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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/085,129	11/20/2013	Chris John Paul Samuel	TKSU-11802/08	4713
25006	7590	03/01/2018	EXAMINER	
DINSMORE & SHOHL LLP 900 Wilshire Drive Suite 300 TROY, MI 48084			JOHNSON, JONATHAN J	
			ART UNIT	PAPER NUMBER
			1734	
			NOTIFICATION DATE	DELIVERY MODE
			03/01/2018	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHRIS JOHN PAUL SAMUEL,
BERTRAM WILHELM EHRHARDT, MARKUS WILHELM FORSCH,
ROGER DALE BOGGS, and STANLEY WAYNE BEVANS¹

Appeal 2016-006033
Application 14/085,129
Technology Center 1700

Before TERRY J. OWENS, WESLEY B. DERRICK, and
CHRISTOPHER C. KENNEDY, *Administrative Patent Judges*.

KENNEDY, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1–13 and 15–20.² An oral hearing was held on February 15, 2018. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ The applicant is ThyssenKrupp Steel USA, LLC. ThyssenKrupp Steel USA, LLC, is also identified as the real party in interest. App. Br. 1.

² Claim 14 was canceled in an amendment following the Final Action. *See* Amendment dated August 24, 2015.

BACKGROUND

The subject matter on appeal relates to a process for manufacturing a ferritic hot rolled steel strip. *E.g.*, Spec. ¶ 2; Claim 1. Claim 1 is reproduced below from page 9 (Appendix A) of the Appeal Brief:

1. A process for manufacturing a ferritic hot rolled steel strip comprising:

providing a steel slab having a chemical composition in weight percent within a range of 0.050–0.080 C, 0.15–0.60 Mn, 0.20 maximum (max) Si, 0.04 max Ti, 0.008 max V, 0.006 max Mo, 0.1 max Ni, 0.05 max Cr, 0.08 max Cu, 0.015 max S, 0.04 max P, 0.01 max N, 0.006 max B, 0.06 max Al, balance Fe and melting impurities;

soaking the steel slab within a temperature range between 1100 to 1400°C;

hot rolling the soaked steel slab in a roughing treatment at temperatures between 900 to 1400°C and producing a transfer bar;

hot rolling the transfer bar in a finishing treatment using a finishing treatment at entry temperatures between 900–1100°C and exit temperatures between 720–850°C and producing hot rolled strip; and

coiling the hot rolled strip at a coiling station at temperatures between 580–780°C;

the coiled hot rolled steel strip having a fully ferritic microstructure and a yield strength between 130–210 MPa, a tensile strength greater than 260 MPa, a uniform elongation greater than 15%, a total elongation to failure greater than 30% and strain hardening exponent greater than 0.2.

REJECTIONS ON APPEAL³

1. Claims 1–9, 12–13, and 15–20 stand rejected under 35 U.S.C. § 103 as unpatentable over Nomura et al. (US 6,982,012 B2, issued Jan. 3, 2006) and Nakagawa (US 2010/0196189 A1, published Aug. 5, 2010). Final Act. 2–5; Ans. 2–4.

2. Claims 10 and 11 stand rejected under 35 U.S.C. § 103 as unpatentable over Nomura, Nakagawa, and Yokoi (US 2010/0108201 A1, published May 6, 2010). Final Act. 5; Ans. 4–5.

3. Claims 1–13 and 15–20 stand rejected for obviousness-type double patenting over claims 1–17 of Application No. 14/105,388, now issued as U.S. Patent No. 9,593,399. Final Act. 7.⁴

4. Claims 1–13 and 15–20 stand provisionally rejected for obviousness-type double patenting over claims 1–12 of Application No. 14/188,810. Final Act. 7; Ans. 5–6.

³ The provisional obviousness-type double patenting rejection over claims 1–19 of Application No. 14/169,184 is moot in view of the abandonment of that application. *See* Final Act. 7; Ans. 5.

⁴ The double patenting rejection over the '388 application was not repeated in the Examiner's Answer. *See* Ans. 5–6. However, in the Answer, the Examiner maintained all grounds of rejection “except for the grounds of rejection (if any) listed under the subheading ‘WITHDRAWN REJECTIONS.’” *Id.* at 2. The Answer does not include a “WITHDRAWN REJECTIONS” subheading. *See generally* Ans. Accordingly, the double patenting rejection based on the '388 application (now the '399 patent) is before us in this appeal.

