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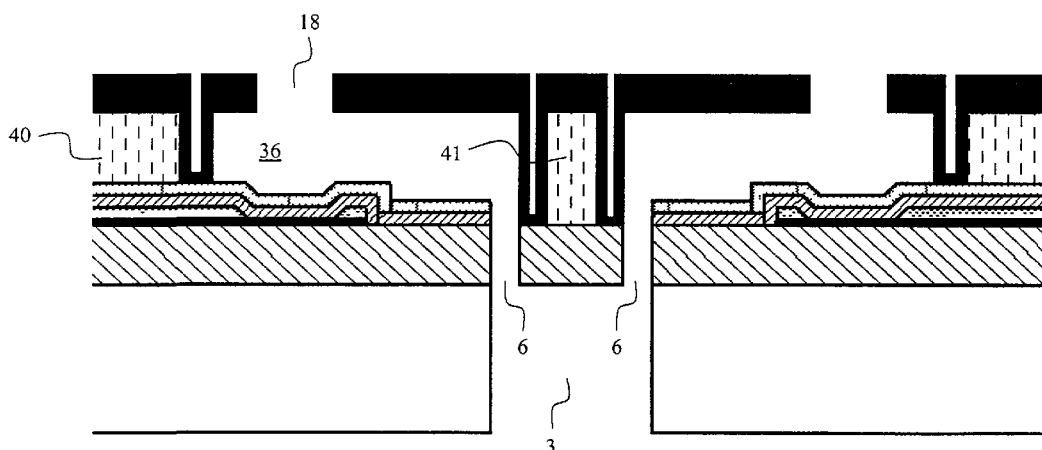
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Published:
— with international search report

[Continued on next page]

(54) Title: LIQUID EJECTOR HAVING IMPROVED CHAMBER WALLS



(57) Abstract: A liquid drop ejector includes a substrate (1) and a plurality of liquid chambers (36). Portions of the substrate define a liquid supply (3). Each liquid chamber is positioned over the substrate and includes a nozzle plate and a chamber wall. The nozzle plate and the chamber wall include an inorganic material (44). The inorganic material of the nozzle plate and the chamber wall is contactable with liquid when liquid is present in each liquid chamber. A region of organic material (40) is positioned over the substrate and located relative to the nozzle plate and the chamber wall such that the region of organic material is not contactable with liquid when liquid is present in each liquid chamber. The region of organic material is bounded by chamber walls of neighboring liquid chambers located on opposite sides of the liquid supply.

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INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. B41J2/14 B41J2/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B41J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Interiial

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 366 906 A (HEWLETT PACKARD CO [US]) 3 December 2003 (2003-12-03) paragraphs [0012], [0013], [0029]; figures 1a, 4	1-6
Y	US 2005/140727 A1 (SILVERBROOK KIA [AU]) 30 June 2005 (2005-06-30) figures 6,8,10,12,13,21-27 paragraphs [0093], [0097] - [0099]	1,22,23, 26
Y	EP 0 904 939 A (CANON KK [JP]) 31 March 1999 (1999-03-31) cited in the application figure 1a	1,22,23, 26

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

12 March 2008

Date of mailing of the international search report

29/05/2008

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/024836

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 6 644 786 B1 (LEBENS JOHN A [US]) 11 November 2003 (2003-11-11) cited in the application figure 14b column. 12, line 63 - line 65 column 13, line 26 - line 36 column 14, line 57 - line 59 column 15, line 8 - line 10</p>	1, 22
A	<p>US 2002/044176 A1 (YAMAGUCHI YUKUO [JP] ET AL) 18 April 2002 (2002-04-18) figures 10,11,25,26 paragraphs [0214] - [0216]</p>	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/024836

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12,22-26

organic material bounded by chamber walls of neighboring liquid chambers located on opposite sides of the liquid supply

2. claims: 13-19

no organic material between adjacent chambers located on the same side of the liquid supply

3. claims: 20,21

chamber wall made of two wall portion of inorganic material with a gap therebetween

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/024836

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