

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**IN RE HITACHI METALS, LTD.,**  
*Appellant*

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2014-1689

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Serial No. 90/010,759.

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Decided: March 17, 2015

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JOHN FRANK MURPHY, Baker & Hostetler LLP, Philadelphia, PA, argued for appellant. Also represented by BARRY EASTBURN BRETSCHNEIDER, WILLIAM THOMAS DE VINNEY, Washington, DC.

JEREMIAH HELM, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for appellee Michelle K. Lee. Also represented by NATHAN K. KELLEY, LORE A. UNT.

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Before PROST, *Chief Judge*, PLAGER and WALLACH, *Circuit Judges*.

PROST, *Chief Judge*.

This appeal arises from an ex parte reexamination of U.S. Patent No. 5,645,651 (“651 patent”) where the Patent and Trademark Appeals Board (“Board”) found that claims 1, 2, 6, 7, and 15-24 of the ’651 patent were invalid for obviousness-type double patenting over claims 1, 3, 13, 16, 29, and 34 of U.S. Patent No. 4,792,368 (“368 patent”). Hitachi now appeals the Board’s decision. Because the Board correctly determined that the claims are unpatentable for obviousness-type double patenting, this court affirms.

#### BACKGROUND

The invention at issue relates to temperature dependency improvements in magnetic materials, including permanent magnets, that are based on a Fe-B-R compound, where Fe represents iron, B represents boron, and R represents a rare earth metal. These compounds are crystalline structures that are substantially a tetragonal system. According to the patent, these crystalline compounds “are advantageous in that they can be obtained in the form of at least as-cast alloys, or powdery or granular alloys or sintered bodies in any desired shapes, and applied to magnetic recording media (such as magnetic recording tapes) as well as magnetic paints, magnetostractive materials, thermosensitive materials and the like.” ’651 patent col. 4 ll. 7-13. Additionally the invention can be used as an intermediary step to creating a permanent magnet. *Id.* at ll. 13, 14.

The present case focuses on two Hitachi patents, the ’368 patent, issued on December 20, 1988 from an application filed on July 25, 1983, and the ’651 patent, issued on July 8, 1997 from an application filed on June 7, 1995. Hitachi was granted a seventeen-year patent term for the ’368 patent on December 20, 1988 and a seventeen-year patent term for the ’651 patent on June 7, 1995.

Thus, the '651 patent's term extends almost nine years beyond the '368 patent.

The '368 patent is directed to crystalline compounds based on an alloy system of R(Fe,Co)B. The claimed crystalline compounds also contain additional elements from the defined class termed M. Claim 13 of the '368 patent is representative and reads:

An anisotropic magnetic material having a mean crystal grain size of at least about 1 micron and an intrinsic coercivity of at least 1 kOe, and having a maximum energy product of at least 10 MGOe upon sintering, said material consisting essentially of, by atomic percent, 12-20 percent R wherein R is at least one element selected from the group consisting of Nd, Pr, La, Ce, Tb, Dy, Ho, Er, Eu, Sm, Gd, Pm, Tm, Yb, Lu and Y and wherein at least 50% of R consists of Nd and/or Pr, 5-18 percent B, at least one additional element M selected from the group given below in the amounts of no more than the atomic percentages specified below wherein when more than one element comprises M, the sum of M is no more than the maximum value of any one of the values specified below for M actually added and the balance being at least 62 percent Fe, in which Co is substituted for Fe in an amount greater than zero and up to 25 percent of the material and a crystal phase of a ferromagnetic compound having an (Fe,Co)-B-R type tetragonal crystal structure occupies at least 50 vol% of the entire material: 3.4% Ti, 6.5% Ni, 5.0% Bi, 6.8% V, 9.6% Nb, 8.3% Ta, 5.4% Cr, 6.1% Mo, 6.0% W, 6.0% Mn, 6.3% Al, 1.3% Sb, 4.2% Ge, 2.0% Sn, 4.2% Zr, and 4.2% Hf; and which has a higher Curie Temperature than a corresponding ferromagnetic Fe-B-R-M base composition containing no Co and having said crystal structure.

