

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* JOHN TONY KINARD, BRIAN JOHN MELODY,  
ALBERT KENNEDY HARRINGTON,  
and DAVID ALEXANDER WHEELER

---

Appeal 2007-1798  
Application 10/347,666  
Technology Center 1700

---

Decided: July 10, 2007

---

Before TONI R. SCHEINER, DONALD E. ADAMS, and  
LORA M. GREEN, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 1-13 and 63, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

## INTRODUCTION

The claims are directed to an electrolyte composition. Claim 1 is illustrative:

1. An electrolyte composition comprising 0.01-5%, by weight, sodium silicate and 0.01-5%, by weight,  $\alpha$ -amino acid wherein said composition has a pH of at least about 5 to no more than about 7.

The Examiner relies on the following prior art references to show unpatentability:

Wehrmann US 3,824,159 Jul. 16, 1974

Claims 1-13 and 63 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Wehrmann.

We affirm.

## DISCUSSION

Claim 1-13 and 63 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Wehrmann. The claims were not separately argued and therefore stand or fall together. 37 C.F.R. § 41.37(c)(1)(vii). Accordingly, we limit our discussion to representative claim 1. Claims 2-13 and 63 stand or fall with claim 1.

Claim 1 is drawn to an electrolyte composition. The composition comprises:

- 1) 0.01-5%, by weight, sodium silicate; and
- 2) 0.01-5%, by weight,  $\alpha$ -amino acid.

Claim 1 further requires that the pH of the composition is at least about 5 to no more than about 7.

The Examiner finds that Wehrmann teaches an electrolyte composition that comprises:

- 1) 0.1-15%, by weight of an alkali metal silicate, such as sodium silicate; and
- 2) 0.1-40%, by weight of a complex-forming substance, such as an amino acid that may be glutamic acid or aspartic acid ( $\alpha$ -amino acids) (Answer 3).

According to the Examiner, the concentrations of sodium silicate and  $\alpha$ -amino acids taught by Wehrmann overlap those set forth in Appellants' claim 1. In this regard, we note that "where there is a range disclosed in the prior art, and the claimed invention falls within that range, there is a presumption of obviousness." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004).

The Examiner recognizes, however, that Wehrmann does not disclose the pH of the electrolyte composition (Answer 4). Nevertheless, the Examiner finds that the pH of an electrolyte composition "has an effect on the corrosiveness or etching power of the electrolyte toward the metal being anodized and the oxide which forms during the anodization process" (*id.*). Therefore, the Examiner finds that the pH of the electrolyte composition will affect the properties of the final product (*id.*). Accordingly, the Examiner reasons that "[t]he pH of an electrolyte composition used for anodizing is a result-effective variable" (*id.*). From this the Examiner reasons that

[s]ince pH is a result-effective variable, choice of an appropriate value of pH would have been a matter of routine optimization within the skill of one of ordinary skill in the art based on the objective of successfully anodizing aluminum to achieve the best performance in applications such as the manufacture of electrolytic capacitors.

(*id.*)

We agree with the Examiner that the discovery of an optimum value of a result effective variable is within the skill of the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). As Appellants explain, silicates have been used in the art for aluminium anodization (Specification 5: ¶ 00013). In addition, Appellants explain that

[s]ilicates are known to react with the surface of the aluminum. Due to the local gradient effects in the vicinity of the liquid/aluminium interface the pH decreases. The gradient caused by a lower pH causes high inconsistent doping of the surface since the silicates become increasing[ly] more insoluble as pH decreases. The inconsistent doping is manifest in unpredictable changes in the eventual capacitor. Sodium silicate is typically used at a pH of approximately 10.5 to reduce the occurrence of premature precipitation.

(*id.*) As Appellants explain “[t]he skilled artisan has therefore been limited to the use of silicates, at a high pH wherein high uncontrollable silicate incorporation occurs. . . .” (Specification 5: ¶ 00014).

Accordingly, we agree with the Examiner that a person of ordinary skill in the art would have recognized that when silicates are used to coat aluminum, the pH of an electrolyte composition is a results effective variable. If the pH of the composition is too low, the silicates will become insoluble. If the pH of the composition is too high uncontrollable silicate incorporation occurs. Therefore, we agree with the Examiner’s assertion that a person of ordinary skill in the art would have found it *prima facie* obvious to optimize the pH of the electrolyte composition.

In sum, we find that the Examiner’s evidence and reasoning supports a *prima facie* case of obviousness. Accordingly, the burden of coming

forward with evidence or argument was properly shifted to the applicant. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

For their part, Appellants rely on the Chen Declaration to support the assertion that Wehrmann's composition "could only yield a high pH and could not be expected to achieve the pH of the present claims" (Br. 3). Chen provides the pH for 5 compositions which are asserted to be "representative of the range of compositions set forth in the examples of Wehrmann et al." (Chen Declaration 2: ¶ 14). Each of the 5 compositions prepared by Chen have a pH above 12 (Chen Declaration 3).

However, as the Examiner points out, "[t]he concentrations of constituents in the solutions are not the same as any of the examples in Wehrmann (Answer 6). We agree. As the Examiner explains, Appellants and Chen both fail to identify which of Chen's solutions relate to any particular example in Wehrmann (*id.*). As set forth in *In re Freeman*, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973):

In order for a showing of "unexpected results" to be probative evidence of non-obviousness, it falls upon the applicant to at least establish: (1) that there actually is a difference between the results obtained through the claimed invention and those of the prior art; and (2) that the difference actually obtained would not have been expected by one skilled in the art at the time of the invention.

On this record, because Appellants' evidence fails to accurately reflect the examples in the prior art which they are alleged to represent, there is no showing that there is an actual difference between the pH of Wehrmann's composition and the composition set forth in Appellants' claim 1. Accordingly, we are not persuaded by the Chen Declaration. We are also

Appeal 2007-1798  
Application 10/347,666

not persuaded by Appellants' arguments which are based on the Chen Declaration.

On reflection, we find that the Examiner has met his burden of presenting a *prima facie* case of obviousness which Appellants have not rebutted. Accordingly, we affirm the rejection of claim 1 under 35 U.S.C § 103(a) as unpatentable over Wehrmann. Claim 2-13 and 63 fall together with claim 1.

#### CONCLUSION

In summary, we affirm the rejection of record.

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

AFFIRMED

Ssc

JOHN B. HARDAWAY, III  
NEXSEN PRUET JACOBS & POLLARD, LLC  
P.O. BOX 10107, FED. STA.  
GREENVILLE, SC 29603-0107