

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PANEL CLAW, INC,
Petitioner,

v.

SUNPOWER CORPORATION,
Patent Owner.

Case IPR2014-00388
Patent RE38,988 E

Before MICHAEL J. FITZPATRICK, JO-ANNE M. KOKOSKI, and
JON B. TORNQUIST, *Administrative Patent Judges*.

FITZPATRICK, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318 and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Panel Claw Inc., filed a Petition for an *inter partes* review of claims 1, 17, 18, 36, 38–40, 55, 56, 58, 59, 61–63, 65, 66, 71–73, 76, 78, and 79 of U.S. Patent No. RE38,988 E (“the ’988 patent,” Ex. 1001). Paper 6, “Pet.” Patent Owner, SunPower Corporation, filed a Preliminary Response pursuant to 35 U.S.C. § 313. Paper 9, “Prelim. Resp.”

In a June 30, 2014, Decision, we instituted trial on claims 1, 55, 56, 78, and 79 as anticipated by Brown.¹ Paper 10 (“Dec. on Pet.”), 23.

After institution, Patent Owner filed a Patent Owner Response (Paper 18, “PO Resp.”), Petitioner filed a Reply (Paper 20, “Pet. Reply”), and an oral hearing was held on February 25, 2015.²

As discussed below, Petitioner has shown by a preponderance of the evidence that claims 1, 55, 56, 78, and 79 of the ’988 patent are unpatentable as anticipated by Brown.

A. Related Matters

Patent Owner asserted the ’988 patent against Petitioner in *SunPower Corp. v. Panel Claw, Inc.*, Case No. 12-1633-GMS (D. Del.). Papers 25, 26. Patent Owner also asserted these patents against another defendant in *SunPower Corp. v. Sunlink Corp.*, Case No. 08-cv-2807 (N.D. Cal.) (the “*Sunlink* case”). Papers 25, 26.

¹ DE 2758067 (July 5, 1979). Petitioner submitted the German language reference (Ex. 1011) as well as a translation (Ex. 1010).

² A transcript of the oral hearing is included in the record. Paper 28 (“Tr.”).

B. The '988 Patent

The '988 patent relates “to a lightweight photovoltaic roofing assembly requiring no roofing penetrations and which resists wind up-lift due to specialized component geometry and by acting as an integral assembly.” Ex. 1001, 1:23–26. The assembly includes photovoltaic modules that are supported above a roofing membrane by spacers (or pedestals or supports). *Id.* at Abstract, 2:45–47. “The spacers are preferably pre-formed and are sized and configured to provide passage ways beneath the photovoltaic modules extending from at least two sides of the modules to reduce uplift forces on the modules.” *Id.* at 2:47–51.

Figure 1a of the '988 patent is reproduced below.

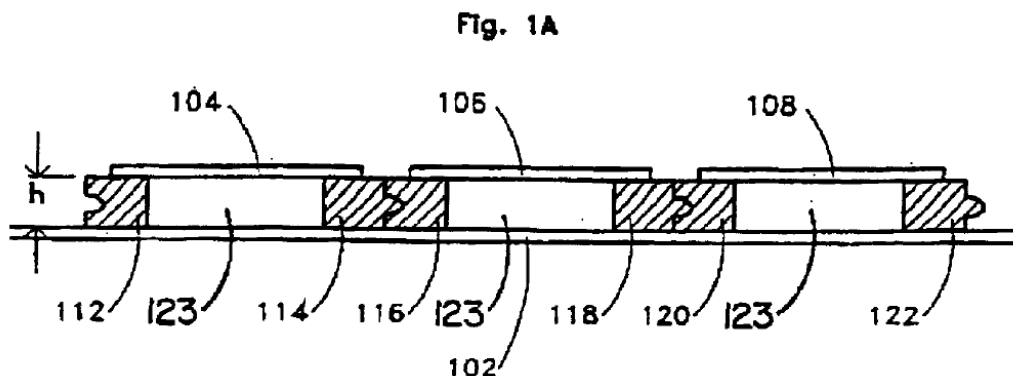


Figure 1a illustrates photovoltaic modules 104, 106, and 108 supported above roofing membrane 102 by spacers 112, 114, 116, 118, 120, and 122. Ex. 1001, 4:15–22. As shown above, “open regions” 123 are formed beneath the photovoltaic modules and above, and directly in contact with, roofing membrane 102. *Id.* at 4:22–24.

Figure 1c of the '988 patent is reproduced below.

