

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THIERRY CHOPIN
and PIERRE MACAUDIERE

Appeal No. 1998-2288
Application 08/600,150

HEARD: March 22, 2001

Before KIMLIN, PAK, and WALTZ, **Administrative Patent Judges**.

WALTZ, **Administrative Patent Judge**.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 52 through 79 as presented in the amendment subsequent to the final rejection (see the amendment dated May 22, 1997, Paper No. 26, entered as per the Advisory Action dated June 6, 1997, Paper No. 27).¹ Claims 52-79 are the only claims remaining in this application.

¹ Although newly added claims 52-79 were physically entered as specified in the Advisory Action of Paper No. 27, we note that the part of the amendment of Paper No. 26 which cancelled claims 1-10, 19-27, 32-48, 50 and 51 was never physically entered. Upon the return of this application to the jurisdiction of the examiner, the examiner should rectify this error.

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According to appellants, the invention is directed to a pigmented composition devoid of toxic metals including a substance to be colored and a coloring effective amount of the pigment of formula (I)(Brief, pages 3-4). A copy of illustrative claim 52 is attached as an Appendix to this decision.

The examiner has relied upon the following references as evidence of obviousness:

Bryson 1972	3,663,245	May 16,
Wanmaker et al. (Wanmaker) 1974	3,793,046	Feb. 19,
Borrelli et al. (Borrelli) 1989	4,832,724	May 23,
Lafon et al. (Lafon) 1992	5,118,659	Jun. 2,
Joyce et al. (Joyce) 1993	5,228,910	Jul. 20,
Katz et al. (Katz) 1993	5,268,337	Dec. 7,
Kinsman et al. (Kinsman) 1989 (Published International Application) ²	WO 89/02871	Apr. 6,
Wu 1989	WO 89/08335	Sep. 8,

² We note that Kinsman was cited by the examiner as prior art relied upon in the rejection of the claims on appeal (Answer, page 3) but was not applied in any rejection (Answer, pages 4-6). Kinsman was applied against process claims 19-27 in a rejection under section 103 in the Final Rejection dated Jan. 22, 1997, Paper No. 24, page 5, paragraph 6. However, all claims to the process have been cancelled by the amendment of Paper No. 26.

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(Published International Application)

Choy et al. (Choy), "Preparation of 90K Superconductor $\text{Yba}_2\text{Cu}_3\text{O}_{7-x}$ via Oxide Precursors BaCuO_2 and $\text{Y}_2\text{Cu}_2\text{O}_5$," *Mat. Res. Bull.*, Vol. 24, pp. 867-874, 1989; and

Grigenaite et al. (Grigenaite), *Chemical Abstracts*, Vol. 115, Abstract No. 83181, 1994 abstract of "Investigation of yttrium barium copper oxides by electron loss spectroscopy," *Liet. Fiz. Rinkinys*, 30(6), 698-705, 1990.

Claims 52-63 and 65-79 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure (Answer, pages 4-5). Claims 52, 58, 74, 76 and 78 stand rejected under the second paragraph of 35 U.S.C. § 112 as indefinite for failing to particularly point out and distinctly claim the subject matter which appellants regard as their invention (Answer, page 6). Claims 52-79 stand rejected under 35 U.S.C.

§ 103 as unpatentable over Lafon in view of Choy, Wu and Grigenaite or, in the alternative, over Choy, Wu and Grigenaite in view of Lafon and further in view of Joyce or Katz and Bryson, Wanmaker or Borrelli (*id.*). We reverse all of the examiner's rejections for reasons which follow.

OPINION

A. *The Rejection under 35 U.S.C. § 112, ¶2*

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The claimed subject matter should be analyzed for definiteness under the second paragraph of section 112 and then compliance with the first paragraph before the scope of the claimed subject matter can be compared to the applied prior art references in an analysis under 35 U.S.C. § 103. See *In re Angstadt*, 537 F.2d 498, 501, 190 USPQ 214, 217 (CCPA 1976), citing *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971).

