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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/836,616	08/26/2015	ADOLPHUS E. MCCLANAHAN	TI-75104	8982

23494 7590 01/06/2020

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EXAMINER
MONSUR, NASIMA

ART UNIT	PAPER NUMBER
2866	

NOTIFICATION DATE	DELIVERY MODE
01/06/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ADOLPHUS E. MCCLANAHAN, ALAN J. WEGLEITNER, DANIEL A. FRESQUEZ, and MARK DAMONE GILLETTE

Appeal 2019-000407
Application 14/836,616
Technology Center 2800

Before LINDA M. GAUDETTE, DONNA M. PRAISS, and LILAN REN, *Administrative Patent Judges.*

PRAISS, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Appellant[2] appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1–12. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We REVERSE.

[1] Our Decision refers to the Specification ("Spec.") filed Aug. 26, 2015, Appellant's Appeal Brief ("Appeal Br.") filed Apr. 26, 2018, the Examiner's Answer ("Ans.") dated Aug. 31, 2018, and Appellant's Reply Brief ("Reply Br.") filed Oct. 22, 2018.

[2] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies Texas Instruments Incorporated as the real party in interest. Appeal Br. 1.

STATEMENT OF THE CASE

The invention relates to methods for probing wafers or testing packaged devices in environments that are at a temperature below the freezing point of water. Spec. ¶ 1. The Specification discloses setting a dry gas flow to ensure the probe environment is at a positive pressure differential relative to the external atmosphere. *Id.* ¶ 19. According to the Specification, the dry gas flow may be increased or decreased to obtain a reference pressure value. *Id.* ¶ 15. More particularly, the Specification describes increasing the dry gas flow when the pressure is below the predetermined positive pressure differential. *Id.* ¶ 22.

Claim 1, the sole independent claim on appeal reproduced below from the Claims Appendix to the Appeal Brief, is illustrative (disputed limitation italicized).

> 1. A method, comprising:
>
> flowing a dry gas into a thermal chamber sealed and maintained at a freezing temperature;
>
> sensing a chamber pressure in the thermal chamber during the flowing the dry gas into the thermal chamber; and
>
> *increasing a flow rate of the dry gas into the thermal chamber when the chamber pressure is below a predetermined pressure differential in reference to an ambient pressure*.

ANALYSIS

We review the appealed rejections for error based upon the issues Appellant identifies. *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 positions of both the Examiner and Appellant, we are persuaded the

Examiner reversibly erred for the reasons set forth in Appellant's briefs and discussed below.[3]

Rejection 1: Anticipation by Komatsu

The Examiner rejects claims 1, 7, 10, and 11 under 35 U.S.C. § 102(a)(1) as anticipated by Komatsu.[4] Final Act. 4–6.

Appellant contends the Examiner's finding that Komatsu discloses "increasing a flow rate of the dry gas into the thermal chamber when the chamber pressure is below a predetermined pressure differential in reference to an ambient pressure" recited in claim 1 is in error, because Komatsu merely discloses maintaining a predetermined depressurized atmosphere that is below atmospheric pressure while dry gas is introduced into the space at a controlled flow rate. Appeal Br. 6–7 (citing Komatsu ¶¶ 31, 33, 34, 36). According to Appellant, Komatsu's disclosure confirms that the pressure within Komatsu's space is lower than atmospheric pressure at all times while the dry gas is introduced into the space. Appeal Br. 7; Reply Br. 7–9.

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[3] We understand from the Advisory Action and attachment dated May 24, 2018 that the Examiner's rejection of claim 12 under 35 U.S.C. § 112(b) for lacking antecedent basis to be withdrawn in view of Appellant's Amendment filed April 26, 2018 under 37 C.F.R. § 1.116 amending claim 12 to recite "The method of claim 1" rather than "The system of claim 1." Both the Advisory Action and the attachment indicate Appellant's April 26, 2018 reply to the Final Office Action is entered and Appellant's Amendment complies with the Examiner's form requirement set forth in the Final Office Action. MPEP § 1206. The Advisory Action also indicates that the Examiner's Answer responds to Appellant's arguments and the rejection to the form of claim 12 is omitted from the Examiner's Answer stating the rejections applicable to the appealed claims.

[4] US 2015/0145540 A1, published May 28, 2015.

