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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT A. PYLES, JAMES M. LORENZO, and
RAYMOND L. GOODSON

Appeal 2018-008358
Application 11/983,980
Technology Center 3600

Before STEFAN STAICOVICI, EDWARD A. BROWN, and
MICHAEL L. WOODS, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's decision in the Final Office Action (dated Sept. 22, 2017) rejecting claims 1–6, 8–18, and 20–22. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Covestro LLC is identified as the real party in interest in Appellant's Appeal Brief (filed May 11, 2018). Appeal Br. 1.

INVENTION

Appellant's invention is directed "to a blast-resistant barrier." Spec. 1, l. 3.

Claim 1, the sole independent claim, is representative of the claimed invention and reads as follows:

1. A blast-resistant barrier for a protected structure consisting of:
 - a panel fixedly attached to a frame, optionally with bolts or a structural adhesive, the panel consisting of:
 - between one and four polycarbonate sheets, optionally at least one of an adhesive and a laminate, and
 - optionally an image layer;
 - wherein the panel is vertically attached to the protected structure in a manner permitting the panel to absorb and withstand forces resulting from a blast event, wherein the panel is greater than 20 and less than 40 millimeters in thickness,
 - wherein the panel is positioned between a source of the blast and the protected structure, and
 - wherein the panel remains intact and bends in response to a blast event where the panel transmits a force of no more than 9,000 Newtons/ unit length of panel into the protected structure.

REJECTIONS

- I. The Examiner rejects claims 1–6, 8–18, and 20–22 under 35 U.S.C. § 112, second paragraph, as being indefinite.
- II. The Examiner rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Kastner.²

² Kastner, US 4,070,805, issued Jan. 31, 1978.

- III. The Examiner rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Snyder.³
- IV. The Examiner rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Fuqua.⁴
- V. The Examiner rejects claims 1–6, 11, 14–16, and 20–22 under 35 U.S.C. § 103(a) as being unpatentable over Mardirossian⁵ and Dlubak.⁶
- VI. The Examiner rejects claims 8–10 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Mardirossian, Dlubak, and Piscitelli.⁷
- VII. The Examiner rejects claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Mardirossian, Dlubak, Piscitelli, and Tucker.⁸
- VIII. The Examiner rejects claims 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Mardirossian, Dlubak, and Park.⁹

³ Snyder, US 6,401,427 B1, issued June 11, 2002.

⁴ Fuqua et al., US 7,520,207 B1, issued Apr. 21, 2009.

⁵ Mardirossian, US 7,784,389 B2, issued Aug. 31, 2010.

⁶ Dlubak, US 2004/0226231 A1, published Nov. 18, 2004.

⁷ Piscitelli et al., US 2010/0242714 A1, published Sept. 30, 2010.

⁸ Tucker et al., US 2009/0139091 A1, published June 4, 2009.

⁹ Park et al., US 7,549,366 B2, issued June 23, 2009.

ANALYSIS

Rejection I

Claim 1 recites, *inter alia*, “[a] blast-resistant barrier . . . *consisting of*: a panel fixedly attached to a frame, *optionally* with bolts or a structural adhesive,” wherein the panel “*consisting of*: between one and four polycarbonate, *optionally* at least one of adhesive and a laminate, and *optionally* an image layer.” See Appeal Br. 13 (Claims App.) (emphasis added).

The Examiner finds that the use of the transitional phrase “consisting of” in combination with the term “optionally,” when referring to the recited structural elements of “adhesive,” “laminate”, and “image layer” of the claimed “panel,” is indefinite because “it is unclear whether . . . [Appellant] seeks to set forth these [structural] elements as part of the inventive barrier.” Final Act. 5. According to the Examiner, it is not clear “whether the base structure is defined as a [blast-resistant] barrier that includes these elements or whether the base structure of the [blast-resistant] barrier does not require them.” *Id.* at 2; *see also* Ans. 4 (“the word ‘optional’ . . . [is] used to either include or omit an entire series of structural elements.”).¹⁰

The essence of the requirement under 35 U.S.C. § 112, second paragraph, that the claims must be definite, is that the language of the claims must make it clear what subject matter the claims encompass. *In re Hammack*, 427 F.2d 1378, 1382 (CCPA 1970). Further, the phrase “[c]onsisting of” is a term of patent convention meaning that the claimed invention contains only what is expressly set forth in the claim.” *Norian*

¹⁰ Examiner’s Answer, dated June 26, 2018.

