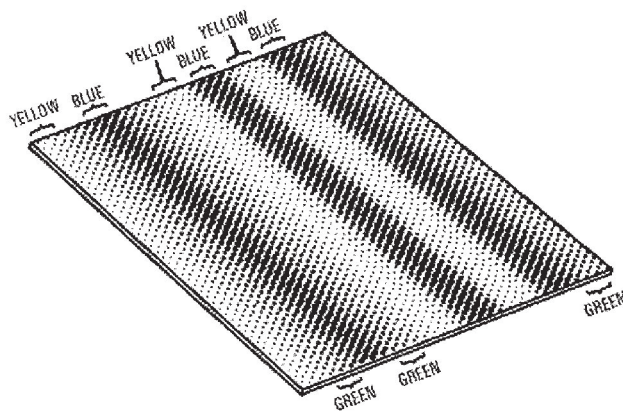


FIG. 6A
(Piedboeuf)

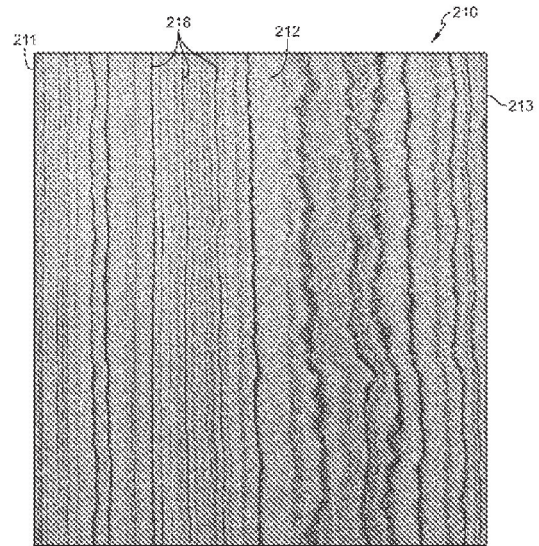


FIG. 11
(Present Application)

Instead, the claimed products are unique to the present application as developed by the listed inventors, and are not taught, shown, or suggested, whether explicitly or inherently, by Piedboeuf.

The Office Action then improperly attempts to shift the burden to the Applicant in rebutting the erroneous analysis. The MPEP explains at § 2142 that "[t]he examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit secondary evidence to show nonobviousness. If, however, the examiner does produce a prima facie case, the burden of coming forward with evidence or arguments shifts to the applicant who may submit additional evidence of nonobviousness." The Office Action fails to identify any evidence, other than a broad

conclusion without any support, that the system and process of Piedboeuf will produce the claimed products. Rather than providing any reference to an explicit teaching, the Office Action places the burden on the Applicant to identify a failure of the reference to teach that which the Examiner has asserted is inherent to the reference. Respectfully, this approach is an improper shifting of the burden and would require the Applicant to prove a negative.

Office Action Does Not Account for All Independent Claim Limitations

The Office Action also fails to account for all of the limitations of each independent claim, instead choosing to base the rejections off of the language contained in claim 1 alone. This is improper, and the Office Action fails to make a *prima facie* case of obviousness by not considering all of the claim limitations and misconstruing the same. *See* MPEP 2143.03; *see also* MPEP 707.07(d). The Office Action fails to identify, with specificity, where each element of the remaining independent claims is supposedly taught by the cited references.

Because the Office Action fails to undertake a proper factual analysis and fails to make a *prima facie* case of obviousness, the rejection of independent claims 1, 10, 21, and 25 is improper and should be overruled. Accordingly, in view of the foregoing, Applicant submits that independent claims 1, 10, 21, and 25 are in condition for allowance and respectfully requests the Board to reverse the 35 U.S.C. §103 rejections.

**(B) THE 35 U.S.C. §103 REJECTIONS OVER U.S. PATENT NO. 7,204,944 IN VIEW OF
U.S. PATENT APPLICATION PUBLICATION NO. US 2011/0177291 FAIL TO
MAKE A PRIMA FACIE CASE OF OBVIOUSNESS**

(1) Claims 1-4, 6, 9, and 18

The 35 U.S.C. §103 rejections of claims 1-4, 6, 9, and 18 are improper and therefore fail to make a *prima facie* case of obviousness. In the Office Action dated January 2, 2019, claims 1-

4, 6, 9, and 18 were rejected under 35 U.S.C. §103 as allegedly unpatentable over Piedboeuf in view of U.S. Patent Application Publication No. 2001/0177291 (“Sudano”).

