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Wasserbauer Law LLC			GONZALEZ RAMOS, MAYLA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Status of Claims

2. **Claim(s)** 1-22 are currently pending.
3. **Claim(s)** 15-20 have been withdrawn.
4. **Claim(s)** 1 have been amended.
5. **Claim(s)** 21-22 have been added.

Election/Restrictions

6. Applicant's election without traverse of Group I (claims 1-14 and 21-22) in the reply filed on 05/26/2023 is acknowledged. It is noted that previously identified inventions Group 1 and Group 2 are related as process of making and product made. The inventions are independent or distinct from the other because the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the core may be deposited on the substrate by another method such as chemical vapor deposition. The inventions listed are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because one or more of the following reasons apply:

- *The inventions have acquired a separate status in the art in view of their different classification;*

- *The inventions have acquired a separate status in the art due to their recognized divergent subject matter;*
- *The inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);*
- *The prior art applicable to one invention would not likely be applicable to another invention;*
- *The inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.*

Accordingly, the requirement is deemed proper and is therefore made FINAL.

Response to Amendment

7. The facts presented in the affidavit under 37 CFR 1.132 filed 05/26/2023 are insufficient because they are not germane to the rejection at issue.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

11. Claim(s) 1-6, 21 and 22 is/are rejected under 35 U.S.C. 103 as being unpatentable over US 4,717,790, Gochermann in view of US 2015/0136207, Giron et al.

Regarding claims 1, 21 and 22

Gochermann teaches a solar panel [see Fig. 2] comprising:
a substrate (7) and a superstrate (4) each including one or more preformed layers [Fig. 2 and Col. 1, lines 55-66], said substrate (7) and superstrate (4) being preformed in a complementary shape when said solar panel is in an assembled configuration [Col. 1, lines 55-66]; and

a core disposed therebetween, said core comprising a solar cell array (6) including at least one solar cell (6), said solar cell array (6) being encapsulated by one or more encapsulant layers (5) [Fig. 2 and Col. 1, lines 55-66];

wherein in said assembled configuration, said core is integrally formed with said substrate (7) and said superstrate (4) such that said at least one solar cell (6) of said solar cell array is curved along two orthogonal axes [Fig. 2].

Gochermann is silent to the at least one solar cell including polycrystalline silicon or a monocrystalline silicon wafer having a thickness of less than 0.4 mm (instant claim 1), less than 0.40 mm and greater than about 0.12 mm (instant claim 21), and ranging from about 0.12 mm to about 0.18 mm (instant claim 22).

Giron, similar to Gochermann, teaches a curved solar cell module comprising a core layer including a solar cell array of monocrystalline or polycrystalline silicon solar cells (6) having a thickness of 10 μm to 500 μm (0.02 mm to 0.5 mm) [Fig. 1, paragraphs 0021 and 0059-0062].

Gochermann and Giron are analogous inventions in the field of curved solar panels. Because Giron teaches choosing from a finite number of identified, predictable photoactive absorber materials, one of ordinary skill in the art would have found obvious to pursue the known options with reasonable expectation of success [see MPEP 2143].

Since Giron teaches that polycrystalline or monocrystalline silicon leads to the anticipated success, said materials are not of innovation but of ordinary skill and common sense [see MPEP 2143].

Further, it would have been obvious to one of ordinary skill in the art to modify the solar cells within the array of Gochermann to have a thickness of between 10 μm to

500 μm (0.02 mm to 0.5 mm), as in Giron, because such provides suitable bendability/flexibility of the solar cells used in curved solar panels [Giron, paragraphs 0021 and 0030].

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) [MPEP 2144.05].

Regarding claim 2

The limitation “wherein said one or more preformed layers of said substrate and said superstrate comprise preformed and thermally or chemically strengthened glass” is considered a product-by-process limitation.

The limitation does not distinguish the claimed product from the prior art. Further, said limitation does not impart any additional structure to the claimed product. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) [MPEP 2113].

It is noted that Gochermann teaches thermally preforming the substrate and the superstrate [Col 1, lines 56-67].

Regarding claim 3

The limitation “wherein said one or more preformed layers of said substrate and said superstrate comprise preformed layers that have been laminated and thermoformed” is considered a product-by-process limitation.

The limitation does not distinguish the claimed product from the prior art. Further, said limitation does not impart any additional structure to the claimed product. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) [MPEP 2113]

Regarding claim 4

Modified Gochermann teaches the solar panel as set forth above, wherein said assembled configuration comprises said substrate (7), said core (6), and said superstrate (4) [Fig. 2].

The limitation “that have undergone a lamination process” is considered a product-by-process limitation.

The limitation does not distinguish the claimed product from the prior art. Further, said limitation does not impart any additional structure to the claimed product. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) [MPEP 2113]

Regarding claim 5

The limitation “wherein said lamination process applies substantially uniform pressure across the at least one solar cell of the solar cell array curved along two orthogonal axes” is considered a product-by-process limitation.