ANALYSIS

Rejections 1 and 2

The Appellants argue the claims subject to Rejections 1 and 2 as a group. We select claim 1 as representative of the rejected claims, and we limit our discussion to claim 1. The remaining claims on appeal will stand or fall with claim 1.

After review of the cited evidence in the appeal record and the opposing positions of the Appellants and the Examiner, we determine that the Appellants have not identified reversible error in Rejections 1 and 2. Accordingly, we affirm those rejections for the reasons stated below.

The Examiner finds that Nomura teaches a process for manufacturing a hot rolled steel strip that is similar to the claimed process. *See* Ans. 2–4. The Examiner identifies the following differences between Nomura’s process and the claimed process: (1) the composition of Nomura’s steel differs from the claimed composition in that the disclosed ranges of some of Nomura’s elements overlap, but are not identical to, the claimed ranges; (2) the composition of Nomura’s steel differs from the claimed composition in that the disclosed ranges of some of Nomura’s elements (C and Mo) do not overlap, but closely approach, the claimed ranges; (3) the disclosed temperature ranges at which the steps of Nomura’s process take place overlap, but are not identical to, the claimed temperature ranges; (4) Nomura does not expressly teach that its steel has “a fully ferritic microstructure,” as recited by claim 1; and (5) Nomura does not expressly disclose the claimed yield strength, tensile strength, uniform elongation, total elongation, and strain hardening values recited by claim 1. *See id.*

Regarding differences (1) and (3), the Examiner determines that the overlapping concentration and temperature ranges of Nomura result in a prima facie case of obviousness of the claimed concentration and temperature ranges recited by claim 1. *Id.*

Regarding difference (2), the Examiner acknowledges that the disclosed concentration ranges of some of Nomura's elements (C and Mo) do not overlap the claimed ranges, but the Examiner determines that the disclosed and claim ranges "are close enough [that] a prima facie case of obviousness still exists." *Id.* at 3.

Regarding difference (4), the Examiner finds that Nakagawa "teach[es] a similar steel with single phase ferrite [that] exhibits high tensile strength and improved stretch flangeability." *Id.* The Examiner determines that "it would have been obvious . . . to modify the steel in Nomura et al. into single phase ferrite, in order to obtain high tensile strength and improved stretch flangeability, as taught by Nakagawa et al." *Id.*

Regarding difference (5), the Examiner determines that the claimed properties would be present in the steel of Nomura as modified by Nakagawa because the combined references "teach[] a fully ferritic hot rolled steel strip with a same or substantially the same composition made by a same or substantially the same method." *Id.* at 4.

In view of those findings, the Examiner concludes that the subject matter of claim 1 would have been obvious to a person of ordinary skill in the art. *Id.* at 2-4.

The Appellants do not challenge the Examiner's findings that Nomura teaches, suggests, or otherwise renders obvious the claimed concentration and temperature ranges (differences (1), (2), and (3)). *See generally* App.

Br. 3–7. Nor do the Appellants argue that the processes taught by the combined prior art differ from the claimed process. *See id.*

However, the Appellants argue that the composition of the combined prior art falls beyond the scope of the claim because “Nakagawa . . . requires between 0.05–0.25 Ti and 0.05–0.25 V,” which is “not close enough to 0.04 max Ti and 0.008 max V to establish a prima facie case of obviousness.”

App. Br. 4.

That argument is not persuasive because the Examiner does not rely on Nakagawa for disclosing a steel composition with the claimed concentrations of Ti and V. As set forth above, the Examiner finds that Nomura teaches a steel composition having concentrations of Ti and V that overlap the claimed ranges. *See* Ans. 2–3 (providing table showing the concentration ranges of each element of the claims and Nomura). The Appellants do not dispute the Examiner’s findings in that regard. The Appellants’ argument, rather, is that the substitution of Nakagawa’s steel composition, including its concentrations of Ti and V, for Nomura’s steel composition results in steel having a composition differing from that claimed. *See* App. Br. 4. But the Appellants provide no explanation as to why the proposed combination would require such a substitution. We understand the Examiner’s rejection to rely on Nomura for the disclosure of a steel composition comprising amounts of Ti and V that overlap the ranges of claim 1, and on Nakagawa for its disclosure concerning the benefits of a fully ferritic microstructure. *See* Ans. 2–4. The Appellants do not argue that it would have been beyond the level of ordinary skill in the art to obtain a fully ferritic microstructure using Nomura’s steel composition, as proposed by the Examiner. On this record, the Appellants’ argument concerning

