



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.
14/713,386	05/15/2015	WILLIAM R. FRUCHTERMAN	21883USA	4032
55649	7590	08/25/2020	EXAMINER	
Moser Taboada / Applied Materials, Inc. 1030 Broad Street Suite 203 Shrewsbury, NJ 07702			BAND, MICHAEL A	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			08/25/2020	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 WILLIAM R. FRUCHTERMAN, MARTIN LEE RIKER,
KEITH A. MILLER, and ANTHONY INFANTE

Appeal 2019-005769
Application 14/713,386
Technology Center 1700

Before JOSEPH L. DIXON, DONNA M. PRAISS, and BRIAN D. RANGE,
Administrative Patent Judges.

RANGE, *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 1–5 and 8–12. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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.

CLAIMED SUBJECT MATTER²

Appellant describes the invention as relating to substrate processing chambers. Spec. ¶ 2. Appellant states that “the inventors have provided improved embodiments of apparatus for forming a metal containing layer with good bottom and sidewall management.” *Id.* ¶ 6. Claim 1 is illustrative:

1. A cooled process tool adapter, comprising:
 - an annular body surrounding a central opening, wherein the annular body further comprises a substantially planar uppermost surface and a substantially planar lowermost surface;
 - an annular groove disposed in the substantially planar uppermost surface;
 - an annular groove disposed in the substantially planar lowermost surface;
 - a coolant channel disposed in the annular body;
 - one or more features extending radially inward from the annular body into the central opening, to facilitate supporting a process tool within the central opening;
 - an inlet and an outlet disposed in the annular body and fluidly coupled to the coolant channel; and
 - a power connection coupled to the annular body, the power connection having a terminal extending from the annular body to couple the annular body to a bias power source.

REFERENCES

The Examiner relies upon the prior art below in rejecting the claims on appeal:

² In this Decision, we refer to the Final Office Action dated July 10, 2018 (“Final Act.”), the Appeal Brief filed January 28, 2019 (“Appeal Br.”), the Examiner’s Answer dated May 20, 2019 (“Ans.”), and the Reply Brief filed July 22, 2019 (“Reply Br.”).

<u>Name</u>	<u>Reference</u>	<u>Date</u>
Rosenstein et al. ("Rosenstein")	US 5,690,795	Nov. 25, 1997
Pavloff et al. ("Pavloff")	US 7,981,262 B2	July 19, 2011
West et al. ("West '927")	US 9,096,927 B2	Aug. 4, 2015
Miller	US 9,605,341 B2	Mar. 28, 2017
Scheible et al. ("Scheible")	US 2007/0102286 A1	May 10, 2007
West et al. ("West")	US 2013/0056347 A1	Mar. 7, 2013

REJECTIONS

The Examiner maintains (Ans. 3) the following rejections on appeal:

- A. Claims 1–5 and 8–11 under 35 U.S.C. § 103 as obvious over West in view of Rosenstein. Final Act. 2.
- B. Claim 12 under 35 U.S.C. § 103 as obvious over Scheible in view of Pavloff. *Id.* at 5.
- C. Claims 1–5 and 8–12 on the ground of nonstatutory double patenting as unpatentable over the claims of Miller and Rosenstein. *Id.* at 8.
- D. Claims 1–5 and 8–12 on the ground of nonstatutory double patenting as unpatentable over the claims of West '927 and Rosenstein. *Id.* at 9.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011))

(“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”)). After considering the evidence presented in this Appeal and each of Appellant’s arguments, we are not persuaded that Appellant identifies reversible error except where we otherwise indicate below. Thus, where we affirm the Examiner’s rejections, we do so for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

Rejection A, obviousness over West and Rosenstein. The Examiner rejects claims 1–5 and 8–11 under 35 U.S.C. § 103 as obvious over West in view of Rosenstein. Final Act. 2. Appellant presents separate arguments for claim 1 and for dependent claim 2. We limit our discussion to those claims. Claims 3–5 and 8–11 stand or fall with the claim from which they depend.

With regard to claim 1, the Examiner finds that West teaches a cooled process tool adapter for a physical vapor deposition (“PVD”) chamber that comprises, among other things, “annular body [122],[125], one or more features including a shelf (i.e.,] cap) [122] extending radially inward from the annular body [122],[125] into the central opening [124]” and a “power connection (i.e.,] electrode) [112] . . . having a terminal extending from the annular body [122],[125].” Final Act. 2–3 (citing, for example, West Fig. 1). The Examiner finds that West does not suggest annular grooves in its uppermost and lowermost surfaces. *Id.* at 3. The Examiner, however, finds that Rosenstein teaches such grooves and provides a rationale for incorporating Rosenstein’s grooves into West. *Id.* (citing Rosenstein).