As discussed above in Section IV(A), the Office Action fails to undertake a proper factual analysis and fails to make a *prima facie* case of obviousness with respect to independent claim 1. Furthermore, on page 8, the Office Action admits that Piedboeuf is “silent with respect to the formation of the sheet such that the colors of the polymer layers entering the system are those that resemble and result in a sheet that simulates a natural wood-grained appearance.” The Office Action cites Sudano to cure this deficiency as teaching “a co-extrusion process for making mouldings that have a simulated wood appearance and the moldings thereof (Pg. 1, Paragraph [0006]).” The Office Action again, however, relies on supposed similarities in the processes of both Piedboeuf and Sudano and the present application as evidence that the resulting structures formed by the cited processes would be the same as the present structures. For at least the above reasons presented in Section IV(A), the Office Action incorrectly relies upon the processes of both Piedboeuf and Sudano as evidence of obviousness of the claimed products of “simulated natural wood-grained polymer” boards and substrates. It is clear that the presently claimed “simulated natural wood-grained polymer” boards and substrates include particular arrangements and structures not expressly taught by Piedboeuf in view of Sudano.

Because the Office Action fails to undertake a proper factual analysis and fails to make a *prima facie* case of obviousness, the rejection of independent claim 1, and its dependent claims 2-4, 6, 9, and 18, is improper and should be overruled. Accordingly, in view of the foregoing, Applicant submits that claims 1-4, 6, 9, and 18 are in condition for allowance and respectfully requests the Board to reverse the 35 U.S.C. §103 rejections.

(2) Claims 10-12, 15, 17, and 19-20

The 35 U.S.C. §103 rejections of claims 10-12, 15, 17, and 19-20 are improper and therefore fail to make a *prima facie* case of obviousness. In the Office Action dated January 2, 2019, claims 10-12, 15, 17, and 19-20 were rejected under 35 U.S.C. §103 as allegedly unpatentable over Piedboeuf in view of U.S. Patent Application Publication No. 2001/0177291 (“Sudano”).

As discussed above in Section IV(B)(1), the Office Action relies on supposed similarities in the processes of both Piedboeuf and Sudano and the present application as evidence that the resulting structures formed by the cited processes would be the same as the present structures. For at least the above reasons presented in Sections IV(A) and IV(B)(1), the Office Action incorrectly relies upon the processes of both Piedboeuf and Sudano as evidence of obviousness of the claimed products of “simulated natural wood-grained polymer” boards and substrates. It is clear that the presently claimed “simulated natural wood-grained polymer” boards and substrates include particular arrangements and structures not expressly taught by Piedboeuf in view of Sudano.

Because the Office Action fails to undertake a proper factual analysis and fails to make a *prima facie* case of obviousness, the rejection of independent claim 10, and its dependent claims 11-12, 15, 17, and 19-20, is improper and should be overruled. Accordingly, in view of the foregoing, Applicant submits that claims 10-12, 15, 17, and 19-20 are in condition for allowance and respectfully requests the Board to reverse the 35 U.S.C. §103 rejections.

(3) Claims 21-24

The 35 U.S.C. §103 rejections of claims 21-24 are improper and therefore fail to make a *prima facie* case of obviousness. In the Office Action dated January 2, 2019, claims 21-24 were rejected under 35 U.S.C. §103 as allegedly unpatentable over Piedboeuf in view of U.S. Patent Application Publication No. 2001/0177291 (“Sudano”).

As discussed above in Section IV(B)(1), the Office Action relies on supposed similarities in the processes of both Piedboeuf and Sudano and the present application as evidence that the resulting structures formed by the cited processes would be the same as the present structures. For at least the above reasons presented in Sections IV(A) and IV(B)(1), the Office Action incorrectly relies upon the processes of both Piedboeuf and Sudano as evidence of obviousness of the claimed products of “simulated natural wood-grained polymer” boards and substrates. It is clear that the presently claimed “simulated natural wood-grained polymer” boards and substrates include particular arrangements and structures not expressly taught by Piedboeuf in view of Sudano.

