

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte LEONARDUS P. M. TIELEMANS

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Appeal No. 1998-1650  
Application No. 08/715,749<sup>1</sup>

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ON BRIEF

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Before MEISTER, NASE, and CRAWFORD, Administrative Patent Judges.

NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 2, 4 to 9, 19 to 22 and 24 to 26, which are all of the claims pending in this application.<sup>2</sup>

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<sup>1</sup> Application for patent filed September 19, 1996.

<sup>2</sup> Claim 24 was amended subsequent to the final rejection.

Appeal No. 1998-1650  
Application No. 08/715,749

We REVERSE.

BACKGROUND

The appellant's invention relates to a method of manufacturing a dynamic groove bearing. An understanding of the invention can be derived from a reading of exemplary claims 24 and 25, which appear in the appendix to the appellant's brief.<sup>3</sup>

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

Murray 1972	3,659,324	May 2,
Wendel 1974	3,833,275	Sep. 3,
Kanamaru et al. 1983 (Kanamaru)	4,370,793	Feb. 1,
Sato 26, 1990	4,936,126	June
Naganawa <sup>4</sup>	3-282009 <sup>5</sup>	Dec. 12, 1991

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<sup>3</sup> We note that claim 24 as presented in the appendix to the appellant's brief contains one error which was noted by the examiner on page 3 of the answer.

<sup>4</sup> The examiner and the appellant used the name of Osanawa to refer to this reference.

<sup>5</sup> In determining the teachings of Naganawa, we will rely on the translation provided by the PTO. A copy of the translation is attached for the appellant's convenience.

(Japan)

Claims 2, 4 to 7, 19 to 22, 24 and 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Wendel in view of Murray.

Claim 8 stands rejected under 35 U.S.C. § 103 as being unpatentable over Wendel in view of Murray and Naganawa.

Claim 9 stands rejected under 35 U.S.C. § 103 as being unpatentable over Wendel in view of Murray and Kanamaru.

Claim 26 stands rejected under 35 U.S.C. § 103 as being unpatentable over Wendel in view of Murray and Sato.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the nonfinal Office action (Paper No. 18, mailed January 7, 1997) and the examiner's answer (Paper No. 25, mailed December 19, 1997) for the

examiner's complete reasoning in support of the rejections, and to the appellant's brief (Paper No. 24, filed November 3, 1997) 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. Upon evaluation of all the evidence before us, it is our conclusion that the evidence adduced by the examiner is insufficient to establish a prima facie case of obviousness with respect to the claims under appeal. Accordingly, we will not sustain the examiner's rejection of claims 2, 4 to 9, 19 to 22 and 24 to 26 under 35 U.S.C. § 103. Our reasoning for this determination follows.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of

obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 9 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In

re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967),  
cert. denied, 389 U.S. 1057 (1968).

With this as background, we analyze the prior art applied by the examiner in the rejection of the independent claims (i.e., claims 24 and 25) on appeal.

Wendel discloses a footstep bearing. As shown in Figure 3, the footstep bearing 1 is formed by a bearing bushing 2 and a bearing block 3 which are securely and permanently force fit together. The upper frontal end of the bearing block 3 is shaped to provide a conical bearing step 4 on which the lower end of the shaft 5 of a spindle rests. The step 4 absorbs the axial thrust of the spindle during operation. The shaft 5 is also guided radially by the upwardly extending tubular bearing bushing 2, the inner surface 6 of which conformingly surrounds and engages the lower portion of the shaft 5. Bushing 2 is provided with a bore 16 extending transversely into the area 11. The bore 16 enables lubricant to pass from the bolster or housing of the spindle into the bushing 2, to lubricate the axial end of the shaft 5.