Corp. v. Stryker Corp., 363 F.3d 1321, 1331 (Fed. Cir. 2004) (citing *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1382–83 (Fed. Cir. 2000)).

In this case, because the second recitation of the phrase “consisting of” appears in the body of claim 1 after the term “panel,” we agree with Appellant that it limits the claimed “panel” to between one and four polycarbonate sheets and other optional elements. Appeal Br. 3. In other words, the claimed “panel” *may* include “an adhesive,” “a laminate,” and/or “an image layer,” but the “panel” *need not* include any of these structural elements, as each of these elements is optional. In other words, at a minimum, the claimed “panel” does not include any of the “optional” elements, and at a maximum, it includes all of these elements. We, thus, agree with Appellant that it is clear to a skilled artisan which “alternative elements are claimed, as each optional element is clearly listed.” *Id.*

For similar reasons, the first recitation of the phrase “consisting of” likewise does not make claim 1 indefinite because it is clear that the claimed “blast-resistant barrier” is limited to “a panel fixedly attached to a frame” by either “bolts or a structural adhesive,” but *need not* include these attachment elements as they are optional. As such, the use of the transitional phrase “consisting of” in conjunction with the term “optionally” does not render claim 1 indefinite, as the language of claim 1 makes it clear what subject matter it encompasses. *See In re Hammack*, 427 F.2d at 1382.

The Examiner further finds that claim 1 is indefinite because it is not clear “what structural feature is being introduced by way of the [last

wherein] functional limitation.”¹¹ Final Act. 5. According to the Examiner, there is a “gap” between the structure of the claimed “blast-resistant barrier” and “the claimed functionality.” Ans. 5. The Examiner explains that Appellant’s Specification describes the role of “framing and panel spacing” on the ability of the “blast-resistant barrier” to perform the claimed function recited in the last “wherein” clause of claim 1. *Id.* at 6 (citing Spec. 10, ll. 6–12; 24–31). However, the Examiner notes that because the claimed “blast-resistant barrier” “is limited to no more than 1-4 vertically oriented polycarbonate layers somewhere between 20-40mm in thickness” and does not include any of the features discussed in the Specification needed to perform as intended, it is not clear how the “the claimed panel . . . perform[s] the claimed functionality.” *Id.*

The Examiner appears to require that the claims specify exactly the material of the frame (steel or aluminum), the shape of the frame (“C” cross section), the mechanical properties of the frame material (yield strength of approximately 300 MPa), the type of attachment of the frame to a protected structure (reinforced concrete foundation), and the distance between the panel and the protected structure (at least 12 inches). However, by not specifying such features, claim 1 is merely broad, not indefinite. *See In re Johnson*, 558 F.2d 1008, 1016 n.17 (CCPA 1977) (breadth is not indefiniteness). That is to say, it is clear that the “blast-resistant barrier” of claim 1 requires at a minimum a panel of “between one and four

¹¹ “[W]herein the panel remains intact and bends in response to a blast event where the panel transmits a force of no more than 9,000 Newtons/ unit length of panel into the protected structure.” *See* Appeal Br. 13 (Claims App.).

polycarbonate sheets” having a thickness “greater than 20 mm and less than 40 mm” that is fixedly attached to a frame; no further detail is necessary to know the metes and bounds of the claim.

In conclusion, for the foregoing reasons, we do not sustain the rejection under 35 U.S.C. § 112, second paragraph, of claims 1–6, 8–18, and 20–22, as being indefinite.

Rejections II–IV

The Examiner finds that each of Kastner, Snyder, and Fuqua discloses the claimed “blast-resistant barrier,” but fails to disclose “the thickness of [the] panel.” Final Act. 5–7. Nonetheless, the Examiner determines that the differences between each of Kastner, Snyder, and Fuqua and the claimed “blast-resistant barrier” are obvious to a person of ordinary skill in the art as the panel thickness “amount[s] to an arbitrary dimension that yields no new or unexpected result.” *Id.* at 6, 7. Moreover, the Examiner determines that “there is no functionality or performance characteristic associated with the panel that results exclusively in the claimed [thickness] range.” *Id.* In other words, we understand the Examiner’s position to be that the modification of the thickness of each of Kastner’s, Snyder’s, and Fuqua’s panel constitutes an obvious matter of design choice.

