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Davidson, Davidson & Kappel, LLC 589 8th Avenue 16th Floor New York, NY 10018			JOHNSON, JONATHAN J	
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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* BERNARD BONNEFOIS, JEROME PEULTIER,  
MICKAEL SERRIERE, JEAN-MICHEL HAUSER,  
and ERIC CHAUVEAU

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Appeal 2018-001445  
Application 14/622,402<sup>1</sup>  
Technology Center 1700

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Before BRADLEY R. GARRIS, JEFFREY T. SMITH, and  
GEORGE C. BEST, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1–8, 26 and 27. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> The Appellant and the real party in interest is Industeel France. (App. Br. 2).

The claims are directed to a duplex stainless steel. App. Br. 2.  
Claim 1 illustrates the subject matter on appeal and is reproduced below:

1. A duplex stainless steel, the composition of which comprises, in % by weight:

- $C \leq 0.05\%$ ;
- $21\% \leq Cr \leq 25\%$ ;
- $1\% \leq Ni \leq 2.5\%$ ;
- $0.16\% \leq N \leq 0.28\%$ ;
- $Mn \leq 2.0\%$ ;
- $Mo+W/2 \leq 0.50\%$ ;
- $Mo \leq 0.45\%$ ;
- $W \leq 0.15\%$ ;
- $Si \leq 1.4\%$ ;
- $Al \leq 0.05\%$ ;
- $0.11\% \leq Cu \leq 0.50\%$ ;
- $S \leq 0.010\%$ ;
- $P \leq 0.040\%$ ;
- $Co \leq 0.5\%$ ;
- $REM \leq 0.1\%$ ;
- $V \leq 0.5\%$ ;
- $Ti \leq 0.1\%$ ;
- $Nb \leq 0.3\%$ ;
- $Mg \leq 0.1\%$ ;

the balance being iron and impurities resulting from smelting, and the microstructure comprising austenite and 35 to 65% ferrite by volume,

said composition satisfying the following relationships:

$$40 \leq I_F \leq 70,$$

where

$$I_F = 6 \times (\% \text{ Cr} + 1.32 \times \% \text{ Mo} + 1.27 \times \% \text{ Si}) - 10 \times (\% \text{ Ni} + 24 \times \% \text{ C} + 16.15 \times \% \text{ N} + 0.5 \times \% \text{ Cu} + 0.4 \times \% \text{ Mn}) - 6.17$$

and

$$I_{LCR} \geq 30.5,$$

where

$$I_{LCR} = \% \text{ Cr} + 3.3 \times \% \text{ Mo} + 16 \times \% \text{ N} + 2.6 \times \% \text{ Ni} - 0.7 \times \% \text{ Mn}.$$

Appellant (*see* Appeal Brief, *generally*) requests review of the following rejections from the Examiner's Final Office Action:

I. Claims 1–8 rejected under 35 U.S.C. § 103(a) as unpatentable over Fujisawa<sup>2</sup> (WO 2005/073422 A1, Aug. 11, 2005).

II. Claims 26–27 rejected under 35 U.S.C. § 103(a) as unpatentable over Fujisawa and Espy (US 4,331,474, May 25, 1982).

We refer to the Examiner's Final Office Action for a complete statement of the rejections. Final Act. 2–4.

### OPINION<sup>3</sup>

This is the second time rejected claims based on this subject matter have come before us for adjudication. The subject matter on appeal relates

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<sup>2</sup> The Examiner relied on U.S. Patent Publication No. US 2007/0163679 A1 to Fujisawa, published on July 19, 2007 as the English equivalent to Fujisawa's WO 2005/073422 A1 reference. Final Act. 2. Accordingly, we refer to the published application when discussing Fujisawa in our decision.

<sup>3</sup> Application 14/622,402, *DUPLEX STAINLESS STEEL*, filed 13 February 2015 is a continuation of application 12/305,014 filed 11 May 2009 which

to a duplex stainless steel having the appropriate proportion of austenite exhibiting good stress corrosion resistance, and to obtain metal with high mechanical properties. (Spec. ¶ 21). According to the Specification when the steel composition has the percentages by weight of chromium, molybdenum, nitrogen, nickel and manganese satisfying the relationship  $I_{LCR} \geq 30.5$ , the steel exhibits good localized corrosion resistance, that is to say resistance to the formation of pits or crevices. (Spec. ¶ 40). The Specification also discloses the ferrite Index formula  $I_F$  describes the ferrite content at 1100°C and to obtain a ferrite proportion between 35 and 65% by volume at 1100°C, the ferrite Index must be between 40 and 70. (Spec. ¶¶ 42–44).

