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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS WILLUM JENSEN and JOHNNY BONKE

Appeal 2019-004913
Application 13/511,557
Technology Center 2400

Before THU A. DANG, ELENI MANTIS MERCADER, and
BETH Z. SHAW, *Administrative Patent Judges*.

SHAW, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 20–24 and 27–39. *See* Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We conducted an oral hearing for this case on August 4, 2020.

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 GEA PROCESS ENGINEERING A/S. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to a method of monitoring a spray dryer and a spray dryer comprising one or more infrared cameras. Claim 20, reproduced below, is illustrative of the claimed subject matter:

20. A method of monitoring a spray dryer part subjected to the formation of deposits, comprising the steps of:
providing a spray drying chamber, and
associating one or more cameras with the spray drying chamber, said one or more cameras having a field of view inside the spray drying chamber, at least one of said one or more cameras being an infrared camera, and
measuring a temperature of the spray dryer part,
providing a control system, and providing a set value for the temperature of the spray dryer part, wherein the control system is associated with an alarm triggered when the temperature exceeds said set value,
wherein the measuring of the temperature of the spray dryer part is carried out by measuring a temperature of deposits of solid material accumulated on the spray dryer part,
wherein the alarm is triggered as a result of deposits forming in the spray drying chamber and the temperature of the deposits exceeding the set value for the spray dryer part,
wherein the spray dryer part comprises at least one of the spray nozzle, a portion of a wall of the spray drying chamber, or a portion of a fluid bed gas distributor plate.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Christensen	US 5,839,207	Nov. 24, 1998
Ray	US 2002/0153627 A1	Oct. 24, 2002
Campbell	US 2004/0225452 A1	Nov. 11, 2004
Arp	US 2012/0057018 A1	Mar. 8, 2012
Miller	US 6,229,563 B1	May 8, 2001
Sugiura	JP 2001-057642 A	Aug. 18, 1999

REJECTIONS

Claims 20–24 and 27–39 are rejected under 35 U.S.C. § 112(a) or 35 U.S.C.112 (pre– AIA), first paragraph, as failing to comply with the written description requirement. Final Act. 7.

Claims 20–23, 27, 28, 29, 30, 33, 34, and 38 are rejected under pre–AIA 35 U.S.C. § 103(a) as being unpatentable over Arp, Mujumdar, and Campbell. Final Act. 9.

Claim 24 is rejected under pre–AIA 35 U.S.C. § 103(a) as being unpatentable over Arp, Mujumdar, Campbell, and Christensen. Final Act. 18.

Claims 29, 31, 32, 35 and 36 are rejected under pre–AIA 35 U.S.C. § 103(a) as being unpatentable over Arp, Mujumdar, Campbell, and Miller. Final Act. 19.

Claim 37 is rejected under pre–AIA 35 U.S.C. § 103(a) as being unpatentable over Arp, Mujumdar, Campbell, Miller, and Sugiura. Final Act. 21.

Claim 39 is rejected under pre–AIA 35 U.S.C. § 103(a) as being unpatentable over Arp, Mujumdar, Campbell, and Ray. Final Act. 22.

OPINION

Section 112 Rejection

Regarding claims 20 and 33, the Examiner finds that the claim limitations “measuring a temperature of deposits of solid material accumulated on the spray dryer part” and “measures a temperature of deposits of solid material accumulated on a spray dryer part on the spray dryer” are not supported by the Specification at the time the application was filed because the Specification uses the word “potentially” and does “not

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support” direct measurement of accumulated deposits of solid material. Final Act. 7–8; Ans. 4–5.

We do not agree with the Examiner’s finding. We agree with Appellant that original claim 7, and page 9 of the Specification, provide sufficient written description support for these claim limitations. For example, original claim 7, which was filed with the patent application, recites: “whereby the monitoring is carried out with respect to deposits of solid material, and the set value for the temperature is the temperature of the deposits.” In the Answer, the Examiner does not respond to Appellant’s arguments regarding original claim 7.

Accordingly, we do not sustain the rejection of claims 20–24 and 27–39 under 35 U.S.C. § 112(a) or 35 U.S.C.112 (pre– AIA), first paragraph, as failing to comply with the written description requirement.

Section 103 Rejections

We conclude the Examiner did not err in finding one skilled in the art would have recognized the combination of references teaches or suggests the disputed limitations of the pending claims. We refer to, rely on, and adopt the Examiner’s findings and conclusions set forth in the Final Rejection and Answer with respect to the § 103 rejections. Ans. 6–9.

Claim 20 recites, inter alia, “measuring a temperature of deposits of solid material accumulated on the spray dryer part” “wherein the spray dryer part comprises at least one of the spray nozzle, a portion of a wall of the spray drying chamber, or a portion of a fluid bed gas distributor plate.”

