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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ISABELLA THIRION, THOMAS VIETORIS,  
RAISA GRIGORIEVA, PASCAL DRILLET, LUDWIG SCHALLER,  
KARL MICHAEL BADER, UWE PAAR, and MICHAEL ALSMANN

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Appeal 2015-006262  
Application 13/147,178<sup>1</sup>  
Technology Center 1700

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Before CHRISTOPHER L. OGDEN, JULIA HEANEY, and  
MICHAEL G. MCMANUS, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision<sup>2</sup> finally rejecting claims 1–10 and 15–19 in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> Appellants identify ArcelorMittal Investigacion Y Desarrollo S.L. as the real party in interest. Appeal Br. 4.

<sup>2</sup> Office Action, April 2, 2014 [hereinafter Final Action].

## BACKGROUND

Appellants' invention relates to "a method for fabricating hot stamped parts prepared from steel sheet precoated with aluminum-silicon alloy."

Spec. 1. Independent claim 1 is representative of the claims on appeal:

1. A manufacturing process of a hot stamped coated part comprising the following successive steps, in this order:

providing a hot rolled or cold rolled steel sheet comprising a steel substrate and an aluminium-silicon alloy precoating, said precoating containing more than 50% of free aluminium and having a thickness selected to enable alloying with said steel substrate, then

cutting said steel sheet to obtain a precoated steel blank, then

heating said blank under a non protective atmosphere up to a temperature  $T_i$  near the melting temperature of said precoating, then

heating said blank from said temperature  $T_i$  up to an austenitization temperature  $T_m$  of said steel substrate, under a non-protective atmosphere at a *heating rate  $V$  between  $30^\circ\text{C/s}$  and  $90^\circ\text{C/s}$* ,  $V$  being the heating rate between said temperature  $T_i$  and said temperature  $T_m$ , in order to obtain a coated heated blank, then

*soaking said coated heated blank at said temperature  $T_m$  for a time  $t_m$  between 20s and 90s*, then

hot stamping said blank in order to obtain a hot stamped coated part, then cooling said stamped part at a cooling rate in order to form a microstructure in said steel substrate comprising at least one constituent chosen among martensite or bainite.

Appeal Br. 16 (emphasis added). Claim 4 is also independent, and contains similar limitations. *See id.* at 17.

The Examiner maintains the following grounds of rejection:

1. Claims 1–5, 7, 9, 10, and 15–19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Maki<sup>3</sup> in view of Park.<sup>4</sup> *See* Final Action 2–4.
2. Claims 6 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Maki in view of Park, and further in view of Hasegawa.<sup>5</sup> *See* Final Action 5.

In the Appeal Brief, Appellants make no substantive argument regarding claims 2–10 and 15–19 beyond the arguments for claim 1. *See* Appeal Br. 8–14. Therefore, we limit our discussion to claim 1.

#### DISCUSSION

The Examiner finds that Maki teaches the limitations of claim 1, including a heating rate  $V$  of at least  $4^{\circ}\text{C/s}$ , *see* Final Action 2–3 (citing Maki abstract, ¶¶ 15–22), except that Maki “do[es] not expressly teach the claimed soaking time,” *id.* at 3. However, the Examiner finds that Park teaches a soaking time  $t_m$  of from 10–1000 seconds in the context of the same or substantially the same process as in claim 1. *Id.* (citing Park ¶ 99). In light of these findings, the Examiner concludes as follows:

It would have been obvious to one of ordinary skill in the art at the time of invention to have adapted the soaking time of

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<sup>3</sup> Maki Jun et al., Japan Patent Application Pub. No. JP 2007-314874 (published June 12, 2007) [hereinafter Maki].

<sup>4</sup> Jin-Keun Oh et al., Int’l Patent Publication No. WO 2007/064172 A1 (published June 7, 2007) [hereinafter Park].

<sup>5</sup> Yasushi Hasegawa et al., U.S. Patent Application Pub. No. US 2011/0129381 A1 (published June 2, 2011).

Park et al. into the process of Maki et al. in order to obtain sufficient amount of austenite after heating and sufficient amount of martensite after hot pressing (stamping) with desired strength, as taught by Park et al. In addition, since the soaking time in Maki et al. in view of Park et al. overlaps the claimed soaking time, a prima facie case of obviousness exists MPEP 2144.05 I.

*Id.* 3.

Appellants argue that Park teaches “very specific process conditions under which the steel sheets work to obtain the desired results,” including teachings relating to nitrogen and tungsten composition. Appeal Br. 9 (citing Park ¶¶ 12, 34, 91–96, 105–149). In addition, Appellants argue that Park’s examples only disclose a heating rate of 10°C/s and a soaking time of 5 minutes, *see id.* at 9–10 (citing Park ¶¶ 105–149), whereas Park’s full disclosed range of suitable soaking times is “such a broad, generic range that the technical teaching thereof does not go beyond the fact that there should be a soaking time,” *id.* at 10.

Regarding Maki, Appellants argue that the reference teaches an optimal aluminum content of 40% or less, which contrasts with the higher aluminum content (more than 40%) disclosed in Park. *See id.* at 11–12. Appellants argue that Maki’s examples only include heating rates of approximately 5°C/s, and make no mention of soaking times at all. *See id.* Appellants also argue that Maki teaches low nitrogen content and makes no mention of tungsten as a relevant element. *See id.* In light of the differences between the Maki and Park, Appellants argue that it would not have been obvious to combine the two references to perform the process of claim 1. *See id.* at 12.

Appellants’ arguments do not persuade us that the Examiner reversibly erred in rejecting claim 1. Typically, a prima facie case of

obviousness exists when the ranges taught by the prior art overlap the ranges in the claim. *See In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003).

Appellants have not persuasively argued that this is an atypical case, in which overlapping ranges do not establish a prima facie case of obviousness. Nor have Appellants pointed to factual evidence, or provided any persuasive technical argument, sufficient to show that the ranges in claim 1 for V and  $t_m$  are critical.

In addition, Appellants have not established that either Maki or Park teaches away from claim 1. Although Maki and Park teach specific examples that are narrower than the broad ranges disclosed in those references, Appellants have not shown how these examples “criticize, discredit, or otherwise discourage the solution claimed.” *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). We disagree with Appellants’ characterization that the soaking time range disclosed in Park is so broad and generic that it has no meaning other than “the fact that there should be a soaking time,” Appeal Br. 10. Park provides meaningful reasons for the disclosed range of soaking times: “When the heat treatment is conducted for a time shorter than 10 seconds, the transformation of austenite is not sufficient. Meanwhile, when the heat treatment is conducted for a time longer than 1,000 seconds, the manufacturing cost is increased and austenite tends to be coarse.” Park ¶ 99.

To the extent that Maki and Park teach different elemental compositions, these differences do not lead us to conclude that the Examiner erred in the rejection. Maki indicates a desirable range for aluminum, without precluding higher percentages. *See Maki* 12. While Maki does not mention tungsten, and includes examples with low nitrogen content,

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Appellants have not pointed to any teaching in Maki that tungsten may not be part of the composition, or that higher levels of nitrogen may not be present. Moreover, obviousness does not require that all the specific features of Park may be bodily incorporated into the process of Maki. Rather, the test for obviousness asks what the combined teachings of Maki and Park suggest to a person of ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Therefore, by a preponderance of the evidence on this record, we are not persuaded of reversible error in the Examiner's rejection of claim 1. For the same reasons, we are not persuaded of reversible error in the Examiner's rejections of claims 2–10 and 15–19.

#### DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended. *See* 37 C.F.R. § 1.136(a)(1)(iv) (2016).

AFFIRMED