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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL JAMES HEALY and JOHN WESLEY HARRIS JR

Appeal 2019-000817
Application 13/894,500
Technology Center 1700

Before CATHERINE Q. TIMM, BRIAN D. RANGE, and LILAN REN, *Administrative Patent Judges.*

TIMM, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–20 under 35 U.S.C. § 103 as being unpatentable over Bunker.[2] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word "Appellant" to refer to "Applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as the Inventors, Michael James Healy and John Wesley Harris, and the Assignee, General Electric Company. Appeal Br. 1.

[2] Bunker et al., US 6,234,755 B1, issued May 22, 2001.

CLAIMED SUBJECT MATTER

The claims are directed to a coating process and a coated article. *See, e.g.*, claims 1, 19, and 20. The coating process involves steps of coating a turbine component, such as turbine component 105 depicted in Appellant's Figure 1. Spec. ¶ 22. Before depositing the coating material, a coating repellant 101 is applied to outermost surface 103 of the turbine component 105 to cover predetermined region 104 depicted in Figure 1. *Id.* Coating repellant 101 directs the coating material 102 away from predetermined region 104, forming a channel 106 in the turbine component 105. Spec. ¶ 25. Figures 8–10 depict channel 106. Spec. ¶¶ 31–32.

We reproduce claim 1 below with reference numerals from Figures 1 and 8–10[3] and with emphasis on the limitations most at issue:

> 1. A coating process, comprising:
>
> providing a turbine component [105] comprising a predetermined region [104] of a substrate, the predetermined region [104] having an outermost surface [portion of substrate surface 103 under region 104];
>
> then *applying a coating repellant [101]* to protrude from the outermost surface [portion of 103 under region 104] and cover a first portion[4] of the outermost surface [103] of the predetermined region [104] of the turbine component [105]; and

[3] Figures 8–10 label the substrate surface 102 and coating material 103, but the Specification refers to substrate surface 103 and coating material 102. *See* Spec. ¶¶ 31–32; *see also* Fig. 1 (which uses 102 to point to the coated surface and 103 to point to an underlying surface shown with a broken line, i.e., the underlying substrate surface). We, thus, refer to substrate surface 103 and coating material 102.

[4] The claim, which first recites "an outermost surface" as part of "a predetermined region" and then recites "a first portion of the outermost surface of the predetermined region," is confusing. It appears to require the

> then depositing a coating material [102] on a second portion and a third portion of the outermost surface [103] of the predetermined region [104] of the turbine component [105], the second portion and the third portion flanking the first portion;
>
> *wherein the coating repellant [101] repels the coating material [102] away from the coating repellant [101], thereby forming a trench [channel 106] in the coating material [102]* on the first portion of the outermost surface of the predetermined region [104].

Appeal Br. 12 (claims appendix).

OPINION

Appellant does not argue any claim apart from the others. Appeal Br. 9–10. We select claim 1 as representative for resolving the issue on appeal. The issue is: Has Appellant identified a reversible error in the Examiner's finding that Bunker teaches using a silicon-based elastomer as a mask that would have repelled the coating material in the same, or in a substantially similar, manner as Appellant's silicon-based elastomeric coating repellant material and would have inherently formed a trench?

Appellant has not identified such an error.

Appellant does not challenge the Examiner's finding that Bunker teaches using a silicone-based elastomer as the masking material. Appeal Br. 8–9. Instead, Appellant contends that "[r]egardless of any specific materials taught by Bunker for a mask, Bunker teaches away from a coating repellant

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first portion be different than an outermost surface of the predetermined region. However, in the context of the Specification, we read "first portion" as being the same as the outermost surface of the predetermined region the claim earlier defines. Although the claim is indefinite as to these limitations, the ambiguity does not impact our review, which focuses on other limitations of the claim.

as a mask, or at least Appellant's coating repellant material changes the principle of operation of the mask taught by Bunker." Appeal Br. 9–10.

We do not agree. As pointed out by Appellant, Bunker describes the mask as having dimensions that are "substantially identical to the pre-selected dimensions of the slot" (Bunker col. 7, ll. 49–51), or "substantially identical to pre-selected dimensions for the slot" (Bunker col. 2, ll. 55–57). Appeal Br. 9. Bunker also depicts the slot with perpendicular walls. Bunker Fig. 9. However, we agree with the Examiner that these disclosures do not amount to a teaching away. Ans. 4–5. We also agree with the Examiner that the selection of materials expressly described by Bunker would not change the principle of operation of Bunker's method. Ans. 4–5.

Bunker is concerned with covering the holes underlying the mask, not with the profile of the slot walls. Specifically, Bunker states:

> A mask is then applied over the holes that have been filled, e.g., a row of holes. The mask usually has dimensions which are substantially identical to the pre–selected dimensions of the slot. (In the case of holes which are in some pattern other than a row, the mask will be shaped to cover that particular pattern of holes).

Bunker, col. 7, ll. 49–54. Bunker does not discuss the profile of the slot walls.

After discussing that the mask is shaped to cover the holes, Bunker discloses material for use in the mask and, in this discussion, Bunker discloses using, as one option, "a strip of the curable plug material described above, e.g., Machbloc™, or one of the thermosetting polymers (in cured or partially cured form)." Bunker col. 7, ll. 54–62.

Two paragraphs above, Bunker describes, in the context of a plug material for the holes, the use of various elastomeric materials, e.g., silicone–based resins or acrylic materials, and lists Machbloc™, which is based on a polysiloxane and a silica filler, as an example material. Bunker col. 7, ll. 26–32. Thus, Bunker suggests using silicone-based elastomer for both the hole plugs and slot-making mask.

Even earlier in the disclosure, in the Background of the Invention, Bunker describes the masking material used in hole plugs as a material that on curing forms a protrusion "to which thermal barrier coatings do not adhere." Bunker col. 2, ll. 8–10. Bunker, thus, suggests that the mask material is repellant.

Appellant presents no convincing evidence that the silicone-based masking material of Bunker would not repel the coating materials in the same, or a substantially similar, manner as Appellant's coating repellant. Given the substantial similarity in the materials and processes of Bunker to those of Appellant, a preponderance the evidence supports the Examiner's finding that trenches would result. *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990); *In re Best*, 562 F.2d 1252, 1254–55 (CCPA 1977). As such, the burden shifted to Appellant to show that, in fact, trenches between the mask and coating material would not inherently result when using Machbloc™ in the process of Bunker. *Id.* Appellant has not provided such evidence.

DECISION

The Examiner's rejection is affirmed.

DECISION SUMMARY

Claims Rejected	Basis	Affirmed	Reversed
1–20	§ 103 Bunker	1–20	

FINALITY AND RESPONSE

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

AFFIRMED