

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YUJI MAEDA, KOJI NAKANISHI,
NOBUO TOKAI, and ICHIRO KAWAI

Appeal 2006-2878
Application 10/111,555
Technology Center: 1700

Decided: August 29, 2006

Before GARRIS, WARREN, and FRANKLIN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

We have carefully considered the record in this appeal under 35 U.S.C. § 134, and based on our review, find that we cannot sustain the grounds of rejection advanced in the Answer: claims 1 through 3 under 35 U.S.C. § 102(b) as anticipated by Kanoto¹ (Answer 3); claims 4, 5, and

¹ Kanoto is referred to in the Answer and the Brief as Shin Taira (Answer 2-4; Br. 8-11). We refer to the translation of this published Japanese Patent

7 under 35 U.S.C. § 103(a) as being unpatentable over Kanoto in view of Ushigawa² (Answer 4); and claims 4, 5, and 7 under 35 U.S.C. § 103(a) as being unpatentable over Kanoto in view of Beinglass (*id.*).³

Claims 1 and 7 illustrate Appellants' invention of a semiconductor manufacturing apparatus, and are representative of the claims on appeal:

1. A semiconductor manufacturing apparatus comprising a process chamber, a susceptor set in said process chamber to hold a target substrate in a substrate holding area on an upper surface thereof and heat the target substrate, and heating means for heating the target substrate through said susceptor, wherein

said susceptor supports the target substrate with a substrate support member so as to form, in the substrate holding area, a gap with a first distance between a substrate heating surface as that surface portion of the upper surface of said susceptor which opposes the target substrate and a lower surface of the target substrate, and

a heating adjusting portion for forming a gap with a second distance smaller than the first distance is formed at a predetermined portion on the substrate heating surface, wherein the heating adjusting portion is island-like and formed about and includes a position of rotational center on the substrate heating surface when said susceptor is rotatably driven.

7. A semiconductor manufacturing apparatus according to claim 1, wherein said heating means comprises a plurality of heating lamps arranged to oppose a lower surface of said susceptor.

We refer to the Answer and to the Brief for a complete exposition of the positions advanced by the Examiner and Appellants.

Application of record prepared for the USPTO by Schreiber Translations, Inc. (PTO 06-[2369], February 2006).

² We refer to the translation of this published Japanese Patent Application of record prepared for the USPTO by Schreiber Translations, Inc. (PTO 06-2367, February 2006).

³ Claims 1 through 5 and 7 are all of the claims in the application.

The issues in this appeal are whether the Examiner has established that as a matter of fact, *prima facie*, Kanoto would have described the claimed semiconductor manufacturing apparatus encompassed by representative claim 1 to one skilled in this art within the meaning of 35 U.S.C. § 102(b), and whether the Examiner has established that as a matter of law, *prima facie*, Kanoto combined with either Ushigawa or Beinglass would have taught or suggested the claimed semiconductor manufacturing apparatus encompassed by representative claim 7 to one of ordinary skill in this art within the meaning of 35 U.S.C. § 103(a).

Both of these issues involve the language in claim 1 “wherein the heating adjusting portion [of the susceptor] is island-like and formed about and includes a position of rotational center on the substrate heating surface when said susceptor is rotatably driven,” as Appellants argue (Br. 9-10, 10-11, and 11). We agree with Appellants that “Claim 1 recites the limitation that the heating adjusting portion includes a position of rotational center when the susceptor is rotatably driven” (Br. 9; see specification, e.g., 11:1-8). This limitation further defines the susceptor by what it does, that is, the susceptor is capable of being rotatably driven and the heating adjusting portion thereof is at the center of the rotation. *See generally, In re Echerd*, 471 F.2d 632, 634-35, 176 USPQ 321, 322 (CCPA 1973); *In re Ludtke*, 441 F.2d 660, 663-64, 169 USPQ 563, 565-67 (CCPA 1971); *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971). The Examiner’s refusal to give effect to this limitation is improper (Answer 2:13-14, and 5). *See In re Angstadt*, 537 F.2d 498, 501, 190 USPQ 214, 217 (CCPA 1976); *In re Geerdes*, 491 F.2d 1260, 1262-63, 180 USPQ 789, 791

(CCPA 1974); *In re Wilder*, 429 F.2d 447, 450, 166 USPQ 545, 548 (CCPA 1970).

