

*THIS OPINION WAS NOT WRITTEN FOR PUBLICATION*

*The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.*

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* WILLIAM M. SCHWARZ, Jr.

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Appeal No. 96-3689  
Application 08/325,914<sup>1</sup>

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ON BRIEF

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Before WEIFFENBACH, ELLIS and WALTZ, *Administrative Patent Judges*.

WEIFFENBACH, *Administrative Patent Judge*.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-27. The remaining claims in the application, claims 28-38, have been withdrawn from consideration pursuant to a restriction requirement. We have carefully considered the respective positions advanced by appellant and the examiner. For the reasons set forth below, we reverse the examiner's rejection.

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<sup>1</sup> Application for patent filed October 19, 1994.

The examiner rejected claims 1-6, 9-15, 18-24 and 27 under 35 U.S.C. § 102(b) as anticipated by Clark et al. (Clark)<sup>2</sup> and claims 1-27 under 35 U.S.C. § 103(a) as unpatentable over Clark.<sup>3</sup> The claims on appeal are directed to a recording sheet. Claim 1 is representative of the claimed subject matter and reads as follows:

A recording sheet which comprises a substrate and an image receiving coating situated on at least one surface of the substrate, said coating comprising water and a surfactant capable of exhibiting a liquid crystalline phase in water at a temperature of about 25E C or higher, said coating containing the water and surfactant in relative concentrations such that upon addition of water to the coating, the surfactant undergoes a phase change, thereby increasing the viscosity of the coating, wherein the recording sheet is suitable for receiving printed images, said substrate being selected from the group consisting of paper and transparent polymeric materials, said image receiving coating being suitable for receiving high quality images of an aqueous ink, said images exhibiting sharp line edges.

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<sup>2</sup> U.S. Patent No. 4,666,621 issued May 19, 1987.

<sup>3</sup> In the final Office action, the examiner rejected claims 1-6, 9-15, 18-24 and 27 under 35 U.S.C. § 102(b) as anticipated by Clark and claims 7, 8, 16, 17, 25 and 26 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Clark. In response to the appeal brief, the examiner prepared an answer and two supplemental answers. In the answer (paper no. 7), the examiner stated the rejections appealed as set forth in the final Office action and introduced a new ground of rejection wherein claims 1-6, 9-15, 18-24 and 27 were rejected under 35 U.S.C. § 103 over Clark. The examiner repeated the grounds of rejection in the first supplemental answer (paper no. 8). In response to the new ground of rejection, appellant submitted an amendment (amendment "B", paper no. 9) wherein the phrase "said images exhibiting sharp line edges" was added to the end of independent claims 1, 10 and 19. In response to the amendment, the examiner mailed a second supplemental answer (paper no. 10) wherein the examiner notified appellant that the amendment "B" was entered and restated the rejections as follows: "[c]laims 1 to 6, 9 to 15, 18 to 24 and 27 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by Clark et al." and that "[c]laims 1-27 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Clark et al." (second suppl. answer: pp. 3-4). It would appear that the examiner has withdrawn the rejection of claims 7, 8, 16, 17, 25 and 26 under 35 U.S.C. § 102(b) as anticipated by Clark. Accordingly, we consider the examiner's rejection of claims 7, 8, 16, 17, 25 and 26 under 35 U.S.C. § 102(b) as anticipated by Clark to have been withdrawn since the rejection does not appear in the second supplemental examiner's answer. *Ex parte Emm*, 118 USPQ 180, 181 (Bd. App. 1957).

According to the examiner, claims 1-6, 9-15, 18-24 and 27 are anticipated by Clark because Clark discloses a substrate made of wood pulp fibers as well as synthetic fibers and having a coating containing water and ammonium lauryl sulfate (a surfactant disclosed by appellant on page 16 and in Example I in the specification). See the final Office action, p. 2, ¶3, paper no. 4.

The invention in Clark is not directed to a recording sheet, but to a pre-moistened wipe for cleaning hard surfaces. The wipe comprises (i) a substrate which comprises specific proportions of wood pulp fibers and synthetic fibers and (ii) a cleaning composition which includes water and a surfactant (col. 2, lines 11-54). The substrate disclosed in Clark would meet the requirements of appellant's claim 1 in that the substrate could be paper or a polymeric material. The cleaning composition, however, does not appear to be a coating as required by claim 1. According to Clark, "[t]he pre-moistened wipe of the invention comprises a flexible substrate comprising a nonwoven fabric which has been treated with a small amount of a polymeric material and wet-impregnated with a liquid cleaning composition" (col. 3, lines 3-7). Even if the composition could be construed as being a coating on the substrate, we do not find that Clark presents a *prima facie* case of anticipation.

