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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LARS-ÅKE and PETER OLSÉRIUS

Appeal 2019-000677
Application 14/362,701
Technology Center 1700

Before ROMULO H. DELMENDO, BRIAN D. RANGE, and LILAN REN,
Administrative Patent Judges.

Opinion for the Board by RANGE, *Administrative Patent Judge.*

Opinion concurring by REN, *Administrative Patent Judge.*

DECISION ON APPEAL

SUMMARY

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–3, 5, and 6. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42 and as named in the Application Data Sheet filed June 4, 2014. Appellant, HÖGANÄS AB, identifies itself as the real party in interest. Appeal Br. 2.

STATEMENT OF THE CASE²

Appellant describes the invention as relating to an alloy (which may be in powder form) useful in High Velocity Oxy Fuel (HVOF) spraying. Spec. 2: 18–25. The alloy and HVOF spraying technique can be used to treat a substrate used in glass manufacture and exhibit high wear resistance and long lifetime. *Id.* Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A metal powder consisting of (all percentages in wt%) carbon 2.2-2.85; silicon 2.1-2.7; boron 1.4-1.6; iron 1.3-2.6; chromium 5.7-8.5; tungsten 32.4-33.6; cobalt 4.4-5.2; the balance being nickel, wherein

the powder is configured to be sprayed by a HVOF spraying process and has a particle size of 12-58 μm as measured by sieve analysis.

Appeal Br. 15 (Claims App'x).

REJECTION

On appeal, the Examiner maintains the rejection of claims 1–3, 5, and 6 under 35 U.S.C. § 103 as unpatentable over Chou et al., US 5,019,459, May 28, 1991 (“Chou”), in view of Stong et al., US 6,562,480 B1, May 13, 2003, and Bose, S. *High Temperature coatings*. Amsterdam: Elsevier, Butterworth-Heinemann (2007).

² In this Decision, we refer to the Final Office Action dated December 20, 2017 (“Final Act.”), the Appeal Brief filed July 16, 2018 (“Appeal Br.”), the Examiner’s Answer dated September 5, 2018 (“Ans.”), and the Reply Brief filed November 5, 2018 (“Reply Br.”).

ANALYSIS

The Examiner has the initial burden of establishing a prima facie case of obviousness based on an inherent or explicit disclosure of, or suggestion or teaching to arrive at, the claimed subject matter under 35 U.S.C. § 103. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992) (“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.”). To establish a prima facie case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art or the inferences and creative steps a person of ordinary skill in the art would have employed. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007); *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988).

Here, the Examiner rejects all pending claims as obvious over Chou in view of Strong and Bose. Ans. 3. The Examiner finds that Chou teaches a composition that overlaps with claim 1’s recited composition. *Id.* (citing Chou). The Examiner finds that Chou does not teach the material in powder or particle form. *Id.* at 4. The Examiner finds that Stong teaches HVOF coating using nickel-based material and that Bose teaches appropriate particle sizes for a HVOF coating process. *Id.* (citing Stong and Bose). The Examiner determines that:

[I]t would have been obvious to one of ordinary skill in the art to have applied the inlay material of Chou using an technique like HVOF spraying as an alternative or substitute to a casting process because HVOF spraying would permit one to achieve a dense coating (low porosity), as taught by Bose, to meet Chou’s objective of making an inlay that is strong and free of defects (e.g., pores).

Id.

Appellant argues that the Examiner errs because the evidence does not adequately support that a person of skill in the art would have chosen to apply Chou's composition by HVOF spraying. Appeal Br. 7–12. Absent such a motivation, there would not be a reason to modify Chou so that it is in powder form of the size appropriate for HVOF spraying (i.e., the size claim 1 recites). *Id.* at 8. In particular, Appellant argues that Chou's particular composition is designed to address problems that arise in centrifugal casting. *Id.* Appellant also argues that Stong indicates that a hard ceramic material (such as chromium carbide) and molybdenum is required for its HVOF process, but both claim 1 and Chou lack these components. (We note that claim 1 is a “consisting of” claim that excludes, for example, inclusion of an unrecited molybdenum component.)