The formation of the step 4 and the securement to the block 3 to the bushing 2 is depicted in Figures 1 and 2. The bushing 2 is formed at its lower end with a cylindrical opening 9 having an upper circumferential edge 10 beveled outwardly toward an inner cylindrical portion 11. The opposite or outer edge 12 is similarly countersunk in an outward bevel. As seen in Figure 2, the bearing block 3 is originally provided as a cylindrical slug having an axial length greater than the axial length of the cylindrical opening 9. The cylindrical slug or block 3 is inserted into the opening 9 so that relative to one another the outer flat end 13 of the block 3 extends below the plane 14 of the lower end of the bushing 2, while the inner flat end 15 of the block 3 extends into the cylindrical section 11. Thereafter, the bushing 2 and inserted block 3 are set on a conforming supporting surface, such as an anvil, and a stamping instrument having a die surface conforming to the conical step 4 is placed on the flat inner end 15. Pressure is applied on the stamping instrument by a conventional hammer, press or the like to cause

the material of the block 3 to be deformed so that simultaneously with the creation of the conical step 4, the material is displaced and swaged to fill the countersunk edges 11 and 12 as seen in Figure 3. As a result of the compression, the bearing block 3 lies with its outer cylindrical face in secure engagement with the face of the opening 9 so that the entire block 3 is immovably held in the bushing 2. Wendel teaches (column 3, lines 20-22) the bushing 2 and block 3 can be made of different materials as for example steel and bronze respectively.

Murray discloses a method of manufacturing an axial bearing part made of a sintered metal powder having a carbon content of less than 0.1 percent and having a plurality of spiral grooves in at least one face thereof consisting of the steps of forming in a pressing die a plurality of grooves corresponding to the ridges between the grooves in the bearing part, grinding the die face smoothly and thereafter pressing the die face in the bearing part to form the spiral grooves.

After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

Based on our analysis and review of Wendel and the independent claims on appeal (i.e., claims 24 and 25), it is our opinion that the only difference is the limitation concerning the step of forming grooves in the bearing surface part (claim 24) or the bearing surface (claim 25) simultaneous with steps of

(1) deforming/obtaining the bearing surface part/bearing surface into the second/finished shape; and (2) affixing the bearing surface part within the bearing member or securing the mass of ductile material in the bearing part.

With regard to this difference, the examiner determined (nonfinal Office action, pp. 2-3) that

[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to press grooves, as shown by Murray, in the bearing surface formed by Wendel following the teaching of Murray that a grooved bearing surface improves lubrication, and further

obvious to press such grooves simultaneously with the deformation utilized by Wendel for securing and shaping the bearing insert following the teaching of Wendel that it is desirable to combine steps.

The appellant argues (brief, pp. 5-11) that the examiner is "employing impermissible hindsight reconstruction" and that the applied prior art does not "teach or suggest the forming of the bearing's overall shape and the forming of the grooves in the bearing in a single manufacturing step." We agree. In our view, the only suggestion for modifying Wendel in the manner proposed by the examiner to meet the limitations of claims 24 and 25 stems from hindsight knowledge derived from the appellant's own disclosure.<sup>6</sup> Specifically, it is our opinion that the combined teachings of Wendel and Murray would not have been suggestive of providing Wendel's conical bearing step 4 with grooves which are formed simultaneously with the formation of Wendel's conical bearing step 4.

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<sup>6</sup> The use of such hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

We have also reviewed the Naganawa, Kanamaru and Sato references additionally applied in the rejection of claims 8, 9 and 26 but find nothing therein which makes up for the deficiencies of Wendel and Murray discussed above.

For the reasons stated above, the decision of the examiner to reject claims 2, 4 to 9, 19 to 22 and 24 to 26 under 35 U.S.C. § 103 is reversed.

#### CONCLUSION

To summarize, the decision of the examiner to reject claims 2, 4 to 9, 19 to 22 and 24 to 26 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES M. MEISTER	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
JEFFREY V. NASE	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
MURRIEL E. CRAWFORD	)	
Administrative Patent Judge	)	

JVN/gjh

Appeal No. 1998-1650  
Application No. 08/715,749

Page 14

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APPEAL NO. 1998-1650 - JUDGE NASE  
APPLICATION NO. 08/715,749

APJ NASE

APJ MEISTER

APJ CRAWFORD

DECISION: **REVERSED**

Prepared By: Gloria Henderson

**DRAFT TYPED:** 10 Mar 99

**FINAL TYPED:**