

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID KARL BIDNER and GOPICHANDRA SURNILLA

Appeal No. 2002-0006
Application No. 09/528,214

HEARD: MAY 7, 2002

Before COHEN, FRANKFORT, and McQUADE, Administrative Patent Judges.
COHEN, Administrative Patent Judge.

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AND INTERFERENCES**

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DECISION ON APPEAL

FORD & BROS. PATENT ATTORNS

This is an appeal from the final rejection of claims 1 through 16. These claims constitute all of the claims in the application.

Appellants' invention pertains to a method for controlling an internal combustion engine of a vehicle having a tailpipe and to a control system for a vehicle having an internal combustion engine. A basic understanding of the invention can be derived

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from a reading of exemplary claims 1, 6, and 9, respective copies of which appear in the APPENDIX to the brief (Paper No. 8).

As evidence of obviousness, the examiner has applied the documents listed below:

Takeshima et al (Takeshima)	5,437,153	Aug. 1, 1995
Rudy	5,531,972	Jul. 2, 1996
Hori et al (Hori)	5,727,528	Mar. 17, 1998
Cullen et al (Cullen)	5,832,722	Nov. 10, 1998

The following rejections are before us for review.

Claims 1 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeshima in view of Rudy.

Claims 2 through 5, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeshima in view of Rudy, as applied to claims 1 and 6 above, further in view of Hori.

Claims 9 through 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeshima in view of Cullen and Rudy.

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Claims 14 through 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeshima in view of Cullen and Rudy, as applied to claim 10, further in view of Hori.

The full text of the examiner's rejections and response to the argument presented by appellants appears in the answer (Paper No. 9), while the complete statement of appellants' argument can be found in the brief (Paper No. 8).

OPINION

In reaching our conclusion on the obviousness issues raised in this appeal, this panel of the board has carefully considered appellants' specification and claims, the applied teachings,¹ and the respective viewpoints of appellants and the examiner. As a

¹ In our evaluation of the applied prior art, we have considered all of the disclosure of each document for what it would have fairly taught one of ordinary skill in the art. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966). Additionally, this panel of the board has taken into account not only the specific teachings, but also the inferences which one skilled in the art would reasonably have been expected to draw from the disclosure. See In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

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consequence of our review, we make the determination which follows.

We do not sustain the respective rejections of appellants' claims.

This panel of the Board fully appreciates the examiner's evaluation of the applied prior art, and point of view as to the obviousness issues on appeal, as clearly expressed in the answer. Nevertheless, for the reasons set forth below, we conclude that the evidence before us does not establish a *prima facie* case of obviousness.

As set forth in the "Background of the Invention" section of appellant's application (pages 1 and 2),

a three way catalyst optimized for NO_x storage, known as a NO_x trap or catalyst, is typically coupled downstream of the first three-way catalytic converter. The NO_x trap typically stores NO_x when the engine operates lean and release NO_x to be reduced when the engine operates rich or near stoichiometry.

One method of determining when to operate end lean operation and regenerate a NO_x trap by operating the engine rich or near stoichiometry uses an estimate of NO_x.

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discharged from the NO_x trap. In this approach, when an estimated amount of NO_x discharged from the NO_x trap is greater than a predetermined value, the NO_x trap is regenerated.

In each of the respective rejections under 35 U.S.C. § 103(a) on appeal, the examiner relies upon the basic combination of the Takeshima and Rudy patents.

A reading of the Takeshima disclosure reveals to us that its teaching is fundamentally akin to what is indicated by appellants as the prior art above. However, as expressly acknowledged by the examiner, Takeshima lacks the limitation in each of appellants' independent claims 1, 6, and 9 that addresses determining a set-point amount of emissions per distance of the vehicle. These independent claims also include a recitation that an engine parameter (air-fuel ratio) is adjusted based upon the aforementioned set-point. To overcome the deficiency, the examiner relies upon the Rudy patent.

The patent to Rudy focuses upon what is indicated to be a markedly superior performance (column 12, lines 11 through 20) obtained from a catalytic converter "A" (TABLE in column 12)

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using, as in EXAMPLE 3 (column 11, lines 25 through 38), the combination of a low ignition temperature catalyst as an upstream catalytic member with a downstream catalyst having a higher ignition temperature but higher conversion efficiencies at operating temperature than the upstream catalyst (graph in the sole Figure of the patent). The patentee (column 11, lines 59 through 62) makes reference to FEDERAL TEST PROCEDURE results in the noted TABLE which are expressed as total weighted grams per mile of CO, HC, and No_x emissions escaping from the catalyst.

As to the latter Rudy reference, we perceive that one having ordinary skill in the art would have clearly comprehended this document as a teaching of the markedly superior performance of a converter "A", with its performance having been tested relative to Federal standards (total weighted grams per mile of CO, HC, and No_x).

Collectively considering the Takeshima and Rudy teachings, this panel of the Board fails to discern any suggestion that would have been derived by one having ordinary skill for altering the engine control of Takeshima by determining a set-point amount of emissions per distance of the vehicle. Consistent with our

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above assessment, it is quite apparent to us that Rudy only relied upon a grams per mile analysis for testing converter performance, and not for determining a set-point en route to adjusting an engine operating parameter (air-fuel ratio), as now claimed.

As a final point, we note that the examiner has applied the respective Hori and Cullen teachings for addressing features other than the above limitation concerning the set-point amount of emissions per distance of the vehicle. Thus, based on the examiner's rationale, these references do not overcome the deficiency of the Takeshima and Rudy references.

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