

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte KAZUHITO MIYAKE and JUNICHI FUJIMORI

Appeal No. 2005-1402
Application No. 10/403,021

ON BRIEF

Before HANLON, JEFFREY T. SMITH, and PAWLIKOWSKI, Administrative Patent Judges.

HANLON, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the final rejection of claims 3 and 4. Claims 1, 2 and 5-11, which are the other claims pending in this application, have been allowed. See Advisory Action dated August 4, 2004. The claims on appeal are directed to a multicolor image-forming material for forming a full color image

of high speed and high resolution with a laser beam, and a method for forming a multicolor image. Claims 1, 3 and 4 are illustrative and read as follows:

1. A multicolor image-forming material comprising:
an image-receiving sheet comprising a support and an image-receiving layer; and
at least four thermal transfer sheets each comprising a support, a light-to-heat converting layer and an image-forming layer, the at least four thermal transfer sheets comprising yellow, magenta, cyan and black thermal transfer sheets,
wherein image-recording is performed by the method comprising the steps of:
superposing each one of the at least four thermal transfer sheets on the image-receiving sheet to be in a state of the image-forming layer being in contact with the image-receiving layer; and
irradiating the thermal transfer sheet with laser beams in two-dimensional array to transfer an image in an area of the image-forming layer subjected to irradiation onto the image-receiving layer, and
a recording area of a multicolor image in each of the thermal transfer sheets is a size of 515 mm x 728 mm or more, a resolution of the transferred image is 2,400 dpi or more, and each of the light-to-heat converting layers comprises from 9.2 to 20 % by weight of a substance which is liquid at 30°C.
3. The multicolor image-forming material according to claim 1, wherein the substance has a solubility in water of 10 g or more.
4. The multicolor image-forming material according to claim 2, wherein the substance has a solubility in water of 10 g or more.

The sole issue in this appeal is whether the examiner properly rejected claims 3 and 4 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellants regard as the invention.

Discussion

Claims 3 and 4 identify the substance of claim 1 as a substance having "a solubility in water of 10 g or more." The examiner argues that claims 3 and 4 are indefinite because the amount of water that the substance is soluble in is not specified, and appellants' specification fails to clarify the matter. See Answer, p. 2; Specification, p. 7, lines 12-14 and p. 12, lines 16-18.

Appellants maintain that the term "solubility," as claimed, refers to a solubility test commonly used in the art, i.e., a test based on 100 g of solution. See Brief, p. 11. For support, appellants rely on a definition of "solubility test" in Encyclopaedia Chimica¹ and definitions of "solubility" and "solute" in Fundamental Dictionary of Chemical Term.^{2,3} See Brief, pp. 11 and 12; Appendix to Brief. Appellants conclude that (Brief, pp. 11-12):

[O]ne of ordinary skill in the art reading the claims in view of the specification and the knowledge in t[h]e art would understand that the solubility of

¹An English translation of a portion of a page from Encyclopaedia Chimica submitted by appellants and of record in the application provides the following definition of "solubility test":

Test to measure the solubility. Generally, an excessive solute (which is sufficiently reduced to powder) is dissolved into a solvent at the prescribed temperature and is made it saturated completely. Then, a certain quantity of this solution is measured accurately, and, after the solvent is evaporated completely, the remain is weighed. And, the number of grams of the solute in 100g of solution is found. . . .

²An excerpt from Fundamental Dictionary of Chemical Term submitted by appellants and of record in the application provides the following definition of "solubility":

The limit up to which a material (solute) dissolves in another material (solvent such as water). The solubility of a solid is often expressed in terms of the quantity (g) of a solute dissolvable in 100 g of a solvent. . . .

³An excerpt from Fundamental Dictionary of Chemical Term submitted by appellants and of record in the application provides the following definition of "solute":

A material dissolved in a solution[.] In the case where a fluid dissolves in another fluid, the one smaller in quantity is designated.

Appellants' claimed substance in water, as in claims 3 and 4, is defined as 10 g or more per 100 g of water.

