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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CLAUS GREWE

Appeal 2019-000855
Application 14/376,426
Technology Center 3700

Before JENNIFER D. BAHR, DANIEL S. SONG, and
STEFAN STAICOVICI, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's decision in the Final Office Action (dated Apr. 13, 2018) rejecting claims 14–17 and 24–34. We have jurisdiction over this Appeal under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We REVERSE and enter a NEW GROUND of REJECTION pursuant to our authority under 37 C.F.R. § 41.50(b).

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Siemens Aktiengesellschaft is identified as the real party in interest in Appellant's Appeal Brief (filed July 18, 2018). Appeal Br. 1.

INVENTION

Appellant's invention is directed "to a method for avoiding pump surges in a compressor." Spec., para. 2.²

Claim 14, the sole independent claim, is representative of the claimed invention and reads as follows:

14. A method for avoiding pump surges in a compressor, comprising:

monitoring a plurality of parameters during an operation of the compressor with a plurality of vibration sensors and predetermining a desired value range for the plurality of parameters,

triggering a reaction that counteracts an imminent pump surge of the compressor if a number of the plurality of parameters exceed or fall below the desired value range for the number of the plurality of parameters,

wherein the plurality of parameters comprises a parameter assigned to rotational noise of the compressor, and

the parameter assigned to the rotational noise of the compressor is a vibration amplitude and/or frequency of at least one component of a fluid-flow machine, and the at least one component comprises a housing of a turbine, and

detecting mechanical vibrations of the at least one component with the plurality of vibration sensors fitted at multiple points on a circumference of the at least one component and not in a flow path of the at least one component.

² Substitute Specification, filed August 3, 2014.

REJECTIONS

- I. The Examiner rejects claims 14–16, 24, 25, and 27–29 under 35 U.S.C. § 103(a) as being unpatentable over Bonanni,³ Kinzie,⁴ and Hoyte.⁵
- II. The Examiner rejects claims 17 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Bonanni, Kinzie, Hoyte, and Walter.⁶
- III. The Examiner rejects claim 31 under 35 U.S.C. § 103(a) as being unpatentable over Bonanni, Kinzie, Hoyte, Walter, and Stabley.⁷
- IV. The Examiner rejects claim 26 under 35 U.S.C. § 103(a) as being unpatentable over Bonanni, Kinzie, Hoyte, and Bently.⁸
- V. The Examiner rejects claims 32 and 33 under 35 U.S.C. § 103(a) as being unpatentable over Bonanni, Kinzie, Hoyte, and Palin.⁹
- VI. The Examiner rejects claim 34 under 35 U.S.C. § 103(a) as being unpatentable over Bonanni, Kinzie, Hoyte, and Abali.¹⁰

³ Bonanni et al., US 2004/0068387 A1, published Apr. 8, 2004.

⁴ Kinzie et al., US 8,074,499 B2, issued Dec. 13, 2011.

⁵ Hoyte et al., US 2011/0247418 A1, published Oct. 13, 2011.

⁶ Walter et al., US 5,594,665, issued Jan. 14, 1997.

⁷ Stabley et al., US 7,905,702 B2, issued Mar. 15, 2011.

⁸ Bently, US 6,092,029, issued July 18, 2000.

⁹ Palin et al., US 8,091,862 B2, issued Jan. 10, 2012.

¹⁰ Abali et al., US 7,282,873 B2, issued Oct. 16, 2007.

ANALYSIS

Rejection I

Independent claim 14 requires, *inter alia*, monitoring “vibration amplitude . . . of at least one component of a fluid-flow machine,” wherein “the at least one component comprises a housing of a turbine.” Appeal Br. 10 (Claims App.).

The Examiner finds that Bonanni discloses many of the limitations of independent claim 14, but does not disclose that “the at least one component comprises a housing of a turbine.” Final Act. 2–3 (citing Bonanni, para. 18, Fig. 1). Nonetheless, the Examiner finds that “Hoyte teaches parameter sensors providing measurements of operating parameters of a turbine operating in conjunction with a compressor . . . for monitoring anomalies to avoid damage to the system.” *Id.* at 3. The Examiner explains that Hoyte cures the deficiency of Bonanni, which already teaches the use of vibration sensors in other locations of a gas turbine, because Hoyt “not only teach[es] monitoring many parameters of the turbine, but . . . [also teaches] using those parameters of the turbine to determine the state of the compressor.” Adv. Act. 2.¹¹ Thus, the Examiner concludes that it would have been obvious to a person of ordinary skill in the art to modify the method of Bonanni to “change the component to comprise a housing of a turbine as taught by Hoyte to avoid damage to the system.” Final Act. 3.

Appellant argues that Bonanni “already teaches avoiding damage to the compressor as a goal, so the [Examiner’s] proposed modification provides no advantage,” and, thus, “does nothing that . . . [Bonanni] doesn’t

¹¹ Advisory Action, dated May 17, 2018.

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