Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte WERNER FASSLER, CHARLES D. DEBOER, and JOHN E. MOONEY

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Appeal No. 2002-0881
Application No. 09/169,071

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ON BRIEF

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Before PAK, OWENS, and WALTZ, ***Administrative Patent Judges***.

PAK, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 6 and 8, which are all of the claims pending in the present application. Claims 9 through 13 have been canceled subsequent to the final Office action dated July 27, 2000.

APPEALED SUBJECT MATTER

Claim 6 is representative of the subject matter on appeal and reads as follows:

> 6. An inkjet printhead including a cleaning structure defining:
>
> a) an outlet orifice plate having a plurality of orifices for ejecting ink droplets and having a surface formed of material including silver or gold;
>
> b) means defining a pumping cavity in communication with the orifices for receiving ink and formed, at least in part, of a piezo electric material which, when energized, squeezes the pumping cavity to eject ink through the orifice; and
>
> c) a cleaning station including means for applying a cleaning liquid to clean the orifice plate, such cleaning liquid including a hydrophobic additive in the liquid having a strong affinity for the material which forms the orifice surface and coats such surface to form a protective coating of such additive so that if a portion of the protective coating is removed, such portion will be repaired by the additive material.

PRIOR ART REFERENCES

As evidence of obviousness, the examiner relies on the following prior art references:

Takahashi et al. (Takahashi)	5,005,024	Apr. 2, 1991
Ochiai et al. (Ochiai)	5,311,218	May 10, 1994
Nakazawa et al. (Nakazawa)	5,397,386	Mar. 14, 1995
Halko et al. (Halko)	5,598,193	Jan. 28, 1997

THE REJECTIONS

The appealed claims stand rejected as follows:

(1) Claim 6 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Ochiai, Halko and Takahashi; and

(2) Claim 8 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Ochiai, Halko, Takahashi and Nakazawa.

OPINION

We have carefully reviewed the claims, specification and applied prior art references, including all of the arguments advanced by both the examiner and the appellants in support of their respective positions. This review leads us to conclude that the examiner's Section 103 rejections are not well founded. Accordingly, we reverse the examiner's Section 103 rejections for essentially those reasons set forth in the Brief. We only add the following for emphasis and completeness.

Ochiai teaches an inkjet printhead having an outlet orifice plate having a plurality of orifices for ejecting ink droplets and a pressure chamber corresponding to the claimed means defining a pumping cavity formed at least in part of a piezo electric material. See Ochiai in its entirety. There is no dispute that Ochiai is silent as the claimed cleaning station and the claimed outlet orifice plate made of a material containing

gold or silver. Compare the Answer in its entirety with the Brief in its entirety.

To remedy the above deficiencies of Ochiai, the examiner relies on Halko to teach a hydrophobic compound coated gold-plated nickel orifice plate. See the Answer, page 5. This conductive orifice plate provides certain advantages for ink jet pens. See, e.g., column 1, lines 11-31. However, as stated by the appellants (Brief, page 10):

> There appears to be no specific discussion in Ochiai et al. as to the material used for the nozzle plate 12 or whether the nozzle plate 12 is coated or plated with any type of material. However, gold electrodes 8 are plated in the interior of ink chambers 14. The gold electrodes 8 are individually controlled through the use of a wiring pattern 9. As the gold electrodes 8 coat the entire interior of the chambers 14 and therefore extend to the end of the chambers 14, the electrodes 8 would make contact with the surface of the nozzle plate 12.

Thus, it is readily apparent to one of ordinary skill in the art that upon employment of such conductive orifice plate in the pressure chamber of the type described in Ochiai, "all of the electrodes 8 would be shorted together, thereby preventing proper operation of the print head" of Ochiai as urged by the appellants. See the Brief, page 10. Yet, the examiner has not explained why and how one of ordinary skill in the art knowing such deleterious effect of a conductive orifice plate in the

operation of the pressure chamber in Ochiai would have employed the conductive orifice plate taught by Halko. Nor do Halko and Ochiai provide any teaching or suggestion that a conductive orifice plate, such as the one described in Halko, can be used in the pressure chamber of the type described in Ochiai.

The examiner also relies on Takahashi to teach the claimed cleaning station. According to the examiner (Answer, page 6):

> Takahashi et al. teaches an ink jet print head comprising a liquid repellent process unit which applies a liquid repellent coating to a discharge port surface for the purpose of cleaning the discharge port surface and preventing ink from accumulating on a discharge port surface (col. 4:34-68 and col. 5:1-2).

However, Halko teaches that its hydrophobic compound coated gold orifice plate already prevents ink and other contaminants from accumulating on a discharge port surface of the orifice plate. See column 1, lines 11-31. On this record, the examiner has not demonstrated that Halko's orifice plate surface proposed to be placed in the pressure Chamber of Ochiai suffers from the same accumulation problem suffered by Takahashi's discharge port surface. It then follows that there is no reason or incentive to employ the cleaning station of the type described in Takahashi in the modified inkjet printhead of the type suggested by the examiner.

Even if Ochiai, Halko and Takahashi are properly combined in the manner suggested by the examiner, the examiner has not established that such combination would result in the claimed invention. Specifically, the examiner has not referred to any structure in the applied prior art references corresponding to the claimed means for applying a cleaning liquid, i.e., the corresponding structure described at page 7 of the specification or equivalents thereof. ***In re Donaldson Co.***, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994)(***en banc***)(when the claimed limitation is presented in a means-plus-function format, we interpret it as being limited to the corresponding structure described in the specification and equivalents thereof in accordance with the requirements of 35 U.S.C. § 112, paragraph 6).

Thus, for the reasons well articulated by the appellants in their Brief and above, we are constrained to reverse the examiner's Section 103 rejections.[1]

REVERSED

CHUNG K. PAK Administrative Patent Judge	)	
TERRY J. OWENS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
THOMAS A. WALTZ Administrative Patent Judge	)	

CKP:hh

[1] The examiner does not rely on Nakazawa to remedy the above deficiencies. Moreover, we decline to consider "Bar-On et al[.]," "Schantz et al.," and "Burke et al." referred to by the examiner at page 8 of the Answer since they are not relied on in the statements of rejections. ***See In re Hoch***, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970).

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