In response, Appellant argues that “[t]he proposed modification to the panels of Kastner, Snyder, and Fuqua, would render those panels unsuitable for their stated purpose.” Appeal Br. 8–9 (citing Kastner, col. 1, ll. 19–22; Snyder, col. 1, ll. 60–63, col. 2, ll. 42–44; Fuqua, col. 1, ll. 29–31). According to Appellant, the modified “panel would no longer be ‘readily

displaceable’ as required by Kastner, ‘modular’ as required by Snyder, or configured in the field as required by Fuqua.” *Id.* at 9.

We are not persuaded by Appellant’s arguments because Appellant does not adequately explain why a panel thickness that “is greater than 20 and less than 40 millimeters” would impede the panels of Kastner, Snyder, and Fuqua from being “readily displaceable,” “modular,” or “re-configurable in the field,” respectively. In particular, we note that the purpose of Kastner’s panel is to bounce-off a ball; the purpose of Snyder’s shield is to contain projectile fragments from a rotating machine (centrifuge); and the purpose of Fuqua’s wall is to provide protection against ballistic projectiles. *See* Kastner, Abstract, col. 2, ll. 5–6, 11–13; Snyder, col. 2, ll. 41–43; Fuqua, col. 1, ll. 6–7, 18–19. Appellant does not adequately explain how modifying the polycarbonate wall (panel) of Kastner to have a thickness “greater than 20 and less than 40 millimeters,” as called for by claim 1, would change the function and purpose of Kastner’s wall (panel) to bounce-off a ball; Snyder’s shield to contain projectile fragments; and Fuqua’s wall to provide protection against ballistic projectiles. Thus, we agree with the Examiner that Appellant’s “arguments do not address how increasing the thickness of these polycarbonate sheets would render them unsuitable for their intended purposes.” Ans. 7.

Appellant further asserts that “[t]here is no explanation as to why a person of [ordinary] skill in the art would modify any of these references to attach the panels vertically to a protected structure, especially when several

of these references expressly teach their panels to be free standing or modular (Kastner, Snyder, and Fuqua).” *Id.* at 11; *see also* Reply Br. 5.¹²

We are not persuaded by Appellant’s argument because the “wherein” clause in claim 1 reciting that “the panel is vertically attached to the protected structure” merely states the result of the structural limitations in the claim, and, thus, adds nothing to the patentability or substance of the claim. *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329 (Fed. Cir. 2005). In other words, the limitation of “the panel is vertically attached to the protected structure” does nothing more than state the intended use of the claimed panel. The panel recited in claim 1 does not undergo a metamorphosis into a new, patentable panel merely by being “vertically attached to the protected structure.” Appellant does not point to any persuasive evidence or provide any persuasive reasoning to establish that the recitation of intended use of the claimed panel being “vertically attached to the protected structure” patentably distinguishes the structure of the claimed panel from the structure of the modified panels of either Kastner, Snyder, or Fuqua. Moreover, we note that the Examiner correctly finds that Kastner’s polycarbonate panel 83 is “vertically attached” to building frame 3, i.e., “protected structure.” *See* Final Act. 6; *see also* Kastner, col. 3, ll. 5–6, col. 4, ll. 10–11, 15–16, Fig. 2.

Appellant also argues that “[t]here is no . . . explanation as to why a person of skill in the art would adjust the thickness of the [claimed] panel to between 20 and 40 mm.” Appeal Br. 11. According to Appellant, “the claimed panel thickness offers unexpected results” by “minimiz[ing] the

¹² Appellant’s Reply Brief, filed Aug. 22, 2018.

inward force to the structure in case of a blast event,” and, thus, “the claimed range is critical,” “unexpected, and counter-intuitive.” *Id.* (citing Spec. 14, Table 1).

We are not persuaded by Appellant’s arguments because the Examiner has set forth adequate reasoning to provide a thickness that “is greater than 20 and less than 40 millimeters” to each of the panels of Kastner, Snyder, and Fuqua, namely, “design choice.” *See* Final Act. 6, 7. In appropriate circumstances, a modification of prior art teachings may be a matter of design choice. Specifically, design choice applies when alternative elements or configurations in the prior art perform the same function as the claimed structures with no unexpected results. *See In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975) (finding that the use of the claimed feature “would be an obvious matter of design choice” when it “solves no stated problem” and “presents no novel or unexpected result” over the disclosed alternatives). In the context of a rejection based on design choice, the relevant issue is whether the alleged differences between the claimed invention and the prior art “result in a difference in function or give unexpected results.” *See In re Rice*, 341 F.2d 309, 314 (CCPA 1965).