The examiner agrees that "grams solute per 100 grams solvent" is a known and often expressed measurement of the solubility of a solute. However, the examiner points out that there are other reasonable definitions of "solubility," such as grams per liter, and relies on a definition of "molar solubility" in Hackh's Chemical Dictionary for support (copy attached). The examiner argues that a term in a claim cannot be construed to have one particular meaning where there is more than one reasonable meaning. Thus, the examiner concludes that the claims are indefinite under 35 U.S.C. § 112, second paragraph, since there is more than one reasonable meaning of "solubility." Answer, p. 3.

In response, appellants argue that (Reply brief, p. 5):

[T]he mere existence of other ways to calculate solubility does not necessarily make the claim language "solubility in water of 10 g or more" indefinite. For example, in Exxon Research and Engineering Co. v. United States, 46 Fed. Cl. 278, 291, 54 U.S.P.Q.2d 1519 (Ct. Fed. Cl. 2000), the defendants presented testimony that there were at least four ways to define the claim term "average diameter." . . . However, the court held that such evidence did not establish that one skilled in the art would not understand how to calculate the average diameter.

In Exxon,⁴ the defendant argued that the term "average diameter" is indefinite and, for support, offered testimony to establish that there are at least four possible definitions of the term. The defendant argued that each definition produces a different value, and a

⁴We note that Exxon Research and Engineering Co. v. United States, 46 Fed. Cl. 278, 54 USPQ2d 1519 (Ct. Fed. Cl. 2000), is not binding precedent on the Board of Patent Appeals and Interferences. Nevertheless, we have distinguished the facts in Exxon from the facts in the case on appeal.

person having ordinary skill in the art would not have understood which definition is intended. Exxon challenged the defendant's testimony that at least two of the definitions would produce substantially different results. As for the other definitions, the Court concluded that the third definition was extremely unreliable, and the fourth definition was not applicable in the context of the claimed invention. Accordingly, the Court held that the defendant failed to meet its burden to show that a person having ordinary skill in the art would not have understood how to calculate the average diameter and, for this reason, concluded that the term is not indefinite. Exxon, 46 Fed. Cl. at 296-98, 54 USPQ2d at 1534-44.

In this case, the amount of water, i.e., solvent, is not specified in claims 3 and 4, and the specification fails to clarify the matter. See In re Moore, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971) (definiteness under 35 U.S.C. § 112, second paragraph, is analyzed 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 skill in the pertinent art). Nevertheless, appellants argue that one of ordinary skill in the art would have understood that claims 3 and 4 require a substance having a solubility of 10 grams or more in 100 grams of water.

We disagree. The record establishes that one of ordinary skill in the art would have understood that "solubility" can be defined at least two ways, i.e., the quantity of a solute dissolvable in 100 grams of a solvent or the quantity of a solute dissolvable in one liter

(1000 grams) of a solvent. In contrast to Exxon, appellants have failed to present any evidence which establishes that the second definition of solubility, i.e., the quantity of solute dissolvable in one liter of solvent, is not applicable in the context of the claimed invention or is "extremely unreliable." In further contrast to Exxon, appellants have failed to establish that a substance having a solubility of at least 10 grams in 100 grams of water is not "substantially different" from a substance having a solubility of at least 10 grams in one liter (1000 grams) of water.

For the reasons set forth above, we agree with the examiner that claims 3 and 4 are indefinite because the amount of water that the substance is soluble in is not specified. See All Dental Prodx, LLC v. Advantage Dental Prods., Inc., 309 F.3d 774, 779-80, 64 USPQ2d 1945, 1949 (Fed. Cir. 2002) ("The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe."). Therefore, the rejection of claims 3 and 4 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which appellants regard as the invention 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

ADRIENE LEPIANE HANLON
Administrative Patent Judge

JEFFREY T. SMITH
Administrative Patent Judge

BEVERLY A. PAWLIKOWSKI
Administrative Patent Judge

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