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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/577,327	04/16/2007	Werner Menk	07-203	2161

34704 7590 02/19/2013

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EXAMINER	
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ART UNIT	PAPER NUMBER
1733	

MAIL DATE	DELIVERY MODE
02/19/2013	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WERNER MENK, ROLF RIETZSCHER, ANDREAS HECKER, and TORSTEN RIECK

Appeal 2012-001245
Application 11/577,327
Technology Center 1700

Before TERRY J. OWENS, LINDA M. GAUDETTE, and DONNA M. PRAISS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 21, 32, 33, 35, and 39, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a spheroidal cast alloy. Claim 21 is illustrative:

21. A spheroidal cast alloy for cast iron parts having mechanical strength, high wear resistance and a high degree of ductility, consisting of:

about 3.43% by weight C,
about 3.38% by weight Si,
about .047% by weight P,
about 0.037% by weight Mg,
about 0.043% by weight Cr,
about 0.012% by weight Al,
about 0.004% by weight S,
about .71% by weight Cu,
about 0.2% by weight Mn,
about 0.0008% by weight B, and balance essentially Fe.

The References

Fukuda (JP '755) (as translated)	JP 60-036755 A	Feb. 25, 1985
Davis (British '333)	GB 2 190 333 A	Nov. 18, 1987

ASM INTERNATIONAL, *Introduction to Cast Irons* 7-8, at http://products.asminternational.org/hbk/do/highlight/content/V15_2008/D14/A01/s108302.... (2010) (hereinafter ASM).[1]

[1] ASM, which has a 2010 copyright date, appears to provide highlights of a 2008 book. Although both 2008 and 2010 are after the Appellants' April 16, 2007 filing date, the Appellants do not challenge the rejection on the ground that ASM is not prior art.

The Rejection

Claims 21, 32, 33, 35, and 39 stand rejected under 35 U.S.C. § 103 over JP '355 in view of ASM and British '333.[2]

OPINION

We affirm the rejection.

It is undisputed that the spheroidal cast alloys which would have been prima facie obvious to one of ordinary skill in the art in view of JP '755's spherical graphite cast iron outer layer composition (p. 1)[3] include alloys which differ from the spheroidal cast alloy claimed in the Appellants' claim 21 only in that they do not include boron, particularly about 0.0008 wt% boron.

JP '755 discloses that the outer layer composition's Si, Mg and Ni components provide the benefit of promoting graphitization (pp. 7-8). The disclosure that promoting graphitization is beneficial would have led one of ordinary skill in the art, through no more than ordinary creativity, to include in the composition other elements which were known in the art to promote graphitization in a cast iron alloy. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (In making an obviousness determination one "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ"). One such component is boron in an amount of less than 0.015 wt% as disclosed by ASM (Table 2). Preceding Table 2,

[2] The final rejection (Dec. 3, 2010) was over JP '355 in view of ASM or (not and) British '333. The Appellants do not object to "or" in the final rejection being changed to "and" in the Examiner's Answer.
[3] JP'755's pages are unnumbered. We have provided the JP '755 page numbers cited herein.

ASM discloses that "[a]lloying elements are usually employed to modify or enhance the properties of the base iron by influencing the matrix structure" and that boron is useful as an alloying element in an amount of approximately 0.001 wt %. The range encompassed by ASM's approximately 0.001 wt% appears to overlap the range encompassed by the Appellants' about 0.0008 wt%.[4]

The Appellants point out that JP '755 includes boron in the inner layer (p. 2), and argue that if the JP '755 inventors wished to include boron in the outer layer they would have done so (Br. 8).

Obviousness is determined based on what would have been obvious to the hypothetical person of ordinary skill in the art in view of both the JP '755 and ASM disclosures, rather than to the JP '755 inventors. *See Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984). As set forth above, to further promote graphitization one of ordinary skill in the art would have added boron to JP '755's outer layer composition in amounts which overlap the Appellants' range of about 0.0008 wt%.

The Appellants argue that the applied references do not disclose the Appellants' recited cast and cooled condition crystalline structure (claim 32), Brinell hardness (claim 33) or elongation at rupture (claim 35) (Br. 9).

[4] The Appellants' 0.0008 wt%, when rounded to the same number of decimal places as ASM's percentage, is 0.001 wt%, which is the same as ASM's percentage. Moreover, the Appellants' disclosure that the amount of boron can be 0.0004 to 0.002 wt% (Spec. 3:13-14) indicates a lack of criticality in the amount of boron being about 0.0008 wt%.

The Examiner finds that JP '755's outer layer composition is sufficiently similar to the Appellants' composition that those alloys appear to have substantially the same properties, and the Examiner points out disclosures in JP '755 of Brinell hardness and elongation values which fall, respectively, within the Appellants' claims 33 and 35 (Ans. 6).[5] The Appellants have provided no evidence or argument which shows that the Examiner erred. Because the Examiner's findings are reasonable and the Appellants have not challenged them, we accept them as fact. *See In re Kunzmann*, 326 F.2d 424, 425 n.3 (CCPA 1964).

The Appellants argue that the claimed alloy has unexpectedly superior properties (Br. 9-10).

That argument is not well taken because the Appellants have not provided a side-by-side comparison of the claimed alloy with the closest prior art which is commensurate in scope with the claims, and provided evidence that the results would have been unexpected by one of ordinary skill in the art. *See In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983); *In re Clemens*, 622 F.2d 1029, 1035 (CCPA 1980); *In re Freeman*, 474 F.2d 1318, 1324 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972).

Accordingly, we are not persuaded of reversible error in the Examiner's rejection.

[5] JP '755's outer layer lacks boron. However, the Appellants' Specification indicates that the desired properties of strength-strain and wear behavior are attributable to the composition's copper and manganese components, not the boron (Spec. 3:19-34).

DECISION/ORDER

The rejection of claims 21, 32, 33, 35, and 39 under 35 U.S.C. § 103 over JP ‘355 in view of ASM and British ‘333 is affirmed.

It is ordered that the Examiner’s decision is affirmed.

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

AFFIRMED

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