

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. 44

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex Parte DAVID S. BAILY,
RONALD H. WHITE and JOHN TEXTER

Appeal No. 1995-2781
Application 07/804,868

ON BRIEF

Before, GARRIS, OWENS and JEFFREY T. SMITH, Administrative Patent Judges.

JEFFREY T. SMITH, Administrative Patent Judge.

Decision on appeal under 35 U.S.C. § 134

Applicants appeal a decision of the Primary Examiner rejecting claims 1-16 and 33-51 all the claims in the application. We have jurisdiction under 35 U.S.C. § 134.

Background

The claimed invention is drawn to aqueous developable photographic elements that are designed to be used in a

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dye-diffusion transfer process for transferring image dye to a polymeric receiving element layer. The instant invention includes silver halide light sensitive layers, hydrophilic binders, dye emitting compounds and thermal solvents. The thermal solvent is said to have a calculated logP greater than 3 and less than 10. (Specification page 6, lines 15-23). According to the specification, page 3, lines 8-10, the calculated logP relates to the variation in the partition coefficient of a molecule between octanol and water. The solvent is said to aid the transfer of dyes from the imaging layer to the receiver element. (Specification page 6, lines 9-12). The compositions of the present invention are said to yield improved dye images in receiving layers of the photographic element. (Specification page 5, lines 16-17).

The following references are relied upon by the Examiner in the rejections before us:

Texter 1994 (Texter)	5,360,695	November 1,
Otani et al. 1993 (Otani)	5,264,332	November 23,
Kohno et al. (Kohno)	5,032,499	July 16, 1991

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Chari et al. (Chari)	5,008,179	April 16, 1991
Sakaguchi et al. 1985 (Sakaguchi)	4,536,467	August 20,
Iwatsune et al. (JP'645)	JP62-136645 ¹	June 19, 1987

Claims 1-6, 9-11, 14-16, 33-38, 41-43 and 46-51 are rejected as being unpatentable under 35 U.S.C. § 103 over Kohno.

Claims 1-6, 9-11, 14-16, 33-38, 41-43 and 46-51 are rejected as being unpatentable under 35 U.S.C. § 103 over JP'645.

Claims 1-8, 10-13, 16, 33-40, 42-45, 48 and 49 are rejected as being unpatentable under 35 U.S.C. § 103 over the combination of Sakaguchi and Otani.

Claims 1-8, 10-13, 16, 33-40, 42-45, 48 and 49 are rejected as being unpatentable under 35 U.S.C. § 103 over the combination of JP'645 and Otani.

Claims 1-16 and 33-49 are rejected as being unpatentable under the judicially created doctrine of obviousness type

¹ We will use the translation of JP62-136545 provided by the USPTO dated October 1992. The first named inventor listed therein is Masaru Iwatsune.

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double patenting over claims 1, 4-16, 18-28 and 31-40 of U.S.
Patent 5,360,695 (Texter) in view of Chari.

DISCUSSION

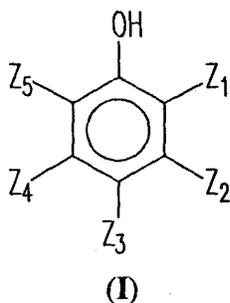
A. The prior art rejections

It is well established that the Examiner has the initial burden under § 103 to establish a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). To that end, the Examiner must show that some objective teaching or suggestion in the applied prior art, or knowledge generally available in the art would have led one of ordinary skill in the art to arrive at the claimed invention. *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). We have carefully reviewed the specification, claims and applied references, including all of the arguments and evidence advanced by the Examiner and Appellants in support of their respective positions. We reverse the Examiner's § 103 rejections.

Independent claims 1 and 33 are reproduced below:

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1. An aqueous developable chromogenic photographic element for non-aqueous thermal dye-diffusion transfer comprising radiation sensitive silver halide, a dye-forming compound wherein said compound forms a heat transferable dye upon reaction of said compound with the oxidation product of a primary amine developing agent, a hydrophilic binder, and a thermal solvent for facilitating non-aqueous thermal dye diffusion transfer wherein said thermal solvent has the structure I



wherein

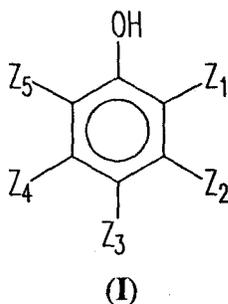
(a) Z1, Z2, Z3, Z4, and Z5 are substituents, the Hammett sigma parameters of Z2, Z3, and Z4 sum to give a total, **G**, of at least -0.28 and less than 1.53;

(b) the calculated logP for I is greater than 3 and less than 10.

