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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WILLIAM T. WEAVER, JASON M. SCHALLER, MALCOLM N. DANIEL, JR., ROBERT B. VOPAT, JEFFREY C. BLAHNIK, and JOSEPH YUDOVSKY

Appeal 2019-000670
Application 14/212,665
Technology Center 1700

Before BEVERLY A. FRANKLIN, MICHAEL G. McMANUS, and MERRELL C. CASHION, JR., *Administrative Patent Judges*.

CASHION, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–7 and 15–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[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. 2.

The invention is directed to temperature control systems for small batch substrate handling systems. Spec. ¶ 2. Claim 1 is illustrative of the subject matter claimed and is reproduced below:

> 1. A substrate handling system, comprising:
>
> a robot configured to transfer a plurality of substrates into or out of a processing chamber;
>
> a carousel positioned outside of the processing chamber and configured to position the substrates for transfer by the robot; and
>
> a temperature control system configured to selectively provide heat from below to one or more substrates rotating on the carousel toward the processing chamber and not provide heat to one or more other substrates rotating on the carousel away from the processing chamber.

Independent claim 15 is directed to a substrate processing system comprising essentially the substrate handling system of claim 1.

Appellant requests review of the following rejections[2] from the Examiner's Final Action:

I. Claims 1–6 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Perlov (US 5,951,770, issued September 14, 1999), Hey (US 4,987,856, issued January 29, 1991), and Nguyen (US 2004/0026374 A1, published February 12, 2004).

II. Claims 7 and 15–20 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Perlov, Rice (US 2007/0141748 A1, published June 21, 2007), Hey, and Nguyen.

[2] The Examiner withdrew the rejection under 35 U.S.C. § 112(b) in the Advisory Action dated March 1, 2018.

For Rejection I, Appellant presents arguments only for independent claim 1 and dependent claim 6. *See generally* Appeal Br. For Rejection II, Appellant presents arguments for independent claim 15 and dependent claims 7, 18, and 20. *Id*. We select claim 1 as representative of the subject matter on appeal. Dependent claims 2–5, 16, 17, and 19 stand or fall with their respective independent claim. We address the arguments for claims 6, 7, 15, 18, and 20 separately.

OPINION

Rejection I (under 35 U.S.C. § 103(a))

After review of the respective positions the Appellant and the Examiner provide, we AFFIRM the Examiner's prior art rejection of claims 1–6 under 35 U.S.C. § 103(a) for the reasons presented by the Examiner. We add the following for emphasis.

Claim 1

The Examiner finds that Perlov teaches a substrate handling system, comprising a robot configured to transfer substrates to a processing chamber, a carousel, positioned outside of the processing chamber, configured to transfer the substrate, and a temperature control system to heat the substrate using heating pockets (heaters). Final Act. 5; Perlov Figures 1, 5; col. 4, ll. 1–9, col. 5, ll. 45–55. The Examiner finds Perlov does not explicitly state that the heaters are individually controllable. Final Act. 5. The Examiner finds Hey discloses a carousel arrangement of substrate supports, whereby each substrate support comprises a dedicated heater. Final Act. 5; Hey col. 5, ll. 36–42. The Examiner finds the output of each heater is independently controlled to accommodate varying individualized thermal requirements.

Final Act. 5; Hey col. 9, ll. 38–41. The Examiner further finds that Nguyen discloses substrate supports comprising a heating mechanism embedded in the support that heat the substrates from below. Final Act. 5; Ans. 3; Nguyen ¶ 87. The Examiner determines that it would have been obvious to modify Perlov's resistive heaters to be independently controllable for the reasons provided by Hey and Nguyen. Final Act. 5. The Examiner further determines that Perlov's device, as modified above, is not distinguishable from the claimed device because it would be structurally capable of executing the claimed control sequence. *Id.*

Appellant argues Perlov does not disclose or suggest an apparatus structurally capable of performing the features of Appellant's temperature control system as recited in independent claim 1 because Perlov does not disclose individually controlled heaters. Appeal Br. 6–7. Appellant further argues that Hey does not disclose or suggest "a carousel positioned outside of the processing chamber and configured to position the substrates for transfer by the robot," as recited in Appellant's independent claim 1. Appeal Br. 8. Appellant additionally argues Nguyen does not disclose or suggest a carousel positioned outside of its process chamber containing process stations and is completely silent as to where and/or when heaters are used to heat workpieces. Appeal Br. 9.

Appellant's arguments do not identify reversible error in the Examiner's determination of obviousness.

Appellant's arguments are unavailing because they do not address the rejection the Examiner presents. It is well settled that nonobviousness cannot be established by attacking the references individually when the rejection is predicated upon a combination of prior art disclosures. *In re*

Merck & Co., Inc., 800 F.2d 1091, 1097 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 425–26 (CCPA 1981) (citations omitted) ("The test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art.").