Here, as discussed *supra*, we note that Appellant has not adequately explained how providing a thickness “greater than 20 and less than 40 millimeters” to each of Kastner’s, Snyder’s, and Fuqua’s panel would change the function and purpose of Kastner’s wall (panel) to bounce-off a ball; Snyder’s shield to contain projectile fragments; and Fuqua’s wall to provide protection against ballistic projectiles. Moreover, Snyder specifically discloses that the thickness of its polycarbonate protective shield “is a matter of test and *design*,” whereas in Fuqua, the thickness of the

polycarbonate ballistic panel depends on the “level[] of ballistic protection” needed. *See* Snyder, col. 6, ll. 14–16 (emphasis added); Fuqua, col. 4, ll. 27–30. Hence, because the prior art discloses that panel thickness is either an obvious design choice (as per Snyder) or a variable that depends on a desired level of protection (as per Fuqua), we agree with the Examiner that selecting the claimed thickness would have been obvious to a person of ordinary skill in the art because merely changing the size of an object known from the prior art does not amount to a patentable invention. *See* Final Act. 6, 7; *see also In re Sovish*, 769 F.2d 738, 742 (Fed. Cir. 1985) (We must attribute skill to the hypothetical person described in 35 U.S.C. § 103(a)).

We further agree with the Examiner that Appellant’s “disclosure does not establish any new or unexpected result from the claimed range and does not establish that range as critical.” Final Act. 3. We are not persuaded that the values in Table 1 from Appellant’s Specification establishes any new or unexpected result for the claimed thickness range “greater than 20 and less than 40 millimeters.” *See* Spec. 14.

First, we note that a skilled artisan would readily expect the inward force transmitted to the protected structure (building) to decrease as the thickness of the barrier-resistant panel increases. Appellant’s Table 1 evidences this, showing that for a thickness of 25 mm, 30 mm, 35 mm, i.e., thickness “greater than 20 and less than 40 millimeters,” the resulting inward force transmitted to the protected structure (building) gradually decreases from a compression value of 7810 to 7076 and to 6788 N/unit length, respectively. *See* Spec. 14.

Second, the data shown in Table 1 is insufficient to allow a person of ordinary skill in the art to reasonably conclude that the claimed range of

“greater than 20 and less than 40 millimeters” constitutes a “critical range.” The Examiner is correct that because a panel having a thickness of 55 mm performs in a similar manner as a panel having a thickness in the claimed range of “greater than 20 and less than 40 millimeters,” “the claimed range is arbitrary and provides no unique and expected results.” Ans. 8.

Furthermore, we note that there is no indication from Appellant’s Table 1 that the panels with a thickness “greater than 20 and less than 40 millimeters” have the same length and width and are located at the same stand-off distance as the panel having a thickness of 55 mm. Hence, a skilled artisan would not be able to conclude from Table 1 that a panel having the claimed range of “greater than 20 and less than 40 millimeters” provides unexpected results as compared to a panel having a thickness of 55 mm because it is not clear from Appellant’s Specification and explanations why the panels exhibit similar behavior.

Appellant also argues that there is “[n]o teaching, suggestion or motivation to modify the cited prior art references to create a blast-resistant barrier meeting all of the present claim limitations.” Appeal Br. 9. In other words, Appellant contends that the panels of the applied prior art do not “absorb and withstand forces resulting from a blast event . . . [and] remain[] intact and bend[] in response to a blast event where the panel transmits a force of no more than 9,000 Newtons/ unit length of panel into the protected structure.” See Appeal Br. 9, 13 (Claims App.).

We are not persuaded by Appellant’s arguments because the Examiner correctly finds that the above noted performance characteristics of the claimed panel are *inherent* to the modified polycarbonate panels of each of Kastner, Snyder, and Fuqua. See Final Act. 6–7. “[I]nherency may

supply a missing claim limitation in an obviousness analysis.” *Par Pharmaceutical, Inc., v. TWI Pharmaceuticals, Inc.*, 773 F. 3d 1186, 1194–95 (Fed Cir. 2014). However, when applying inherency to obviousness, inherency “is present only when the limitation at issue is the ‘natural result’ of the combination of prior art elements.” *Id.* at 1195.

