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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREW MILLER CAMERON and
CHRISTIAN JUAN FELDERMANN

Appeal 2010-009820
Application 10/517,906
Technology Center 1700

Before BRADLEY R. GARRIS, CHUNG K. PAK, and
TERRY J. OWENS, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-21. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM-IN-PART.

Appellants claim a method of refining a ferroalloy comprising blowing a gas which contains molecular oxygen into a melt of the ferroalloy, introducing a metallurgically acceptable particulate material (e.g., an oxide of chromium) which is "capable of providing a cooling effect" from above into the melt in a first supersonic gas jet which travels to the melt shrouded by a second supersonic gas jet (claim 1). The claimed method includes an embodiment wherein the metallurgically acceptable particulate material is an oxide of manganese (claim 8). The claimed method also includes an embodiment wherein the second supersonic gas jet is formed of burning gases (claim 14).

Representative claims 1, 8, and 14 read as follows:

1. A method of refining a ferroalloy, comprising blowing a gas selected from molecular oxygen and a gas mixture including molecular oxygen into a melt of the ferroalloy and exothermically reacting the molecular oxygen with carbon in the melt; introducing a metallurgically acceptable particulate material, capable of providing a cooling effect, from above into the melt in a first supersonic gas jet which travels to the melt shrouded by a second supersonic gas jet; and forming velocities of the first and the second supersonic gas jets for controlling migration of said particulate material between said first and second supersonic gas jets, the velocity of the second supersonic gas jet being from 10% less to 10% greater than the velocity of the first supersonic gas jet.

8. A method according to claim 1, wherein the ferroalloy is ferromanganese and the metallurgically acceptable particulate material is an oxide of manganese.

14. A method according to claim 1, wherein the second supersonic gas jet is formed of burning gases.

The references listed below are relied upon by the Examiner as evidence of obviousness:

Schlichting	5,366,537	Nov. 22, 1994
Anderson et al.	6,241,510 B1	June 5, 2001
Edlinger	6,409,793 B1	June 25, 2002
Fritz	6,558,614 B1	May 6, 2003

The Examiner rejects claims 1-7, 9-14, and 19-21 under 35 U.S.C. § 103(a) as unpatentable over Schlichting in view of Edlinger and correspondingly rejects claims 15-18 as unpatentable over these references and further in view of Fritz. In the Answer, the Examiner newly rejects claim 8 under 35 U.S.C. § 103(a) as unpatentable over Schlichting in view of Edlinger and further in view of Anderson.

The Rejection based on Schlichting and Edlinger

Concerning independent claim 1, we share the Examiner's conclusion that it would have been obvious to provide the coal-containing supersonic gas jet of Schlichting's method with chromium oxide-containing dust in order to obtain a high-grade ferrochromium alloy as taught by Edlinger (Ans. para. bridging 4-5). Further, we agree with the Examiner's determination that the chromium oxide in the so-modified method of

Schlichting would be inherently "capable of providing a cooling effect" as recited in claim 1 (*id.*).

Appellants argue that the above combination would not have been obvious because the non-combustible chromium-containing dust of Edlinger would inhibit the combustion desired by Schlichting and would render Schlichting's method unsatisfactory for its intended purpose (App. Br. 11).

This argument is unpersuasive because it is unsupported by evidence. Appellants have offered no evidence at all that adding chromium oxide-containing dust to Schlichting's coal-containing gas jet would inhibit combustion and render the method of Schlichting unsatisfactory.

Furthermore, Appellants' argument is undermined by Edlinger's express teaching that it is advantageous to add coal to the chromium-containing jet in order to maintain the necessary slag treatment temperature (col. 4, ll. 39-40). That is, this teaching of Edlinger evinces that the combination of coal and chromium oxide in a gas jet would not inhibit combustion and render Schlichting's method unsatisfactory.

Appellants also argue that the Examiner's inherency position is improper because no factual basis exists for believing that chromium oxide would necessarily be capable of providing a cooling effect or for believing that a person of ordinary skill in the art would recognize this capability (App. Br. 12).

As correctly pointed out by the Examiner, the basis for considering Edlinger's chromium oxide as inherently "capable of providing a cooling effect" (claim 1) is the undisputed fact that Appellants disclose and claim chromium oxide as possessing this capability (Ans. para. bridging 4-5; *see also* Spec. 4-5 and claim 4). As for Appellants' argument relating to

recognition of this inherent capability by a person of ordinary skill in the art, such recognition is not required. *See Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003).

Appellants argue that the Examiner has failed to establish a prima facie case of obviousness for claims 9 and 10 which require that the metallurgically acceptable particulate material is in fine particulate form (claim 9) having a mean particle size of 1 mm or less (claim 10) (App. Br. 14).

This argument lacks convincing merit. The Examiner finds that the chromium oxide-containing dust of Edlinger is disclosed as having "particle sizes of below 4mm, preferably 0.5-2mm, which overlaps the particle size of 1 mm or less as recited in the instant claim [i.e., claim 10 which depends from claim 9]" (Ans. 6; *see also* Edlinger col. 2, ll. 18-21). This finding has not been disputed by Appellants in the record before us. Based on the Examiner's undisputed finding, a prima facie case of obviousness has been established for claims 9 and 10.

Finally, Appellants argue that the Examiner has failed to identify any teaching or suggestion in the applied references of the claim 14 limitation "wherein the second supersonic gas jet is formed of burning gases" (App. Br. 15; Reply Br. 5-6).

For the reasons detailed by Appellants in the above referenced pages of the Appeal Brief and the Reply Brief, this argument is persuasive. The Schlichting disclosures cited by the Examiner for establishing the unpatentability of claim 14 (Ans. 6, 12) contain no teaching or suggestion of the limitation under consideration.

The remaining claims in this rejection have not been separately argued by Appellants (App. Br. 9-15).

In light of the foregoing, the § 103 rejection based on Schlichting and Edlinger is affirmed as to claims 1-7, 9-13, and 19-21 but is reversed as to claim 14.

The New Rejection based on Schlichting, Edlinger, and Anderson

The Examiner relies on Anderson to establish a prima facie case of obviousness for claim 8 (Ans. para. bridging 7-8).

In response to this new rejection, Appellants filed a Reply Brief in which they argue that the Examiner fails to identify any teaching or suggestion in Anderson of the claim 8 limitation "wherein . . . the metallurgically acceptable particulate material is an oxide of manganese" (Reply Br. 6-7).

Appellants' argument is correct. The Anderson disclosures cited by the Examiner (Ans. para. bridging 7-8) contain no such teaching or suggestion. Moreover, this argument against the new rejection of claim 8 has not been rebutted by the Examiner (i.e., no Supplemental Answer has been filed).

These circumstances compel us to reverse the Examiner's § 103 rejection of claim 8.

The Rejection based on Schlichting, Edlinger, and Fritz

Appellants have directed no additional, separate arguments against this rejection (App. Br. 15-16). As a consequence, we affirm this § 103 rejection of dependent claims 15-18 for the reasons given in affirming the rejection of parent independent claim 1.

Conclusion

In summary, we affirm the rejections of claims 1-7, 9-13, and 15-21 but reverse the rejections of claims 8 and 14.

The decision of the Examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED-IN-PART

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