It has long been established that the initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention rests upon the examiner. *Ex parte Levy*, 17 USPQ2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990). The factual determination of anticipation requires the disclosure in a single reference of every element of the claimed invention. *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); *In re Bond*, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990);

*Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677-78, 7 USPQ2d 1315, 1317 (Fed. Cir. 1988); *In re Marshall*, 578 F.2d 301, 304, 198 USPQ 344, 346 (CCPA 1978); *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972). Moreover, it is incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference. *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). Here the examiner has failed to consider two features of the claimed subject matter, namely, that the water and surfactant composition be “capable of exhibiting a liquid crystalline phase in water at temperatures of about 25E C or higher” and that the coating composition contain “water and surfactant in relative concentrations such that upon addition of water to the coating, the surfactant undergoes a phase change.”

The meaning “crystalline phase” and “phase change” as set forth in the claims must be considered in light of the specification as it would be interpreted by one of ordinary skill in the art. *Gechter v. Davidson*, 116 F.3d 1454, 1457, 1460 n.3, 43 USPQ2d 1030, 1032, 1035 n.3 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). Appellant discloses the

following at page 16 of the specification:

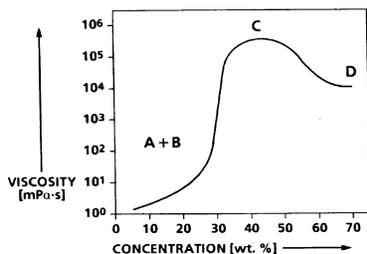


FIG. 3

... Figure 3 [which is reproduced to the left of this column] represents the viscosity in milliPascal-seconds of the surfactant ammonium laureth sulfate, of the structural formula  $C_{12}H_{25}-(OCH_2CH_2)_2OSO_3^{\ominus}NH_4^{\oplus}$ , in water at varying concentrations in percent by weight of the surfactant in the solution at a fixed temperature of about

25EC. As indicated, at relatively low concentrations, the viscosity increases with increasing concentration. In these low concentration regions, spherical and rod micelles are the predominant phase .... As concentration increases, viscosity peaks, and the surfactant molecules are predominantly in the hexagonal liquid crystalline phase (represented by "C" ...). As concentration further increases, viscosity drops as the surfactant molecules predominantly assume the lamellar liquid crystalline configuration (represented by "D" ...).

Accordingly, for the purposes of the present invention, the surfactant solution coated onto the recording sheet at the time of printing is in a phase such that the aqueous ink contacting the surfactant solution dilutes the surfactant solution to the extent necessary to effect a phase change that results in an increase in viscosity in the surfactant solution. For example, in a preferred embodiment of the present invention, the recording sheet substrate is coated with a solution of the surfactant in the lamellar phase. Upon application of an aqueous ink to the coating, the concentration of the surfactant is decreased by the local dilution effect of the ink drop. This decrease in concentration shifts the surfactant to the hexagonal liquid crystalline phase, and accordingly increases the viscosity of the recording sheet coating in the area of the ink droplet. While not being limited to any particular theory, it is believed to be possible that this local increase in viscosity on the recording sheet decreases drying time and inhibits printing defects such as fuzzy line edges, line growth, and intercolor bleed.

Clark's Example 2 discloses a composition comprising water and ammonium laureth sulfate, a surfactant within the scope of appellant's claim 1 as noted, *supra*. The amount of water in the composition is about 79% by weight while the amount of surfactant is about 0.015% by weight. In fact, the concentration of surfactant disclosed by Clark in his cleaning composition does not exceed about 1% by weight (col. 2, lines 45-48). As can be gleaned from Fig. 3, *supra*, these concentrations are nowhere near the amounts illustrated in the Fig. 3 which are required to cause the phase changes recited in appellant's claims. For the foregoing reasons, the examiner's rejection of claims 1-6, 9-15, 18-24 and 27 under 35 U.S.C. § 102(b) as anticipated by Clark is reversed.

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For the same reasons, we also reverse the rejection of claims 1-27 under 35 U.S.C. § 103 over Clark. We find no teaching or suggestion in Clark, and the examiner has not provided any technical or scientific reasoning, which would have led a person having ordinary skill in the art to the claimed recording sheet. In addition, we agree with appellant that Clark is not analogous prior art with respect to the claimed subject matter. We do not find Clark to be in the field of appellant's endeavor, i.e., recording sheets for receiving images of an aqueous ink, or reasonably pertinent to the particular problem with which the appellant is concerned. *In re Clay*, 966, F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992). Accordingly, the examiner's rejection of claims 1-27 for obviousness is also reversed.

In summary, the decision of the examiner is reversed.

**REVERSED**

CAMERON WEIFFEBACH )  
Administrative Patent Judge )  
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) BOARD OF PATENT  
JOAN ELLIS )  
Administrative Patent Judge ) APPEALS AND  
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) INTERFERENCES  
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THOMAS A. WALTZ )  
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