The Examiner in stating that “[i]t should . . . be understood that if a person of ordinary skill were going to use [Kanoto] with a single substrate he/she would obviously put it at the center,” admits that Kanoto alone does not describe a susceptor having the claimed limitation to one skilled in this art (Answer 5). Indeed, contrary to the Examiner’s position, we find that Kanoto describes and illustrates only susceptors **10,20** having twelve substrate holders **11,21** and an apparent center of rotation in the center thereof which is not included by a substrate holder, and teaches that the susceptor can be changed with respect to the number and dimensions of the substrate holders (e.g., ¶¶ 0011 and 0042-0045; **Figs. 1 and 5**). Thus, we agree with Appellants (Br. 9-10) that there is no teaching in Kanoto from which one skilled in the art would reasonably infer a description of an apparatus having a susceptor with a single substrate holder satisfying the subject claim limitation. *See generally, In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968) (“[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom”).

Accordingly, the Examiner has not established as a matter of fact that *prima facie* each and every element of the claimed semiconductor manufacturing apparatus encompassed by claim 1, arranged as required by the claim, is found in Kanoto alone, either expressly or under the principles of inherency. *See generally, In re Schreiber*, 128 F.3d 1473, 1477,

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44 USPQ2d 1429, 1431 (Fed. Cir. 1997); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677-78, 7 USPQ 1315, 1317 (Fed. Cir. 1988); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

Therefore, in the absence of a *prima facie* case of anticipation, we reverse the rejection of claims 1 through 3 under 35 U.S.C. § 102(b). *See generally, In re Spada*, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3 (Fed. Cir. 1990).

The Examiner's position that the claimed susceptor would have been obvious over the teachings of Kanoto also fails when considered under the requirements of 35 U.S.C. § 103(a) with respect to the ground of rejection of claim 7, dependent on claim 1. Indeed, based on the teachings in Kanoto which we found above, it cannot be said that one of ordinary skill in this art would have found in this reference alone any motivation or suggestion to modify susceptors **10,20** to arrive at the claimed semiconductor manufacturing apparatus encompassed by claim 7, and in this context, the Examiner has not identified the knowledge in the art that would have led this person to such a modification. "Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of the reference. *See B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996)." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000).

On the record before us, the Examiner has not relied on either Ushigawa or Beinglass, both of which disclose susceptors with single

substrate holders, in this respect and thus, has not addressed the question whether either or both references would have been combined with Kanoto by one of ordinary skill in the art to arrive at the claimed susceptor. *See generally, In re Kahn*, 441 F.3d 977, 985-89, 78 USPQ2d 1329, 1334-38 (Fed. Cir. 2006). In any event, the Examiner has also not addressed Appellants' arguments why this person would not have combined the references in this respect (Br. 10-11). *See generally, In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

Thus, on this record, the Examiner has not established that *prima facie* some objective teaching, suggestion, or motivation in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in this art would have led that person to the claimed semiconductor manufacturing apparatus encompassed by claim 7 as a whole, including each and every claim limitation arranged as required therein, without recourse to the teachings in Appellants' disclosure. *See generally, Kahn*, 441 F.3d at 985-88, 78 USPQ2d at 1334-37; *In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *In re Fritch*, 972 F.2d 1260, 1265-66, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992); *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. Accordingly, we reverse the grounds of rejection involving claims 4, 5, and 7 under 35 U.S.C. § 102(b).

The Examiner's decision is reversed.

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REVERSED

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