Because the Office Action fails to undertake a proper factual analysis and fails to make a *prima facie* case of obviousness, the rejection of independent claim 21, and its dependent claims 22-24, is improper and should be overruled. Accordingly, in view of the foregoing, Applicant submits that claims 21-24 are in condition for allowance and respectfully requests the Board to reverse the 35 U.S.C. §103 rejections.

(4) Claim 25

The 35 U.S.C. §103 rejection of claim 25 is improper and therefore fails to make a *prima facie* case of obviousness. In the Office Action dated January 2, 2019, claim 25 was rejected under 35 U.S.C. §103 as allegedly unpatentable over Piedboeuf in view of U.S. Patent Application Publication No. 2001/0177291 (“Sudano”).

As discussed above in Section IV(B)(1), the Office Action relies on supposed similarities in the processes of both Piedboeuf and Sudano and the present application as evidence that the resulting structures formed by the cited processes would be the same as the present structures. For at least the above reasons presented in Sections IV(A) and IV(B)(1), the Office Action incorrectly relies upon the processes of both Piedboeuf and Sudano as evidence of obviousness of the claimed

products of “simulated natural wood-grained polymer” boards and substrates. It is clear that the presently claimed “simulated natural wood-grained polymer” boards and substrates include particular arrangements and structures not expressly taught by Piedboeuf in view of Sudano.

Because the Office Action fails to undertake a proper factual analysis and fails to make a *prima facie* case of obviousness, the rejection of independent claim 25 is improper and should be overruled. Accordingly, in view of the foregoing, Applicant submits that claim 25 is in condition for allowance and respectfully requests the Board to reverse the 35 U.S.C. §103 rejection.

Respectfully submitted,

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V. CLAIMS APPENDIX

1. (Previously Presented) A simulated natural wood-grained polymer board having a first side and a second side spaced apart from the first side, the spacing between the first and second sides defining one of a width or a height of the board, the first and second sides extending along a length direction between a first end and a second end, the first and second ends defining a length of the board, the board comprising:

a first set of polymer layers extending along the length direction and containing a first colorant, a majority of the first set of polymer layers extending along the length of the entire board;

a second set of polymer layers extending along the length direction and containing a second colorant different than the first colorant, a majority of the second set of polymer layers extending along the length of the entire board; and

wherein a plurality of individual layers of the first and second sets of polymer layers alternate within the board and extend along a substantially uninterrupted curvilinear path originating proximate the first side of the board and terminating proximate the second side of the board.

2. (Previously Presented) The board of claim 1, wherein the layers of the first set of polymer layers are thinner than the layers of the second set of polymer layers.

3. (Original) The board of claim 1, wherein a portion of at least one of the first side and second side of the board is removed to expose portions of the first and second sets of polymer layers along the length direction.

4. (Previously Presented) The board of claim 3, wherein the exposed portions of the first and second sets of polymer layers form a burl grain pattern.
5. (Original) The board of claim 1, wherein at least one of the first and second sides of the board is embossed with a wood grain pattern.
6. (Previously Presented) The board of claim 1, wherein the first and second sets of polymer layers are formed from high density polyethylene.
7. (Original) The board of claim 6, wherein the first and second sets of polymer layers further include at least one of a UV inhibitor and a foaming agent.
8. (Original) The board of claim 6, wherein one of the first and second sets of polymer layers further includes a foaming agent.
9. (Original) The board of claim 1, wherein the board is formed to define a polygonal cross-section along a length of the board.
10. (Previously Presented) A simulated natural wood-grained polymer substrate extending along a first direction, the substrate having a first side and a second side spaced apart from the first side along a second direction different than the first direction, the first and second sides defining a width of the substrate, the first and second sides extending along the first direction, a core of the substrate extending between the first and second sides and along the first direction, the substrate comprising:

a first set of polymer layers extending along the first direction and containing a first colorant, a majority of the first set of polymer layers being substantially continuous along the first direction; and

a second set of polymer layers extending along the first direction and containing a second colorant different than the first colorant, a majority of the second set of polymer layers being substantially continuous along the first direction;

wherein individual layers of the first and second sets of polymer layers alternate within the core of the substrate to form a natural wood-grained appearance throughout the core of the substrate; and

wherein a plurality of the individual layers of one of the first and second sets of polymer layers extend along a substantially uninterrupted curvilinear path in the second direction originating proximate the first side and terminating proximate the second side.