33. A multilayer aqueous-developable color-photographic material for non-aqueous thermal dye diffusion transfer comprising a support, a yellow dye producing layer containing light-sensitive silver halide grains, a compound providing a heat transferable yellow dye, and a hydrophilic binder, a magenta dye producing layer containing light

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sensitive silver halide grains, a compound providing a heat transferable magenta dye, and a hydrophilic binder, a cyan dye producing layer containing light-sensitive silver halide grains, a compound providing a heat transferable cyan dye, and a hydrophilic binder, and where said material contains a thermal solvent for facilitating non-aqueous thermal dye diffusion transfer, according to formula I,



wherein

(a) Z1, Z2, Z3, Z4, and Z5 are substituents, the Hammett sigma parameters of Z2, Z3, and Z4 sum to give a total, **G**, of at least -0.28 and less than 1.53;

(b) the calculated logP for I is greater than 3 and less than 10¹ with the proviso that said heat transferable yellow, magenta, and cyan dyes formed upon reaction of said compounds with the oxidation product of a primary amine developing agent transfer at a temperature of from about 50°C to 200°C.

1. The § 103 rejection over Kohno

Claims 1-6, 9-11, 14-16, 33-38, 41-43 and 46-51 are rejected under 35 U.S.C. § 103 over Kohno.

Kohno describes heat developable silver halide photographic medium and the transfer of the image by heating the composite of the receiving element and the exposed medium

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to 150°C under dry conditions. Kohno discloses silver halide light sensitive layers (Column 13, lines 49-64); dye emitting compounds (Columns 39 & 51); binders (Column 58); and thermal solvents (Columns 59-60 & 66). Kohno discloses the use of various heat solvents for incorporation in the elements to promote the thermal development and/or transfer. Kohno does not disclose the calculated logP for the solvents or the importance of solvents not washing out during aqueous development.

According to the Examiner it would have been obvious to substitute hydroxy derivatives of the benzamides disclosed with a reasonable expectation of achieving comparable results, based upon the presence of hydroxy substituted compounds within the disclosed example compounds. We do not agree. The Examiner has not directed us to a basis within the reference to select a solvent with the calculated logP required by claims 1 and 33. There is no suggestion to go to the solvents in Kohno and select the specific solvents with the calculated logP required by claims 1 and 33. The rejection of claims 1-6, 9-11, 14-16, 33-38, 41-43 and 46-51 under 35 U.S.C. § 103 over Kohno is reversed.

2. The § 103 rejection over JP'645

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Claims 1-6, 9-11, 14-16, 33-38, 41-43 and 46-51 are rejected under 35 U.S.C. § 103 over JP'645.

JP'645 describes heat developable photographic elements used in color image forming. JP'645 discloses silver halide light sensitive layers (Page 13); dye emitting compounds (Page 15); binders (Page 22); and various types of heat solvents (Pages 7-10). JP'645 does not disclose the calculated logP for the solvents or the importance of solvents not washing out during aqueous development.

According to the Examiner, JP'645 anticipates the use of benzamide derivatives as heat solvents in color producing systems, alternatively, it would have been obvious to use these heat solvents in heat developable compositions. (Examiner's Answer, paragraph bridging pages 4 and 5). The Examiner also states the compounds embraced by the instant claim language are taught with respect to formula IV and that JP'645 has chosen a different measure of hydrophobic/hydrophillic character. (Examiner's Answer, page 14, lines 17-20). We have not been directed to a correlation between the argued different measures of hydrophobic/hydrophillic character of JP'645 and the calculated logP for the solvents required by the claims. That

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is, no reason has been provided for selecting a solvent within the scope of claims 1 and 33 using any method of measurement of hydrophobic/hydrophilic character. The Examiner has not directed us to a basis within the reference to select a solvent with the calculated logP required by claims 1 and 33. There is no suggestion to go to the solvents in JP'645 and select the specific solvents with the calculated logP required by claims 1 and 33. The rejection of claims 1-6, 9-11, 14-16, 33-38, 41-43 and 46-51 under 35 U.S.C. § 103 over JP'645 is reversed.

3. The § 103 rejection over Sakaguchi and Otani

Claims 1-8, 10-13, 16, 33-40, 42-45, 48 and 49 are rejected under 35 U.S.C. § 103 over the combination of Sakaguchi and Otani.

Sakaguchi describes heat developable photographic elements used in color image forming. Sakaguchi discloses silver halide light sensitive layers (Columns 13 & 14); dye emitting compounds (Columns 15 & 16); hydrophilic binders (Column 15); and solvents (Columns 4-9). Sakaguchi does not disclose the calculated logP for the solvents or the importance of solvents not washing out during aqueous development.