Here, claim 1 requires “[a] blast-resistant barrier for a protected structure consisting of: a panel fixedly attached to a frame . . . the panel consisting of: between one and four polycarbonate sheets . . . [and] wherein the panel is greater than 20 and less than 40 millimeters in thickness.” Appeal Br. 13 (Claims App.). Consistent with the requirements of claim 1 noted *supra*, the Examiner correctly finds that each of the blast resistant barriers of Kastner, Snyder, and Fuqua, as modified, constitutes a polycarbonate sheet panel attached to a frame and having a thickness between 20 and 40 mm. *See* Final Act. 6–7; *see also* Kastner, Fig. 2; Snyder, Fig. 2; Fuqua, Fig. 2. Hence, the Examiner has made explicit findings that the structure of the blast resistant barriers of either Kastner, Snyder, or Fuqua, as modified, and the structure of Appellant’s blast resistant barrier are similar.

Accordingly, in light of such structural similarities, a person of ordinary skill in the art would reasonably expect that each of the panels of either Kastner, Snyder, or Fuqua, as modified, would possess the claimed performance characteristics of Appellant’s panel. Stated differently, the claimed performance characteristics are the “natural result” of the structural similarities of Appellant’s claimed panel and the panel of either Kastner, Snyder, or Fuqua, as modified. Appellant provides neither evidence nor persuasive technical reasoning to show otherwise.

In conclusion, for the foregoing reasons, we sustain the rejections under 35 U.S.C. § 103(a) of claim 1 as unpatentable over either Kastner, Snyder, or Fuqua.

Rejection V

Appellant does not present arguments for the patentability of claims 2–6, 11, 14–16, and 20–22 apart from claim 1. Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(iv), we select claim 1 as the representative claim to decide the appeal of the rejection of these claims, with claims 2–6, 11, 14–16, and 20–22 standing or falling with claim 1.

The Examiner finds that Mardirossian discloses most of the limitations of claim 1, but fails to disclose “a blast resistant barrier panel placed at a distance from the surface of the building.” Final Act. 7–8 (citing Mardirossian, Fig. 1). Nonetheless, the Examiner finds that Dlubak discloses a blast-resistant barrier assembly 10 attached to frame 12 including, *inter alia*, polycarbonate panel 30, injected as a liquid material between glass sheets 22, 24, and having a thickness of 20–40 mm. *Id.* at 8 (citing Dlubak, paras. 51, 93, Fig. 2). The Examiner concludes that it would have been obvious to a skilled artisan “to combine the gateway of Mardirossian with the barrier of Dlubak under the motivation of providing a windowed portion looking into the gateway that is capable of sustaining a blast impact.” *Id.* (citing Dlubak, para. 6).

Appellant argues that “Dlub[a]k requires its panel to include at least one glass sheet, “whereas the panel of claim 1 “is limited to between one and four polycarbonate sheets, at least one of an adhesive and a laminate, and an image layer, through use of the transitional phrase ‘consisting of.’” Appeal

Br. 9. According to Appellant, “[p]anels having additional elements, such as glass sheets, are outside the scope of the claims.” *Id.*

We are not persuaded that Dlubak’s glass sheets 22, 24 are outside the scope of claim 1 because claim 1 recites “*optionally* an image layer.” *See* Appeal Br. 13 (Claims App.) (emphasis added). As Appellant’s Specification describes, “at least one image layer in the form of . . . glass,” a skilled artisan would reasonably construe Dlubak’s glass sheets 22, 24 as the claimed “optional” image layer. *See* Spec. 4, ll. 8–9. Moreover, we do not agree with Appellant’s position that claim 1 *must* include “at least one of an adhesive and a laminate” and “an image layer” because these elements are recited using the term “optionally.”

Appellant further argues that there is “[n]o teaching, suggestion or motivation to modify the cited prior art references to create a blast-resistant barrier meeting all of the present claim limitations.” Appeal Br. 9. According to Appellant, “[t]here is no explanation as to why a person of [ordinary] skill in the art would modify any of these references to attach the panels vertically to a protected structure, especially when . . . the panel is . . . [Dlubak’s] door or window.” *Id.* at 11.

We are not persuaded by Appellant’s arguments because the Examiner has set forth adequate reasoning based on a rational underpinning to provide Dlubak’s blast resistant barrier to the protective gateway of Mardirossian, namely, to “provid[e] a windowed portion looking into the gateway that is capable of sustaining a blast impact.” Final Act. 8. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (stating that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational

underpinning to support the legal conclusion of obviousness” (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006))).