Appellant's argument is persuasive of reversible error. Chou describes cylinders used for injection molding of plastics. Chou 1:7–10. Chou teaches that a “hard, wear resistant alloy” can be cast inside such a cylinder using a “centrifugal casting process.” *Id.* at 1:43–2:9. Chou explains that alloys formed in this manner have “excellent wear and corrosion resistance” but may be brittle, have cracking, or require use of a nitride layer or sleeve that each also cause problems. *Id.* at 2:1–2:63. Chou thus seeks “to provide a bimetallic cylinder that avoids the need for a nitride layer or sleeve but yet has good wear and corrosion resistance and is stronger than known bimetallic cylinders.” *Id.* at 3:6–10. Although Chou meets its objectives by teaching a composition that overlaps the recited composition of claim 1, Chou's composition is not in a particle form of the size claim 1 recites. Ans. 2. Because Chou is focused on solving problems

that arise in deposition techniques different from HVOF, we agree with Appellant that the evidence does not adequately support the Examiner's position that a person of skill in the art would have had reason to select Chou's composition for a HVOF process. Absent such a desire to use the composition for HVOF, a person of skill in the art would not have reason to reach the particle size claim 1 recites.

Appellant's argument concerning Stong further supports Appellant's position. Stong teaches a HVOF method for coating power cylinders, but it teaches that these coatings should contain more than 25 weight percent chromium carbide in order to avoid inadequate abrasion and wear resistance. Stong 3:34–53. Similarly, Stong teaches that its coatings must be more than 15 weight percent molybdenum for adequate scuff resistance. *Id.* at 4:8–24. Similarly, Bose teaches that HVOF has been used successfully for “Cr₃C₂/NiCr” coatings. Bose 105. Claim 1 excludes the presence of chromium carbides and molybdenum. Given this evidence, the Examiner has not adequately explained why a person of skill in the art would have reached a powder with claim 1's recited particle size (i.e., a size suitable for a HVOF process) that lacks chromium carbide.

For the above reasons, we do not sustain the Examiner's rejection of claim 1. Because the Examiner's treatment of dependent claims 2, 3, and 5 does not cure this error, we also do not sustain the Examiner's rejection of those claims. Finally, we do not sustain the Examiner's rejection of independent claim 6 because, as Appellant explains (Appeal Br. 12), the

Examiner's rejection of claim 6 errs in the same manner as the rejection of claim 1.³

DECISION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1-3, 5, and 6	§ 103 Chou, Stong, Bose		1-3, 5, and 6
Overall Outcome			1-3, 5, and 6

REVERSED

³ It is unnecessary for us to resolve Appellant's distinct argument directed at claims 2 and 6. Appeal Br. 12-14.

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REN, *Administrative Patent Judge*, concurring

Although I concur in the decision to reverse the rejection, I write separately to emphasize the principle that “[t]he discovery of a new property or use of a previously known composition, even when that property and use are unobvious from the prior art, can not impart patentability to claims to the known composition.” *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990). In this case, the limitations that “the powder is configured to be sprayed by a HVOF spraying process and has a particle size of 12-58 μm as measured by sieve analysis” recite intended use and property, respectively, which do not impart patentability absent structural distinction from the prior art. The record before us, however, does not adequately support a teaching or

suggestion of the limitation “metal powder,” and I therefore concur in the outcome of the case.

More specifically, the Examiner acknowledges that “Chou does not teach the material in powder or particle form” and relies on Stong for the teaching. Final Act. 3–4; Ans. 4. The Examiner’s rationale to combine the references does not sufficiently address the prior art teaching as a whole – including, for example, Stong’s discussion of the necessity to include hard ceramic material such as chromium carbide. *See* Stong 3:34–54. It is on the basis that the reason to combine Chou and Stong for the claim limitation “metal powder” that I concur in the outcome of the case.