

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

Paper No. 28

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** RYOHEI KOKAWA,  
YASUHIRO YAMAKAGE,  
and MAKOTO SHINOHARA

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Appeal No. 2004-1087  
Application No. 09/223,472

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ON BRIEF

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Before KRATZ, DELMENDO and PAWLIKOWSKI, **Administrative Patent Judges**.

PAWLIKOWSKI, **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 1-5 and 18-33.

Claim 1 is representative of the subject matter on appeal and is set below:

1. A method of applying a material onto a substrate surface, comprising:  
    exposing a surface of a substrate to a liquid, containing a material, in an enclosure; and  
    directing more of the liquid from an outlet which, when viewed from the front, is off-center from a central axis of the substrate normal to the surface, and, when viewed from the right, is at an angle other than normal to the surface so that the liquid flows rotationally over the surface about the central axis, the material depositing on the surface.

As an initial matter, we note that on page 2 of the answer, the examiner has indicated that claims 25, 26 and 32 are objected to, but would be allowable if rewritten in independent form.

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

Norris	4,151,062	Apr. 24, 1979
Eidschun	4,443,304	Apr. 17, 1984
Mori	5,443,707	Aug. 22, 1995

Claim 33 stands rejected under 35 U.S.C. § 112 second paragraph (indefiniteness).

Claims 1, 3, 4, 5, 18, 19, 22, 23, 27, 29, and 30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Norris.

Claims 1-5, 18-24 and 27-31 stand rejected under 35 U.S.C. § 103 as being unpatentable Mori in view of Norris.

Claims 1, 3-5, 18, 19, 20, 22, 23, 24, 27, 29, 30, and 31 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Edischun.

Claims 21 and 28 stand rejected under 35 U.S.C. § 103 as being unpatentable over Edischun.

On page 5 of the brief, appellants state all the claims stand or fall together. We therefore consider claim 1 in this appeal. We also consider claim 33 regarding the rejection under 35 U.S.C. § 112, second paragraph (indefiniteness). 37 CFR § 1.192(c)(7) and (8) (2002).

**OPINION**

I. The 35 U.S.C. § 112, second paragraph (indefiniteness) rejection

On page 4 of the answer, the examiner states that claim 33 is indefinite because it refers to "the cross pattern", which lacks antecedent basis. The examiner also states that claim 33 should be dependent upon claim 32, rather than claim 27. We note that in the final Office Action of Paper No. 18, the examiner had also rejected claims 1-5 and 18-32 under this rejection, but these claims are no longer rejected in this 35 U.S.C. § 112, second paragraph rejection. However, on pages 5-7 of the brief, we observe that appellants do not address claim 33. Because appellants do not dispute the rejection of claim 33, we affirm this rejection of claim 33.

II. The 35 U.S.C. § 102(b) rejection over Norris

In this rejection, the issue is whether the claimed limitation of, when the outlet is viewed from the right, it is at an angle other than normal to the surface, is taught by Norris.

On pages 8-9 of brief, appellants argue that the series of nozzles 128, 130, 132, 134, 136, and 138 depicted in Figure 4 of Norris must be parallel to the plate electrodes 108 and 110.

At the top of page 9 of the brief, appellants conclude therefore that Norris does not disclose an outlet that, when viewed from the right, is at an angle other than normal to the surface.

Beginning on page 8 of the answer, the examiner responds and states that the word "normal" means "perpendicular". The examiner states that as stated by the appellants, the outlets of Norris are parallel to the plate electrodes. The examiner states that this observation is therefore consistent with the examiner's interpretation of Norris. The examiner states that if the nozzles are parallel to the plate electrodes, then they are clearly at an angle, in this case, a right angle (which is other than perpendicular (normal)) to the surface of the plate electrodes.

