

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KURT H. J. BUSCHOW, FRANCISCUS H. FEIJEN,
DIRK B. DE MOOIJ and ARJAN NOORDERMEER

Appeal No. 96-0021
Application No. 08/105,820¹

ON BRIEF

Before WILLIAM F. SMITH, JOHN D. SMITH, and WALTZ,
Administrative Patent Judges.

WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the examiner's final rejection of claims 4 through 9, which are the only claims remaining in this application.

¹ Application for patent filed August 11, 1993.

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According to appellants, the invention is directed to a method of manufacturing a permanent magnet based on an intermetallic alloy of neodymium, iron and boron (hereafter NdFeB) where an alloy of gallium and one or more rare earth metals is mixed with the NdFeB, magnetically aligned, compressed, and sintered to produce a magnet with improved corrosion resistance and increased coercive force (Brief, pages 1-2). Claim 6 is illustrative of the subject matter on appeal and is reproduced below:

6. A method of manufacturing a permanent magnet comprising NdFeB, said method comprising forming a mixture of a powder of NdFeB and a powder of an alloy consisting in an amount of at least 50% of Ga and at least one rare earth metal in an amount not greater than 50%; magnetically orienting said mixture; compressing said thus oriented mixture and sintering the resultant compressed mixture in an oxygen-free atmosphere.

The examiner has relied upon the following references to support the rejections:

Ghandehari (Ghandehari '574)	4,762,574	Aug. 9, 1988
Ghandehari (Ghandehari '499)	5,004,499	Apr. 2, 1991

Claims 4 through 9 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Ghandehari '499 (Answer, page 3). Claims 4 through 9 also stand rejected under 35 U.S.C. § 103

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as obvious over Ghandehari '499 in view of Ghandehari '574 (*Id.*). We reverse all of the examiner's stated rejections for reasons which follow.

OPINION

A. The Rejection under § 102(b)

The method recited in appealed claim 6 comprises forming a mixture of a powder of NdFeB and a powder of an alloy consisting of specified amounts of gallium and at least one rare earth metal, magnetically orienting (i.e., aligning) the mixture, compressing the mixture, and sintering the compressed mixture in an oxygen-free atmosphere.

The examiner recognizes that Ghandehari '499 fails to disclose a sintering step but "teaches a sub-sintering step" (Answer, page 3). However, the examiner finds that Ghandehari '499 teaches that "it is old and therefore well known" that the method steps "mix-align-compress-sinter" for compounds comprising NdFeB are part of "the previous state of the art" (*Id.* citing column 4, the paragraph beginning at line 6). The

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examiner states that this portion of Ghandehari '499 incorporates by reference S.N. 745,293 (now Ghandehari '574) and

...it would have been obvious to the routineer in the art at the time the invention was made that the pronouncement in the '499 patent at col. 4, beginning at line 6 teaches that the mix-align-compress-sinter method for NdFeB compounds is part of the previous state of the art and therefore anticipates the instant invention (Answer, page 4).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). One limitation of appealed claim 6 is the composition of the alloy powder that is mixed with NdFeB. The examiner has failed to show that this limitation was "well known" in combination with the conventional "mix-align-compress-sinter" steps of the "previous state of the art" as evidenced by either Ghandehari '499 or '574. Accordingly, the rejection of claims 4 through 9 under 35 U.S.C. § 102(b) as anticipated by Ghandehari '499 cannot be sustained.

B. The Rejections under § 103

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For both rejections based on § 103, the examiner advances the rationale that the process steps of "mix-align-compress-sinter" are well known and it would have been obvious to apply these steps to any NdFeB compositions, citing *In re Durden*² and *In re Kanter*³ as authority (Answer, pages 3-9).

We do not agree with the examiner's rationale for two reasons. First, "[w]hen any applicant properly presents and argues suitable method claims, they should be examined in light of all ... relevant factors, free from any presumed controlling effect of *Durden*" or any other precedent. *In re Dillon*, 919 F.2d 688, 695, 16 USPQ2d 1897, 1903 (Fed. Cir. 1990)(in banc), *cert. denied*, 500 U.S. 904 (1991). The examiner has not compared the claimed subject matter as a whole with the prior art, i.e., including the specific composition limitations of the claimed subject matter on appeal. See generally *In re Brouwer*, 77 F.3d 422, 37 USPQ2d 1663 (Fed. Cir. 1996); *In re Ochiai*, 71 F.3d 1565, 37 USPQ2d 1127 (Fed. Cir. 1995).

²763 F.2d 1406, 226 USPQ 359 (Fed. Cir. 1985).

³399 F.2d 249, 158 USPQ 331 (CCPA 1968).

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Secondly, the examiner's combination of Ghandehari '499 and Ghandehari '574 (whether applied together or by "incorporation-by-reference") has no proper basis. It is not disputed that Ghandehari '574 discloses the conventional "mix-align-compress-sinter" steps in preparing a permanent magnet comprising NdFeB with at least one rare earth oxide (column 2, lines 5-19; column 2, line 63-column 3, line 2; column 3, lines 39-57; and column 4, lines 33-34). Ghandehari '499 discloses a permanent magnet composition comprising NdFeB with at least one particulate additive metal including, *inter alia*, gallium and rare earth metals such as dysprosium and terbium (column 2, line 60-column 3, line 17; column 3, line 61-column 4, line 5; and column 4, lines 41-53). However, Ghandehari '499 teaches that it is "critical" to the invention that the heating temperature of the mixture of the alloy and additive metal be at least 150°C. less than the sintering temperature (column 5, lines 9-23). One of the objects of Ghandehari '499 is to produce an "unsintered permanent magnet" (column 3, lines 12-14).

"When relying on numerous references or a modification of prior art, it is incumbent upon the examiner to identify some

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suggestion to combine references or make the modification." *In re Mayne*, 104 F.3d 1339, 1342, 41 USPQ2d 1451, 1454 (Fed. Cir. 1997). The examiner has not identified any suggestion to combine the Ghandehari '499 and '574 references, especially in view of the specific teaching in Ghandehari '499 to avoid sintering when employing a gallium and rare earth metal additive with the NdFeB base composition to produce a permanent magnet.

For the foregoing reasons, we determine that the examiner has not established a *prima facie* case of obviousness over the applied prior art references. Accordingly, the rejections of claims 4 through 9 under 35 U.S.C. § 103 as unpatentable over Ghandehari '499 alone or in view of Ghandehari '574 are reversed.

The decision of the examiner is reversed.

REVERSED

WILLIAM F. SMITH)
Administrative Patent Judge)
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)	BOARD OF PATENT
JOHN D. SMITH)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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THOMAS A. WALTZ)	
Administrative Patent Judge)	

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DECISION: REVERSED
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s): _____

Prepared: May 22, 2000

Draft Final

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OB/HD GAU

PALM / ACTS 2 / BOOK
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