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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ATSUSHI ENDO, MASAKI KUROKAWA,
and HIROKI IRIUDA

Appeal 2019-002310
Application 13/432,599
Technology Center 1700

Before KAREN M. HASTINGS, RAE LYNN P. GUEST, and GEORGE C. BEST, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] requests our review under 35 U.S.C. § 134(a) of the Examiner's decision rejecting claims 9–13 under 35 U.S.C. § 103 as unpatentable over at least the combined prior art of Takeuchi (JP 06-005533,

[1] We use the word "Appellant" to refer to the "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies Tokyo Electron Limited as the real party in interest (Appeal Br. 3).

Jan. 14, 1994; as translated), Inoue (JP 09-055372 A, Feb. 25, 1997; as translated), and Nagakura (US 2001/0025605 A1, pub. Oct. 4, 2001).[2]

We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM.

CLAIMED SUBJECT MATTER

Claim 9 is illustrative of the subject matter on appeal (italicized portions indicate the key disputed limitation):

> 9. A vertical batch-type film forming apparatus that collectively performs a film forming process to a plurality of processing targets, the vertical batch-type film forming apparatus comprising:
>
> an accommodating container;
>
> a processing chamber disposed inside the accommodating container, the processing chamber accommodating a plurality of processing targets stacked in a heightwise direction and collectively performs a film forming process to the plurality of processing targets;
>
> a heating device which heats the plurality of processing targets accommodated in the processing chamber, and comprises a plurality of heating bodies for heating different portions inside the processing chamber;
>
> an exhauster disposed outside the accommodating container, the exhauster evacuating an inside of the processing chamber;
>
> a gas supply mechanism which supplies a gas used in a process into the accommodating container;

[2] An additional reference, Merry (US 2009/0004405 A1, pub. Jan. 1, 2009), was applied to dependent claim 10 and is listed in the Summary Table located at the end of this Decision. Discussion of this reference is not necessary for disposition of this appeal.

> a plurality of gas holes formed in a first side wall of the processing chamber to flow the gas from a space defined by an inner wall of the accommodating chamber and the first side wall of the processing chamber toward the plurality of processing targets inside the processing chamber;
>
> an exhauster port, one end of which is coupled to a lower portion of a second side wall of the processing chamber, the second side wall being opposite to the first side wall, the other end of which is coupled to the exhauster disposed outside the accommodating container in such a way that the gas flows directly from the processing chamber to the exhauster; and
>
> *a controller which is configured to control* the vertical batch-type film forming apparatus such that
>
> (i) the gas used in a process is supplied into the processing chamber via the plurality of gas holes in a parallel flow to processing surfaces of the plurality of processing targets, and
>
> (ii) the film forming process is collectively performed to the plurality of processing targets *without setting a furnace temperature gradient in the processing chamber, wherein when the film forming process is collectively performed to the plurality of processing targets, temperatures of the plurality of heating bodies are set to be the same.*

Appellant's arguments focus on independent claim 9, and they do not present additional arguments for any other claim (*see generally* Briefs). Accordingly, all claims, including those separately rejected, stand or fall together.

OPINION

Upon consideration of the evidence of record and each of Appellant's contentions as set forth in the Appeal Brief, as well as the Reply Brief, we determine that Appellant has not demonstrated reversible error in the

Examiner's rejections (e.g., *see generally* Ans.). *In re Jung*, 637 F.3d 1356, 1365–66 (Fed. Cir. 2011) (explaining the Board's long-held practice of requiring Appellant(s) to identify the alleged error in the Examiner's rejection). We sustain the rejections for the reasons expressed by the Examiner in the Final Office Action and the Answer.

We add the following primarily for emphasis.

It has been established that "the [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 418 (2007); *see also In re Fritch*, 972 F.2d 1260, 1264–65 (Fed. Cir. 1992) (a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in the art would have reasonably been expected to draw therefrom).

Appellant's main contention is that Nagakura's gas feeder "is completely different" to the claimed configuration (Appeal Br. 15) such that it would not have been obvious to add the controller for the heating elements of Nagakura to the Takeuchi/Inoue combination as proposed by the Examiner because of the differing gas flow paths (Appeal Br. 15, 16; e.g., Reply Br. 8, 12). Appellant is de facto arguing that Nagakura teaches away from the claimed invention. Appellant also argues that the Examiner is using impermissible hindsight (e.g., Appeal Br. 18, 19; *generally* Reply Br.). Appellant's arguments are not persuasive of reversible error for reasons presented by the Examiner (Ans. 5–10).

In *KSR*, the Supreme Court stated that:

> In determining whether the subject matter of a . . . claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim. If the claim extends to what is obvious, it is . . . [unpatentable] under § 103.

"The Supreme Court's decision in *KSR* . . . directs us to construe the scope of analogous art broadly, stating that '*familiar items may have obvious uses beyond their primary purposes*, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle.'" *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010) (quoting *KSR*, 550 U.S. at 420).

It is also well established that a prior art reference must be considered in its entirety, i.e., as a whole, when determining if it would lead one of ordinary skill in the art away from the claimed invention. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983); *In re Harris*, 409 F.3d 1339, 1341 (Fed. Cir. 2005) (whether a reference teaches away from a claimed invention is a question of fact).

Each of the applied references is directed to a heated, vertically-arranged, wafer processing reactor, such that one of ordinary skill in the art, using no more than ordinary creativity, would have combined the known features of such reactors in accordance with the Examiner's position with a reasonable expectation of success. One of ordinary skill in the art would have inferred and readily appreciated that a known heater controller for a wafer processing reactor that may be configured to either maintain a uniform temperature *or* to provide a temperature gradient, such as taught in Nagakura, may be used on any wafer processing reactor such as that of the Takeuchi/Inoue wafer processing reactor combination (Ans. 5, 6).

Likewise, Appellant's arguments regarding impermissible hindsight to combine the cited art are also unpersuasive for the reasons given above. That is, the arguments fail to account for "the inferences and creative steps that a person of ordinary skill in the art would employ." *See KSR*, 550 U.S. at 418.

Thus, Appellant has not shown reversible error in the Examiner's position that it would have been obvious for one of ordinary skill to have used a known heating controller technique as exemplified in Nagakura's vertically-arranged, wafer processing reactor for predictably heating the Takeuchi/Inoue vertically-arranged, wafer processing reactor. *See KSR*, 550 U.S. at 417 (the predictable use of known prior art elements or steps performing the same functions they have been known to perform is normally obvious; the combination of familiar elements/steps is likely to be obvious when it does no more than yield predictable results); *Ball Aerosol & Specialty Container, Inc. v. Limited Brands, Inc*., 555 F.3d 984, 993 (Fed. Cir. 2009) (under the flexible inquiry set forth by the Supreme Court, the PTO must take account of the "inferences and creative steps," as well as routine steps, that an ordinary artisan would employ) (emphasis omitted).

Accordingly, we sustain the Examiner's obviousness rejections, noting that no dependent claims are separately argued, including separately rejected claim 10 (Appeal Br. 21).

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
9, 11–13	103	Takeuchi, Inoue, Nagakura	9, 11–13	
10	103	Takeuchi, Inoue, Nagakura, Merry	10	
Overall Outcome			9–13	

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)(1)(iv).

AFFIRMED