The limitation does not distinguish the claimed product from the prior art. Further, said limitation does not impart any additional structure to the claimed product. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) [MPEP 2113]

Regarding claim 6

The limitation “wherein said substantially uniform pressure comprises applying pressure so that said substrate initially moves said at least one cell at a downward-facing side center, and said superstrate simultaneously moves said at least one cell at upward-facing side corners, thereby bending said at least one cell by applying said substantially uniform pressure” is considered a product-by-process limitation.

The limitation does not distinguish the claimed product from the prior art. Further, said limitation does not impart any additional structure to the claimed product. Even though product-by-process claims are limited by and defined by the process,

determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) [MPEP 2113]

12. Claim(s) 7-14 is/are rejected under 35 U.S.C. 103 as being unpatentable over US 4,717,790, Gochermann in view of US 2015/0136207, Giron et al. as applied to claims 1-6, 21 and 22 above, and further in view of US 2013/0122719, De Vries.

Regarding claims 7-9

All the limitations of claim 1 have been set forth above.

Modified Gochermann does not teach either or both of said substrate and said superstrate comprising an outer protective layer, an inner rigid layer and one adhesive layer disposed therebetween.

De Vries teaches a flexible thin material (12) for use as a substrate or superstrate for PV cells or PV panels [Fig. 3a and paragraph 0007], the flexible thin material (12) comprising an outer protective layer (9), an inner rigid layer (6) and one adhesive layer (14) disposed therebetween [Fig. 3a and paragraph 0052]. Said combination of the outer protective layer, the inner rigid layer and the adhesive therebetween providing a very good and uniform layer which is particularly suited to be adhered to a second substrate using an adhesive layer [paragraph 0014].

Modified Gochermann and De Vries are analogous inventions in the field of substrates and superstrates for used in solar cells. It would have been obvious to one

of ordinary skill in the art before the effective filing date of the invention to modify either or both of said substrate and said superstrate in Modified Gochermann to comprise an outer protective layer, an inner rigid layer and one adhesive layer disposed therebetween, as in De Vries, because such provides a very good and uniform layer which is particularly suited to be adhered to a second substrate using an adhesive layer [De Vries, paragraph 0014].

The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) [MPEP 2144.07].

Regarding claim 10

Modified Gochermann teaches the solar panel as set forth above, wherein said inner rigid layer (6) is a material selected from the group consisting of: polycarbonate (PC), glass, polypropylene (PP), polymethyl methacrylate (PMMA), polyethylene terephthalate (PET), polyvinylchloride (PVC), polyethylene (PE), cyclic olefin copolymer (COC), and fluorinated ethylene propylene (FEP) [paragraph 0052].

The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) [MPEP 2144.07].

Regarding claim 11

Modified Gochermann teaches the solar panel as set forth above, wherein said outer protective layer (9) is a material selected from the group consisting of: ethylene tetrafluoroethylene (ETFE), glass, and ethylene chlorotrifluoroethylene (ECTFE) [paragraph 0052].

The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) [MPEP 2144.07].

Regarding claim 12

Modified Gochermann teaches the solar panel as set forth above, wherein said adhesive layer (15) is a material selected from the group consisting of: acrylic-based or silicone-based adhesive transfer tape [paragraph 0056].

The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945) [MPEP 2144.07].

Regarding claim 13

With regards to the limitation “wherein said inner rigid layer is a material having an elastic modulus ranging from about 1.79 GPa to about 3.24 GPa”, because the inner rigid layer (6) of the prior art is identical to the one claimed (e.g. PEN inner rigid layer), the claimed properties or functions are presumed to be inherent.

The court has held that products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

It has been held that when the structure recited in the reference is substantially identical to *that of the claims*, claimed properties or functions are presumed to be inherent (see MPEP § 2112.01). “When the PTO shows a sound basis for believing that

the products of the applicant and the prior art are the same, the *applicant has the burden of showing that they are not.* In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 14

With regards to the limitation “wherein said outer protective layer is a material having an elastic modulus ranging from about from about 0.490 GPa to about 0.827 GPa”, because the outer protective layer (9) of the prior art is identical to the one claimed (ETFE or ECTFE), the claimed properties or functions are presumed to be inherent.

The court has held that products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

It has been held that when the structure recited in the reference is substantially identical to *that of the claims*, claimed properties or functions are presumed to be inherent (see MPEP § 2112.01). “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the *applicant has the burden of showing that they are not.*” In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAYLA GONZALEZ RAMOS whose telephone number

is (571)272-5054. The examiner can normally be reached Monday - Thursday, 9:00-5:00 - EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allison Bourke can be reached on (303)297-4684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/MAYLA GONZALEZ RAMOS/
Primary Examiner, Art Unit 1721