

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** SHUNICHI WADA, YASUO NAITOU  
and KAZUMICHI TSUTSUMI

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Appeal No. 96-0323  
Application 08/131,684<sup>1</sup>

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HEARD: December 10, 1998

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Before THOMAS, HAIRSTON, and CARMICHAEL, **Administrative Patent Judges**.

CARMICHAEL, **Administrative Patent Judge**.

**DECISION ON APPEAL**

This is an appeal from the final rejection of Claims 1-4, 6-7, and 9-12. The other claims remaining in the application, Claims 5 and 13, stand objected to as being dependent upon a rejected base claim.

Claim 1 reads as follows:

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<sup>1</sup> Application for patent filed October 5, 1993.

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1. A power steering control apparatus for a motor vehicle, comprising:

first control means for determining a driving torque for a steering assist motor on the basis of steering torque information, indicative of a steering torque of a steering wheel generated upon operation of the steering wheel by a driver of the motor vehicle, and pseudo vehicle speed information indicative of an estimated vehicle speed, and then generating a driving signal for said steering assist motor on the basis of said driving torque; and

second control means for generating said pseudo vehicle speed information indicative of an estimated speed of said motor vehicle which is calculated on the basis of wheel rotation speed information indicative of a rotation speed of wheels of said motor vehicle and acceleration/deceleration information of said motor vehicle indicative of an acceleration/deceleration of said motor vehicle, said second control means also generating a brake actuation signal for said wheels of said motor vehicle on the basis of said pseudo vehicle speed signal, said acceleration/deceleration information and brake application information indicative of brake application by a driver of the motor vehicle.

The examiner's Answer cites the following prior art:

Shimizu 1989	4,819,170	Apr. 4,
Kageyama et al.(Kageyama) 1993	5,210,690	May 11,
Nishiwaki et al.(Nishiwaki) 1993	5,229,955	Jul. 20,

**OPINION**

Claims 1-4, 6-7, and 10-11 stand rejected under 35 U.S.C. § 103 as unpatentable over Shimizu in view of Kageyama.  
Claims 9 and 12 stand rejected under 35 U.S.C. § 103 as

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unpatentable over Shimizu in view of Kageyama as above,  
further in view of Nishikawa.

We affirm for the reasons given by the examiner,  
amplified as follows.

***Claims 1-4, 6-7, and 10-11***

Claims 1-4, 6-7, and 10-11 stand or fall together with  
Claim 1 because appellants have presented no arguments for the  
separate patentability of the claims under 37 CFR § 1.192.

The examiner contends that Kageyama suggested replacing  
Shimizu's vehicle speed detecting means 43 with Kageyama's  
vehicle speed detecting means 17. According to the examiner,  
such a replacement would have been seen by the artisan as a  
way to improve Shimizu's power steering control. Examiner's  
Answer at 9.

Appellants argue that Shimizu and Kageyama do not suggest  
the desirability of such a modification because Shimizu's  
power steering control only needs to know whether the vehicle  
speed is high, medium, or low and has no need for improved  
vehicle speed information. Appeal Brief at 6.

We agree with the examiner. Shimizu estimates vehicle  
speed by using wheel speed sensors. Kageyama teaches that

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such an estimate can be very inaccurate, and that there can be a large difference between wheel speed and actual vehicle speed. Column 1, lines 40-45. As a solution to that problem, Kageyama suggests using a pseudo speed based not only on wheel speed sensors but also on an acceleration sensor. Column 2, lines 1-6. The pseudo speed is further adjusted for controlling the anti-lock braking system at low vehicle speeds. Column 2, lines 7-14.

Thus, the combined teachings of the prior art would have suggested the desirability of borrowing the ABS pseudo speed signal (as in Kageyama) as the speed signal needed to control the power steering (as in Shimizu).

Nishikawa was not applied to Claims 1-4, 6-7, and 10-11, and is unnecessary to our decision on those claims. However, Nishikawa confirms that the skilled artisan was motivated to share pseudo speed data among the various systems in a vehicle that need vehicle speed data, including the ABS system 11 and the power steering system 25, in order to provide for more reliable control. Column 1, lines 33-57; Figure 1(b).

Moreover still, Nishikawa's Figure 1(b) appears to show all of the elements of the claimed invention, considering the

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output of Nishikawa's apparatus 60 to be the recited "pseudo speed." That output is based on at least the vehicle speed sensor 22, acceleration sensor 46, and brake sensor 53. The output is fed to both the brake system 11 and steering system 25.

***Claims 9 and 12***

Claims 9 and 12 stand or fall together with Claim 9 because appellants have presented no arguments for the separate patentability of the claims under 37 CFR § 1.192.

Claim 9 recites that a road friction estimate is used to change a plurality of steering control data. We consider this limitation met by the combination discussed above, since Kageyama's pseudo speeds are adjusted for road friction. Column 4, lines 43-63.

Moreover, Nishikawa suggests using a road friction estimate to change a plurality of data used to control power steering systems. Column 2, lines 13-20; Figure 1(b). The

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skilled artisan would have considered this applicable to Shimizu's power steering system.

Moreover still, Nishikawa fully discloses the claimed invention. Column 2, lines 13-20; Figure 1(b). The "first control means" is equivalent to Nishikawa's steering control circuit 25. The "second control means" is equivalent to Nishikawa's anti-skid control circuit 11. The "road friction coefficient estimation means" is equivalent to Nishikawa's road surface frictional coefficient detection apparatus 60. Because anticipation is the epitome of obviousness, we affirm for this additional reason.

**CONCLUSION**

The rejections are sustained.

**AFFIRMED**

JAMES D. THOMAS	)	
Administrative Patent Judge	)	
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	)	
KENNETH W. HAIRSTON	)	BOARD OF PATENT
Administrative Patent Judge	)	
	)	APPEALS AND
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) INTERFERENCES  
)  
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Administrative Patent Judge )

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