

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS JUSTEL, HANS NIKOL,
and JACQUELINE MERIKHI

Appeal No. 2003-1932
Application No. 09/436,179

ON BRIEF

Before LIEBERMAN, KRATZ and TIMM, Administrative Patent Judges.
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claim 5, which is the only claim pending in this application.

BACKGROUND

Appellants' invention relates to a coating method for a luminescent material including the steps of adding a magnesium salt solution to a luminescent material suspension, increasing the suspension pH to about 9.5 to precipitate magnesium hydroxide on the luminescent material, separating magnesium hydroxide coated luminescent material from the suspension, and calcinating

the separated coated material. Appealed claim 5 is reproduced below.

5. A method of providing a luminescent material with a coating comprising magnesium oxide MgO, said method comprising:

forming an aqueous suspension of the luminescent material, forming an aqueous solution of a water-soluble magnesium salt, adding the solution of the water-soluble magnesium salt to the suspension of the luminescent material, the thereby modified suspension having a pH of about 7, increasing the pH of the suspension to about 9.5 thereby forming a homogeneous precipitate of magnesium hydroxide Mg (OH)₂ on the luminescent material, separating the resultant magnesium hydroxide coated luminescent material from the suspension, then calcinating the magnesium hydroxide coated luminescent material.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Tamatani et al. (Tamatani)	5,289,081	Feb. 22, 1994
Bruno et al. (Bruno)	5,382,452	Jan. 17, 1995

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Tamatani in view of Bruno.

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by appellants and the examiner concerning the issues before us on this appeal.

OPINION

Having carefully considered each of appellants' arguments set forth in the brief and reply brief, appellants have not persuaded us of reversible error on the part of the examiner. Accordingly, we will affirm the examiner's rejection for substantially the reasons set forth by the examiner in the answer. We add the following for emphasis.

Like appellants, Tamatani discloses a method for coating luminescent material with magnesium oxide. Tamatani forms an aqueous suspension of the luminescent material that contains a water soluble magnesium salt, increases the pH of the suspension sufficiently to form magnesium hydroxide, separates magnesium hydroxide coated luminescent material therefrom and heats the separated material (calcining) to form a surface treated (magnesium oxide coated) phosphor (luminescent material). See Example 4 of Tamatani.

While Tamatani discloses a preliminary step of forming a solution of the magnesium salt (Example 4), the examiner noted that Tamatani does not expressly disclose the preliminary formation of an aqueous suspension of the luminescent material and adding the magnesium salt solution thereto, as here claimed. Rather, Tamatani exemplifies (Example 4) a suspension formation

method wherein the luminescent material is added to a magnesium salt solution.

As further noted by the examiner, Tamatani discloses (example 17) that an aqueous suspension of luminescent material can be mixed with an aqueous suspension of magnesium oxide. Based on those teachings of Tamatani, the examiner (answer, pages 3 and 4) has reasonably determined that one of ordinary skill in the art in reviewing example 4 of Tamatani in light of the entire patent document disclosure would have been led to the option of adding water to both the magnesium salt and the luminescent material prior to the combination thereof rather than adding all of the water to form the magnesium salt solution with a reasonable expectation of success in so doing. After all skill, and not the converse, is presumed on the part of those practicing in the art. See In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985); In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962).

We agree with the examiner's interpretation of that reference as it applies to the here claimed subject matter.

Based upon the teachings of Tamatani as discussed above, one of ordinary skill in the art would have expected to obtain a coated luminescent material of acceptable quality for use in a

lamp whether the water was added solely to the magnesium salt or a portion of the water was premixed with the luminescent material to form a suspension prior to the addition of the luminescent material to the magnesium salt solution. One of ordinary skill in the art would have added the components in whatever order and manner that was most convenient to arrive at the desired suspension solution mixture. Premixing the luminescent material with some water before adding that premixture to the aqueous magnesium salt solution would have been an obvious option to one of ordinary skill in this art. See In re Burhans, 154 F.2d 690, 692, 69 USPQ 330, 332 (CCPA 1946).

As for the pH levels claimed, Tamatani (Example 4) discloses that the pH of the suspension solution is increased to the alkaline range or area of pH values so as to produce magnesium hydroxide prior to the separation (filtration) step as described above. Tamatani does not explicitly describe the pH level of the suspension before the increase as being about 7 and after the increase as being about 9.5, as here claimed. However, we agree with the examiner that one of ordinary skill in the art upon routine experimentation would have arrived at a workable pH in the increased pH alkaline range for forming magnesium hydroxide as required by Tamatani and would have arrived at a preliminary

non-increased pH value below the alkaline magnesium hydroxide formation range for the suspension solution prior to the pH increasing step. In so doing, we agree with the examiner that one of ordinary skill in the art would have been led to a non-alkaline, non-hydroxide forming neutral pH value, such as about 7, as being appropriate for the suspension prior to the pH raising step.

Moreover, one of ordinary skill in the art would have reasonably arrived at a suitable increased alkaline pH, such as the here claimed pH of about 9.5, for causing the formation of the magnesium hydroxide. As pointed out by the examiner, Bruno teaches that the conversion of a metal chelate compound, such as magnesium chloride, to the hydroxide occurs at a pH of greater than about 9. See column 9, line 40 through column 10, line 56 of Bruno. Consequently, we agree with the examiner that the here claimed process is rendered prima facie obvious based on the combined teachings of Bruno and Tamatani.¹

¹ While the examiner refers to four other references at pages 5 and 6 of the answer, we observe that those other references are not identified as evidence being relied upon in the rejection before us. Consequently, we do not take the teachings of those other references into account in assessing the propriety of the examiner's obviousness position.

In light of the above discussion, we do not find appellants' argument of a lack of teaching or suggestion of the here claimed process in the applied references to be persuasive. While we recognize that Bruno is directed to a somewhat different method of forming a luminescent material composition, Bruno does teach the pH range at which a conversion to hydroxide would be expected. Moreover, Tamatani suggests a pH in the alkaline range for the formation of magnesium hydroxide. Appellants have not furnished any evidence that would tend to suggest that one of ordinary skill in the art would have gone in a different direction in selecting a suitable alkaline pH notwithstanding the clear teachings of Tamatani and Bruno.

Having reconsidered the evidence of obviousness advanced by the examiner in light of appellants' arguments, we determine that the examiner's obviousness presentation outweighs the arguments thereagainst as presented in the briefs. Hence, we shall affirm the stated rejected.

CONCLUSION

The decision of the examiner to reject claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Tamatani in view of Bruno is affirmed.

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

AFFIRMED

PAUL LIEBERMAN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
PETER F. KRATZ)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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CATHERINE TIMM)	
Administrative Patent Judge)	

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