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Otani describes heat developable photographic elements used in color image forming. Otani discloses silver halide light sensitive layers (Column 3); dye emitting compounds (see Columns 3-4); binders (Columns 59-61); and high boiling point solvents (Columns 32-43). Otani column 43 describes four compounds which are said to meet the thermal solvent required by claims. (Examiner's Answer, page 5, last paragraph). Otani does not disclose the calculated logP for the solvents or the importance of solvents not washing out during aqueous development.

According to the Examiner, Otani teaches the use of compounds embraced by the language of Sakaguchi as heat melting solvents. (Examiner's Answer, page 5, last paragraph). The Examiner asserts that it would have been obvious to use hydroxy derivative of the compounds disclosed by Sakaguchi with a reasonable expectation that these compounds would function to aid to transfer and improve dye stability. (Examiner's Answer, paragraph bridging pages 5 and 6). The Examiner has not directed us to a basis to combine the solvents of the references and to select a solvent with the calculated logP required by claims 1 and 33. There is no suggestion to go to the solvents in Otani and select the

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specific solvents with the calculated logP required by claims 1 and 33 to be used in the system disclosed by Sakaguchi. Both Sakaguchi and Otani are silent as to the calculated logP of their solvents. The rejection of claims 1-8, 10-13, 16, 33-40, 42-45, 48 and 49 under 35 U.S.C. § 103 over the combination of Sakaguchi and Otani is reversed.

4. The § 103 rejection over JP'645 and Otani

Claims 1-8, 10-13, 16, 33-40, 42-45, 48 and 49 are rejected under 35 U.S.C. § 103 over the combination of JP'645 and Otani.

JP'645 and Otani are described above. According to the Examiner, JP'645 teaches the transfer of dye images is improved by using benzamide derivative thermal solvents, however, esters of benzoic acid thermal solvents are not shown. Otani teaches esters of benzoic acid are known as thermal solvents. The Examiner asserts that it would have been obvious to substitute the benzoic acid esters of Otani for the benzamide esters of JP'645 with a reasonable expectation that these compounds would provide comparable results as thermal solvents. (Examiner's Answer, pages 6, second paragraph). The Examiner has not directed us to a basis to combine the solvents of the references and to select

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a solvent with the calculated logP required by claims 1 and 33. There is no suggestion to go to the solvents in Otani and select the specific solvents with the calculated logP required by claims 1 and 33 to be used in the system disclosed by JP'645. Both JP'645 and Otani are silent as to the calculated logP of their solvents. The rejection of claims 1-8, 10-13, 16, 33-40, 42-45, 48 and 49 under 35 U.S.C. § 103 over the combination of JP'645 and Otani is reversed.

B. The double patenting rejection

Claims 1-16 and 33-49 have been rejected as unpatentable under the judicially created doctrine of obviousness type double patenting over claims 1, 4-16, 18-28 and 31-40 of U.S. Patent 5,360,695 (Texter) in view of Chari. Claims 1 and 33, reproduced above, are representative of the rejected claims. Below, we reproduce claim 1 of U.S. Patent No. 5,360,695:

1. An aqueous developable chromogenic photographic dye-diffusion transfer element of two or more layers comprising a support, radiation sensitive silver halide, a dye-forming compound wherein said compound forms a heat transferable dye upon reaction of said compound with the oxidation product of a primary amine developing agent and wherein said heat transferable dye does not contain water solubilizing groups to immobilize said heat transferable dye in dry gelatin, a hydrophilic binder, and a solid particle thermal solvent dispersion, wherein said thermal solvent is a water-immiscible phenol derivative, has a melting

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point of between 50° C. and about 130°C., and is incorporated at 5 to 200% by weight of said hydrophilic binder, and where said thermal solvent dispersion contains a dispersing aid at a thermal solvent to dispersing aid weight ratio of 1:0.01 to 1:2.

Appellants and the Examiner appear to agree that it is appropriate to apply a two way test in assessing the propriety of this double patenting rejection. In applying this two way test, the issue is whether application claims 1-16 and 33-49 are obvious over the patent claims 1, 4-16, 18-28 and 31-40, and also whether the patent claims are obvious over the application claims. **In re Dembiczak**, 175 F.3d 994, 1002, 50 USPQ2d 1614, 1619-20 (Fed. Cir. 1999); **In re Braat**, 937 F.2d 589, 593-94, 19 USPQ2d 1289, 1292-93 (Fed. Cir. 1991).