As the Examiner finds, Perlov teaches a substrate handling system that differs from the claimed invention in that Perlov does not disclose heaters that are individually controlled or that heat the substrate from below. Final Act. 5. The Examiner finds that Hey teaches that it is conventional to use substrate supports in a carousel arrangement where each support comprises an independently controlled heater to accommodate varying individualized thermal requirements. Final Act. 5; Hey col. 5, ll. 36–42. The Examiner further finds that Nguyen discloses that it is conventional to heat substrates from below using substrate supports in a carousel arrangement where each support comprises a heating mechanism embedded in the support that heat the substrates from below. Final Act. 5; Ans. 3; Nguyen ¶ 87. Thus, the Examiner provides a reasonable basis for one skilled in the art to modify Perlov's substrate support to arrive at the claimed invention and reasonably expect that the support of Hey/Nguyen would be suitable for Perlov's substrate handling system. *In re O'Farrell*, 853 F.2d 894, 904 (Fed. Cir. 1988) ("For obviousness under § 103, all that is required is a reasonable expectation of success."). Appellant has not argued adequately to the contrary.

Further, "apparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1468 (Fed. Cir. 1990). Therefore, the patentability of an apparatus claim depends on the claimed structure, not on the use or purpose of that structure, *Catalina*

Mktg. Int'l Inc. v. Coolsavings.com Inc., 289 F.3d 801, 809 (Fed. Cir. 2002), or the function or result of that structure. *In re Danly*, 263 F.2d 844, 848 (CCPA 1959); *In re Gardiner*, 171 F.2d 313, 315–16 (CCPA 1948). If the prior art structure possesses all the claimed characteristics including the capability of performing the claimed function, then there is a prima facie case of unpatentability. *In re Ludtke*, 441 F.2d 660, 663–64 (CCPA 1971).

As the Examiner notes, the Examiner further determines that Perlov's device, as modified above, is not distinguishable from the claimed device because it would be structurally capable of executing the claimed control sequence. Final Act. 5.

Claim 6

Claim 6 recites that the substrate handling system of claim 1 further includes a chamber enclosing the substrate handling system and providing a load lock function within the chamber.

The Examiner finds that Perlov teaches the contested claimed feature. Final Act. 5; Ans. 4. Appellant argues that the cited art, individually or combined, does not disclose or suggest the claimed feature. Appeal Br. 11–12.

We are unpersuaded of reversible error in the Examiner's determination of obviousness because the argument again fails to address the rejection presented by the Examiner. *See Merck*, 800 F.2d at 1097; *Keller*, 642 F.2d at 425–26. Appellant's argument does not explain why the Examiner's determination is in error.

Accordingly, we affirm the Examiner's prior art rejection of claims 1–6 under 35 U.S.C. § 103(a) for the reasons the Examiner presents and we provide above.

Rejection II (under 35 U.S.C. § 103(a))

Appellant presents arguments only for claims 7, 15, 18, and 20. See generally App. Br. 9–12. We limit our discussion of this ground of rejection to these claims. Claims 16, 17, and 19 stand or fall with claim 15.

After review of the respective positions the Appellant and the Examiner provide, we AFFIRM the Examiner's prior art rejection of claims 7 and 15–20 under 35 U.S.C. § 103(a) for the reasons presented by the Examiner. We add the following for emphasis.

Independent claim 15 and dependent claims 7 and 20

Appellant relies on the arguments presented when discussing claim 1 and 6 to address the rejection of claims 7, 15, and 20 and does not distinguish the additional features of the claims so rejected based on the additionally cited references. Appeal Br. 9–12. Thus, Appellant's arguments for these claims do not persuade us of reversible error for the reasons we give above.

Claim 18

Claim 18 recites that the factory interface of claim 15's substrate processing system includes a cooling station configured to draw heat from the substrates.

We refer to the Examiner's Final Action for a statement of the rejection of this claim. Final Act. 6.

We have considered Appellant's arguments (Appeal Br. 12) but are unpersuaded of reversible error in the Examiner's determination. This argument again fails to address the rejection presented by the Examiner. *See Merck*, 800 F.2d at 1097; *Keller*, 642 F.2d at 425–26. Appellant's argument does not explain why the Examiner's determination is in error.

Accordingly, we affirm the Examiner's prior art rejection of claims 7 and 15–20 under 35 U.S.C. § 103(a) for the reasons the Examiner presents and we provide above.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–6	103(a)	Perlov, Hey, Nguyen	1–6	
7, 15–20	103(a)	Perlov, Hey, Nguyen, Rice	7, 15–20	
Overall Outcome			1–7, 15–20	

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1) (2017).

AFFIRMED