

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TADASHI TANAKA, MASAOKI SAKAMOTO
TOHRU KATO and YOSHIKI SATO

Appeal No. 95-3862
Application No. 08/068,091¹

ON BRIEF

Before KIMLIN, WEIFFENBACH and ELLIS, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-16, all the claims remaining in the present application. Claim 1 is illustrative:

1. A multi-layered bearing having superior load-resistance comprising an aluminium base bearing alloy layer and a backing

¹ Application for patent filed May 28, 1993.

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metal layer, said bearing alloy consisting essentially of, by weight, 2-8% zinc, 0.1-8% silicon, 0.1-3% copper, 0.05-3% magnesium and the balance of aluminium, wherein said multi-layered bearing is a product of solution heat treatment at a temperature of at least 450°C and artificial aging treatment at a temperature of at most 250°C, and wherein said bearing alloy layer has a hardness of at least Hv 71.

The examiner relies upon the following references as evidence of obviousness:

Mori	4,170,469	Oct. 9, 1979
Ogawa et al. (Ogawa)	4,786,340	Nov. 22, 1988
Tanaka et al. (Tanaka)	5,028,393	July 2, 1991
Faure	5,110,372	May 5, 1992

Appellants' claimed invention is directed to a multi-layered bearing comprising an aluminum base bearing alloy layer of the recited composition and a backing metal layer. The multi-layered bearing is the product of solution heat treatment and artificial aging, and the bearing alloy layer has a hardness of at least Hv 71.

Appealed claims 1-16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mori or Tanaka in view of Ogawa or Faure.

We have carefully reviewed the respective positions advanced by appellants and the examiner. In so doing, we agree with appellants that the claimed invention, considered as a whole, would not have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103. Accordingly, we will not sustain the examiner's rejection.

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We agree with the examiner that the various claimed aluminum base alloy compositions would have been obvious to one of ordinary skill in the art in view of the disclosures of Mori and Tanaka. While appellants concede that Mori encompasses the bearing alloy of appealed claim 2 and Tanaka encompasses the bearing alloy of appealed claim 4, we disagree with appellants that the claim language "consisting essentially of" precludes the presence of certain additional elements disclosed by Mori and Tanaka. For instance, whereas Tanaka discloses an alloy containing lead and strontium, it is evident from appellants' claims 2 and 3 that the inclusion of lead and strontium do not materially affect the basic nature of appellants' aluminum base alloy.

However, we concur with appellants that the applied prior art fails to establish the obviousness of the claimed multi-layered bearing that is produced by the claimed solution heat treatment and artificial aging treatment. The primary references of Mori and Tanaka, while disclosing a multi-layered bearing comprising an aluminum base bearing alloy layer and a backing metal layer, fail to disclose subjecting the multi-layered bearing to the claimed solution heat treatment and artificial aging treatment. Although Ogawa and Faure disclose the claimed solution heat treatment and artificial aging treatment of an

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aluminum base alloy, the references fail to teach such treatments for a multi-layered bearing comprising the claimed backing metal layer, and, significantly, neither reference teaches or suggests the substantial improvements in hardness and fatigue resistance that are realized by the presently claimed multi-layered bearings. Appellants' specification presents convincing data that the presently claimed solution heat treatment and artificial aging treatment result in significant improvements in hardness and fatigue resistance. We note that bearings 6, 12 and 18 are of the same composition but exhibit significant differences in hardness and fatigue resistance due to their subjection to different heat treatments. Also, the Rule 132 Declaration of Masaaki Sakamoto, one of the present inventors, establishes that specific alloys of Mori and Tanaka, the primary references, realize a substantial increase in hardness and fatigue resistance when subjected to the claimed solution heat treatment and artificial aging treatment. We note that the examiner has advanced no reason why one of ordinary skill in the art would have expected the improved results set forth in appellants' specification and the Sakamoto declaration.

We do not subscribe to the examiner's position that "the instant aging temperature reads on no aging or aging at room temperature," since the claim language "at most 250°C" includes

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zero or room temperature as the lower limit (page 8 of Answer).
We say this because we agree with appellants that the claim
language "artificial aging treatment" in and of itself requires a
treatment temperature in excess of ambient.

In conclusion, based on the foregoing, the examiner's
decision rejecting the appealed claims is reversed.

REVERSED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
)	
)	
CAMERON WEIFFENBACH)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
JOAN ELLIS)	
Administrative Patent Judge)	

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