Fig. 1C

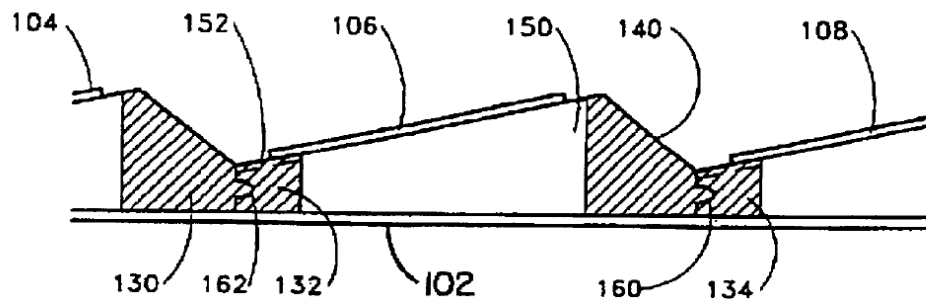


Figure 1c illustrates an alternative embodiment with photovoltaic modules 104, 106, and 108 supported above roofing membrane 102 by spacers 130, 132, and 134, each of which has a tapered profile. Ex. 1001, 4:57–61. Open regions (not labelled) are formed beneath the photovoltaic modules and above, and directly in contact with, roofing membrane 102. *Id.* at Fig. 1c. Openings 150 and 152 enable free air exchange with the open region that is under module 106. *Id.* at 4:66–5:2. According to the specification, “[s]uch free air exchange with the spacer geometry shown [in Figures 1c and 1d] has been determined through wind-tunnel testing to aid in the instantaneous equilibration of air pressures between the top and bottom side of module 106, thus reducing net forces of wind uplift.” *Id.* at 5:2–6.

C. Illustrative Claim

Trial was instituted for claims 1, 55, 56, 78, and 79. Of those, claims 1, 55, and 56 are independent. Claim 78 depends from claim 55, and claim 79 depends

from claim 56. Claim 1 is illustrative of the claims at issue in this trial and is reproduced as follows, with italics and bracketed material omitted:³

1. A photovoltaic assembly comprising:
 - a building rooftop;
 - a photovoltaic module having sides and having upper and lower surfaces; and
 - a spacer secured to the lower surface of the photovoltaic module and supported by the building rooftop;
 - said spacer sized and configured to define:
 - an open region beneath said lower surface, said open region extending between and in contact with the lower surface and in direct contact with the building rooftop, and
 - including access openings formed therein for fluidly coupling said open region to said upper surface;
 - said access openings extending along at least two sides of said photovoltaic module;
 - whereby wind uplift forces are resisted when said photovoltaic assembly is mounted to the building rooftop.

³ In the '988 patent, italics are used to indicate material added during reissue, and brackets are used to indicate material removed during reissue. Ex. 1001, 1:4–7. To the extent present in subsequently quoted content of the '988 patent, italics and bracketed material are also omitted therefrom, without further indication.

II. ANALYSIS

A. Claim Construction

“A claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b). Pursuant to that standard, the claim language should be read in light of the specification, as it would be interpreted by one of ordinary skill in the art. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010). Thus, we generally give claim terms their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.”) (internal quotation marks omitted).

In the Decision instituting trial, we expressly construed several limitations recited by claims 1, 55, and 56 and incorporated into claims 78 and 79. Dec. on Pet. 10–13. The meaning of only one term remains in dispute: “whereby wind uplift forces are resisted.” This term appears in claims 1, 55, and 56, and it is incorporated by reference into claims 78 and 79.

Petitioner argues that the term is meaningless because “virtually anything that has weight will resist at least some degree of ‘wind uplift forces.’” Pet. 10. Thus, Petitioner proposes that it be construed “as **not limiting**.” *Id.*

Patent Owner argues that the term is limiting and, if expressly construed, should be construed to mean: “whereby wind uplift forces are resisted *in excess of the resistance provided by the weight of the assembly alone*.” PO Resp. 9 (emphasis added). Central to Patent Owner’s position is that the disputed term be

read in the context of the structural limitations of the claims that facilitate the wind uplift resistance. For example, Patent Owner states:

A correct interpretation . . . must read the claimed structural limitations of spacer geometry and access openings and the term “whereby wind uplift forces are resisted” as complementary, and recognize that the whereby clause requires that the claimed structures have features, other than weight, responsible for resisting wind uplift forces.

To be sure, the fact that wind uplift forces are resisted by the claimed assemblies due to the particular elements of the challenged claims, in addition to weight, is the focus of the specification of the ’988 patent, and would be readily understood to be so by one of skill in the art.

