

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARTIN GROSSER and CLAUS HINRICHSEN

Appeal No. 2002-0236
Application No. 08/911,494

ON BRIEF

Before COHEN, FRANKFORT, and NASE, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 3 and 6 through 8 in Paper No. 13, mailed November 9, 2000. Claims 4 and 5, the only other claims remaining in the application, stand objected to, but have been

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Appellants' invention relates to an apparatus and method for metering fuel in a motor vehicle and, more particularly, to a system which acts to eliminate, in a reliable and cost effective manner, the danger of fuel discharge under high pressure, e.g., such as the high pressure present in a fuel supply rail of a fuel injection system, in the event of an accident. More specifically, appellants' invention relates to an arrangement wherein there is provided a means or system for reducing the pressure and a means or system for issuing a signal relevant to vehicle safety, with fuel pressure being reduced in response to the signal relevant to vehicle safety. Independent claims 1 and 7 are representative of the subject matter on appeal and a copy of those claims, as they appear in the Appendix to appellants' brief, is attached to this decision.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Yoshino	5,043,898	Aug. 27, 1991
Katayama et al.	5,091,857	Feb. 25, 1992

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Claims 1 and 6 through 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Katayama in view of Minagawa.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Katayama in view of Minagawa as applied to claim 1 above, and further in view of Yoshino.

Rather than reiterate the examiner's explanation of the above-noted rejections and the conflicting viewpoints advanced by the examiner and appellants regarding those rejections, we make reference to the examiner's answer (Paper No. 20, mailed August 17, 2001) for the examiner's reasoning in support of the rejections, and to appellants' brief (Paper No. 19, filed June 13, 2001) and reply brief (Paper No. 21, filed January 4, 2002) for the arguments thereagainst.

OPINION

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examiner. As a consequence of our review, we have made the determination that the examiner's rejections of the appealed claims under 35 U.S.C. § 103(a) will be sustained. Our reasons for this determination follow.

In considering the examiner's rejection of claims 1 and 6 through 8 under 35 U.S.C. § 103(a) based on the combined teachings of Katayama and Minagawa, we are in agreement with the examiner that Katayama discloses an apparatus and method for metering fuel in a motor vehicle and, more specifically, a motor vehicle that includes a brake system and a fuel injection multi-cylinder internal combustion engine (col. 2, lines 46-51). Moreover, we agree with the examiner that the brake system disclosed in Katayama constitutes a vehicle safety system that modifies a braking effect on at least one vehicle wheel brake, and that such vehicle safety system, upon detection of a safety condition, generates a safety signal relating to safe operation of the vehicle, and that such motor vehicle also includes a

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fuel rail, like that set forth in claims 1 and 6 through 8 on appeal.

However, Minagawa discloses that it is conventional in a fuel supply apparatus for injecting fuel into an intake port of an internal combustion engine to use a fuel rail to provide high pressure fuel to the injectors and to keep the pressure of the fuel supplied to the injectors at a predetermined pressure (see, for example, col. 1, lines 17-26). Appellants' specification, at page 1, lines 5-14, also appears to indicate that such an arrangement was known to be conventional in a fuel injection system for internal combustion engines.

Based on our evaluation of the collective teachings of Katayama and Minagawa, we are in agreement with the examiner that it would have been obvious to one of ordinary skill in the art at the time appellants' invention was made to have provided the fuel injection system of Katayama with a fuel rail like that in

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Appellants' argument in their reply brief (page 2) that there is no suggestion to combine Minagawa with Katayama is unpersuasive. While it may be true that the secondary reference to Minagawa does not teach or suggest reducing fuel pressure in a fuel rail in response to a safety signal like that in appellants' claim 1 on appeal and in Katayama, that does not mean that there is no suggestion to combine these two references in the manner posited by the examiner. For the reason already indicated above, we fully support the examiner's position that it would have been obvious to utilize a fuel rail like that in Minagawa in the fuel injector system described in Katayama. Moreover, we further consider that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to have provided the fuel injection system of Katayama with a fuel supply apparatus like that in Minagawa in order to obtain the benefits of both the driving force control or safety system of Katayama and the fuel supply apparatus disclosed in Minagawa. Appellants have provided no specific argument to the contrary.

