



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
22.11.2006 Bulletin 2006/47

(51) Int Cl.:
B41J 2/175^(2006.01)

(43) Date of publication A2:
03.05.2006 Bulletin 2006/18

(21) Application number: **05256047.1**

(22) Date of filing: **28.09.2005**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

(72) Inventors:
• **Toba, Koichi**
Suwa-shi,
Nagano 392-8502 (JP)
• **Aoki, Yuji**
Suwa-shi,
Nagano 392-8502 (JP)

(30) Priority: **30.09.2004 JP 2004288698**
30.09.2004 JP 2004288699

(74) Representative: **Cloughley, Peter Andrew et al**
Miller Sturt Kenyon,
9 John Street
London WC1N 2ES (GB)

(71) Applicant: **SEIKO EPSON CORPORATION**
Shinjuku-ku,
Tokyo 163-0811 (JP)

(54) **Ink cartridge and printer**

(57) An ink cartridge 7 includes a cartridge main body 71 forming an ink storage chamber, an ink supply port 39 formed in a bottom section of the ink storage chamber for supplying an ink fluid stored in the ink storage chamber to a print head mounted on a carriage of a printer, and a positioning protrusion 87 projectingly provided on a front wall 73 of the cartridge main body 71. The posi-

tioning protrusion 87 fits into a positioning groove of the carriage, so that the cartridge main body 71 is positioned at a cartridge mount section of the carriage. The positioning protrusion 87 is formed integrally into a hollow bag structure where a pair of mutually-opposing plate-like sections 87a, 87b are joined together by means of an extremity joint wall 87c and a joint bottom wall 87d.

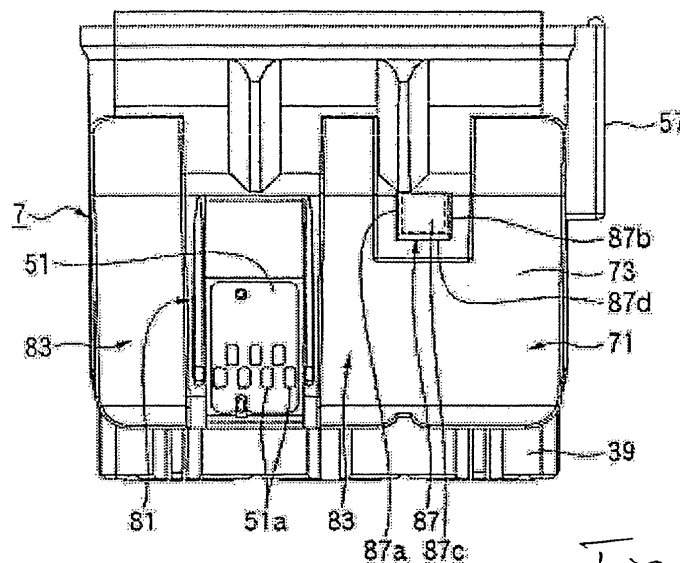


Fig. 4



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 05 25 6047

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 512 926 A (UCHIKATA ET AL) 30 April 1996 (1996-04-30)	1,2,4	INV. B41J2/175
Y	* column 27, lines 12-15; figure 30 *	1-4	
Y	EP 0 930 170 A (CANON KABUSHIKI KAISHA) 21 July 1999 (1999-07-21) * figures 3,14,15 *	1-4	
X	EP 1 424 202 A (SEIKO EPSON CORPORATION) 2 June 2004 (2004-06-02)	1,4	
Y	* figures 29a-b *	3	
Y	* paragraphs [0002], [0195] - [0200] *		
Y	US 2002/175977 A1 (HANSON LISA M ET AL) 28 November 2002 (2002-11-28) * figures 3-7 *	3	
Y	* paragraph [0034] *		
A	EP 0 993 954 A (HEWLETT-PACKARD COMPANY) 19 April 2000 (2000-04-19) * figure 1c *	1-4	TECHNICAL FIELDS SEARCHED (IPC)
			B41J
X	US 2004/041889 A1 (CHO SEO-HYUN ET AL) 4 March 2004 (2004-03-04) * paragraphs [0018], [0024] - [0027]; figure 2 *	5-7	
A	US 2004/145637 A1 (HWANG HYUNG-HYU ET AL) 29 July 2004 (2004-07-29) * figures 2-4,6-13 *	5-7	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 October 2006	Examiner Callan, Feargel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

5
EPO FORM 1503 03.82 (P04C01)

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4

An ink cartridge comprising:

a cartridge main body forming an ink storage chamber;
 an ink supply port formed in a bottom section of the ink storage chamber for supplying an ink fluid stored in the ink storage chamber to a print head mounted on a carriage of a printer; and
 a positioning protrusion projecting from a wall of the cartridge main body, the positioning protrusion being adapted to fit into a positioning groove of the carriage so that the cartridge main body is positioned at a cartridge mount section of the carriage, wherein the positioning protrusion has a pair of plate-like sections opposing each other with a space therebetween, and a joint section which joins the plate-like members together; and
 an outer surface of one of the plate-like sections is set as a positioning surface which comes into contact with the positioning groove.

2. claims: 5-7

An ink cartridge comprising:

a cartridge main body forming an ink storage chamber;
 a porous elastic body retained in the ink storage chamber and impregnated with an ink fluid;
 an ink supply port formed in a bottom section of the ink storage chamber for supplying the ink fluid stored in the ink storage chamber to a print head of the printer;
 an elastic-body retaining rib projecting from an interior surface of a wall of the cartridge main body and retaining the porous elastic body in a compressed state;
 a recessed section which causes the interior surface of the wall, from which the elastic-body retaining rib projects, to protrude toward the inside of the ink storage chamber so that a projecting height of the elastic-body retaining rib with reference to the interior surface of the wall becomes smaller.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 05 25 6047

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-10-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5512926	A	30-04-1996	NONE	
EP 0930170	A	21-07-1999	US 6293662 B1	25-09-2001
EP 1424202	A	02-06-2004	DE 10341100 A1	17-06-2004
			DK 1424202 T3	08-05-2006
			FR 2848144 A1	11-06-2004
			FR 2854344 A1	05-11-2004
			FR 2879962 A1	30-06-2006
			GB 2395684 A	02-06-2004
			HK 1063615 A1	25-11-2005
			US 2005146580 A1	07-07-2005
			US 2005200670 A1	15-09-2005
US 2002175977	A1	28-11-2002	AT 251992 T	15-11-2003
			AU 3125701 A	07-08-2001
			BR 0108136 A	25-02-2003
			CA 2394696 A1	02-08-2001
			CN 1396865 A	12-02-2003
			DE 60100995 D1	20-11-2003
			DE 60100995 T2	02-09-2004
			EP 1257423 A1	20-11-2002
			ES 2208552 T3	16-06-2004
			JP 2003520712 T	08-07-2003
			TW 541247 B	11-07-2003
			WO 0154911 A1	02-08-2001
EP 0993954	A	19-04-2000	DE 69922128 D1	30-12-2004
			DE 69922128 T2	22-12-2005
			ES 2229633 T3	16-04-2005
			JP 2000141688 A	23-05-2000
			US 6224192 B1	01-05-2001
US 2004041889	A1	04-03-2004	NONE	
US 2004145637	A1	29-07-2004	NONE	