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EXAMINER	
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte JOAKIM HAEGERSTAM

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Appeal 2018-003349
Application 14/395,534
Technology Center 3700

_____

Before STEFAN STAICOVICI, MICHELLE R. OSINSKI, and LEE L. STEPINA, *Administrative Patent Judges*.

OSINSKI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1–8. An oral hearing was held on October 10, 2019. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We REVERSE.

[1] We use the term "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Volvo Construction Equipment AB.

THE CLAIMED SUBJECT MATTER

Claim 1, the sole independent claim, is reproduced below.

> l. An arrangement for controlling the temperature of air being fed to a vehicle engine, the arrangement comprising an engine compartment in which the engine is arranged, the engine compartment being provided with an ambient air intake allowing an airflow into the engine compartment, the engine being provided with an engine air intake arranged inside the engine compartment, and an air fan for forcing the airflow via the ambient air intake into the inside of the engine compartment, the engine air intake being arranged in a position allowing at least a substantial part of the airflow to enter the engine air intake wherein the air fan is arranged for selectively being operated in:
>
> - a first mode of operation with a relatively high speed for providing an airflow from the ambient air intake to the engine air intake, thereby decreasing the temperature of the air flowing into the engine air intake; or
>
> - a second mode of operation with a relatively low speed for providing an airflow from within the engine compartment to the engine air intake, thereby increasing the temperature of the air flowing into the engine air intake.

EVIDENCE

The Examiner relied on the following evidence in rejecting the claims on appeal:

Kajitani	US 5,284,025	Feb. 8, 1994
Yabuki	US 2009/0217655 A1	Sept. 3, 2009

REJECTIONS

I. Claims 1–4 and 6–8 stand rejected under 35 U.S.C. § 102(b) as anticipated by Yabuki. Final Act. 2–4.

II. Claim 5 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Yabuki and Kajitani. *Id.* at 5–6.

OPINION

Rejection I

The Examiner finds that Yabuki discloses, among other things, an engine air intake 30 located inside an engine compartment and an air fan 25 for forcing airflow via an ambient air intake into the inside of the engine compartment. Final Act. 3. With respect to the engine air intake, the Examiner states that "paragraph 0072 of Yabuki explicitly describes 'air taken in through an air cleaner 39 . . . and an intake flow passage 30'" and that "Figure 2 of Yabuki further shows air intake flow passage 30 connected to air cleaner 39, and ends there because that is where ambient air is being drawn in . . . for the intake passage." Ans. 5–6.

With respect to the air fan 25 for forcing airflow via an ambient air intake 30 into the inside of the engine compartment, the Examiner references paragraph 2 of Yabuki. Final Act. 2–3; Yabuki ¶ 2 (describing "a cooling fan disposed in the engine room [that] is driven to introduce open air through intake holes formed in the cover, thereby producing cooling air" that is "introduced into the engine room and passes through various heat exchangers for cooling them," including, for example, "an intercooler for cooling compressed air pressurized by a turbocharger which is mounted on the engine").

As to air fan 25 selectively being operated in (i) a first mode with a high speed for providing an airflow *from the ambient air intake* to the engine air intake, thereby decreasing the temperature of air flowing into the engine air intake; and (ii) a second mode with a low speed for providing an airflow *from within the engine compartment* to the engine air intake, thereby increasing the temperature of the air flowing into the engine air intake, the

Examiner finds that Yabuki discloses operation of air fan 25 at high speed N_{max} and low speed N_{min} in Figures 4–6, along with a logic chart in Fig. 3 to determine the desired fan rotation speed. Final Act. 3.

Appellant argues that Yabuki fails to disclose an air fan selectively being operated in first and second modes in accordance with the claims. Appeal Br. 5. More particularly, Appellant argues "the sole purpose of the fan 25 [in Yabuki] is to provide cooling air for each one of an intercooler, a radiator 23 and an oil cooler 24." *Id.* (citing Yabuki ¶ 70) (emphasis omitted). Appellant continues that "[i]t is not at all understood how this flow can have any impact on whether air that enters the intake flow passage 30 is from engine compartment or from ambient air" and "the air that enters the intake flow passage 30 will only be dependent on the rotational speed of the turbo 38." *Id.* Appellant continues that "there is no disclosure regarding [the] source [of air that enters the intake flow passage 30]" and "[i]t is merely speculation that the air entering the engine air intake will be from an engine compartment or from ambient air, much less that it will do so based on the speed of the fan." Reply Br. 4 (emphasis omitted). Appellant also argues that "there is no reason to expect that the speed of the fan 25 will have any influence on the temperature of the air entering the air cleaner 39, much less the intake flow passage 30 through the turbo charger 38."). Appeal Br. 6.

We agree with Appellant that it is not clear how the speed of air fan 25 affects the source and/or temperature of airflow to Yabuki's intake flow passage 30. At most, the Examiner explains that "[t]he speed of the fan 25 of Yabuki determines the amount of air, and thus the amount of cooling, [that] is applied to the engine components." Ans. 8 (citing Yabuki ¶ 2). As

pointed out by Appellant, "[t]he mere fact that a fan causes air to pass externally over coils of a heat exchanger does not mean that that same fan causes air to flow internally through those coils, much less through a flow passage connected to the heat exchanger." Reply Br. 4; Yabuki Fig. 2. In other words, the Examiner has not adequately explained how operation of Yabuki's air fan 25 at a high speed (e.g., N_{max}) will result in providing an airflow *from the ambient air intake* to the Examiner-identified engine air intake 30 so as to decrease the temperature of air flowing into the engine air intake, whereas operation of air fan 25 at a low speed (e.g., N_{min}) will result in providing an *airflow from within the engine compartment* to the Examiner-identified engine air intake 30 so as to increase the temperature of air flowing into the engine air intake, as required by claim 1.

For the foregoing reasons, we do not sustain the rejection of claim 1, and claims 2–4 and 6–8 which depend therefrom, under 35 U.S.C. § 102(b) as anticipated by Yabuki.

Rejection II

The Examiner's rejection of claim 5 under 35 U.S.C. § 103(a) relies on the same erroneous finding that Yabuki discloses an air fan arranged for selectively being operated in a first mode for providing an airflow from the ambient air intake to the engine air intake and a second mode for providing an airflow from within the engine compartment to the engine air intake. Final Act. 5–6. The Examiner does not explain how Kajitani would remedy the deficiency of Yabuki. Accordingly, we do not sustain the rejection of claim 5 under 35 U.S.C. § 103(a) as unpatentable over Yabuki and Kajitani.

DECISION

The Examiner's decision to reject claims 1–8 is REVERSED.

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–4, 6–8	102(b)	Yabuki		1–4, 6–8
5	103(a)	Yabuki, Kajitani		5
Overall Outcome				1–8

REVERSED