

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte WILLIAM E. CLARK

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Appeal No. 1998-1772  
Application No. 08/578,047<sup>1</sup>

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ON BRIEF

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Before ABRAMS, 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 1, 2, 4, 11 and 12, which are all of the claims pending in this application.<sup>2</sup>

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<sup>1</sup> Application for patent filed December 26, 1995.

<sup>2</sup> Claims 2, 4, 11 and 12 were amended subsequent to the final rejection and the examiner's answer. Claims 5 through 10 were canceled subsequent to the final rejection.

Appeal No. 1998-1772  
Application No. 08/578,047

We AFFIRM-IN-PART.

BACKGROUND

The appellant's invention relates to a method for casting a shaped metallic alloy article. An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellant's brief.

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

Brooks 1974	3,826,301	July 30,
Ashok et al. (Ashok) 1995	5,381,847	Jan. 17,
Sato et al. (Sato)	1-178345 <sup>3</sup> (Japan)	July 14, 1989

Claims 1, 2, 4, 11 and 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Brooks in view of Sato and Ashok.<sup>4</sup>

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<sup>3</sup> In determining the teachings of Sato, we will rely on the translation provided by the PTO. A copy of the translation is attached for the appellant's convenience.

<sup>4</sup> This rejection was set forth as a new ground of rejection in the examiner's answer (Paper No. 16, mailed October 9, 1997). Since the grounds of rejection set forth in  
(continued...)

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted new ground of rejection, we make reference to the examiner's answer (Paper No. 16, mailed October 9, 1997) and the examiner's communication (Paper No. 19, mailed December 18, 1997) for the examiner's complete reasoning in support of the new ground of rejection, and to the appellant's reply brief (Paper No. 17, filed December 9, 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

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<sup>4</sup>(...continued)  
the final rejection (Paper No. 9, mailed February 20, 1997) were not set forth in the examiner's answer we assume that these grounds of rejection have been withdrawn by the examiner. See Ex parte Emm, 118 USPQ 180, 181 (Bd. App. 1957).

sufficient to establish a case of obviousness only with respect to claim 1. Accordingly, we will sustain the examiner's rejection of claim 1 under 35 U.S.C. § 103. We will not sustain the examiner's rejection of claims 2, 4, 11 and 12 under 35 U.S.C. § 103. Our reasoning for this determination follows.

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968). Furthermore, the conclusion that the claimed subject matter is 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).

With this as background, we turn to the examiner's new ground of rejection of the claims on appeal (answer, pp. 3-4). The examiner determined the teachings of Brooks and then concluded that

Brooks substantially shows the invention as claimed except that the semi-solid mass is not injected into a die cavity and that the semi-solid mass is not moved away from the molten stream as the semi-solid mass is collected.

The examiner then determined that Sato "shows to inject semi-solid mass into a die cavity to form a die casting product" and that Ashok teaches "to maintain 5-50% volume fraction of solid in the semi-solid mass during disrupting and partial solidification process by maintaining a constant cooling zone distance through moving the mold 46 or hot top 62, both are considered as a container." The examiner then concluded from the combined teachings of the applied prior art that it would have been obvious to (1) inject the semi-solid mass of Brooks

into a injection die cavity to form a die casting product as suggested by Sato's teaching, and (2) maintain a constant cooling zone in the process of Brooks such that a uniform fraction of solid in the semi-solid mass is maintained during the spraying process as suggested by Ashok's teachings.

Implicit in this new ground of rejection is the examiner's view that the above noted modifications of Brooks would result in a method which corresponds to the method recited in claims 1, 2, 4, 11 and 12 in all respects.<sup>5</sup>

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<sup>5</sup> We note again that claims 2, 4, 11 and 12 were amended subsequent to the new ground of rejection set forth in the examiner's answer.

**Claim 1**

In applying the above-noted test for obviousness, we reach the conclusion that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Figure 4 embodiment of Brooks to (1) maintain a constant cooling zone by moving Brooks' cylindrical container 37 away from the tundish 10, nozzle 12 and gas atomiser 13 as suggested by Ashok's teachings<sup>6</sup> to inhibit the formation of coarse dendrites as taught by Ashok, and (2) form a die casting product as suggested by Sato's teaching instead of extruding a product since die casting and extruding are known alternatives of forming a product from a molten metal alloy.

