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CANTOR COLBURN LLP 20 Church Street 22nd Floor Hartford, CT 06103			DHINGRA, RAKESH KUMAR	
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* WATARU YOSHIKAWA,  
KAZUKI MOYAMA, NOBUYUKI OKAYAMA,  
KENJI SUDOU, and YASUHIRO OTSUKA

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Appeal 2017-001381  
Application 13/502,829  
Technology Center 1700

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Before KAREN M. HASTINGS, GEORGE C. BEST, and  
MERRELL C. CASHION JR., *Administrative Patent Judges.*

BEST, *Administrative Patent Judge.*

DECISION ON APPEAL

The Examiner finally rejected claims 1–9 of Application 13/502,829 under 35 U.S.C. § 103(a) as obvious. Final Act. (February 1, 2016). Claim 1 was also rejected on the non-statutory ground of obviousness-type double patenting. *Id.* Appellants<sup>1</sup> seek reversal of these rejections pursuant to 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we *affirm*.

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<sup>1</sup> Tokyo Electron Limited is identified as the real party in interest. Appeal Br. 3.

## BACKGROUND

The '829 Application describes a sample table that holds a substrate to be processed. Spec. 1. The sample table is used in a microwave plasma processing apparatus that performs a plasma process on the substrate. *Id.*

Claim 1 is representative of the '829 Application's claims and is reproduced below from the Claims Appendix:

1. A sample table which holds a substrate to be processed, the sample table comprising:

an adsorption plate which has a first surface contacting the substrate and a second surface which is an opposite side of the first surface, and has an electrode therein to electrostatically adsorb the substrate on the first surface;

a supporting substrate which has a top surface having a first concave recess, wherein the first concave recess includes a circular bottom surface portion and a tapered portion around the circular bottom surface portion, wherein the circular bottom surface portion has a predetermined diameter and the tapered portion forms a predetermined angle with the circular bottom surface portion; and

an adhesive disposed between the first concave recess and the second surface, wherein the adsorption plate is adhered to the circular bottom surface portion and the tapered portion to approximately conform to the first concave recess such that the first surface of the adhered adsorption plate forms a second concave recess.

Appeal Br. 21.

## REJECTIONS

On appeal, the Examiner maintains<sup>2</sup> the following rejections:

1. Claims 1–3 and 6–8 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Higuma<sup>3</sup> and Migita.<sup>4</sup> Answer 3–6.
2. Claim 4 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Higuma, Migita, Lue,<sup>5</sup> and Imai.<sup>6</sup> Answer 6–8.
3. Claims 5 and 9 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Higuma, Migita, and Schmitt.<sup>7</sup> Answer 8–10.

## DISCUSSION

Appellants only present substantive arguments with respect to the rejection of claim 1. *See* Appeal Br. 8–19. Claims 2–9 are alleged to be patentable solely because they depend from claim 1. *Id.* at 19. Accordingly, we limit our discussion to claim 1. Claims 2–9 will stand or fall with claim 1.

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<sup>2</sup> The Examiner has withdrawn the obviousness-type double patenting rejection. Advisory Act. 2 (April 27, 2016).

<sup>3</sup> JP 2008-243973, published October 9, 2008. The Examiner, without objection from Appellants, relied upon US 2009/0101284 A1, published April 23, 2009, as the English-language counterpart.

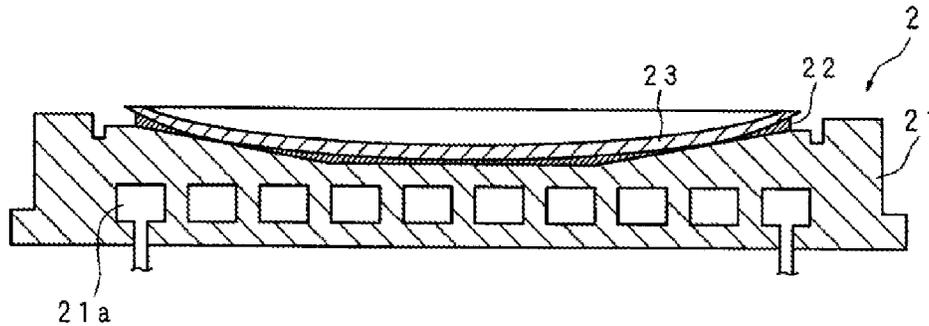
<sup>4</sup> US 2007/0144442 A1, published June 28, 2007.

<sup>5</sup> US 5,761,023, issued June 2, 1998.

<sup>6</sup> US 2006/0021705 A1, published February 2 2006.

<sup>7</sup> US 6,228,438 B1, issued May 8, 2001.

Claim 1 is directed to a sample table which holds a substrate for processing. Figure 2 of the '829 Application, reproduced below, illustrates an embodiment of the claimed sample table.