Appellant's arguments are persuasive of harmful error. Komatsu is directed to a semiconductor inspection system and method that prevents condensation at an interface part that makes electrical connection by evacuating the space surrounded by a mother board to a depressurized atmosphere lower than the atmospheric pressure by about 10 kPa to 100 kPa. Komatsu ¶¶ 7, 31. Komatsu teaches supplying dry gas into the space at a predetermined flow rate to maintain this state and reliably prevent condensation at the interface part. *Id.* ¶ 36. As Appellant correctly points out, the Examiner's finding (Ans. 15) that Komatsu's flow rate controller "can increase the pressure and also decrease the pressure to a predetermined pressure differential by controlling the flow rate of the dry gas" and that this is "the inherent feature of [a] control system" fails to explain why Komatsu's disclosure of controlling a gas flow rate necessarily discloses the claimed step of increasing a flow rate of the dry gas into the thermal chamber when the chamber pressure is below a predetermined pressure differential. The Examiner finds (Ans. 16) that Komatsu's controller can control/change the pressure differential both above and below the ambient pressure, however, the record contains no specific finding that increasing a dry gas flow rate increases the pressure or pressure differential as required by claim 1's method.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). In order to anticipate, a reference must identify something falling within the claimed subject matter with sufficient specificity to constitute a description thereof within the purview of § 102. *In*

re Schaumann, 572 F.2d 312, 317 (CCPA 1978). It is well established that specific examples of the claimed subject matter are not necessary to establish anticipation. Rather, to anticipate, one skilled in the art must be able to "**at once envisage**" the claimed subject matter in the prior art disclosure. *In re Petering*, 301 F.2d 676, 681 (CCPA 1962) (claimed chemical compound described by prior art reference because one skilled in the art would "at once envisage" each member of a limited class of chemical structures).

The Examiner's finding that Komatsu's flow rate controller can both increase and decrease a predetermined pressure differential fails to explain how one skilled in the art would envisage the claimed step of "increasing a flow rate of the dry gas into the thermal chamber when the chamber pressure is below a predetermined pressure differential" from Komatsu's method. The Examiner's position (Ans. 15) that Komatsu's flow rate controller inherently increases or decreases the flow of gas to maintain, increase, or decrease a pressure differential is also insufficient to support anticipation by Komatsu, because it fails to provide a basis for the claimed relationship between increasing the flow rate of the dry gas and raising the pressure in a chamber.

"It is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. 'Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.'" *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002) (citations and internal quotation marks omitted). "Inherency, however, may not be established by probabilities or possibilities. The mere

fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotation marks omitted).

The Examiner's rejection does not sufficiently explain why Komatsu inherently discloses claim 1's method. At most, the rejection presents the probability that when Komatsu's flow rate controller increases the flow rate of gas, the pressure will increase. Such a probability is insufficient to support anticipation of claim 1 over Komatsu.

In view of the above and for the reasons provided in the Appeal Brief and the Reply Brief, we reverse the Examiner's rejection of claim 1 as anticipated by Komatsu.

Because claims 7, 10, and 11 require the same step of increasing a flow rate of the dry gas when the chamber pressure is below a predetermined pressure differential as in claim 1, we do not sustain the Examiner's rejection of claims 7, 10, and 11 as anticipated by Komatsu for the same reasons.

Rejection 2: Obviousness over Komatsu and Miyata

The Examiner rejects claims 2–6, 9, and 12 under 35 U.S.C. § 103 as being unpatentable over Komatsu in view of Miyata.[5] Final Act. 7–14. Claims 2–6, 9, and 12 depend directly or indirectly from claim 1.

The Examiner's reliance on additional prior art in the rejection of claims 2–6, 9, and 12 does not cure the deficiencies discussed above with regard to claim 1. As noted in the Examiner's Answer, Komatsu rather than

[5] US 5,198,752, issued Mar. 30, 1993.

Miyata is relied upon to teach the "predetermined pressure differential" recited in claim 1. Ans. 18. Therefore, we do not sustain the Examiner's rejection of claims 2–6, 9, and 12 under § 103.

Rejection 3: Obviousness over Komatsu, Miyata, and Dyer

The Examiner rejects claim 8 under 35 U.S.C. § 103 as being unpatentable over Komatsu, Miyata, and further in view of Dyer.[6] Final Act. 14–15. Claim 8 depends from claim 1 and requires using a manometer to sense the chamber pressure. Appeal Br. 2 (Claims Appendix).

The Examiner's reliance on additional prior art in the rejection of claim 8 does not cure the deficiencies discussed above with regard to claim 1. Therefore, we do not sustain the Examiner's rejection of claim 8 under § 103.

CONCLUSION

For these reasons and those the Appellant provides, we reverse the Examiner's prior art rejections of claims 1–12.

DECISION SUMMARY

In summary:

Claim(s) Rejected	**35 U.S.C. §**	**Reference(s)/Basis**	**Affirmed**	**Reversed**
1, 7, 10, 11	102(a)(1)	Komatsu		1, 7, 10, 11
2–6, 9, 12	103	Komatsu, Miyata		2–6, 9, 12
8	103	Komatsu, Miyata, Dyer		8
Overall Outcome				1–12

[6] US 5,379,632, issued Jan. 10, 1995.

REVERSED