Nakagawa's Ti and V concentrations is not persuasive of reversible error in the Examiner's rejection. *See In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (explaining that, even if the examiner had failed to make a prima facie case, the Board would not have erred in framing the issue as one of reversible error because "it has long been the Board's practice to require an applicant to identify the alleged error in the examiner's rejections").

The Appellants also argue that "neither Nomura . . . or Nakagawa . . . disclose or fairly suggest a yield strength between 130–210 MPa as recited in claim 1." App. Br. 4. However, that argument is again based on the assumption that the prior art steel composition relied on by the Examiner includes the amounts of Ti and V disclosed by Nakagawa, rather than the amounts of Ti and V disclosed by Nomura. *See id.* at 4–5. The Appellants do not argue that steel compositions having the amounts of Ti and V taught by Nomura (i.e., amounts that overlap the claimed Ti and V ranges), modified to possess a fully ferritic microstructure as suggested by Nakagawa, would not possess the yield strength recited by claim 1. The Appellants' argument, accordingly, does not meaningfully address the Examiner's rationale, and, therefore, is not persuasive of reversible error. *See Jung*, 637 F.3d at 1365.

Finally, the Appellants argue that modifying Nomura in view of Nakagawa to obtain a fully ferritic microstructure would render the steel of Nomura "unsatisfactory for its intended purpose" because Nomura teaches a steel composition "with retained austenite, ferrite and at least one of bainite and martensite." App. Br. 6–7. In other words, the Appellants argue that, because Nomura's steel is not fully ferritic, modifying it to obtain fully ferritic steel would render Nomura's steel unsatisfactory for its intended

purpose. *Id.* The Appellants state that “the purpose of Nomura et al. is [to] produce [a] hot rolled strip that avoids a fully ferritic microstructure.” *Id.* at 7.

That argument is not persuasive. Nomura describes its compositions with retained austenite and bainite and/or martensite as “preferred embodiment[s].” *See, e.g.*, Nomura at 5:12–35; *see also id.* at 2:27–31. We are not persuaded by the Appellants’ discussion of Nomura that Nomura’s purpose is as narrow as suggested by the Appellants, i.e., to “avoid[] a fully ferritic microstructure.” *See* App. Br. 7. Rather, Nomura is more broadly concerned with producing high strength steel “having excellent workability and shape accuracy.” *See, e.g.*, Nomura at Title, Abstract, 1:11–18. Nakagawa, similarly, is concerned with producing high strength steel. *See, e.g.*, Nakagawa at Abstract. On this record, we are not persuaded that the Examiner’s proposed modification would render Nomura’s steel unsuitable for its intended purpose.

We affirm the Examiner’s rejection of claim 1.⁵

⁵ In the Reply Brief, the Appellants argue for the first time that Nakagawa’s steel “is not fully ferritic as recited in claim 1.” Reply Br. 2. That argument was not presented in the opening Appeal Brief. On the contrary, the Appellants “assume[d] for arguments sake that a combination of Nomura et al. and Nakagawa et al. provide[s] a fully ferritic microstructure,” and made no specific argument to the contrary. *See* App. Br. 5. Accordingly, the new argument in the Reply Brief is untimely, and the Appellants have not shown good cause for failing to raise that argument in the opening Appeal Brief. *See* 37 C.F.R. § 41.41(b)(2). We decline to consider it.

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Rejections 3 and 4

The Appellants do not acknowledge or address the obviousness-type double patenting rejections. *See generally* App. Br.; Reply Br. Accordingly, we summarily affirm those rejections.

CONCLUSION

We AFFIRM the Examiner's rejections of claims 1–13 and 15–20.

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

AFFIRMED