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(e.g., a signal generated by a vehicle safety system upon detection of a safety condition, wherein the safety signal relates to a safe operation of the motor vehicle), we find such arguments unpersuasive. It is clear from a reading of Katayama's discussion of the embodiment seen in Figures 1 and 2 (i.e., col. 2, line 45 - col. 5, line 8) that there is provided a system and method for metering fuel in a motor vehicle wherein that system controls a driving force (by cutting off fuel supplied to the fuel injectors) to meet a brake demand to thereby cause the vehicle to obey the brake demand, particularly in the situation where the Master Vac (3) seen in Figure 1 ceases to operate properly. Thus, when the brake fluid pressure P_B is greater than or equal to a preset value P_{BSET} for a predetermined period of time, the system of Katayama decides that a safety condition has occurred and instructs a fuel-cut signal (safety signal) to be sent to the control unit (20). In response to the fuel-cut signal (safety signal), the control unit (20) performs a fuel-cut function to suspend fuel injection via the injectors (23),

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pedal (1) even if the servo action of the Master Vac (3)
disappears.

Since we have determined that the teachings and suggestions found in Katayama and Minagawa would have made the subject matter as a whole of independent claims 1 and 7 on appeal obvious to one of ordinary skill in the art at the time of appellants' invention, we will sustain the examiner's rejection of those claims under 35 U.S.C. § 103(a).¹

With regard to dependent claims 6 and 8, we note that on page 3 of the brief (Paper No. 19) appellants have grouped claim 6 with claim 1 (Group I) and claim 8 with claim 7 (Group II).

¹ In our consideration of independent claim 7 on appeal, we note that the "detection of a safety condition" recited in this claim is not necessarily associated with a braking safety condition as in claim 1, and that if a motor vehicle having a fuel injection system like that described as prior art on page 1, lines 15-25, of appellants' specification also included a conventional anti-lock braking system (ABS), then it appears that

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Since we have sustained the examiner's rejection with respect to both independent claims 1 and 7, it follows that claim 6 will fall with claim 1 and claim 8 will fall with claim 7. Thus, the examiner's rejection of claims 6 and 8 under 35 U.S.C. § 103(a) based on the collective teachings of Katayama and Minagawa will also be sustained.

As for the examiner's rejection of dependent claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Katayama, Minagawa and Yoshino, we are in agreement with the examiner's position as set forth on pages 5, 6 and 8 of the answer. Appellants' continued insistence that Katayama does not generate a "safety signal" as set forth in claim 1 is equally unavailing here. As for the assertion that there is no suggestion to combine Yoshino with Katayama and Minagawa, we share the examiner's view that it would have been obvious to one of ordinary skill in the art at the time appellants' invention was made to use an ABS braking system like that in Yoshino in the

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being controlled so as to follow changes in the coefficient of friction between the road surface and the wheels. Accordingly, the examiner's rejection of claims 2 and 3 under 35 U.S.C. § 103(a) will likewise be sustained.

In view of the foregoing, the decision of the examiner to reject claims 1 through 3 and 6 through 8 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

IRWIN CHARLES COHEN)	
Administrative Patent Judge)	
)	
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)	BOARD OF PATENT
CHARLES E. FRANKFORT)	APPEALS
Administrative Patent Judge)	AND

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Claim 1

1. An apparatus for metering fuel in a motor vehicle, wherein the motor vehicle includes a vehicle safety system that modifies a braking effect on at least one vehicle wheel brake and wherein the vehicle safety system, upon detection of a safety condition, generates a safety signal relating to a safe operation of the motor vehicle, comprising:

a system reducing a fuel pressure in a rail in response to the safety signal.

Claim 7

7. A method for metering a fuel in a motor vehicle including a rail having fuel with a defined fuel pressure, comprising the steps of:

modifying a braking effect on at least one vehicle wheel brake;

upon detection of a safety condition, generating a safety signal relating to a safe operation of the motor vehicle; and

reducing the defined fuel pressure in response to the safety signal.