{Figure 2 is a lateral cross-sectional view schematically showing a sample table according to an embodiment of the claimed invention.}

Figure 2 shows sample table 2. Spec. 9. Sample table 2 includes supporting substrate 21, which includes cooling channels 21a and an adsorption plate 23. *Id.* The upper surface of supporting substrate 21 defines a first concave recess. *Id.* Adhesive 22 is used to attach adsorption plate 23 to the upper surface of supporting substrate 21 so that the top surface of adsorption plate 23 defines a second concave recess. *Id.*

Appellants argue that the Examiner has not established a prima facie case of obviousness for the rejection of claim 1. Appeal Br. 9.

The Examiner rejected claim 1 as unpatentable over the combination of Higuma and Migita. Answer 3–6. The Examiner found that Higuma describes or suggests every limitation of claim 1 except that it “do[es] not explicitly teach that the first surface of the adhered adsorption plate forms a second concave recess.” *Id.* at 4. The Examiner also found that Migita describes or suggests the second concave recess form between a substrate



Appellants argue that the rejection of claim 1 should be reversed because the Examiner did not establish a prima facie case of obviousness. Appeal Br. 9. In particular, Appellants argue that the combination of Higuma and Migita neither describes or suggests the claim limitation “wherein the adsorption plate is adhered to the circular bottom surface portion and the tapered portion to approximately conform to the first concave recess such that the first surface of the adhered adsorption plate forms a second concave recess.” *Id.* at 13–14. Appellants’ argument relies upon the following analysis:

In this regard, **neither** Higuma **nor** Migita discloses the claimed features that ‘the supporting substrate (21) is concaved (i.e., the first concave recess (21b)) and thereby **the adsorption plate (23)** (which includes the electrode for exerting electrostatic force) **is concaved conformed [sic] to the first concave recess.**

That is, (a) Higuma discloses that (the adsorption plate’s upper surface is plainer and) **only** the supporting substrate’s upper surface is concaved, and

(b) Migita discloses (that the supporting substrate’s upper surface is plainer and) **only** the adsorption plate’s upper surface is concaved;

(c) however, these references have **no** recognition/working principles that the second concave recess (of the adsorption plate) is made **due to the conformation to the first concave recess (of the supporting substrate).**

*Id.*

This argument is not persuasive because it fails to address the substance of the rejection. Claim 1 is an apparatus claim. Structural claims, such as claims directed to an article or apparatus, must be distinguished from the prior art in terms of structure. *See In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997) and cases cited therein; *see also In re Danly*, 263 F.2d 844,

848 (CCPA 1959) (“Claims drawn to an apparatus must distinguish from the prior art in terms of structure rather than function.” (citation omitted)); *In re Gardiner*, 171 F.2d 313, 315–16 (CCPA 1948) (“It is trite to state that the patentability of apparatus claims must be shown in the structure claimed and not merely upon a use, function, or result thereof.”). Appellants’ arguments have not persuaded us that the Examiner reversibly erred by finding that the combination of Higuma and Migita describes or suggests each structural limitation recited in claim 1.

Appellants also argue that the subject matter of claim 1 is patently distinct from the combination of Higuma and Migita because the second concave recess arises from the process of conforming the adsorption plate to the surface of the first concave recess. Appeal Br. 13–14; Reply Brief 5–9. In particular, Appellants argue that creation of the second concave recess in the upper surface of Higuma’s adsorption plate as described or suggested by Migita would be a difficult and expensive process. *See* Reply Br. 5–9. These arguments are not relevant to the subject matter of claim 1 because claim 1 is an apparatus claim<sup>8</sup>. Thus, the particular way in which the structure is created is not relevant.

Appellants further argue that the rejection should be reversed because the proposed combination of Higuma and Migita changes the working principles of those references. Appeal Br. 14–15. This argument is not persuasive because Higuma, Migita, and the claimed invention described in electrostatic chuck for use in semiconductor manufacturing.

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<sup>8</sup> We, however, do not hold that such arguments would be irrelevant to a claim directed to the method of making the sample table described in the ’829 Application.

Appellants also argue that the Examiner erred by stating that Migita's plate member **102** has a uniform thickness. Appeal Br. 16. This argument is not persuasive because Migita expressly states that the thickness of the adhesion plate — i.e., the thickness of the insulating layer from the supporting surface **103** to the electrodes **104a** and **104b** — can be made uniform. Migita ¶ 25. Migita further goes on to describe how adsorption plate **102** can be manufactured with internal electrodes. *Id.* ¶ 47.

We have considered Appellants' other arguments and find them to be similarly unpersuasive.

#### CONCLUSION

For the reasons set forth above, we affirm the rejection of claims 1–9 of the '829 Application.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED