



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/651,354	10/12/2012	VALENTIN TODOROW	16188USA02	8532
55649	7590	06/30/2020	EXAMINER	
Moser Taboada / Applied Materials, Inc. 1030 Broad Street Suite 203 Shrewsbury, NJ 07702			DEONAUTH, NIRVANA	
			ART UNIT	PAPER NUMBER
			3726	
			NOTIFICATION DATE	DELIVERY MODE
			06/30/2020	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ataboada@mtiplaw.com
docketing@mtiplaw.com
llinardakis@mtiplaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte VALENTIN TODOROW, SAMER BANNA, IMAD YOUSIF,
ALBERT WANG, and GARY LERAY

Appeal 2020-000187
Application 13/651,354
Technology Center 3700

Before JILL D. HILL, LEE L. STEPINA, and ARTHUR M. PESLAK,
Administrative Patent Judges.

HILL, *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, 2, 4–7, and 21–30. *See* Final Act. 1. 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. Appellant identifies the real party in interest as Applied Materials, Inc. Appeal Br. 3.

BACKGROUND

Appellant's invention relates to a process kit ring having a plurality of protrusions. Claims 1, 21, and 26 are independent. Claim 1, reproduced below, illustrates the invention with certain limitations italicized:

1. A process kit ring for use with a substrate support of a process chamber, comprising:

a ring shaped body having an outer edge, an inner edge, a top surface and a bottom forming a rectangular cross section, wherein the outer edge has a diameter of about 12.473 inches to about 12.479 inches and the inner edge has a diameter of about 11.726 inches to about 11.728 inches, and wherein the ring shaped body has a thickness of about 0.116 to about 0.118 inches; and

a plurality of protrusions disposed on the top surface of the ring shaped body and configured to support an edge ring atop of the plurality of protrusions, each of the plurality of protrusions disposed symmetrically about the ring shaped body, wherein each of the plurality of protrusions has a height of about 0.049 inches to about 0.059 inches above the top surface of the ring shaped body.

REFERENCE

The prior art relied upon by the Examiner is:

Name	Reference	Date
Heemstra	US 2008/0289766 A1	Nov. 27, 2008

REJECTION

Claims 1, 2, 4–7, and 21–30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Heemstra (US 2008/0289766, pub. Nov. 27, 2008).

Final Act. 2.

ANALYSIS

Independent claims 1 and 26 recite, *inter alia*, a plurality of protrusions “configured to support an edge ring atop of the plurality of protrusions.” Appeal Br. 15, 17 (Claims App.). Independent claim 21 similarly and more specifically recites three protrusions “configured to support an edge ring atop of the three protrusions.” Appeal Br. 16 (Claims App.).

The Examiner finds that Heemstra discloses a ring shaped apparatus having a plurality of protrusions. Final Act. 2. The Examiner considers that, because Heemstra’s apparatus is capable of being used with an edge ring workpiece, Heemstra meets the above-noted “configured to” limitation. Final Act. 2–3; *see also* Ans. 14.

Appellant asserts that Heemstra’s projections are not configured to support an edge ring. Appeal Br. 10; *see also* Reply Br. 5. According to Appellant, the protrusions of Heemstra are used to prevent the semiconductor wafer from moving outside the bounds of a process plane, which differs from the claimed protrusions supporting an edge ring thereontop. *Id.* at 11.

Appellant has the better position. Although we appreciate that Heemstra discloses a plurality of protrusions 415, Heemstra’s protrusions “serve to maintain the position of the wafer while achieving a more uniform etch rate.” Heemstra ¶ 31. Appellant’s edge ring 228 instead is supported by the claimed protrusions as explained in Fig. 2, reproduced below.