Furthermore, we are not persuaded by Appellant’s arguments because for the reasons discussed *supra*, the Examiner correctly finds that the performance characteristics of the claimed blast resistant barrier are *inherent* to the blast resistant barrier of Mardirossian, as modified by Dlubak. *See* Final Act. 8. In particular, the blast resistant barrier of Mardirossian, as modified by Dlubak, constitutes “a blast-resistant barrier,” as called for by claim 1, because blast resistant assembly 10, including polycarbonate panel 30 and glass sheets 22, 24, is fixedly attached to frame 12, and has a thickness in the range of 20–40 mm. *See* Mardirossian, Fig. 1; Dlubak, paras. 6, 51, 93, Fig. 2. Thus, in light of such structural similarities, a person of ordinary skill in the art would reasonably expect that the panel of Mardirossian, as modified by Dlubak, would possess the claimed performance characteristics of Appellant’s panel. Stated differently, the claimed performance characteristics are the “natural result” of the structural similarities of Appellant’s claimed panel and the panel of Mardirossian, as modified by Dlubak. Appellant provides neither evidence nor persuasive technical reasoning to show otherwise.

Lastly, Appellant argues that even though “Dlubak discloses a thickness for the polymeric layer, that is not the thickness of the panel which includes one or more glass sheets.” Appeal Br. 10 (citing Dlubak, para. 51).

In a first instance, we appreciate Appellant’s position that Dlubak discloses polycarbonate panel 30 as having a thickness in the range of about 3 to about 51 mm (1/8–2 inches). *See* Dlubak, para. 51. However, Dlubak also discloses that the thickness of glass sheets 22, 24 can be any “desired”

value, and provides an example of 4.75 mm (3/16 inches). *See* Dlubak, paras. 91, 92. The fact that a person skilled in the art might need to change the precise dimensions of the elements in order to effectuate the proposed combination and arrive at a working device is not indicative of nonobviousness. *See Graham v. John Deere Co.*, 383 US 1, 10–12 (1966) (discussing *Hotchkiss v. Greenwood*, 11 How. 248 (1851) (The fact that judgment and mechanical skill may be required to arrive at a particular combination does not necessarily mean that particular combination constitutes a nonobvious invention.)). An artisan must be presumed to know something about the art apart from what the references disclose. *See In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962).

In this case, as Dlubak’s glass sheets have a thickness of 4.75 mm and polycarbonate panel 30 has a thickness of about 3 to about 51 mm, there would appear to exist a finite range of thicknesses that a skilled artisan can easily employ for polycarbonate panel 30 in order to obtain a total panel thickness of 20–40 mm. For example, a thickness of 20 mm for polycarbonate panel 30 and a thickness of 4.75 mm for each glass sheet results in a total panel thickness of 29.5 mm, which is “greater than 20 and less than 40 millimeters,” i.e., the claimed thickness.

In conclusion, for the foregoing reasons, we sustain the rejection under 35 U.S.C. § 103(a) of claim 1 as unpatentable over Mardirossian and Dlubak. Claims 2–6, 11, 14–16, and 20–22 fall with claim 1.

Rejections VI–VIII

Appellant does not present any substantive arguments with respect to Rejections VI–VIII. *See* Appeal Br. 4–12. Therefore, we summarily sustain

the rejections under 35 U.S.C. § 103(a) of claims 8–10 and 12 as unpatentable over Mardirossian, Dlubak, and Piscitelli; of claim 13 as unpatentable over Mardirossian, Dlubak, Piscitelli, and Tucker; and of claims 17 and 18 as unpatentable over Mardirossian, Dlubak, and Park.

CONCLUSION

Claim(s) Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–6, 8–18, 20–22	112, 2 nd ¶	Indefiniteness		1–6, 8–18, 20–22
1	103(a)	Kastner	1	
1	103(a)	Snyder	1	
1	103(a)	Fuqua	1	
1–6, 11, 14–16, 20– 22	103(a)	Mardirossian, Dlubak	1–6, 11, 14–16, 20–22	
8–10, 12	103(a)	Mardirossian, Dlubak, Piscitelli	8–10, 12	
13	103(a)	Mardirossian, Dlubak, Piscitelli, Tucker	13	
17, 18	103(a)	Mardirossian, Dlubak, Park	17, 18	
Overall Outcome			1–6, 8– 18, 20–22	

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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