After review of the respective positions provided by Appellant and the Examiner, we AFFIRM for the reasons presented by the Examiner.<sup>4</sup>

The Examiner found Fujisawa discloses an austenitic ferritic (duplex) stainless steel comprising amounts of C, Cr, Ni, N, Mn, Mo, Si, Al, Cu, S, P, REM, V, Ti, Nb, Mg, Ca, W, Co and Fe that overlap the amounts required by the claimed invention. (Final Act. 2–4; Fujisawa Abstract, ¶¶ 66–106). The Examiner determined the claimed invention would have been obvious

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was as the national stage under 35 U.S.C. § 371 of PCT/FR2007/000994 filed 15 June 2007.

<sup>4</sup> Appellant presents arguments only for independent claim 1 and dependent claims 2 and 5. *See* Appeal Brief, *generally*. Accordingly, we limit our discussion to these claims. Dependent claims 3, 4, and 6–8 are not separately argued. *Id.* In addition, Appellant does not present substantive arguments for the separate rejection of dependent claims 26 and 27 under 35 U.S.C. § 103(a) as unpatentable over Fujisawa and Espy. *Id.* at 9. Accordingly, dependent claims 3, 4, 6–8, 26 and 27 stand or fall together with independent claim 1.

because Fujisawa describes the same utility throughout the described ranges. (Final Act. 2–3). The Examiner further states:

In addition, even though Fujisawa et al. do not expressly teach the claimed formula; it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art. *In re Cooper*, 134 F.2d 630 (CCPA[1943]). In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more than routine investigation by those ordinary skilled in the art. *In re Austin, et al*, 149 USPQ 685, 688 [(CCPA1966)].

(Final Act. 4).

Appellant argues the  $I_{LCR}$  formula in the claimed invention specifies the contents of the Cr, Mo, N, Ni and Mn in the steel. (App. Br. 4). Appellant argues Fujisawa does not show or disclose or make obvious the duplex stainless recited in claim 1 and specifically a steel with the claimed composition and having an  $I_{LCR} \geq 30.5$  because Fujisawa's compositions have an  $I_{LCR}$  within broad range of 7.4 to 65.6. (App. Br. 5). Appellant contends that Fujisawa fails to identify any composition meeting the  $I_{LCR}$  formula and, thus, there is no prima facie case of obviousness. (App. Br. 6–8).

We are unpersuaded by these arguments.

Appellant's arguments focus on the compositional content as specified by the formula  $I_{LCR} \geq 30.5$ , where  $I_{LCR} = \% Cr + 3.3 \times \% Mo + 16 \times \% N + 2.6 \times \% Ni - 0.7 \times \% Mn$  in claim 1. What Appellant really seeks is a patent on a duplex steel resulting from mixtures of Cr, Mo, N, Ni and Mn having the claimed ratios and proportions, which are within the ranges generally disclosed or suggested by Fujisawa. However, Appellant identifies nothing in the record establishing that

the claimed ratios and proportions are critical. It is incumbent upon Appellant to establish by a proper showing that they have invented a steel composition possessing characteristics or qualities of utility that are new and materially different from the compositions disclosed in Fujisawa. *See In re Swenson* 132 F.2d 1020 (CCPA 1948); *In re Cooper supra*.

Appellant's arguments identify no reversible error in the Examiner's reliance on *In re Cooper* or the selection of values from the ranges disclosed in Fujisawa to satisfy the claimed formula. Appellant's arguments suggest that, to rely on the Examiner's proffered rationale, the prior art must disclose a working example that anticipates a claimed formula. In *Cooper*, however, no such working example or specific composition was identified in the prior art. Rather, the Cooper court upheld the Board's affirmance of the Examiner's obviousness rejection, and the Board's decision identified selected concentrations of tungsten, chromium, molybdenum and vanadium from a range of prior art values that satisfied the claimed formula. *Cooper*, 134 F.2d at 631–632. Moreover, we observe that Fujisawa describes duplex stainless steel exhibiting good stress corrosion resistance and mechanical properties. (Fujisawa ¶¶ 47–48).

#### Claims 2 and 5

Appellant's arguments focus on the compositional content as specified by the formula  $I_{LCR}$ . (App. Br. 9). These arguments are not persuasive for the reasons stated above.

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Application 14/622,402

Accordingly, we affirm the Examiner's prior art rejections of claims 1-8, 26 and 27 under 35 U.S.C. § 103(a) for the reasons presented by the Examiner and given above.

**ORDER**

The Examiner's prior art rejections under 35 U.S.C. § 103(a) are affirmed.

**TIME PERIOD**

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**