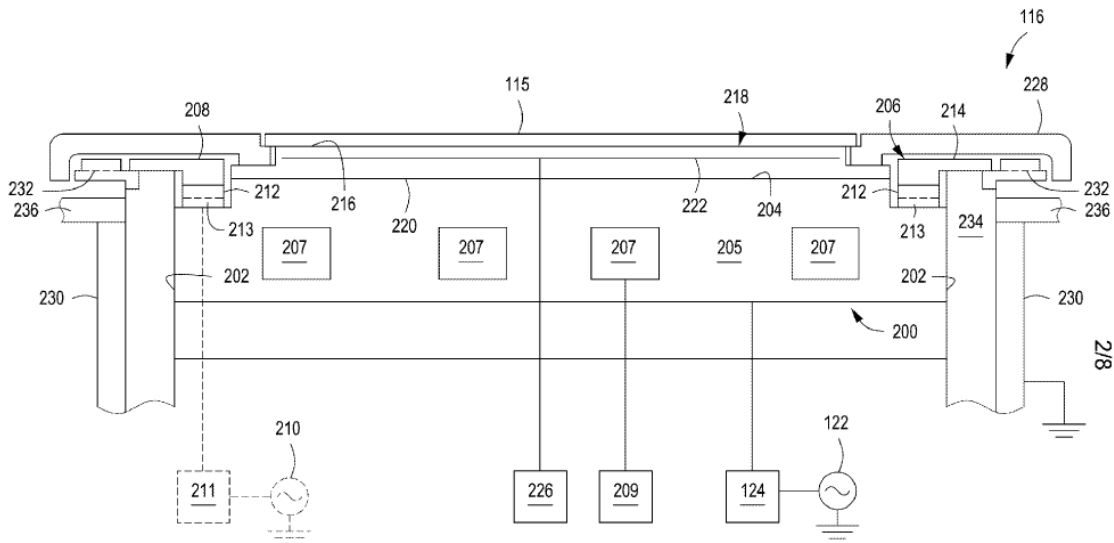


FIG. 2

Figure 2 depicts a schematic view of Appellant’s substrate support. Spec. ¶ 11. Substrate support 116 includes edge ring 228 that is “about equal in height with a processing surface of the substrate 115 when disposed on the electrostatic chuck 218.” Spec. ¶ 28. Edge ring 228 improves processing near the peripheral edge of the substrate and protects the substrate support during processing. *Id.* The Specification further discloses an additional “ring 502 that may be used as the ring 232,” depicted in Figure 2. Spec. ¶ 31; *see also* Fig. 5A. Ring 502 includes a plurality (three shown) of protrusions 506 that support edge ring 228 of substrate support 116 atop the ring 502 “and provide a gap therebetween.” *Id.* ¶ 34; *see also* Fig. 5B. Thus, one of ordinary skill in the art would understand that the claimed ring is distinct from the edge ring, and that the function of the claimed ring is to support the edge ring.

In Heemstra, the uppermost element is the edge ring, as seen in its Fig. 1, reproduced below.

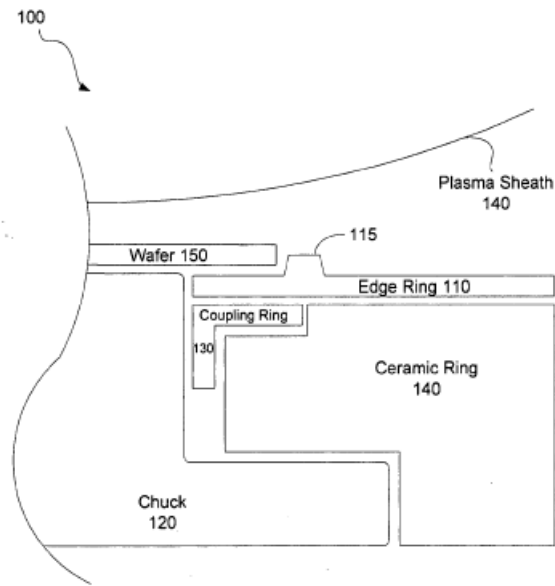


Figure 1

Figure 1 illustrates a simplified cross-sectional view of a plasma processing chamber. Heemstra ¶ 10. As noted above, Heemstra discloses that the projections of its edge ring “serve to maintain the position of the wafer.” *Id.* ¶ 31.

The claims require the projections be “configured to” support an edge ring atop of the protrusions. “Configured to” is normally construed more narrowly than “capable of and, generally, is equivalent to “made to” or “designed to.” *See e.g. In re Giannelli*, 739, F.3d 1375, 1379 (Fed. Cir. 2014); *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349 (Fed. Cir. 2012). Although we appreciate the Examiner’s position that Heemstra’s structural similarities would “permit the apparatus to support an ‘edge ring’ workpiece,” the Examiner has not directed us to any disclosure that Heemstra’s edge ring protrusions are configured to support an [edge] ring atop of the protrusions, nor do we discern any such disclosure in

Heemstra. Ans. 14. The mere fact that Heemstra's projections might be capable of supporting an edge ring, in a hypothetical situation where someone decided to place an edge ring thereupon, is not sufficient to satisfy the limitation in claims 1, 21, and 26 of projections configured to support an edge ring atop of the protrusions. We decline to rely on such hypotheticals to meet this claim limitation. Therefore, we do not sustain the rejection of independent claims 1, 21, and 26 as unpatentable over Heemstra. Claims 2, 4-7, 22-25, and 27-30 depend from claim 1, claim 21, or claim 26. We likewise do not sustain the rejection of the dependent claims for the same reasons.

CONCLUSION

The Examiner's rejection is reversed.

More specifically,

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 4-7, 21-30	103(a)	Heemstra		1, 2, 4-7, 21-30

REVERSED