"The legal standard for definiteness [under section 112, ¶2] is whether a claim reasonably apprises those of skill in the art of its scope. [Citations omitted]." *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994).

"[T]he definiteness of the language employed must be analyzed - not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art." *Angstadt, supra; Moore; supra*.

The examiner rejects claims 52, 58, 74, 76 and 78 under the second paragraph of section 112 because the term "dye" is indefinite and confusing since the examiner does not realize

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how a dye could be a substance which could be colored with a pigment (Answer, page 6).

Appellants argue that the scope of the term "dye" is well known to one of ordinary skill in the art and the dye is merely combined with a specified mixed metal oxide to form the claimed mixture (Brief, page 12).

The initial burden of presenting a *prima facie* case of unpatentability rests with the examiner. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The examiner has not established that any term or language recited in the claims fails to apprise those of ordinary skill in the art of its scope (see the Answer, page 6). The examiner has not alleged or established that the scope of the term "dye" is unclear or unknown to those of ordinary skill in the art. Any question of how the mixed metal oxide pigment can be combined with a dye would come under the enablement requirement of section 112, first paragraph. However, the examiner has also not met the initial burden of presenting a *prima facie* case of unpatentability for this requirement of section 112.

For the foregoing reasons, we determine that the examiner has not met the initial burden of establishing that the claim language fails to reasonably apprise those of skill in the art of its scope. Accordingly, the rejection of claims 52, 58, 74, 76 and 78 under 35 U.S.C. § 112, ¶2, is reversed.

B. The Rejection under 35 U.S.C. § 112, ¶1

Claims 52-63 and 65-79 stand rejected under 35 U.S.C. § 112, ¶1, for failing to provide an enabling disclosure (Answer, pages 4-5). The examiner states that, since appellants argue that one of ordinary skill in the art could not predict whether the mixed metal oxides of the prior art would function as pigments, the amount and type of examples necessary to support broad claims increases due to the unpredictability of the art (Answer, page 5). The examiner further states that "[c]laims broad enough to cover a large number of compositions that do not exhibit the desired properties fail to satisfy the requirements of 35 USC 112." *Id.*

Appellants argue that the examiner has not met the initial burden of proof and has no basis for concluding that persons of ordinary skill in the art, armed with appellants'

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specification and working examples, would not be able to determine which metal oxides within the scope of the claims work to pigment or color the substance to be colored (Brief, page 10).

To be enabling, the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without "undue experimentation." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). When rejecting a claim under the enablement requirement of section 112, the examiner bears the initial burden of presenting a reasonable explanation as to why it is believed that the scope of protection provided by the claim is not adequately enabled by the description of the invention provided in the specification, including providing sufficient reasons for doubting any assertions in the specification as to the scope of enablement. *See Wright, supra; In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 369-70 (CCPA 1971).

We agree with appellants that the examiner has provided no reasonable basis for doubting the enablement provided in the application specification. The examiner has concluded that it would have required undue experimentation to practice

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the claimed invention given the disclosure and examples of appellants' specification (Answer, page 11). However, the only determinations the examiner has made are that the art is unpredictable (based on appellants' arguments regarding the rejection under 35 U.S.C. § 103) and there is no guidance in the specification as to which compounds encompassed by the claims would function as pigments and which would not (Answer, pages 8-11). Unpredictability is but one factor to be considered in determining undue experimentation. *See In re Wands*, 858 F.2d 731, 735, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). Furthermore, although the amount of direction or guidance presented is another factor in determining undue experimentation, guidance as to which compounds will *not* function as pigments is not required. *See Wands, supra*; Answer, page 11. Finally, the examiner admits that "[t]here is no indication that some of the compounds meeting the formula would not be suitable as pigments, nor that any experimentation would be required at all to find suitable pigments within the claimed formula. In such a case, the specification would be enabled...." Answer, page 12.

For the foregoing reasons, we determine that the examiner has not met the initial burden of presenting a *prima facie* case of unpatentability. Accordingly, the rejection of claims 52-63 and 65-79 under 35 U.S.C. § 112. ¶1, is reversed.

