

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 52

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KYOJI TSUTSUI,  
TAKEHITO YAMAGUCHI,  
HIDEAKI EMA,  
MASARU SHIMADA,  
HIROSHI GOTO,  
ICHIRO SAWAMURA,  
EIICHI KAWAMURA,  
KEISHI KUBO,  
SHOJI MARUYAMA,  
HIROKI KUBOYAMA,  
and  
KEISHI TANIGUCHI

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Appeal No. 1999-1460  
Application No. 08/070,859

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HEARD: JANUARY 10, 2002

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Before GARRIS, OWENS, and DELMENDO, Administrative Patent Judges.  
GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the final rejection of claims 1-4 and 9-12 which are all of the claims remaining in the application.

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The subject matter on appeal relates to a method of reversible thermosensitive color recording by manifestation of different states of a functional element which consists essentially of two compounds. The functional element is capable of alternatively assuming (a) a first state in which the two compounds interact to form a regular aggregate structure or (b) a second state in which the two compounds do not interact, and at least one of the two compounds is in an aggregate or crystallized state, by heating and cooling the functional element to obtain one of said two states. More specifically, the first state (which is a colorized state) is attained by fusing the two compounds with the application of heat followed by rapidly cooling the two fused compounds. The second state (which is a decolorized state) is attained by elevating the temperature of the two fused compounds to a temperature below the temperature at which the two compounds are fused, thereby destroying the aforementioned regular aggregate structure of the two compounds. This appealed subject matter is adequately illustrated by independent claim 1 which reads as follows:

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1. A method of reversible thermosensitive coloring recording by selective manifestation of different states of a functional element which consists essentially of two compounds and is capable of alternatively assuming (a) a first state in which said two compounds interact to form a regular aggregate structure, or (b) a second state in which said two compounds do not interact, and at least one of said two compounds is in an aggregate or crystallized state, by heating and cooling said functional element to obtain one of said two states, wherein at least one of said two compounds has a long hydrocarbon chain structure, and said second state is attained by the aggregation force of said long hydrocarbon chain structure.

All of the claims on appeal stand finally rejected under the first paragraph of 35 U.S.C. § 112 as being based upon a specification disclosure which would not enable one skilled in the art to make and/or use the here-claimed invention. According to the examiner, "[t]he specification is non-enabling for [the appealed] claims which utilize the language 'regular aggregate structure' because this phrase does not have a well defined scope and meaning in the art and is not defined within the specification" (answer, page 3).

The claims on appeal also stand finally rejected under the second paragraph of 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter which the appellants' regard as their invention. The examiner considers the appealed claims to offend the second paragraph of Section 112 because "[t]he phrase 'regular aggregate structure' is indefinite

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since its meaning is not art recognized and cannot be ascertained from the specification" (answer, page 4).

As correctly indicated by the examiner on page 2 of the answer, all of the appealed claims will stand or fall together. See 37 CFR § 1.192(c) (7) (1997).

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by the appellants and by the examiner concerning the above-noted rejections.

#### OPINION

For the reasons set forth in the answer and below, we will sustain each of these rejections.

As indicated above, it is the examiner's basic position that the appealed claim phrase "regular aggregate structure" is not an art recognized phrase and is not defined in the appellants' specification disclosure in such a manner as to enable one having ordinary skill in the art to practice the here-claimed invention as required by the first paragraph of Section 112.

Correspondingly, the examiner considers this absence of a definition for the phrase "regular aggregate structure" to render the claims offensive to the second paragraph of Section 112. Thus, because they are based upon the same deficiencies, the

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rejections before us under the first and second paragraphs of 35 U.S.C. § 112 are interrelated as sometimes occurs. See Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376, 58 USPQ2d 1801, 1806 (Fed. Cir. 2001).

The appellants acknowledge that "the term 'regular aggregate structure' is not an art recognized term, but rather is a term which they have formulated to describe an important structural feature of the components of the functional element of the invention" (brief, page 3). Nevertheless, the appellants argue they "have provided ample description in the specification of the meaning of the term in question" (brief, page 4). We cannot agree.

In an attempt to support their above-noted argument, the appellants refer to the disclosure on several pages of the subject specification. While these disclosures reflect the critical importance of forming a "regular aggregate structure" in order to achieve the objectives of the here-claimed invention, we share the examiner's view that the specification disclosures to which the appellants refer provide no meaningful definition of

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the phrase in question. If anything, these disclosures support the examiner's position that an artisan would not be able to recognize and/or achieve the formation of a "regular aggregate structure."

For example, a comparison of the last full paragraph on specification page 8 with the paragraph bridging specification pages 8 and 9 reveals that a "regular aggregate structure" is formed when two compounds are fused and then "rapidly cooled" (specification, page 8, line 16) whereas, "when the fused compounds are gradually cooled, the aggregate structure of the two compounds is not generally formed" (specification, page 8, lines 21-23). Notwithstanding the pivotal importance of rapid versus gradual cooling in achieving a "regular aggregate structure," we find nothing and the appellants point to nothing in their specification disclosure which would enable the artisan to determine whether a specific degree of cooling would achieve the desired structure or for that matter to determine whether the product of the cooling step indeed possessed the desired "regular aggregate structure."

In an effort to assess the meaning of the claim phrase under consideration, the examiner has questioned the appellants as to whether a "regular aggregate structure" relates to a crystallized

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condition. The appellants respond to the examiner's question by stating that "the regular aggregate structure is an ordered structure in which two compounds . . . interact to form the structure, with molecules of one of the two compounds interacting to form an aggregate or crystallized state of that compound and the molecules of the other compound interacting to form [sic, form] an aggregate or crystallized state of that compound" (brief page 5). This statement, however, does not meaningfully respond to the examiner's question. For example, the aforementioned explanation uses the terms "aggregate" and "crystallized" without specifying whether these terms possess the same or different meanings. As a consequence, it is unknown whether the term "aggregate" refers to a state which is in a "crystallized" form or which is in some other form.

Finally, we observe that many of the appellants' arguments in support of their position refer to and rely upon a drawing figure of record (i.e., the figure attached to the brief filed March 17, 1998) which is characterized as showing a "regular aggregate structure" as well as the manner in which it is made and destroyed. As quite properly indicated by the examiner, however, this figure is not part of the appellants' specification disclosure. Similarly, as implicitly acknowledged by the

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appellants themselves, this figure is not a part of the prior art. For these reasons, the figure cannot be relied upon to establish enablement or definiteness pursuant to the first and second paragraphs of Section 112.

In summary, for the reasons set forth above and in the answer, the examiner has carried her burden of establishing reasons for doubting enablement with respect to the claim phrase "regular aggregate structure" whereas the appellants have failed to present suitable arguments and proofs to show the contrary. In re Marzocchi, 439 F.2d 220, 223-24, 169 USPQ 367, 369-70 (CCPA 1971). Analogous reasoning applies to the examiner's determination of claim indefiniteness and the appellants' response thereto. It follows that we will sustain the examiner's rejections of all claims on appeal under both the first and second paragraphs of 35 U.S.C. § 112.

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The decision of the examiner 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

BRADLEY R. GARRIS	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
TERRY J. OWENS	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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ROMULO H. DELMENDO	)	
Administrative Patent Judge	)	

BRG:hh

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