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EXAMINER

LAGUARDA, GONZALO

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PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIC KURTZ, PAUL JOSEPH TENNISON,
WILLIAM CHARLES RUONA, WAHEED ALASHE,
DAVID A. MAY, and JOSHUA PUTMAN STYRON

Appeal 2016-005032
Application 13/438,740¹
Technology Center 3700

Before ANTON W. FETTING, PHILIP J. HOFFMANN, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

According to Appellants, the invention relates to “[m]ethods and systems for increasing fuel economy of a vehicle including [an] SCR catalyst.” Spec., Abstract. Claims 1, 9, and 16 are the only independent

¹ According to Appellants, “[t]he real party in interest is Ford Global Technologies, LLC.” Appeal Br. 3.

claims on appeal. Below, we reproduce claim 1 as illustrative of the appealed claims.²

1. A method for operating an engine, comprising:
adjusting an EGR amount supplied to an engine in response to an amount of NH₃ stored within an SCR catalyst and an amount of urea stored in a tank.

REJECTIONS AND PRIOR ART

The Examiner rejects claims 1, 5–9, and 11–20 under 35 U.S.C. § 102(b) as anticipated by Katogi (US 2006/0086080 A1, pub. Apr. 27, 2006).

The Examiner rejects claims 2–4 and 10 under 35 U.S.C. § 103(a) as unpatentable over Katogi.

ANALYSIS

Anticipation rejection

Independent claim 1, and its dependent claims 5–8

Independent claim 1 recites, in relevant part, “adjusting an EGR [exhaust gas recirculation] amount supplied to an engine in response to . . . an amount of urea stored in a tank.” Appeal Br., Claims App. The Examiner finds that Katogi’s Abstract and paragraphs 5, 10–13, 61, and 65 teach this recitation (Final Action 2; Answer 2–3), while Appellants argue that none of these portions of Katogi discloses adjusting an EGR amount in response to an amount of urea stored in a tank (Appeal Br. 15–16; Reply Br. 2–5). Based on our review, for the reasons we discuss below, the

² We correct claim 1 to recite “NH₃.” See, e.g., Appellants’ Response filed Mar. 18, 2013, 2.

Examiner does not support adequately the finding that Katogi discloses the disputed claim recitation.

Specifically, although Katogi's Abstract states that "an EGR amount adjusting unit . . . adjust[s] an EGR amount," and that "[a]n addition amount of the additive and the EGR amount are set depending on an operating state and deterioration of the catalyst with time," this portion does not describe adjusting an EGR amount in response to an amount of urea stored in a tank. Katogi, Abstract; *see also* Appeal Br. 15. Katogi's paragraph 5 discusses problems of known systems, including the risk of pollution resulting from injecting a large amount of ammonia or urea water. Katogi ¶ 5; *see also* Appeal Br. 16. Katogi also describes the following: "increasing the EGR amount when the regeneration of the catalyst is determined as being insufficient" (Katogi ¶ 10); "modifying the addition amount of the additive depending on the amount of the detected particular component" in an exhaust gas (*id.* ¶ 11); "setting upper and lower limit values of the modification amount for the addition amount of the additive, and modifying engine control parameters . . . to suppress emission of the particular component upon detection of arrival of the modification amount to the upper and lower limit values" (*id.* ¶ 12); and "setting upper and lower limit values of the modification amount for the addition amount of the additive, and modifying the EGR rate or fuel injection timing . . . to suppress emission of the particular component upon detection of arrival of the modification amount to the upper and lower limit values" (*Id.* ¶ 13). However, none of these portions of Katogi discuss adjusting an EGR amount in response to an amount of urea stored in a tank. Reply Br. 2–5.

Katogi's paragraph 61 describes computing an amount of urea remaining, and that "the spraying of the urea water is stopped" if the amount of remaining urea is below a certain threshold. Katogi ¶ 61; *see* Reply Br. 2–4. Similarly, Katogi's paragraph 65 describes stopping the spraying of urea water under certain circumstances. Katogi ¶ 65; *see* Appeal Br. 16. But, neither portion describes adjusting an EGR amount in response to an amount of urea stored in a tank. Thus, based on the foregoing, the Examiner does not support adequately the finding that Katogi discloses the disputed claim recitation, and, therefore, we do not sustain the anticipation rejection of claim 1 or its dependent claims 5–8.

Independent claim 9, and its dependent claims 11–15

Independent claim 9 recites, in relevant part, "adjusting an EGR amount supplied to an engine in response an amount of urea stored in a tank while a urea injection system is allowed to inject NH₃." Appeal Br., Claims App. For reasons similar to those discussed above regarding claim 1, the Examiner does not support adequately the finding that Katogi teaches adjusting an EGR amount supplied to an engine in response an amount of urea stored in a tank. Therefore, we do not sustain the anticipation rejection of claim 9 or its dependent claims 11–15.

Independent claim 16, and its dependent claims 17–20

Independent claim 16 recites, in relevant part, "adjusting an amount of urea injected in response to an amount of urea stored in a tank being greater or less than an amount to reach a predetermined urea refill interval." Appeal Br., Claims App. The Examiner finds that Katogi's paragraphs 65 and 74 teach this recitation (Final Action 5; *see also* Answer 5), while Appellants argue that neither paragraph discloses the claimed adjusting (Appeal Br. 28–

29; Reply Br. 9–10). Based on our review, for the reasons we discuss below, the Examiner does not support adequately the finding that Katogi discloses the disputed claim recitation.

Katogi’s paragraph 65 states that

[w]hen the amount of the urea water in a urea water tank comes into a predetermined range, the control unit **200** informs a driver of the fact that the amount of the remaining urea water has reduced to a low level. . . . When the amount of the urea water remaining in the urea water tank is reduced below a lower limit, the spraying of the urea water is stopped and an alarm is issued for prompting the driver to reduce the engine output (**309**).

Katogi ¶ 65. Although this portion of Katogi teaches stopping the injection of *urea water* when the amount of *urea water* falls below a lower limit, this portion does not describe anything about adjusting an *amount of urea* injected in response to *an amount of urea stored in a tank* being greater or less than a predetermined amount.

Katogi’s paragraph 74 does state that “the amount of supplied urea is set in reverse proportion to the concentration of the urea water.” Katogi ¶ 74. But, it is not apparent from either the paragraph itself, or our review of Katogi in general, that this portion of Katogi discloses adjusting an amount of urea that is *injected* anywhere, as compared, for example, to changing an amount of urea that is supplied to the urea water, based on a concentration of the urea in the urea water. It may be that this paragraph teaches (for example) adding more urea water when the concentration of urea in the urea water is too low, such that no change in an amount of *injected* urea ever occurs. Thus, the Examiner does not support adequately the finding that Katogi discloses the disputed claim recitation, and, therefore, we do not sustain the anticipation rejection of claim 16 or its dependent claims 17–20.

Obviousness rejection

Each of claims 2–4 and 10 depends from independent claim 1 or 9, whose anticipation rejection based on Katogi we do not sustain. The Examiner does not demonstrate that an obvious variation of Katogi or any other reference remedies the above-discussed deficiencies in the independent claims' rejection. Thus, we do not sustain the obviousness rejection of dependent claims 2–4 and 10.

DECISION

We REVERSE the Examiner's anticipation and obviousness rejections of claims 1–20.

REVERSED