PO Resp. 8 (citing Exs. 1001, 1002); *see also* Tr. 21:10–13 (counsel for Patent Owner: “Looking at the claim language, the claim language and the structure of the claim itself links the wind uplift resistance of the whereby clause to the component geometry recited in the claim.”). We agree that the claims require resistance to wind uplift forces as a result of the claimed structural limitations.⁴

Although Patent Owner maintains—and we agree—that the recited structure must be responsible for some amount of wind uplift resistance for the claims to be met (*see* PO Resp. 8), Patent Owner does not concede that the recited structure necessarily results in wind uplift forces being resisted. In other words, in Patent Owner’s view, “whereby wind uplift forces are resisted” does not merely describe

⁴ In instituting trial, we initially construed “whereby wind uplift forces are resisted” to require merely that wind uplift forces are resisted, regardless of the reason why wind uplift forces are resisted. Dec. on Pet. 13. We do not adopt our initial construction of “whereby wind uplift forces are resisted” in this final Decision.

the result of the recited structure, but rather sets forth an additional limitation, separate from the recited structure.

We are not persuaded by this argument. An analogous argument was presented to the Court of Appeals for the Federal Circuit in *Texas Instruments Inc. v. International Trade Commission*, 988 F.2d 1165 (Fed. Cir. 1993) and rejected. The Court held:

Respondents assert that the “whereby/to preclude” clauses of these claims establish specific further limitations to the claims relating to the velocity of the fluid inside the mold and the manner of securing the conductors which must be met in the respondents’ opposite-side gating processes in order for those processes to infringe the claims of the ’027 patent. We disagree. A “whereby” clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim.

Id. at 1172.⁵ The Court concluded that the “whereby” clause “merely describe[d] the result of arranging the components of the claims in the manner recited in the claim[.]” and, thus, it did “not contain any limitation not inherent to the process found in [the claim].” *Id.*; see also *Israel v. Cresswell*, 166 F.2d 153, 156 (CCPA 1948) (“In this case, as is presumed to be true in all cases in which the claims have a whereby clause, the clause states the result. The result, of course, is not patentable and when stated it adds nothing to the patentability of a claim.”). Following this precedent, we similarly conclude that “whereby wind uplift forces

⁵ In *Texas Instruments*, the full clause read: “whereby the fluid will not directly engage the device and electrical connection means at high velocity, and the conductors will be secured against appreciable displacement by the fluid.” *Texas Instruments*, 988 F.2d at 1171.

are resisted” does not contain any limitation not inherent to the structure recited in the claims.

If “whereby wind uplift forces are resisted” were a further limitation of the claims—as opposed to being a description of the result of the recited structure—it would be so broad a limitation that it would not make a difference to this proceeding. That is because such a limitation would have to encompass *all resistance* to wind uplift forces, including resistance provided by weight. For it is only by the claims tying the recited resistance, via the word “whereby,” to the recited structure that Patent Owner can support excluding resistance provided by weight. *See, e.g.*, PO Resp. 8 (“A correct interpretation . . . must read the claimed structural limitations of spacer geometry and access openings and the term ‘whereby wind uplift forces are resisted’ as complementary, and recognize that the whereby clause requires that the claimed structures have features, other than weight, responsible for resisting wind uplift forces.”).

Of course, this hypothetical construction is not the one advanced by Patent Owner. Rather, Patent Owner proposes a construction that both (1) relies on “whereby” to tie resistance to wind uplift forces so as to exclude, from the claims, resistance provided by weight; and (2) defies “whereby” in an attempt to exclude, from the claims, some amount of the recited structure upon which “whereby” grammatically operates. Thus, in addition to being contrary to *Texas Instruments* and *Israel*, Patent Owner’s construction is internally inconsistent.

Furthermore, Patent Owner’s construction is not supported by the specification, which does not explain adequately how to determine whether structure recited by the claims falls within the scope of the claims, as so construed.

Although the specification repeatedly refers to various embodiments that were subjected to wind-tunnel testing, it does not explain—whether through wind-tunnel testing or otherwise—how to detect or measure the presence of resistance to wind uplift forces *in excess of resistance provided by weight alone*.

B. Anticipation by Brown

Petitioner asserts that claims 1, 55, 56, 78, and 79 are anticipated by Brown. Pet. 34–45.

1. Overview of Brown

Brown “relates to a solar panel system having at least one solar panel, supported on a subsurface that is horizontal or deviating only slightly from the horizontal, in particular, a flat roof.” Ex. 1010, 4. Figure 5 of Brown is reproduced below.