The '651 patent also claims a crystalline compound based on an alloy system of R(Fe,Co)B. The claimed crystalline compound contains additional elements from defined classes termed: X, A, and M. Claim 1 of the '651 patent is representative and reads:

A crystalline R(Fe,Co)BXAM compound having a stable tetragonal crystal structure having lattice constants of  $a_0$  about 8.8 angstroms and  $c_0$  about 12 angstroms, in which R is at least one element selected from the group consisting of Nd, Pr, La, Ce, Tb, Dy, Ho, Er, Eu, Sm, Gd, Pm, Tm, Yb, Lu and Y, X is at least one element selected from the group consisting of S, C, P and Cu, A is at least one element selected from the group consisting of H, Li, Na, K, Be, Sr, Ba, Ag, Zn, N, F, Se, Te and Pb, and M is at least one element selected from the group consisting of Ti, Ni, Bi, V, Nb, Ta, Cr, Mo, W, Mn, Al, Sb, Ge, Sn, Zr, Hf and Si.

An ex parte reexamination of the '651 patent was requested on December 7, 2009. The examiner issued seven rejections, one of which was a rejection of claims 1, 2, 6, 7, and 15-24 for obviousness-type double patenting over the '368 patent. Hitachi subsequently appealed to the Board. The Board reversed all of the examiner's rejections, and while agreeing that the claims of the '651 patent represent obvious variants of the claims of the '368 patent, the Board designated its analysis as a new ground of rejection pursuant to 37 C.F.R. § 41.50(b) as the Board's analysis differed from that of the examiner's. Hitachi then requested a rehearing, which was denied.

#### DISCUSSION

The court has jurisdiction over this appeal pursuant to 35 U.S.C. § 134(b), 35 U.S.C. § 141(b), and 28 U.S.C. § 1295(a)(4)(A).

### A. Standard of Review

Whether a claimed invention is unpatentable as obvious under 35 U.S.C. § 103 is a question of law based on underlying findings of fact. *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). Therefore, when the board determines that a patent's claims are unpatentable under § 103, this court reviews the board's legal conclusions de novo and the board's factual findings for substantial evidence. *Id.*

### B. Obvious-Type Double Patenting

Obviousness-type double patenting is a judicially created doctrine that “prevents the extension of the term of the original patent via the patenting of an obvious variation.” *Georgia-Pac. Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1326 (Fed. Cir. 1999) *opinion amended on reh'g*, 204 F.3d 1359 (Fed. Cir. 2000). “Under obviousness-type double patenting, a patent is invalid when it is merely an obvious variation of an invention disclosed and claimed in an earlier patent by the same inventor.” *Id.* The determination of whether there is obviousness-type double patenting is a two-step process:

[1.] [The] court construes the claim in the earlier patent and the claim in the later patent and determines the differences.

[2.] [T]he court determines whether the differences in subject matter between the two claims render the claims patentably distinct. A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim.

*Eli Lilly & Co. v. Barr Labs. Inc.*, 251 F.3d 955, 968 (Fed. Cir. 2001) (citations omitted).

A determination that there is obviousness-type double patenting must be based on the matter actually claimed;

reliance on the specification and not the claims is legal error. *In re Longi*, 759 F.2d 887, 893 (Fed. Cir. 1985); *see also Application of Vogel*, 422 F.2d 438, 441 (CCPA 1970) (“[T]he patent disclosure may not be used as prior art.”). However, this does not mean that the court must close its eyes to the specification entirely. For example, the court may look to the specification to define terms found in the claims. *Application of Vogel*, 422 F.2d at 441. Additionally, in answering the question, “Does any claim in the application define merely an obvious variation of an invention disclosed and claimed in the [prior] patent?” the court may look to the various embodiments described in the specification as they provide a tangible and more meaningful method to discern whether what is claimed was merely modified in an obvious manner. *Id.* As this court’s predecessor has held, the use of the specification in this manner “is not in contravention of the cases forbidding its use as prior art, nor is it applying the patent as a reference under 35 U.S.C. § 103 . . .” *Id.* at 442. Thus in limited circumstances, we may turn to the specification in the analysis of whether there is obviousness-type double patenting.

In accordance with the two-prong obviousness-type double patenting test, we first construe the claims at issue and determine the differences in subject matter between the claims.

The relevant claims of the ’368 patent claim a crystalline compound with a tetragonal structure with the general formula  $R(Fe,Co)B$ . Additionally, the claims require at least one element from each of its claimed R and M groups. Groups R and M are composed of the following elements: **Group R** is composed of elements Nd, Pr, La, Ce, Tb, Dy, Ho, Er, Eu, Sm, Gd, Pm, Tm, Yb, Lu, and Y; and **Group M** is composed of elements Ti, Ni, Bi, V, Nb, Ta, Cr, Mo, W, Mn, Al, Sb, Ge, Sn, Zr, and Hf. Therefore, to satisfy the relevant claims of the ’368 patent, the

compound must at least contain Fe, Co, B, and at least one element from each group R and M.