On page 5 of the answer, the examiner recognizes that Figure 3, which is a view from the right, does not show the nozzles because they are on the opposite side of vertical tube. The examiner states that if the nozzles were visible, for example, if the tube were transparent, the nozzles would be seen to point down, as shown in Figure 4. We agree. We further find that Norris teaches in column 4, beginning at line 40, that the nozzles can work at a wide range of angles and that by having the nozzles at a slightly different angle provides for better circulation of the solution. Hence, a variety of angles are disclosed which would provide for not only a parallel arrangement, but for a variety of angles other than normal to the surface.

We, therefore, are not persuaded by appellants' arguments, and affirm the rejection.

III. The 35 U.S.C. § 103 rejection of Mori in view of Norris

We note that on page 6 of the answer, the examiner relies upon Norris for the same reasons discussed in the anticipation rejection, and hence we affirm this rejection regarding claim 1 for the same reasons discussed, supra, and because claims 2-5, 18-24 and 27-31 fall with claim 1 in this rejection, we also affirm the rejection of these claims too.<sup>1</sup> We note that on pages 9-10 of the brief, appellants again argue that the applied art does not suggest the claimed limitation that when the outlet is viewed from the right, it is at an angle other than normal to the surface. We are not persuaded by this argument for the reasons discussed, supra.

IV. The 35 U.S.C. § 102(b) rejection over Eidschun

On pages 6-7 of the answer, the examiner explains his position in this rejection. The examiner states that Figure 4 of Eidschun is considered a front view, and Figure 5 is considered a right view. The examiner states that Eidschun teaches that nozzles 55 can be angularly adjusted to impinge directly, or at an acute angle, on the printed circuit board substrates.

In response, on page 11 of the brief, appellants argue that claim 1 includes the limitation that the outlet is at an angle other than normal to the surface so the liquid flows rotationally over the surface about the central axis. Appellants argue that Eidschun discloses distributing a fluid in

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<sup>1</sup>The examiner relies upon Mori for the subject matter of the other claims in this rejection, and not for the subject matter of claim 1. Hence, we need not discuss Mori in making our determination herein.

a single direction onto a printed circuit board and therefore does not disclose having an outlet other than normal to the surface so that the liquid flows rotationally over the surface about the central axis.

The examiner responds on pages 9-11 of the answer. The examiner refers to appellants' specification for guidance as to the interpretation of the limitation "flows rotationally." The examiner correctly points out that the phrase "flows rotationally" is not specifically set forth in the specification. Answer, page 10.

On page 11 of the answer, the examiner states that in view of the disclosure in the paragraph bridging pages 5-6 of the specification, and as depicted in Figures 1e and 1f of appellants' specification, when the specification states that the liquid flow 70 "rotates", this includes localized swirling motion, because, as shown in Figure 1c, there are outlets surrounding the central axis, and thus there will be localized swirling or rotation about the central axis. In this same way, the examiner states that the plurality of nozzles of Eidschun, which are positioned at all sides of the central axis of the circuit boards, would produce localized swirling or rotation about the central axis. Appellants do not dispute this interpretation of the motion of localized swirling explained by the examiner. Appellants also do not dispute that Eidschun cannot produce such a localized swirling as described by the examiner. Hence, based upon the examiner's findings, we affirm the rejection.

V. The 35 U.S.C. § 103 rejection over Eidschun

This rejection involves claims 21 and 28 which are dependent upon claims 1 or 18, and therefore fall with claims 1

and 18. We also note that on pages 11-12 of the brief, the appellants provide the same arguments in this rejection that appellants provided in the anticipation rejection over Eidschun. Hence, for the same reasons, we are not convinced by appellants' arguments. We therefore affirm this rejection also.

VI. Conclusion

Each of the rejections 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**

PETER F. KRATZ	)
Administrative Patent Judge	)
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	) BOARD OF PATENT
	) APPEALS AND
ROMULO H. DELMENDO	) INTERFERENCES
Administrative Patent Judge	)
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BEVERLY A. PAWLIKOWSKI	)
Administrative Patent Judge	)

BAP/sld

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Application No. 09/223,472

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