

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. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ELLIOTT FORBES-ROBINSON

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Appeal No. 1999-0613  
Application No. 08/592,025

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HEARD: October 23, 2000

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Before ABRAMS, NASE, and GONZALES, Administrative Patent Judges.  
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 2, and 4-7, which are all of the claims pending in this application.<sup>1</sup>

We AFFIRM-IN-PART.

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<sup>1</sup>The final rejection (Paper No. 6) erroneously lists claims 1-7 as being finally rejected. However, claim 3 was canceled in amendment A (Paper No. 5). In addition, we note that the examiner refused to enter an amendment filed after the final rejection (see Papers No. 10 and 11).

### BACKGROUND

The appellant's invention relates to a motor vehicle steering assembly. An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellant's Brief.

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

Kawabata <u>et al.</u> (Kawabata)	4,517,854	May 21, 1985
Davis	1,572,519	Feb. 9, 1926

Claims 5 and 7 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the appellant regards as his invention.

Claims 1, 2, and 4-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kawabata in view of Davis.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 14) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 13) and Reply Brief (Paper No. 16) for the appellant's arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

According to the appellant's specification, in vehicles such as race cars there is a propensity for foreign matter to enter the steering assembly and affect its operability, because the steering shaft and the elements that support it on the vehicle frame are exposed to the elements. More particularly, foreign matter may infiltrate the space between the steering shaft and the mounts in which it rotates, causing damage to the elements and giving rise to the potential for the mechanism to bind. The appellant points out (Brief, pages 2 and 3) that he has solved this problem by an invention which incorporates two features. The first is to make the bearing of a polymeric material of hardness sufficiently less than the steering shaft such that the bearing will be deformed if abrasive foreign matter does manage to infiltrate the gap between the shaft and the bearing, rather than allowing it to cause binding therebetween. The second is a sleeve bearing for the steering shaft which comprises an integral external flange that engages the associated end of the tubular housing in which the steering shaft is located to substantially close the end of the housing so that entry of foreign material between the shaft and the housing is inhibited.

The Rejection Under 35 U.S.C. § 112, Second Paragraph

It is the examiner's position that dependent claims 5 and 7 are indefinite because they fail to add further limitations to independent claim 4, from which they depend. We agree with the appellant that such is not the case with claim 5, for whereas claim 4 recites that the tubular housing encloses "a substantial portion of the length of said steering shaft," claim 5 requires that it surround it "along the entire length." Clearly, this is a further restriction on the language of claim 4, and we therefore will not sustain this rejection of claim 5.

We reach the opposite conclusion with regard to claim 7, noting that the appellant has not disputed the examiner's position. This rejection of claim 7 is sustained.

The Rejection Under 35 U.S.C. § 103

All of the claims stand rejected as being unpatentable over Kawabata in view of Davis. The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this end, the requisite motivation must stem from some

teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

Independent claim 1 is directed to a motor vehicle steering assembly comprising a metal steering shaft of predetermined hardness, a tubular housing affixed to the vehicle frame and enclosing a portion of the length of the shaft and defining a radial gap between the shaft and the housing, and at least one sleeve bearing interposed in the gap and having an integral external flange formed at one end thereof, with the bearing so positioned that the flange engages an associated end of the housing and the sleeve substantially closes the gap along at least a portion of the length of the shaft. The claim specifies that the bearing is

formed of a polymeric material having a predetermined hardness which is substantially less than the predetermined hardness of said steering shaft wherein in the event abrasive foreign matter enters between the steering shaft and the sleeve bearing, the sleeve bearing will be deformed and binding between the steering shaft and the bearing is thereby precluded.

Kawabata discloses a vehicle steering system comprising a steering shaft (10) enclosed by a tubular housing (14) and supported at its upper end by a sleeve bearing (32) and at its lower end by a low-vibration device (34). Much of the structure recited in claim 1 can be found in Kawabata, and concern is expressed in this reference for keeping dust

from entering the steering tube and the steering gearbox, which is accomplished by means of a flexible member (64 in Figure 11). Be that as it may, giving the reference its broadest interpretation, we agree with the appellant that Kawabata fails explicitly to teach that either of the bearings meets the requirement quoted above, that is, its hardness is such that abrasive matter will deform the bearing sleeve and binding between the sleeve and the steering shaft will be precluded. Kawabata describes bearing 32 as being made of oil-impregnated plastic, such as synthetic resin, which has “an excellent wear resistance” (column 5, lines 17- 20) which, in the absence of explanation to the contrary, would in our view convey to one of ordinary skill in the art that it would not deform in response to the entry of abrasive foreign matter. The bearing insert of low-vibration device 34 is simply described as being made of nylon (column 5, lines 25 and 26), and to conclude that it inherently would meet the terms of the appellant’s claim 1 is mere supposition.

This deficiency is not cured by Davis, which was cited by the examiner for its showing of a bearing having an integral external flange that engages the end of the steering shaft. The material from which bushing 32 is made is not disclosed, and therefore the reference also cannot be counted upon to render the quoted portion of claim 1 obvious.

For the reasons set forth above, it is our conclusion that the combined teachings of the two applied references fail to establish a prima facie case of obviousness with regard

to the subject matter recited in claim 1. This being the case, we will not sustain the rejection of independent claim 1 or, it follows, of claim 2, which depends therefrom.

Independent claim 4 also is directed to a motor vehicle steering assembly, and differs from claim 1 in that it recites a pair of sleeve bearings, one at each end of the tubular housing, and it further specifies that the material from which the bearings are made is such that the sleeve will be “deformed or destroyed” (emphasis added) in the event abrasive foreign matter enters between the steering shaft and the housing. For the reasons set forth above with regard to claim 1, the applied references also fail to establish a prima facie case of obviousness with respect to the subject matter of independent claim 4 and dependent claims 5-7, and we will not sustain the rejection.

#### SUMMARY

The rejection of claim 5 under 35 U.S.C. § 112, second paragraph, is not sustained.

The rejection of claim 7 under 35 U.S.C. § 112, second paragraph, is sustained

The rejection of claims 1, 2, and 4-7 under 35 U.S.C. § 103 is not sustained.

The decision of the examiner is affirmed in part.

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

AFFIRMED-IN-PART

NEAL E. ABRAMS	)	
Administrative Patent Judge	)	
	)	
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	)	
	)	BOARD OF PATENT
JEFFREY V. NASE	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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JOHN F. GONZALES	)	
Administrative Patent Judge	)	

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FITZPATRICK, CELLA, HARPER & SCINTO  
30 ROCKEFELLER PLAZA 38th Floor  
NEW YORK , NY 10112-3801

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APPLICATION NO. 08/592,025

APJ ABRAMS

APJ GONZALES

APJ NASE

DECISION: **AFFIRMED-IN-PART**

Prepared By:

**DRAFT TYPED:** 16 Oct 01

**FINAL TYPED:**