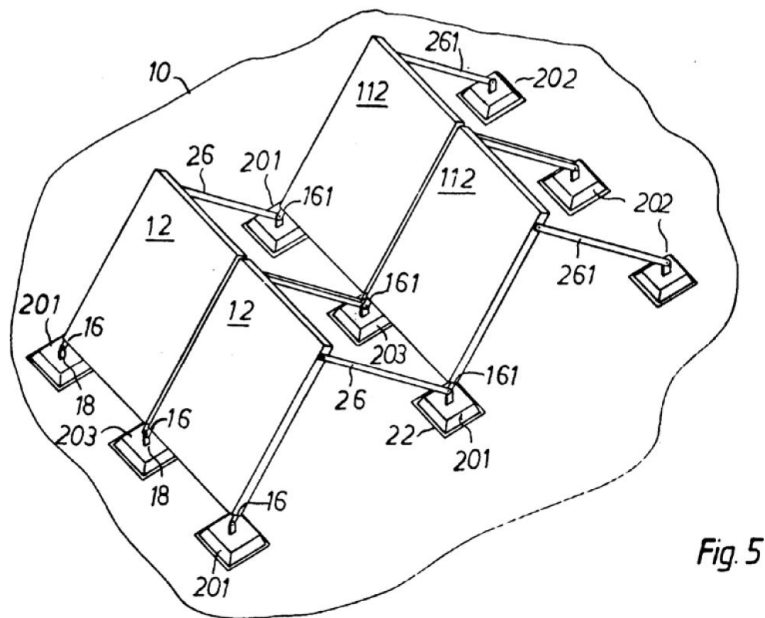


Fig. 5

Figure 5 illustrates “two rows [of] solar panels disposed behind one another.” Ex. 1010, 6. The solar panels are supported by support blocks 201–203. *Id.* at 9, Fig. 5. The support blocks do not penetrate the roof. *Id.* at Fig. 5; *see also id.* at 7 (stating, with respect to an alternative embodiment, that the single, larger support block “lies loosely” on the roof), 8 (stating that the “substantial difference” in the asserted embodiment (shown in Figure 5) relative to the alternative embodiment is that it employs numerous, smaller support blocks).

2. Comparison of Brown to Challenged Claims

Brown discloses a photovoltaic assembly of solar panels 12 and 112, supported by support blocks 201–203 that rest on top of a roof without penetrating it. Ex. 1010, 4, 6, Fig. 5. The solar panels have sides and upper and lower surfaces. Ex. 1010, Fig. 5; *see also* Pet. 38, 42, 44. The support blocks are spacers within the meaning of the claims, as they support photovoltaic modules above the roofing surface, such that a space exists below the modules and above the roofing surface. Ex. 1010, Fig. 5; *see also* Pet. 38–39, 42, 44.

That space constitutes an “open region extending between and in contact with the lower surface [of the solar panels] and in direct contact with the building rooftop,” as required by the claims. Ex. 1010, Fig. 5; *see also* Pet. 39, 42, 44. The space includes “access openings extending along at least two sides” of the solar panels. Ex. 1010, Fig. 5; *see also* Pet. 39, 42, 44. In fact, in Figure 5 of Brown, there are access openings along at least three sides of each solar panel.

Accordingly, Brown discloses all the structural limitations recited in claims 1, 55, 56, 78, and 79, and Patent Owner does not dispute that. *See generally* PO

Resp. Thus, the sole disputed issue is whether Brown discloses “whereby wind uplift forces are resisted when said photovoltaic assembly is mounted to the building rooftop.”

Brown lacks an express disclosure of this feature. Petitioner argues that Brown “necessarily has a weight that would tend to resist some measure of uplifting force.” Pet. 40, 43, 45. As properly construed, and notwithstanding our initial construction at institution,⁶ having weight is not enough to meet the claim. But, the recited feature of resistance to wind uplift forces nonetheless is present inherently in Brown. As construed above, and through use of the word “whereby,” the recited feature of resistance to wind uplift forces constitutes a description of the result of photovoltaic assemblies having the recited structural limitations. See *Texas Instruments*, 988 F.2d at 1172. Brown discloses the claimed structure. Therefore, the Brown structure resists wind uplift forces.

III. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claims 1, 55, 56, 78, and 79 of the '988 patent are anticipated by Brown.

IV. ORDER

Accordingly, it is

ORDERED that claims 1, 55, 56, 78, and 79 of U.S. Patent No. RE38,988 E are held unpatentable; and

⁶ See *supra*, 7 n. 4.

IPR2014-00388
Patent RE38,988 E

FURTHER ORDERED that, because this Decision is final, a party to the proceeding seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

Petitioner:

Matthew B. Lowrie
Aaron W. Moore
Lucas I. Silva
FOLEY & LARDNER LLP
mlowrie-PTAB@foley.com
amoore-PTAB@foley.com
lsilva@fole.com

Patent Owner:

Joshua A. Griswold
Dan Smith
FISH & RICHARDSON P.C.
griswold@fr.com
dsmith@fr.com