C. The Rejections under 35 U.S.C. § 103

The claims on appeal stand rejected under section 103 as unpatentable over Lafon in view of Choy, Wu and Grigenaite or, in the alternative, over Choy, Wu and Grigenaite in view of Lafon and further in view of Joyce or Katz and Bryson, Wanmaker or Borrelli (Answer, page 6). We reverse this rejection essentially for the reasons stated on pages 16-26 of the Brief. We add the following reasons for completeness and emphasis.

The examiner finds that Lafon teaches the particle sizes of powders as recited in the claims on appeal but fails to suggest powders of the claimed formula and that these powders can be used to pigment the claimed substrates (Answer, page 6). Accordingly, the examiner applies Choy and Wu for the teaching that Y_2O_3 -BaO-CuO powders are superconductors and inherently are a pigment since they absorb light in the visible range and would be insoluble in most typical pigment

vehicles (*id.*). From these findings, the examiner concludes that "it would have been obvious to have used the notoriously well known colored mixed metal oxides of Lafon as pigments in substrates typically colored by metal oxide pigments, since the secondary references (Choy and Wu) show that the instant formulae are *colored* oxides." Answer, page 7.

Alternatively, the examiner applies Choy, Wu and Grigenaite to show "that compounds on which the instant formula reads are known" and applies Lafon to teach the claimed particle size (Answer, paragraph bridging pages 7-8). The examiner further applies Joyce, Katz, Bryson, Wanmaker and Borrelli to show substrates typically colored by other mixed metal oxides (Answer, pages 7-8). Therefore, the examiner concludes that it would have been obvious to have used the notoriously well known colored mixed phase oxides of Choy, Wu and Grigenaite in substrates typically colored by other mixed metal oxides, as shown by Joyce, Katz, Bryson, Wanmaker and Borrelli, and in the particle sizes of Lafon (Answer, page 8).

We disagree with both of the examiner's rationales. The examiner and appellants agree that Lafon fails to disclose or suggest the mixed oxides of formula (I) in claim 52 on appeal

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or their use as pigments (Answer, page 6; Brief, pages 15-16). Choy only discloses a mixed metal oxide within the formula of claim 52 which is useful as an intermediate in the preparation of a superconductor (Choy, pages 868-869). The examiner has failed to point to any disclosure or suggestion in Choy that this intermediate mixed oxide is useful as a pigment.

Similarly, Wu discloses a green *phase* of Y_2BaCuO_5 in a superconductor but the examiner has not established that Wu discloses or suggests the use of this phase as a pigment in the form of agglomerates, grains, and mixtures thereof as required by claim 52 on appeal (Wu, page 3, ll. 8-11; claim 2). Finally, the Grigenaite abstract discloses the same green *phase* of Y_2BaCuO_5 in a superconductor as taught by Wu, although additionally this abstract teaches a blue phase of $Y_2Cu_2O_5$. The examiner has failed to present any convincing evidence or reasoning that one of ordinary skill in the art would have recognized the intermediates or phases of Choy, Wu or Grigenaite as pigments merely because these compounds themselves possess a color.

The tertiary references to Joyce, Katz, Bryson, Wanmaker and Borrelli were applied by the examiner to either have given

the "artisan a reasonable expectation of success in obtaining suitable pigments from *any* mixed metal oxide" or to show that it was "notoriously well known that numerous mixed metal oxides are useful as pigments in the instant substrates." Answer, pages 7 and 8, respectively.