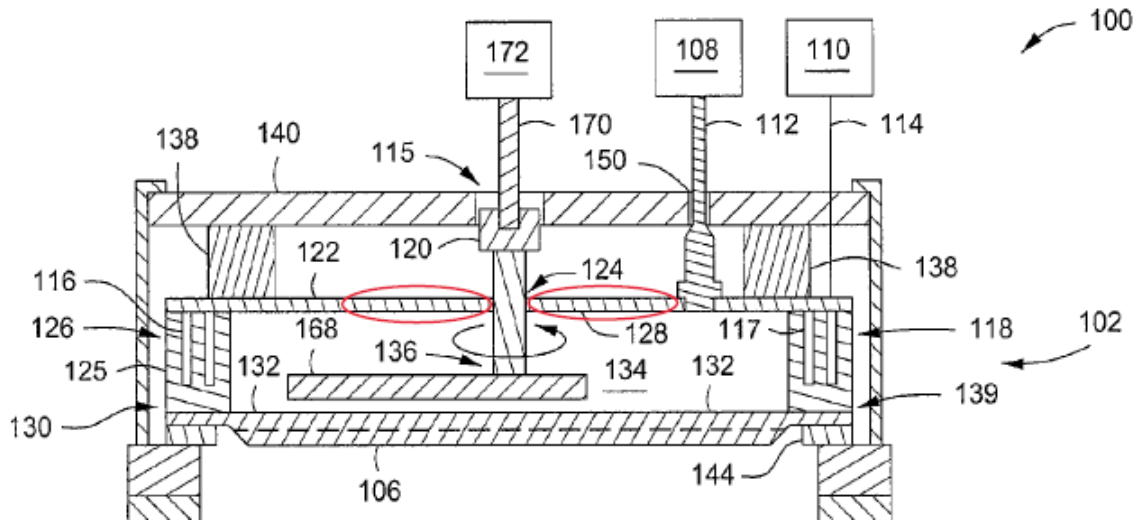
Appellant argues that the Examiner errs by applying one prior art element to two distinct recitations of claim 1. Appeal Br. 7–11. In particular, Appellant argues that cap 122 of West cannot correspond to both the recited

“annular body” and recited “one or more features” because these are distinct claim elements. Appeal Br. 6–7. As a matter of claim construction, we agree that one physical portion of the prior art apparatus cannot correspond to both the recited “annular body” and the recited “one or more features” because claim 1 requires that the “one or more features extend[] radially inward from the annular body into the central opening.” Appeal Br. 19 (Claims App.). Nothing in claim 1, however, prohibits the “annular body” and “one or more features” from being different portions of one integral object.

Appellant further argues that claim 1 requires a “terminal extending from the annular body” and West cannot meet this recitation unless West’s entire cap is the annular body. Appeal Br. 9–11; Reply Brief 5–8. If Appellant were correct that West cannot meet this recitation unless West’s entire cap is claim 1’s recited “annular body,” the cap could not also be the “one or more features extending radially inward from the annular body.”

Appellant’s argument does not persuade us of error. The Examiner’s position is that West’s body 125 along with a portion of cap 122 corresponds to the recited annular body. Ans. 3–6. A different portion of cap 122 corresponds to the recited one or more features extending radially inward from the annular body. *Id.* In particular, the Examiner finds that West body 125 along with the rightmost portion of cap 122 extending from body 125 to the terminal of bias power source 108 corresponds to the recited annular body. *Id.* at 5–6 (annotating West Fig. 1). Under this reasoning, West teaches claim 1’s recited “power connection having a terminal extending from the annular body.” Under this same reasoning, other portions of cap 122 extend radially inward from the annular body as described above and correspond to the recited “one or more features.”

To illustrate, we provide an annotated version of a portion of West Figure 1 below.



The figure above is an annotated reproduction of the upper portion of West Figure 1. West Figure 1 depicts a cross sectional view of a process chamber in accordance with an embodiment of West's invention. West ¶ 10. Above, we add ovals to West Figure 1 to indicate portions of the West structure that, as an example, correspond to claim 1's "one or more features" under the Examiner's analysis. In this example, the remainder of West's structures 122 and 125, as explained above, correspond to claim 1's annular body. As illustrated in the example above, bias power source 108 extends from the annular body (i.e., the portion of cap 124 below and also to the right of electrode 112), and, simultaneously, the portions of cap 122 that we mark with an oval are features that extend radially inward from the annular body into the central opening.

Because Appellant's argument does not identify error, we sustain the Examiner's rejection of claim 1 and of claims 8–11 which depend from claim 1.

