

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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STORRS T. HOEN
NAOTO KAWAMURA
and
JONAH A. HARLEY

Appeal No. 2004-0111
Application No. 09/930,098

ON BRIEF

Before GARRIS, WARREN, and MOORE, *Administrative Patent Judges*.
MOORE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 19, 26, 27, 29-31 and 34.

REPRESENTATIVE CLAIM

The appellants have indicated (Brief, page 3) that, for the purposes of this appeal, claims 26-27, 29-31, and 34 stand together, and claim 19 stands alone. Consistent with this indication, we shall focus our analysis on claims 19 and 26, which are reproduced (with any preceding claims from which they depend) as follows.

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19. In an ink pen adapted for use in an off-axis printer having a remote ink supply, where the ink pen includes a local ink supply and a print head adapted to selectively print using ink from the local ink supply, an improvement comprising:

a valve that selectively supplies the local ink supply with ink from the remote ink supply;

wherein said valve includes a fluid inlet adapted to receive ink from the remote ink supply, a fluid chamber having a valve seat and a valve head, and a fluid outlet adapted to feed ink into the local ink supply from the fluid chamber;

wherein said fluid chamber is bounded by a compliant diaphragm, said valve being prefabricated to receive an electric relay in a manner such that selective actuation of the relay displaces the compliant diaphragm, said compliant diaphragm coupled to one of the valve seat and the valve head to perform one of selective opening and selective closing of the valve in response to actuation of the relay.

26. An ink pen adapted for use in an off-axis printer having a remote ink supply, said ink pen comprising:

a local link supply;

a print head adapted to selectively print using ink from the local ink supply;

a valve opened to selectively supply the local ink supply with ink from the remote ink supply, said valve including a fluid inlet adapted to receive ink from the remote ink supply, a fluid chamber having a valve seat and a valve head, and a fluid outlet adapted to feed ink into the local ink supply from the fluid chamber; and

means for maintaining substantially constant volume in the fluid chamber notwithstanding opening and closing of the valve.

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of an electric relay.” (Appeal Brief, page 4, lines 3-16, quoting lines 15-16).

Despite appellants’ assertion, Thomas does disclose the use of an electric relay. As noted in the specification, a magnetic actuator is used in the claimed valve (preferably a commercially available one) (Specification, page 2, lines 13-17).

As correctly pointed out by the examiner, Thomas, figure 1, discloses a magnetic actuator 44, 46, 48 which actuates an elastic diaphragm 22. Additionally, Thomas states that the valve is opened and closed by control of the current in the magnet coil or winding (column 5, lines 26-29). Clearly, this is a magnetic actuator, or relay, as claimed by the appellants.

Other than the appellants’ conclusory statement that Thomas fails to disclose a relay, no evidence to contradict the examiner is put forth by the appellants. Therefore, we agree with the examiner’s conclusion that the subject matter of claim 19 is anticipated by the Thomas disclosure and shall affirm the rejection as it applies to claim 19.

Turning now to claims 26-27 and 29-31, the appellants urge that Thomas does not show a means for maintaining substantially constant volume in the fluid chamber notwithstanding opening and closing of the valve. The appellants state that “use of either side of the [see-saw] armature to displace the compliant diaphragm

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enables opening and closing of the valve without significantly changing fluid volume within the valve" (Specification, page 3, lines 1-4).

However, the examiner has observed that the displacement of Thomas' diaphragm results in a volume of the chamber remaining substantially or largely constant due to the small gap which it must move to seal, compared to the volume of the overall chamber. (Examiner's Answer, page 7, lines 3-17). The Appellants have provided no argument to counter this position, other than to assert that Thomas does not disclose such a means of "maintaining constant volume, or reciprocal displacement structure." (Appeal Brief, page 5, lines 6-7).

First, we note that the present claim 26 does not require a reciprocal (see-saw type) structure. Rather, it is written in means-plus-function language, which is broader. 35 U.S.C. § 112, paragraph 6, states that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure...described in the specification and equivalents thereof." The specification notes that use of either side of the armature to displace the compliant diaphragm enables opening and closing of the valve without significantly changing fluid volume within the valve. (Page 3, lines 1-4). This does not require the reciprocal displacement structure argued by the

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appellants, it merely requires one end to displace the compliant diaphragm, which is precisely what the Thomas disclosure teaches.

The appellants also fail to account for the term "substantially" in claim 26. The volume need not be maintained absolutely constant, simply substantially. The examiner's position, which is unrebutted, is that the armature displacing the diaphragm of Thomas need travel only a very short distance to close the valve gap. We find this logic compelling - relative to the overall volume, the change to seal the valve of Thomas appears to retain a substantially constant volume in the valve chamber.

We therefore shall affirm this rejection as well.

Summary of Decision

The rejection of claim 19 under 35 U.S.C. § 102(b) over Thomas is sustained.

The rejection of claims 26-27 and 29-31 under 35 U.S.C. §102(b) over Thomas is sustained.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

BRADLEY R. GARRIS)	
Administrative Patent Judge)	
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)	
)	BOARD OF PATENT
CHARLES F. WARREN)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
JAMES T. MOORE)	
Administrative Patent Judge)	

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