The relevant claims of the '651 patent are also directed toward a crystalline structure, except with the formula of R(Fe,Co)BXAM. Like the relevant claims in the '368 patent, here the claims also require the presence of at least one element from the R and M groups. However, the relevant claims of the '651 patent also require at least one element from each X and A groups. Groups X and A consist of the following elements: **Group X** is composed of elements S, C, P, and Cu; and **Group A** is composed of elements H, Li, Na, K, Be, Sr, Ba, Ag, Zn, N, F, Se, Te, and Pb. The relevant '651 patent claims also include one additional element in group M that is not present in the relevant '368 patent claims' definition of group M, Si. Thus, to satisfy the relevant claims of the '651 patent the compound must at least contain Fe, Co, B, and at least one element from each group R, X, A, M; two more elements than is required in the relevant '368 patent claims. In other words, except for the slight variance in group M, the only difference between the relevant claims in the '368 patent and the '651 patent is the addition of two elements, one from each of group X and A.

Additionally, in construing the relevant '368 patent claims, we concur with the Board that, because the claims were drafted in the "consisting essentially of" format, the scope of the claims can include those additional elements which do not materially affect the basic and novel characteristics of the claimed invention as specified in the '368 patent specification. *See Application of Herz*, 537 F.2d 549, 551 (CCPA 1976) ("[I]n construing the phrase 'consisting essentially of' in appellants' claims, it is necessary and proper to determine whether their specification reasonably supports a construction that would include additives . . .").

The Board correctly turned its attention to the specification, which explicitly states that various starting materials may include impurities that will be present in the finished product, in determining what elements are included in the claims. For example, the specification states that iron may include carbon, phosphorous, manganese, sulfur, copper, chromium, nickel, copper, and aluminum as impurities, boron may include carbon as an impurity, and neodymium may include fluorine as an impurity. '368 patent col. 9 ll. 15-27. Furthermore, the specification gives no indication that the starting elements must undergo any treatment to remove said impurities. Additionally, the specification makes clear that the composition claimed in the '368 patent need not use pure starting elements. For example, the '368 patent's specification states that tetragonal systems "are stable when they contain up to 1% of H, Li, Na, K, Be, Sr, Ba, Ag, Zn, N, F, Se, Te, Pb, or the like." *Id.* at col. 23 ll. 28-31. It is notable that these elements are not claimed in the '368 patent, but are instead members of group A as defined by the relevant '651 patent claims. Thus, we conclude that the Board had a sufficient basis for finding that the relevant '368 patent claims included carbon, phosphorous, manganese, sulfur, copper, chromium, nickel, copper, and aluminum.

We now turn to the second prong of the test for obviousness-type double patenting, determining "whether the differences in subject matter between the two claims render the claims patentably distinct." *Eli Lilly*, 251 F.3d at 968. We conclude that the Board properly held that the '651 claims were obvious variations of the '368 claims. As discussed above, while the relevant '368 patent claims do not explicitly include elements from groups X and A, this court construes the claims to include the impurities carbon, phosphorous, copper, and fluorine. Carbon, phosphorous, and copper are all members of the '651 patent's X group and fluorine is a member of the '651



patent's A group. Thus, the relevant claims of the '368 patent include at least one claimed compound that would satisfy claim 1 of the '651 patent, as at least a single element of groups R, X, A, and M are present in the relevant '368 patent claims' compounds. In other words, by making, for example, the compound claimed in claim 13 of the '368 patent, the compound would include not only Fe, Co, B and an element of each group M and R—as required by claim 13—but would also include impurities that are defined as belonging to the '651 patent claims' X and A groups. Therefore, as the relevant '651 patent claims at issue are not patentably distinct from the relevant '368 patent claims, the claims are invalid.

We have reviewed Appellants' remaining arguments and find them unpersuasive.

#### CONCLUSION

For the reasons stated above, we affirm the judgment of the Patent Trial and Appeal Board rejecting claims 1, 2, 6, 7, and 15-24 of Hitachi's U.S. Patent No. 5,645,651 in ex parte reexamination Control No. 90/010,759 for obviousness-type double patenting over claims 1, 3, 13, 16, 29 and 34 of U.S. Patent No. 4,792,368.

**AFFIRMED**