Claim 2 recites, “[t]he cooled process tool adapter of claim 1, wherein the one or more features include a shelf extending radially inward from the annular body into the central opening and **disposed below an upper surface of the annular body.**” Appeal Br. 19 (Claims App.) (emphasis added). The Examiner finds that modified West “discloses plating exterior surfaces of the annular body [122],[125] . . . and therefore the shelf [122] extends radially inward towards the central opening [124] and below the upper surface formed by the plating of the annular body [122],[125].” Final Act. 4; *see also* Ans. 6–7 (elaborating on this point).

Appellant argues that, under West’s teachings, the portion of cap 122 extending radially inwards would be at the same level of cap 122 with the plating. Appeal Br. 13–14. Appellant’s argument is persuasive. In particular, the Examiner has not adequately explained how West teaches or suggests the “disposed below an upper surface of the annular body” recitation of claim 2. The Examiner cites only West’s paragraph 22 to support the Examiner’s claim 2 position. Final Act. 4; Ans. 6–7. At paragraph 22, West states, “[i]n some embodiments, exterior surfaces of the body 125 and the cap 122 may be silver plated.” West ¶ 22. West does not, however, teach or suggest that only a portion of body 125 and cap 122 would be plated so that a portion of cap 122 (i.e., the portion of cap 122 that would correspond to the “features” of claims 1 and 2) would be disposed below an upper surface of the annular body as claim 2 requires. We, thus, do not sustain the Examiner’s rejection of claim 2. We also do not sustain the Examiner’s rejection of claims 3–5 for the same reason because those claims depend from claim 2.

Rejection B, obviousness over Scheible in view of Pavloff. The Examiner rejects claim 12 under 35 U.S.C. § 103 as obvious over Scheible

in view of Pavloff. Final Act. 5. Claim 12 recites, among other things, “a shelf extending radially inward from the annular body” and “a plurality of through holes disposed through the shelf.” Appeal Br. 21 (Claims App.)

In the Final Office Action, the Examiner finds that Scheible depicts a shelf [360] extending radially inward from annular body [330]. Final Act. 5–6 (citing Scheible). The Examiner determines that Scheible depicts one “through hole” through shelf [360] and provides reason why a person of skill in the art would combine the teachings of Pavloff to reach multiple through holes. *Id.* (citing Scheible and Pavloff).

In the Appeal Brief, Appellant argued that Scheible’s ledge 360 extends radially outward rather than radially inward and thus does not meet claim 12’s recitations. Appeal Br. 13–15. In response, the Examiner clarifies (or modifies) the prior rejection by annotating Scheible Figure 2 by shading a portion of the figure in grey and finding that the greyed area corresponds to claim 12’s shelf extending radially inward. Ans. 7–8. The Examiner, however, does not identify any through holes within the greyed-section and does not provide a rationale as to why a person of skill in the art would add through holes to the greyed-section. Reply Br. 12. Because the Examiner does not explain how the through hole recitations of claim 12 would have been met under the Answer’s obviousness analysis, we do not sustain this rejection.

Rejections C and D, nonstatutory double patenting. The Examiner rejects claims 1–5 and 8–12 on the ground of nonstatutory double patenting as unpatentable over the claims of Miller and Rosenstein. Final Act. 8. The Examiner also rejects claims 1–5 and 8–12 on the ground of nonstatutory

double patenting as unpatentable over the claims of West '927 and
Rosenstein. *Id.* at 9.

Appellant argues that the Examiner failed to articulate reasoning to support these rejections. Appeal Br. 16–17. We disagree. For each of these rejections, the Examiner finds that Appellant’s claims are not patentably distinct as compared to the claims of the cited art. Final Act. 8–9. The Examiner finds numerous elements in common between Appellant’s claims and the prior art claims and provides a rationale for combining the art’s teachings. *Id.* Appellant has the burden, on appeal, to identify error in the Examiner’s rejection. *Frye*, 94 USPQ2d at 1075. Appellant’s argument here is too general to meet that burden. In particular, Appellant makes no technical or other argument on the merits, and Appellant does not attempt to draw a distinction between the cited art and Appellant’s claims. We, thus, sustain these rejections.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–5, 8–11	103	West, Rosenstein	1, 8–11	2–5
12	103	Scheible, Pavloff		12
1–5, 8–12		Nonstatutory Double Patenting (Miller, Rosenstein)	1–5, 8–12	
1–5, 8–12		Nonstatutory Double Patenting (West '927, Rosenstein)	1–5, 8–12	
Overall Outcome			1–5, 8–12	

Appeal 2019-005769
Application 14/713,386

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2018).

AFFIRMED