The appellant first argues (reply brief, pp. 2-3) that the rejection is based on impermissible hindsight. We do not agree. When it is necessary to select elements of various teachings in order to form the claimed invention, we ascertain whether there is any suggestion or motivation in the prior art

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<sup>6</sup> See especially column 5, lines 33-37, of Ashok.

to make the selection made by the appellants. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. The extent to which such suggestion must be explicit in, or may be fairly inferred from, the references, is decided on the facts of each case, in light of the prior art and its relationship to the appellants' invention. It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the appellant's structure as a template and selecting elements from references to fill the gaps. The references themselves must provide some teaching whereby the appellants' combination would have been obvious. In re Gorman, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991) (citations omitted). That is, something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. See In re Beattie, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992); Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984). In this case, it is our view that the suggestion to combine

the teachings of the applied prior art comes not from impermissible hindsight but from the teachings of the applied prior art as set forth above. In that regard, Ashok clearly teaches the benefits of maintaining a constant cooling zone in a vertical casting process very similar to Brooks. In fact, Brooks is cited by Ashok<sup>7</sup> as showing a prior art spray casting process. Furthermore, it is our opinion that die casting and extruding are known alternatives of forming a product from a molten metal alloy and accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Brooks to have utilized die casting when a die casted product was to be formed from a molten metal alloy.

Lastly, the appellant argues (reply brief, pp. 3-5) that it would not have been obvious to combine the teachings of Ashok and Sato as suggested since it would not have been obvious to use the auger style feeding system<sup>8</sup> of Sato in the

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<sup>7</sup> See column 1, lines 36-48, of Ashok.

<sup>8</sup> See Sato's groove 23a on tool 23.

process of Ashok. We find this argument unpersuasive for the following reasons. First, the rejection does not contemplate providing the auger style feeding system of Sato in the process of Ashok or for that matter in the process of Brooks. Second, all of the features of the secondary reference need not be bodily incorporated into the primary reference (see In re Keller, supra, at 642 F.2d 425, 208 USPQ 881) and the artisan is not compelled to blindly follow the teaching of one prior art reference over the other without the exercise of independent judgment (see Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 889, 221 USPQ 1025, 1032 (Fed. Cir. 1984)). Thus, for the reasons stated by the appellant, one skilled in the art in modifying Brooks' process to die cast a product would not have included the auger style feeding system of Sato.

For the reasons stated above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 is affirmed.

**Claims 2 and 4**

We agree with the appellant's argument (reply brief, pp. 5-7) that the claimed "piston" within the container is not suggested or taught by the applied prior art. Accordingly, the decision of the examiner to reject claims 2 and 4 under 35 U.S.C. § 103 is reversed.

The examiner's statement in the examiner's communication (Paper No. 19) that "it would have been obvious to provide a piston within the container of Brooks if the collected semisolid is to be injected from the top, instead of bottom, of the container" is not supported by any **evidence**<sup>9</sup> that would have led one skilled in the art to arrive at the claimed invention.

#### **Claims 11 and 12**

We agree with the appellant's argument (reply brief, pp. 7-8) that the claimed "rotating" steps set forth in claim 11 and the claimed "second container" set forth in claim 12 are not suggested or taught by the applied prior art.

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<sup>9</sup> The applied prior art contains no teaching of the claimed "piston" within the container.

Accordingly, the decision of the examiner to reject claims 11 and 12 under 35 U.S.C. § 103 is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 2, 4, 11 and 12 under 35 U.S.C. § 103 is affirmed with respect to claim 1 and reversed with respect to claims 2, 4, 11 and 12.

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

AFFIRMED-IN-PART

NEAL E. ABRAMS	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
JEFFREY V. NASE	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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	)	
MURRIEL E. CRAWFORD	)	
Administrative Patent Judge	)	

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APPEAL NO. 1998-1772 - JUDGE NASE  
APPLICATION NO. 08/578,047

APJ NASE

APJ CRAWFORD

APJ ABRAMS

DECISION: **AFFIRMED-IN-PART**

Prepared By: Gloria Henderson

**DRAFT TYPED:** 02 Jun 99

**FINAL TYPED:**

**Gloria: The panel order was changed.**