Appellant argues that Mujumdar does not teach or suggest that the temperature of deposits of solid material accumulated on a spray dryer part is to be measured. Appeal Br. 12. Yet, the Examiner does not rely on

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Mujumdar, alone, to teach “measuring of the temperature of the spray dryer part is carried out by measuring a temperature of deposits of solid material accumulated on the spray dryer part,” as recited in claim 20. Rather, the Examiner relies on the combination of Arp and Mujumdar to teach this element. Ans. 6–7.

In particular, Arp teaches that a “thermal imaging camera 26” provides an output that is an “electronic representation of the variations of temperature within the camera’s field of view.” Arp ¶ 61. Arp also describes how a “thermal imaging camera 86 is arranged to scan the spray pattern 88 adjacent the exit of the *nozzle* and thereby obtain a direct measure of the temperature of the slurry of material as it exits the spray nozzle. *Id.* at 70 (emphasis added). The Examiner explains that Mujumdar describes monitoring operations in spray drying for a potential danger of explosion and fire. Ans. 6. Because the claim recites measuring a temperature of deposits “on the spray dryer part,” and because the spray dryer party “comprises at least one of the spray nozzle,” Arp at least suggests measuring the temperature of something (e.g., deposits) in the field of view of the camera, including the nozzle. Arp, ¶¶ 61, 70.

Appellant also argues that there would not have been a reasonable expectation of success in modifying the references in the manner asserted by the Office. Appeal Br. 14. “By shifting the focus of the infrared camera of Arp as suggested by the Examiner, it would not have been possible ‘to determine the rate at which coating material is being deposited onto the tablets, and to control of the spray pressure and other processing parameters in response to the data derived from the thermal imaging camera,’ as taught by Arp.” *Id.* “As such, one of ordinary skill in the art would not have made such a modification of Arp.” *Id.*

We are not persuaded by this argument, which is not supported by any evidence in the record. Upon reviewing the record before us, we find that the Examiner’s suggestion for the proposed modification in the prior art suffices as an articulated reason with some rational underpinning to establish a prima facie case of obviousness. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). In summary, we find that an ordinarily skilled artisan at the time of the claimed invention would have combined Arp’s teaching of a thermal imaging camera that scans and measures its field of view including a spray nozzle for a spray drying system (*see* Arp ¶¶ 61, 70, Fig. 6), with Mujumdar’s teaching of a monitoring for potential fire in spray drying operations and spontaneous combustion in product deposits (*see* Mujumdar pp. 301–302), and Campbell’s teaching of an alarm (Campbell ¶ 86).² *See* Ans. 6–9 (“With [Arp’s] specifically selected area [i.e., field of view of a spray nozzle] there would have been a reasonable expectation of success to monitor the spray nozzle for clogging/deposits and to monitor the temperature of said clogging/deposits to prevent a fire due to deposit ignition due to deposit temperature, as taught by Mujumdar.”). Such a combination would have been within ordinarily skilled artisans’ knowledge when accounting for the inferences and creative steps that these artisans would have employed. *See KSR*, 550 U.S. at 416.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *Id.* at 417. Because Appellant

² We note that Appellant does not dispute any of the Examiner’s findings with respect to Campbell. *See* Appeal Br. 9–14; Reply Br. 8–10.

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has not demonstrated that the proposed combination would have been “uniquely challenging or difficult for one of ordinary skill in the art,” the proposed modification would have been well within the purview of the ordinarily skilled artisan. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418).

Accordingly, we sustain the § 103 rejection of claim 20. Because Appellant has not presented separate patentability arguments or has reiterated substantially the same arguments as those previously discussed for the § 103 rejection of claim 20 above, the remaining pending claims fall therewith. *See* 37 C.F.R. § 41.37(c)(1)(iv).

CONCLUSION

We reverse the rejection of claims 20–24 and 27–39 under 35 U.S.C. § 112(a) or 35 U.S.C.112 (pre– AIA), first paragraph, as failing to comply with the written description requirement.

We affirm the rejections of claims 20–24 and 27–39 under § 103.

Because we affirm at least one ground of rejection with respect to each claim on appeal, the Examiner’s decision to reject claims 20–24 and 27–39 is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
20–24, 27–39	112			20–24, 27–39
20–23, 27, 28, 29, 30, 33, 34, 38	103	Arp, Mujumdar, Campbell	20–23, 27, 28, 29, 30, 33, 34, 38	
24	103	Arp, Mujumdar, Campbell, Christensen	24	
29, 31, 32, 35, 36	103	Arp, Mujumdar, Campbell, Miller	29, 31, 32, 35, 36	
37	103	Arp, Mujumdar, Campbell, Miller, Sugiura	37	
39	103	Arp, Mujumdar, Campbell, Ray	39	
Overall Outcome			20–24, 27–39	

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).

AFFIRMED