Joyce discloses mixed metal oxides that are useful as pigments and have utility as superconductors (col. 5, ll. 3-12). However, the specific mixed metal oxides taught by Joyce are not encompassed by formula (I) in claim 52 on appeal nor are they similar to the intermediates/phases disclosed by Choy, Wu and Grigenaite (see Joyce, Examples, col. 8-col. 11). Katz discloses many mixed metal oxides with several utilities (col. 1, ll. 15-22) but there is no teaching that all of the mixed metal oxide formulas possess *all* the listed utilities or functions.³ Furthermore, the Y-Ba-Cu-O formula disclosed by Katz does not fall within formula (I) of claim 52 on appeal. Bryson discloses forehearth color concentrates for coloring glasses, none of which are similar to the pigments of formula (I) in claim 52 on appeal (col. 1, ll. 3-5; col. 2, ll. 25-36;

³ For example, we note that it was well known that simple mixed metal oxides such as silica-alumina are not generally superconductors while it was equally well known that Y-Ba-Cu-O is not generally useful as a catalyst, catalyst support, or optical fiber.

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and the Examples). Wanmaker discloses a inorganic yellow-colored pigment useful in paints having a specified formula which is not similar to formula (I) in claim 52 on appeal (col. 1, ll. 3-12; col. 2, ll. 24-47; and col. 3, ll. 16-17). Borrelli discloses a method for coloring photochromic glasses including transition metal oxides and/or rare earth metal oxides as inert glass colorants but with no disclosure of colorants identical or similar to those of formula (I) in claim 52 on appeal (col. 1, ll. 6-7; col. 3, ll. 48-63; and Table 1 in col. 4).

From the foregoing analysis of the Joyce, Katz, Bryson, Wanmaker and Borrelli reference disclosures, we determine that the examiner has not presented any reasonable and convincing factual basis for the conclusion "all of which would have given the artisan a reasonable expectation of success in obtaining suitable pigments from *any* mixed metal oxides" (Answer, page 7) since each reference only discloses specific mixed metal oxides that function as pigments. Alternatively, we determine that the examiner has presented a sufficient factual basis for establishing that "it [sic, is] notoriously

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well known that numerous mixed metal oxides are useful as pigments in the instant substrates" (Answer, page 8). However, the examiner has not presented any convincing evidence or reasons why the references should be combined in the manner proposed, i.e., why the dissimilar mixed metal oxide pigments of Joyce, Katz, Bryson, Wanmaker and Borrelli would have suggested that the particular mixed metal oxides of Choy, Wu, and Grigenaite, useful as intermediates or phases in a superconductor, would have been useful as pigments with the specified substrates. See *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)(The evidence of a suggestion, teaching or motivation to combine features of different references must be clear and particular).

For the foregoing reasons and those set forth in the Brief, we determine that the examiner has not met the initial burden of presenting a *prima facie* case of obviousness. Accordingly, the rejections of the claims on appeal under 35 U.S.C. § 103 over Lafon in view of Choy, Wu and Grigenaite or, in the alternative, over Choy, Wu and Grigenaite in view of Lafon and Joyce, Katz, Bryson, Wanmaker and Borrelli are reversed.

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D. Summary

The rejection of claims 52, 58, 74, 76 and 78 under 35 U.S.C. § 112, ¶2, is reversed. The rejection of claims 52-63 and 65-79 under 35 U.S.C. § 112, ¶1, is reversed. The rejections of claims 52-79 under 35 U.S.C. § 103 over Lafon in view of Choy, Wu and Grigenaite or, alternatively, over Choy, Wu and Grigenaite in view of Lafon, Joyce, Katz, Bryson, Wanmaker and Borrelli are reversed.

The decision of the examiner is reversed.

REVERSED

EDWARD C. KIMLIN)
Administrative Patent Judge)
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) BOARD OF PATENT
)
) APPEALS AND
CHUNG K. PAK)
Administrative Patent Judge) INTERFERENCES
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APPENDIX

52. A pigmented/colored composition comprising a substance to be colored and a coloring effective amount of agglomerates, grains, or mixtures thereof of a pigment made of at least one mixed oxide of the formula (I):



in which R is yttrium, a rare earths metal having an atomic number ranging from 62 to 71, inclusive, or combination thereof; M is barium, magnesium, calcium, or strontium; and x and y are two numbers, the sum $x + y$ of which is equal to 2, said substance being different from said mixed oxide and being a synthetic resin, natural rubber, porcelain, crockery, earthenware, paper, dye, cosmetic, ink, or coating composition.