

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. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HANS REINTEN

Appeal No. 2000-0722
Application No. 08/646,399

HEARD: January 9, 2002

Before HAIRSTON, DIXON, and GROSS, **Administrative Patent Judges**.
DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-4, 6, 10, 14-16 and 20-32, which are all of the claims pending in this application. An amendment filed after the final rejection was denied entry by the examiner.

We REVERSE.

BACKGROUND

The appellant's invention relates to an ink-jet system integrated on a common substrate. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. An ink-jet system comprising:

an ink channel between an ink reservoir and a nozzle, the ink channel being attached to the ink reservoir and the nozzle; and

an electromechanical transducer which comprises an expansible member being arranged adjacent and operatively connected to the ink channel for abruptly reducing volume of the ink channel to thereby eject an ink droplet through said nozzle, the ink channel having a first portion and a second portion with each portion having a depth as measured in a depth direction, the expansible member exerts a force on ink in the ink channel in the depth direction,

the second portion of the ink channel being between the expansible member and the nozzle and the first portion of the ink channel being adjacent to the expansible member, the depth of the second portion being larger than the depth of the first portion and being larger than a height of the nozzle.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Takeshima et al. (Takeshima)	JP 60-008074	Jan. 16, 1985
Koizumi et al. (Koizumi)	JP 03-081155	Apr. 05, 1991

Claims 1-4, 6, 10, 14-16 and 20-32 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the

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subject matter which appellant regards as the invention. Claims 1, 10, 14, 15, 22-24, 26, 27, and 30-32 stand rejected under 35 U.S.C. § 102 as being anticipated by Takeshima. Claims 2-4, 6, 16, 20, 21, 25, 28, and 29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Takeshima in view of Koizumi.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 23, mailed Nov. 19, 1999) for the examiner's reasoning in support of the rejections, and to the appellant's brief (Paper No. 22, filed Sep. 1, 1999) and reply brief (Paper No. 24, filed Jan. 19, 2000) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

35 U.S.C. § 112, SECOND PARAGRAPH

The examiner maintains that "it is unclear what structure 'a depth direction' is referring to." (See answer at page 3.) Appellant argues that the depth direction is the direction in which the expansible member 22 moves in the direction indicated by the

arrow "H" in Figures 1 and 3. We agree with appellant. Furthermore, the depth dimension is also labeled in Figures 1 and 3 as "d" and defined and described in the specification at pages 8-12. Therefore, we find that appellant has particularly pointed out and distinctly claimed the invention, and we will not sustain the rejection under 35 U.S.C. § 112, second paragraph.

35 U.S.C. § 102

The examiner maintains that Takeshima discloses an ink channel with a depth direction in which an expansible member acts to exert a force on ink in the chamber as shown in Figure 2(a). The examiner maintains that the depth of a second portion of the ink channel is larger than the depth of a first portion. (See answer¹ at page 4.) The examiner does not specifically identify that "S2" in Figure 2(a) is the second portion, but appellant's arguments are directed to portion S2 as the larger portion.

Appellant argues that the portion S2 is a width and not a depth in a direction in which the expansible member acts on the ink in the ink channel. We agree with appellant. (See brief at page 7.) The examiner maintains that the area indicated by S2 is a depth and relies upon the rejection under 35 U.S.C. § 112, second paragraph. (See answer at page 8.) As discussed above, we find the relative dimensions and directions to be clear in the

¹ We note that the statement of the rejection ends with "and ." but appears to be a complete sentence otherwise. Therefore, we find that this is the examiner's complete statement of the grounds of the rejection.

language of the claims, and we disagree with the examiner's interpretation of the clear teachings of Takeshima. Takeshima discloses the side view of the basic structure of the ink supply structures and the placement of the piezoelectric element 3 in Figure 1(a). Takeshima in Figures 1(b) and 2(a) shows a cross sectional view along line A-A in Figure 1(a). Therefore, the views in Figures 1(b) and 2(a) are bottom views since the piezoelectric element 3 is shown with dotted (hidden) lines. Hence, we find that the dimension of S2 would have an increased width rather than increased depth as indicated by the examiner. (See also, appellant's argument at page 7 of the brief.) Therefore, we will not sustain the rejection since the examiner has not shown that all of the elements are taught or inherent in Takeshima as recited in the language of independent claim 1.

35 U.S.C. § 103

The examiner relies on the teachings of Koizumi to teach various limitations of the dependent claims, but does not rely on Koizumi to teach or suggest the claimed relationship between the expansible member and the first and second portions as recited in the language of claim 1. Claim 1 requires that "the second portion of the ink channel being between the expansible member and the nozzle and the first portion of the ink channel being adjacent to the expansible member, the depth of the second portion being larger than the depth of the first portion and being larger than a height of the nozzle." (See also brief at page 10.) From our review of Koizumi, we find that

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Koizumi does not teach or suggest the relationship as claimed. Furthermore, appellant argues that the expansible member of Koizumi is beneath the second portion and therefore, there is no teaching of having a portion of the downstream ink channel having a varying or larger depth. Therefore, Koizumi does not remedy the deficiency as noted above in Takeshima alone, and we will not sustain the rejection of the claims under 35 U.S.C. § 103.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-4, 6, 10, 14-16 and 20-32 stand rejected under 35 U.S.C. § 112, second paragraph, is reversed, the decision of the examiner to reject claims 1, 10, 14, 15, 22-24, 26, 27, and 30-32 under

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35 U.S.C. § 102 is reversed, and the decision of the examiner to reject claims 2-4, 6, 16, 20, 21, 25, 28, and 29 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JOSEPH L. DIXON)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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