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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARCEL BROEKAART, IONUT RADU,
and DIDIER LANDRU

Appeal 2019–005336
Application 15/170,532
Technology Center 2800

Before BEVERLY A. FRANKLIN, MICHAEL P. COLAIANNI, and JANE
E. INGLESE, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the
Examiner’s decision to reject claims 1–8, 11–13, and 15–18. We have
jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R.
§ 1.42(a). Appellant identifies the real party in interest as Soitec. Appeal Br.
2.

CLAIMED SUBJECT MATTER

Claim 1 is illustrative of Appellant's subject matter on appeal and is set forth below:

1. A method for mechanically separating layers, comprising the steps of:

providing a first semiconductor compound comprising a layer of a handle substrate and an active

layer with a front main side and a back main side opposite the front main side, wherein

the layer of the handle substrate is attached to the front main side of the active layer; then providing a layer of a carrier substrate onto the back main side of the active layer; and then initiating mechanical separation of the layer of the handle substrate so as to obtain a second

semiconductor compound comprising the layer of the carrier substrate at the back main side of the active layer;

and further comprising, before the step of initiating mechanical separation, a step of thinning the

layer of the handle substrate;

wherein the layer of the handle substrate and the layer of the carrier substrate are provided with a

substantially symmetrical mechanical structure after the step of thinning the layer of the

handle substrate.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Fathimulla et al.	US 2004/0002197 A1	Jan. 1, 2004
Kim et al.	US 2014/0106649 A1	Apr. 17, 2014
Broekaart et al.	US 2016/0358805 A1	Dec. 8, 2016
Bartek, M., et al. <i>Characterization of High-Resistivity Polycrystalline Silicon Substrates for Wafer-Level Packaging and Integration of RF Passives</i> , 227–230 (2004).		

REJECTIONS

1. Claims 1–5 and 15–16 are rejected under 35 U.S.C. § 103 as being unpatentable over Broekaart, Applicant own Admitted Prior Art (hereinafter “AAPA”) in view of Kim.

2. Claim 6 is rejected under 35 U.S.C. § 103 as being unpatentable over AAPA and Kim, as applied to claim 5 above, and further in view of Bartek.

3. Claims 7–8, 11–13, 17, and 18 are rejected under 35 U.S.C. § 103 as being unpatentable over AAPA and Kim, as applied to claim 4 above, and further in view of Fathimulla.

OPINION

Upon consideration of the evidence and each of the respective positions set forth by each party, we find that the preponderance of evidence supports Appellant’s position. We thus reverse the Examiner’s decision to reject the appealed claims for the reasons provided by Appellant in the record, and add the following for emphasis.

Critical to our analysis herein is claim interpretation. Appellant argues that the Specification expressly defines the term “substantially symmetrical mechanical structure” in claim 1 as meaning “that, even if the layer of temporary handle substrate and the layer of final carrier substrate have different intrinsic mechanical properties (elasticity/rigidity, fracture toughness, etc.) and/or different geometries (thickness, shape, etc.) with respect to each other, they are provided such that the global mechanical properties on either side of the active layer are substantially the same when the mechanical separation is initiated.” Spec. ¶ 15; *see also* ¶¶ 16-19 of the Specification; Appeal Br. 18–20; Reply Br. 2–4.

Appellant submits that based upon the express disclosure in these paragraphs of the Specification, one skilled in the art would readily understand that both the mechanical properties and the geometries of a handle substrate and a carrier substrate must be accounted for when determining whether a multilayer structure has a “substantially symmetrical mechanical structure,” as recited in claim 1. Reply Br. 3.

Appellant explains that if a handle substrate and a carrier substrate have the same thickness but substantially different Young’s Modulus, they clearly would not have a substantially symmetrical mechanical structure, as recited in claim 1. Reply Br. 3–4. Similarly, if a handle substrate and a carrier substrate have the same Young’s Modulus but substantially different thicknesses, they also clearly would not have a substantially symmetrical mechanical structure. Reply Br. 4. Appellant explains that a handle substrate and a carrier substrate having different thickness could be provided with a substantially symmetrical mechanical structure by ensuring

an appropriate difference in the magnitudes of their Young's Modulus. *Id.* Appellant explains that similarly, a handle substrate and a carrier substrate having different Young's Modulus could be provided with a substantially symmetrical mechanical structure by ensuring an appropriate difference in their thicknesses. *Id.* It is in this manner that “the layer of the handle substrate and the layer of the carrier substrate are provided with a substantially symmetrical mechanical structure after the step of thinning the layer of the handle substrate” as claimed in claim 1.

We agree with the aforementioned claim interpretation as explained by Appellant based upon the disclosure in the Specification as pointed out by Appellant. We note that applicants are free to act as their own lexicographers, but any novel definitions they choose to adopt must be clearly indicated as such. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[A] patentee may choose to be his own lexicographer . . . as long as the special definition of the term is clearly stated in the patent specification. . .”). Appellant has done so in the Specification as explained by Appellant in the record.

We thus agree with Appellant's position that the Examiner's claim interpretation (Ans. 4–6) is flawed because it is overly broad. The Examiner views the claim phrase as only requiring a structure having substantially the same geometry or having substantially the same mechanical properties. Ans. 5–6. However, this is inconsistent with the Specification as discussed, *supra*. Spec ¶¶ 15–19. The Specification disclosure indicates that both mechanical and geometrical properties are accounted for in achieving a “substantially symmetrical mechanical structure” as recited in claim 1. Although claims are given their broadest reasonable interpretation during

examination, the interpretation must not be unreasonably broad. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010) (“[T]his court has instructed that any such construction be “consistent with the specification, . . . and that 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 Smith Int’l, Inc.*, 871 F.3d 1375, 1382 (Fed. Cir. 2017) (“[T]he protocol of giving claims their broadest reasonable interpretation . . . does not include giving claims a legally incorrect interpretation’ ‘divorced from the specification and the record evidence.’”) (internal citation omitted).

Having given the aforementioned claim interpretation, we therefore also agree with Appellant that the Examiner’s reliance upon AAPA is flawed because, contrary to the Examiner’s position (Ans. 6), AAPA does not provide for “wherein the layer of the handle substrate and the layer of the carrier substrate are provided with a substantially symmetrical mechanical structure after the step of thinning the layer of the handle substrate” within the meaning of this claim term as discussed, *supra*. Appeal Br. 22–24.

As such, we reverse each rejection (the Examiner does not rely upon the other applied references to cure the stated deficiency of AAPA). Final Act. 5–16.

CONCLUSION

We reverse the Examiner’s decision.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–5, 15, 16	103	Broekaart, AAPA, Kim		1–5, 15, 16
6	103	AAPA, Kim, Bartek		6
7, 8, 11–13, 17, and 18	103	AAPA, Kim, Fathimulla		7, 8, 11–13, 17, and 18
Overall Outcome				1–8, 11–13, and 15–18

REVERSED