11. (Previously Presented) The substrate of claim 10, wherein the layers of the first set of polymer layers are thinner than the layers of the second set of polymer layers.

12. (Previously Presented) The substrate of claim 10, wherein the first and second sets of polymer layers are formed from high density polyethylene.

13. (Original) The substrate of claim 12, wherein the first and second sets of polymer layers further include at least one of a UV inhibitor and a foaming agent.

14. (Original) The substrate of claim 12, wherein one of the first and second sets of polymer layers further includes a foaming agent.

15. (Previously Presented) The substrate of claim 10, wherein the substrate is formed to define a polygonal cross-section along a length of the substrate.

16. (Cancelled)

17. (Previously Presented) The board of claim 6, wherein the core is substantially

free of natural wood materials.

18. (Previously Presented) The board of claim 1, further comprising a third side and a fourth side spaced apart from the third side along a height direction different than the length direction and width direction, wherein the third and fourth sides define a height of the board, wherein the third and fourth sides extend along the length direction between the first and second ends, wherein the core of the board extends between the first, second, third, and fourth sides and between the first and second ends, and wherein the individual layers of the first and second sets of polymer layers alternate within the core of the board along the height direction.

19. (Previously Presented) The substrate of claim 12, wherein the core is substantially free of natural wood materials.

20. (Previously Presented) The substrate of claim 10, further comprising a third side and a fourth side spaced apart from the third side along a third direction different than the first and second directions, wherein the third and fourth sides define a height of the substrate, wherein the third and fourth sides extend along the first direction, wherein the core of the substrate extends between the first, second, third, and fourth sides and along the first direction, and wherein individual layers of the first and second sets of polymer layers alternate within the core of the substrate along the third direction.

21. (Previously Presented) A simulated natural wood-grained polymer substrate having a length defined along a first direction, a width defined along a second direction perpendicular to the first direction, and a height defined along a third direction perpendicular to both the first and second directions, the substrate comprising:

a first set of polymer layers extending along the first direction and containing a first colorant, a majority of the first set of polymer layers being substantially continuous along the first direction; and

a second set of polymer layers extending along the first direction and containing a second colorant different than the first colorant, a majority of the second set of polymer layers being substantially continuous along the first direction;

wherein individual layers of the first and second sets of polymer layers alternate within the substrate along the third direction to form a natural wood-grained appearance throughout the substrate; and

wherein a plurality of the individual layers of one of the plurality of the first and second sets of polymer layers extend along a substantially uninterrupted curvilinear path in the second direction originating proximate an outer surface of a first portion of the substrate and terminating proximate an outer surface of a second portion of the substrate.

22. (Previously Presented) The substrate of claim 21, wherein the layers of the first set of polymer layers are thinner than layers of the second set of polymer layers.

23. (Previously Presented) The substrate of claim 21, wherein the first and second sets of polymer layers are formed from high density polyethylene.

24. (Previously Presented) The substrate of claim 23, wherein the core is substantially free of natural wood materials.

25. (Previously Presented) A simulated natural wood-grained polymer board comprising:

a polymer core having a first side and a second side spaced apart from the first side, spacing between the first and second sides defining one of a width or a height of the core, the first and second sides extending along a length direction of the core between a first end and a second end, the first and second ends defining a length of the core;

a first set of polymer layers extending along the length direction and containing a first colorant, a majority of the first set of polymer layers extending along the entire length of the core;

a second set of polymer layers extending along the length direction and containing a second colorant different than the first colorant, a majority of the second set of polymer layers extending along the entire length of the core; and

wherein a plurality of individual layers of the first and second sets of polymer layers alternate within the core and extend along a substantially uninterrupted curvilinear path originating from proximate the first side of the core and terminating proximate the second side of the core.

Electronic Patent Application Fee Transmittal

Application Number:	15245948			
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Title of Invention:	WOOD-GRAINED POLYMER SUBSTRATE			
First Named Inventor/Applicant Name:	Andrew Stephens			
Filer:	Davis M Chin Jr/Masako Kozawa			
Attorney Docket Number:	108357-0012			
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
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Patent-Appeals-and-Interference:				
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Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 2 months with \$0 paid	2252	1	300	300
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37 CFR 1.19 (Document supply fees)
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1	Appeal Brief Filed	108357-0012AppealBriefAsFile d.pdf	467601	no	25
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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