

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte ZHENAN BAO and ROBERT W. FILAS

---

Appeal No. 2005-1257  
Application No. 10/179,570

---

ON BRIEF

---

Before KIMLIN, PAK and PAWLIKOWSKI, Administrative Patent Judges.  
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-20.

Claims 1 and 20 are illustrative:

1. A method of producing a nanofeature on a substrate, comprising:

soaking a portion of a stamp having a nanopattern thereon in an ink solution to absorb said ink solution into said stamp and produce an inked surface on said nanopattern; and

applying said inked surface against a substrate to transfer an ink pattern onto said substrate, said ink solution within said inked stamp replenishing said surface of said nanopattern.

20. A method of decontaminating a stamp having a nanopattern thereon, comprising:

Appeal No. 2005-1257  
Application No. 10/179,570

extracting contaminants from within at least a portion of a matrix of a stamp having a nanopattern thereon by soaking at least a portion of said stamp in a solvent.

The examiner relies upon the following references as evidence of obviousness:

|                            |           |               |
|----------------------------|-----------|---------------|
| Schnur et al. (Schnur)     | 5,079,600 | Jan. 7, 1992  |
| Soane                      | 5,278,243 | Jan. 11, 1994 |
| Domenico et al. (Domenico) | 5,364,662 | Nov. 15, 1994 |
| Kumar et al. (Kumar)       | 5,512,131 | Apr. 30, 1996 |
| Everhart et al. (Everhart) | 5,922,550 | Jul. 13, 1999 |
| Maracas et al. (Maracas)   | 5,937,758 | Aug. 17, 1999 |
| Lochhead et al. (Lochhead) | 6,039,897 | Mar. 21, 2000 |

Appellants' claimed invention is directed to a method of producing a nanofeature on a substrate by applying an inked surface of a stamp against a substrate to transfer the ink onto the substrate. The stamp which contains the nanopattern is soaked in an ink solution whereby the stamp absorbs sufficient ink to allow the surface of the nanopattern to be replenished with ink after transfer to the substrate. Appealed claim 20 is directed to a method of decontaminating the nanopattern-containing stamp by soaking the stamp in a solvent which extracts the contaminants.

The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

(a) claims 1-5, 7 and 8 over Maracas in view of Everhart and Lochhead;

Appeal No. 2005-1257  
Application No. 10/179,570

(b) claim 6 over the stated combination of references further in view of Soane;

(c) claims 9, 10 and 18-20 over the stated combination of references further in view of Domenico;

(d) claims 11-14 and 17 over the stated combination of references further in view of Kumar; and

(e) claims 15 and 16 over the references applied in (d) above further in view of Schnur.

In accordance with the grouping of claims set forth at page 7 of appellants' principal brief, the following groups of claims stand or fall together: (I) claims 1-3, 5, 7 and 8; (II) claims 11-14 and 17; (III) claims 15 and 16; and (IV) claims 9, 10, 18 and 19.

We have carefully reviewed each of appellants' arguments for patentability, as well as the declaration evidence relied upon in support thereof. However, we are in complete agreement with the examiner's reasoned analysis and application of the prior art, as well as his cogent disposition of the arguments raised by appellants. Accordingly, we will adopt the examiner's reasoning as our own in sustaining the rejections of record, and we add the following for emphasis only.

Appeal No. 2005-1257  
Application No. 10/179,570

There is no dispute that Maracas, like appellants, discloses the presently claimed method of producing a nanofeature on a substrate by soaking a stamp having a nanopattern thereon in an ink solution and applying the inked surface of the stamp against a substrate to transfer an ink pattern onto the substrate. As recognized by the examiner, Maracas is silent with respect to whether ink within the stamp replenishes the surface of the stamp after the ink transfer onto the substrate. However, we agree with the examiner's analysis that Everhart and Lochhead provide sufficient evidence in support of the reasonable conclusion that the ten-minute soaking in the inking solution disclosed by Maracas would result in enough ink in the stamp of Maracas to replenish the surface after transfer.

It is well settled that when a claimed process reasonably appears to be substantially the same as a process disclosed by the prior art, the burden is on the applicant to prove that the prior art process does not necessarily or inherently possess characteristics attributed to the claimed process. In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990); In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In the present case, the stamps of both appellants and Maracas are made of the same material, poly(dimethylsiloxane), and appellants'

Appeal No. 2005-1257  
Application No. 10/179,570

specification discloses that sufficient absorption of ink into the stamp occurs when the stamp is soaked in the ink solution for as little as five minutes (see page 11 of specification). Accordingly, since Maracas teaches soaking the same material in an ink solution for about ten minutes, which is twice as long as the minimum amount of time disclosed by appellants, it is reasonable to conclude that the process of Maracas necessarily allows for a replenishing of the stamp surface after transfer, particularly since the claimed method only requires two transfers before re-inking the stamp (see claim 4). Consequently, based on the close correspondence between the methods of appellants and Maracas, we find that it is eminently fair to place upon appellants the burden of establishing that the method of Maracas does not, in fact, allow for replenishing the surface of the stamp with ink. Appellants, however, have proffered no such objective evidence. The Declaration of Dr. Zhenan Bao fails to address the thrust of the examiner's rejection. The Bao Declaration is directed to the Everhart process but fails to rebut the reasonable conclusion that the ten-minute soaking disclosed by Maracas necessarily results in replenishing of the poly(dimethylsiloxane) surface of the stamp.

Appeal No. 2005-1257  
Application No. 10/179,570

Moreover, appellants' specification describes the present invention as an advancement over conventional nanocontact printing methods which only dip the stamp into the ink solution (see page 2 of specification, second paragraph). Hence, it would seem that Maracas, like appellants, effects an improvement over the conventional nanocontact printing methods by soaking the stamp in the ink solution for about ten minutes. Furthermore, even in the absence of the specific disclosure in Maracas of soaking for ten minutes, we find that appellants' solution to the problem of conventional nanocontact printing methods would have been readily apparent to one of ordinary skill in the art. In re Ludwig, 353 F.2d 241, 243-44, 147 USPQ 420, 421 (CCPA 1965).

As for the further arguments presented by appellants with respect to the other rejections, we will not unnecessarily burden the record by reiterating the analysis set forth by the examiner, which we find more than adequate to rebut appellants' arguments.

In conclusion, based on the foregoing and the reasons well stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.

Appeal No. 2005-1257  
Application No. 10/179,570

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

AFFIRMED

|                             |   |                 |
|-----------------------------|---|-----------------|
| EDWARD C. KIMLIN            | ) |                 |
| Administrative Patent Judge | ) |                 |
|                             | ) |                 |
|                             | ) |                 |
|                             | ) |                 |
|                             | ) |                 |
| CHUNG K. PAK                | ) | BOARD OF PATENT |
| Administrative Patent Judge | ) | APPEALS AND     |
|                             | ) | INTERFERENCES   |
|                             | ) |                 |
|                             | ) |                 |
| BEVERLY PAWLIKOWSKI         | ) |                 |
| Administrative Patent Judge | ) |                 |

ECK:clm

Appeal No. 2005-1257  
Application No. 10/179,570

Hitt Gaines, PC  
Lucent Technologies, Inc.  
P.O. Box 832570  
Richardson, TX 75083