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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ALSTON ILFORD SCIPIO, PAUL ROBERT FERNANDEZ,
REBECCA EVELYN HEFNER, and SANJI EKANAYAKE

Appeal 2019-001636
Application 14/571,322
Technology Center 3700

Before CHARLES N. GREENHUT, BENJAMIN D. M. WOOD, AND
LEE L. STEPINA, *Administrative Patent Judges*.

STEPINA, *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 1–3, 5–13, 15–19, and 21. 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 General Electric Company. Appeal Br. 2.

CLAIMED SUBJECT MATTER

The claims are directed to an online and offline compressor anticorrosion treatment system that uses condensate or boiler feed water for component passivation. Spec. ¶ 101.

Claims 1, 15, and 16 are independent. Claim 1, reproduced below, is illustrative of the claimed subject matter.

1. A gas turbine engine, comprising:
 - a compressor;
 - a compressor wash system in communication with the compressor, the compressor wash system configured for online and offline washes;
 - a condensate or boiler feed water system in communication with the compressor;
 - a dosing system in communication with the condensate or boiler feed water system; and
 - a temperature and concentration management system comprising one or more sensors configured to determine a concentration of an anticorrosion agent in a flow of condensate or boiler feed water in the condensate or boiler feed water system in a feedback loop, wherein the temperature and concentration management system is configured to automatically control the concentration based on output from the one or more sensors.

Appeal Br. 12 (Claims App.).

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Foster	US 6,491,048 B1	Dec. 10, 2002
Hjerpe	US 2007/0059159 A1	Mar. 15, 2007
Saha	US 2013/0186435 A1	July 25, 2013
Scipio	US 2013/0330172 A1	Dec. 12, 2013
White	US 9,103,261 B1	Aug. 11, 2015

REJECTIONS

I. Claims 1, 3, 5, 7, 8, 12, 16, 17, and 21 are rejected under 35 U.S.C. § 103 as unpatentable over Hjerpe, Saha, and White.

II. Claims 2, 9–11, 13, 15, and 19 are rejected under 35 U.S.C. § 103 as unpatentable over Hjerpe, Saha, White, and Scipio.

III. Claims 6 and 18 are rejected under 35 U.S.C. § 103 as unpatentable over Hjerpe, Saha, White, and Foster.

OPINION

Rejection I–Hjerpe, Saha, and White

The Examiner finds that Hjerpe discloses many of the elements recited in claim 1, including a compressor, a compressor wash system, a dose system, and a temperature and concentration management system. Final Act. 3–4. However, the Examiner finds

Hjerpe is silent on a condensate or boiler feed water system in communication with the compressor; the dosing system in communication with the condensate or boiler feed water system; and the temperature and concentration management system comprising one or more sensors configured to determine a concentration of an anticorrosion agent in a flow of condensate or boiler feed water in the condensate or boiler feed water system in a feedback loop, wherein the temperature and concentration management system is configured to automatically control the concentration based on output from the one or more sensors.

Id. at 4. The Examiner turns to Saha as teaching a condensate or boiler feed water system (HRSG 150 and heater 170) in communication with compressor 120 and a flow of condensate or boiler feed water in the condensate or boiler feed water system. *Id.* at 4–5 (citing Saha, Fig. 3). The Examiner reasons that it would have been obvious to a person of ordinary

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skill in the art to provide condensate or boiler feed water to the compressor and dosing system “in order to increase the overall system efficiency by reducing the parasitic losses associated with operating water wash systems as suggested by Saha.” *Id.* at 5 (citing Saha ¶ 5).

The Examiner finds White discloses the use of a sensor to determine the concentration of an anticorrosion agent in order to operate a feedback loop that controls the amount of the anticorrosion agent added—preventing its waste. *Id.* at 5–6; Ans. 3.

Appellant argues that Examiner provides an inadequate rationale for modifying the system of Hjerpe to include the use of water from a condensate or boiler feed water system. Appeal Br. 7. Specifically, Appellant contends Saha teaches that the operation of wash systems causes an undesirable parasitic loss, not an improvement. *Id.*

In response, the Examiner takes the position that Saha intends to *reduce* parasitic losses associated with existing wash systems, and, therefore, the proposed modification to the system of Hjerpe, based on Saha’s teachings, would result in an improvement. Ans. 2–3.

