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OBLON, MCCLELLAND, MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			RUFO, LOUIS J	
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patentdocket@oblon.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CORNELIA ROEGER-GOEPFERT,
ROMAN BENEDIKT RAETHER, HARALD HOERHAMMER,
ARNOLD MARCO, CHARLOTTE EMNET, and DIETER MAYER

Appeal 2018-006845
Application 13/994,540
Technology Center 1700

Before N. WHITNEY WILSON, CHRISTOPHER C. KENNEDY and
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

WILSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's June 15, 2017 decision finally rejecting claims 1–10, 12, 13, and 16–24 (“Final Act.”). We have jurisdiction over the appeal under 35 U.S.C. § 6(b). An oral hearing was held on September 12, 2019, a transcript of which will be made part of the record.

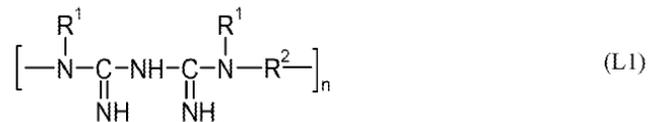
We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies BASF SE as the real party in interest (Appeal Br. 1).

CLAIMED SUBJECT MATTER

Appellant's disclosure relates to electroplating compositions comprising a leveling agent (Spec. 1). A leveling agent, as described in the Specification, is used to provide a substantially planar surface over a substrate surface (*id.*). The claimed compositions also include (1) a source of metal ions, (2) an accelerating agent, (3) a suppressing agent different from the leveling agent, and (4) a chloride ion. The leveling agent is a biguanide compound (or a corresponding salt thereof), having a specific structure. Claim 1 is representative of the invention and is reproduced below from the Claims Appendix to the Appeal Brief (*emphasis added*):

1. A composition, comprising:
 - a source of metal ions,
 - an accelerating agent,
 - a leveling agent,
 - a suppressing agent different from the leveling agent, and
 - a chloride ion,wherein the leveling agent comprises
 - (i) a linear or branched polymeric biguanide compound comprising a structural unit of formula L1



wherein

R^1 is, independently at each occurrence, an H atom or an organic radical having from 1 to 20 carbon atoms,

R^2 is a divalent organic radical having from 1 to 20 carbon atoms, optionally comprising a polymeric biguanide branch, and

n is an integer of 2 or more: or

(ii) a corresponding salt of the polymeric biguanide compound, formed by reacting the biguanide groups with one or more organic or inorganic acids.

REJECTIONS

Claims 1–10, 12, 13, and 16–24² are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mikkola³ in view of Michelet.⁴

DISCUSSION

Appellant does not argue any of the claims separately (*see* Appeal Br. 5–11). Accordingly, we focus our analysis on the rejection of claim 1 over Mikkola and Michelet. The remaining claims stand or fall with claim 1.

The Examiner finds that Mikkola discloses a composition comprising a source of copper ions, accelerating agents such as bis-sulfopropyl-disulfide, a suppressing agent, and chloride ion in an amount between 5 and 50 ppm (Final Act. 3, citing Mikkola ¶¶ 17, 24, 25, 30, 33). The Examiner further finds that Mikkola does not disclose the use of the claimed biguanide compound. However, the Examiner finds that Michelet discloses a composition used for a similar purpose to Mikkola's composition and which

² The Examiner did not include claim 24 in the statement of rejection. Final Act. 3. However, the Examiner addressed claim 24 in the discussion of the prior art. *Id.* at 6. Appellant acknowledges that claim 24 is properly rejected in seeking its review on appeal. Appeal Br. 2, 12. Therefore, we consider the omission to be harmless error.

³ Mikkola et al., US 2004/0217009 A1, published November 4, 2004.

⁴ Michelet, WO 2007/118985 A1, published October 25, 2007. Because Michelet is in French, the parties make reference to the English-language counterpart: Michelet, US 2010/0243467 A1, published September 30, 2010.

contains the claimed biguanide compounds (Final Act. 4, citing Michelet, ¶ 14). The Examiner determines that it would have been obvious to use Michelet's biguanide compounds in Mikkola's composition because Michelet teaches that they lead to smoother copper electrodeposits (Final Act. 4, citing Michelet ¶ 13).

Appellant argues that:

Michelet does not describe its polymeric biguanide compound to be used as a leveler but only as a suppressor, because the interaction between the polymeric biguanide compound and an accelerator described in Michelet is typical for a suppressor that would have been recognized by a skilled artisan at the time of the invention.

(Appeal Br. 6).

This argument is not convincing for several reasons. First, as noted above, Michelet specifically states that its biguanide compound containing baths provide "smooth" copper electrodeposits (i.e. the biguanide compound acts in some sense like a leveler). Thus, though Michelet does not describe the biguanide compounds as levelers, it appears to recognize that they can have a leveling effect. Second, because claim 2 further defines the claimed leveler as having a specific chemical structure (i.e. the claimed biguanide compounds), whether Michelet specifically describes those compounds as levelers is not critical to the obviousness rejection, which only requires an articulated reason with rational underpinnings to explain why a person of skill in the art would have incorporated them into Mikkola's composition. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). The Examiner has provided such a

reason for the proposed combination (namely that Michelet suggests that the biguanide compound can provide a smoothing effect).

The statement in Michelet's paragraph 13 is sufficient both to provide a reason to incorporate the biguanide compound into Mikkola's composition, and also to provide a reasonable expectation of success in doing so. Absolute predictability that the combination will be successful is not required. All that is required is a reasonable expectation of success. *See In re O'Farrell*, 853 F.2d 894, 903–904 (Fed. Cir. 1988).

Although Appellant provides technical arguments as to why Michelet suggests that the biguanide compound acts as a suppressor and not a leveler (Appeal Br. 7–10), these arguments are not persuasive as they do not adequately refute the rationale provided by the Examiner for making the proposed combination (i.e. that Michelet teaches that its compositions, including the biguanide compounds, are useful for smooth copper electrodeposits).

Appellant also argues that Michelet teaches that its composition is best used in the absence of chloride ions and, therefore, that a person of skill in the art would not have sought to use components from Michelet in Mikkola's composition (Reply Br. 8). This argument is not convincing because, although Michelet describes the disadvantages associated with the presence of chloride ions (Michelet ¶ 6), it does not state that chloride ions cannot be present at all, only that its disclosure “also relates to copper electroplating baths devoid of chloride ions, comprising poly(alkylene-biguanide) salts” (Michelet ¶ 11).

Accordingly, Appellant has not shown reversible error in the rejection.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1-10, 12, 13, and 16-24	§ 103(a) Mikkola and Michelet	1-10, 12, 13, and 16-24	
Overall Outcome		1-10, 12, 13, and 16-24	

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