The crux of the inquiry lies in a comparison of the claims. **In re Borah**, 354 F.2d 1009, 1017, 148 USPQ 213, 220 (CCPA 1966). Patent claim 1 is directed to an aqueous-developable color-photographic material containing a thermal solvent dispersion which contains a dispersing aid at a thermal solvent to dispersing aid weight ratio of 1:0.01 to 1:2 while appealed claim 1 provides for aqueous-developable color-photographic material containing a thermal solvent. Thus, patent claim 1 differs from appealed claim 1 in that the

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thermal solvent of appealed claim 1 does not expressly recite the inclusion of a dispersion aid. That is, patent claim 1 comprises a thermal solvent dispersion which includes a dispersing aid which is not recited by the appealed claim 1.

To remedy the difference between the subject matter of appealed claim 1 and patent claim 1, the Examiner relies on Chari. Chari describes stable dispersions of photographic coupler materials which are incorporated in photographic systems. (Column 1, lines 6-9). The photographic system of Chari is said to include combining a permanent solvent dispersion and a coupler dispersion. (See figure 1 and column 3, lines 47-64). Chari discloses, prior to his invention, the separate dispersions were prepared by milling or homogenization and therefore required the use of large amounts of energy. (Column 1, lines 51-56). The coupler dispersion is said to be combined with a compatible solvent which serves to activate the coupler. Chari describes solvents which meet the thermal solvent required by the appealed claims. (See columns 9-13). Chari discloses the solvent dispersion is formed with the use of a dispersion aid and without the use of mechanical operations, such as milling or homogenization. (Column 3, lines 39-42). Chari states prior to his invention,

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the formation of dispersions comprising solvents and couplers were formed without dispersion aids. (Column 1, lines 14-23).

According to the Examiner, the appealed claims would include or embrace the use of a dispersion aid. (Examiner's Answer, paragraph bridging pages 7 and 8). We agree. Additionally, it would have been obvious to provide the Appellants' claimed photographic element with a dispersion aid. Chari discloses the advantages which are obtained by the use of the combination of a solvent and a dispersion aid in photographic systems. The formation of the developable photographic dye diffusion transfer element of appealed claim 1 including a solvent and dispersion aid would have been obvious to one of ordinary skill in the art who desired not to use mechanical methods for forming a dispersion. Thus, one of ordinary skill in the art with the subject matter of appealed claim 1 and the Chari reference before him would have found obvious the aqueous-developable color-photographic material containing a thermal solvent dispersion, as described in patent claim 1.

Regarding the second aspect of the two way test, the Examiner determined the subject matter of patent claim 1 is not patentably distinct from the subject matter of appealed

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claim 1. The Examiner indicated it would have been obvious to one skilled in the art to modify the aqueous developable chromogenic photographic dye-diffusion transfer element as described in the patent claim 1 by removing the dispersion aid because Chari teaches that the formation of solvent dispersions by mechanical means was known to those skilled in the art. (Examiner's Answer, page 8, second full paragraph).

Appellants urge there is no motivation to use the solvents of Chari and the solvents of Chari and Texter (patent) are not equivalent. (Reply Brief, page 17, second full paragraph to page 18, line 2). Chari describes photographic systems which contain solvent dispersions including dispersion aids. One of ordinary skill in the art would have recognized that solvent dispersions including dispersion aids could be formed from any of Chari's disclosed solvents. Included in the described suitable solvents are compounds which Appellants admit read on the instant claims. (Reply Brief, page 17, last paragraph). Consequently, a person of ordinary skill in the art who did not want to employ mechanical means to form a dispersion would have used a dispersion aid as described in Chari.

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Appellants urge specific elements of appealed claims 3, 5, 6, 9-16, 33, 35, 37, 38 and 41-48 are not found in the cited claims 1, 4-16, 18-28 and 31-40 of Texter. (Reply Brief, pages 19-21). The Examiner, in a supplemental Examiner's Answer, appears to have provided reasons why the subject matter of appealed claims 3, 5, 6, 9-16, 33, 35, 37, 38 and 41-48 are not patentably distinct from the subject matter of Texter claims 1, 4-16, 18-28 and 31-40. We presume the Appellants have acquiesced to the reasons set forth by the Examiner because the Appellants have not responded to the statements by filing a Supplemental Reply Brief.

The rejection of claims 1-16 and 33-49 as unpatentable under the judicially created doctrine of obviousness type double patenting over claims 1, 4-16, 18-28 and 31-40 of U.S. Patent 5,360,695 in view of Chari 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-IN-PART

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