We agree with the Examiner on this point. Saha discloses that compressor wash systems are useful, but also create a parasitic loss (a decrease in power output). Saha ¶¶ 1–4. However, paragraph 5 of Saha explains that “the parasitic losses associated with a compressor water wash system may be reduced and/or eliminated so as to improve overall system efficiency[, and] otherwise wasted heat may be used to provide useful work.” Accordingly, contrary to Appellant’s argument, Saha teaches not only that compressor wash systems result in a parasitic losses, Saha also teaches a manner of using waste heat to reduce these losses.

Appellant next argues “White is entirely silent as to any determination of temperature using a sensor, and therefore fails on its face to teach or suggest the claimed **temperature and** concentration management system.” Appeal Br. 8. This argument does not apprise us of Examiner error because the Examiner finds that Hjerpe discloses a temperature and concentration management system and relies on White only to teach the use of a feedback loop to control the concentration in the water supplied to the wash system. *See* Ans. 3. In particular, the Examiner finds that paragraphs 39 and 40 of Hjerpe disclose managing the temperature of the water used in the wash system. Paragraph 39 of Hjerpe states, “[h]eated water may be advantageous to use, e.g. for compressor washing. For this purpose pump skid 201 includes tanks and heaters for providing heated water.” Thus, the Examiner’s finding regarding Hjerpe’s disclosure of a temperature management system is supported by a preponderance of the evidence.²

Appellant contends “White does not teach or suggest the claimed temperature and management system because it is specifically directed to a fuel system and discusses, at length, its intended purpose of reducing waste of ‘expensive fuel additives.’” Appeal Br. 8. This argument is unavailing because the Examiner’s use of White’s teachings does not depend on any association of the sensor and feedback loop taught by White with a compressor wash system. Rather, as the Examiner explains, “one of ordinary skill in the art would recognize the general teachings in White of using a sensor to measure the amount of additive in a fluid and iteratively use that measurement to determine how much additive should be added to

² Appellant does not assert that Hjerpe fails to disclose a temperature and concentration management system. *See* Appeal Br. 6–9.

the fluid as being applicable to a water wash system.” Ans. 4. Accordingly, Appellant’s apparent contention that White relates to a system so different from that of Hjerpe that a person of ordinary skill in the art would not have found the implementation of White’s sensor and feedback loop to be an obvious improvement to Hjerpe’s compressor wash system is unavailing.

Appellant next contends, “[a]lthough White describes a generic concentration management system, it is applied to a fuel delivery system in White, and one having skill in the art would therefore apply it to the respective fuel delivery systems of Hjerpe and Saha if combined - not to the compressor wash system as asserted by the Examiner.” Appeal Br. 9. This argument does not apprise us of Examiner error because, as discussed above, the Examiner’s rejection relies on White’s general teaching of using a sensor and feedback loop to control the concentration of an additive in a fluid—the rejection does not rely on a bodily incorporation of White’s system with the system disclosed by Hjerpe. Ans. 5. The fact that a person of ordinary skill in the art may have found other implementations of White’s teachings obvious to implement in Hjerpe’s system (such as in Hjerpe’s fuel system) does not undermine the basis for the Examiner’s rejection, specifically, that the use of a feedback loop as taught by White would have been obvious in order to control the concentration of additive in Hjerpe’s system. *See* Final Act. 5–6; Answer 3.

We have considered all of Appellant’s arguments in support of the patentability of claim 1, but find them unavailing. Accordingly, we sustain the rejection of claim 1. Appellant relies only on the arguments set forth for claim 1 in support of claims 3, 5, 7, 8, 12, 16, 17, and 21. *See* Appeal Br. 9. Accordingly, these claims fall with claim 1.

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Rejections II and III— Hjerpe, Saha, White, Scipio, and Foster

Appellant makes no separate arguments for the patentability of claims 2, 6, 9–11, 13, 15, 18, and 19 (Rejections II and III). *See* Appeal Br. 10. Accordingly, we sustain the Examiner’s rejection of these claims for the same reasons discussed above regarding claim 1 (Rejection I).

CONCLUSION

The Examiner’s rejections are affirmed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 3, 5, 7, 8, 12, 16, 17, 21	103	Hjerpe, Saha, White	1, 3, 5, 7, 8, 12, 16, 17, 21	
2, 9–11, 13, 15, 19	103	Hjerpe, Saha, White, Scipio	2, 9–11, 13, 15, 19	
6, 18	103	Hjerpe, Saha, White, Foster	6, 18	
Overall Outcome			1–3, 5–13, 15–19, 21	

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