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(54) **Printing fluid cartridge and printing apparatus**

(57) A printing fluid cartridge is configured to be inserted into a cartridge mounting portion in an insertion direction against a biasing force in a removal direction opposite the insertion direction. The printing fluid cartridge includes a front face oriented toward the insertion direction when the printing fluid cartridge is inserted into

the cartridge mounting direction, a rear face positioned opposite the front face with respect to the insertion direction, an electrical interface positioned between the front face and the rear face, and an engagement portion for retaining the printing fluid cartridge in the cartridge mounting portion against the biasing force.

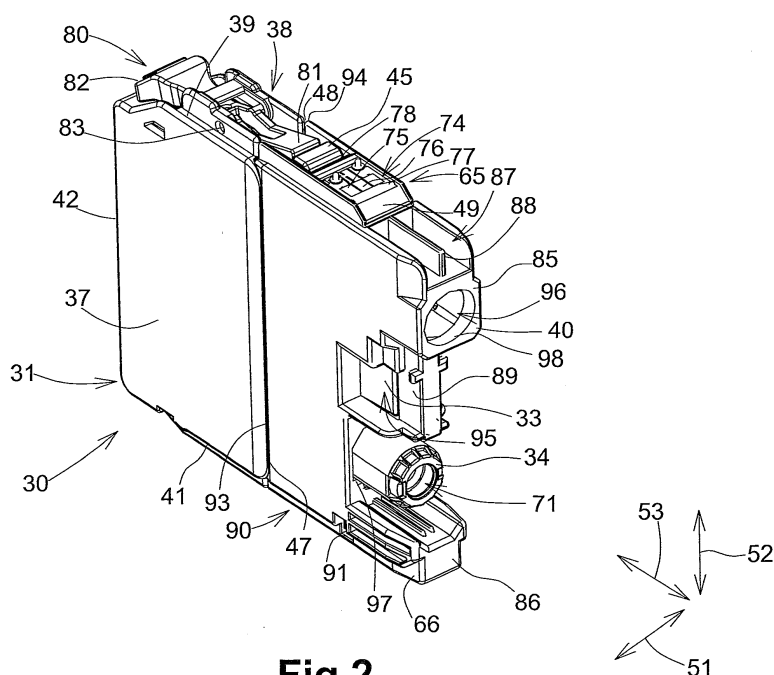


Fig.2



EUROPEAN SEARCH REPORT

 Application Number
 EP 15 16 1567

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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	EP 1 512 536 A1 (SEIKO EPSON CORP [JP]) 9 March 2005 (2005-03-09) * paragraphs [0014], [0015], [0021], [0029]; figures 1a, 1b, 2l, 3b *	1-21	INV. B41J2/175
X	JP 2005 007893 A (SEIKO EPSON CORP) 13 January 2005 (2005-01-13) * paragraphs [0036], [0037]; figures 5-7 *	1-21	
X	EP 1 348 559 A2 (SEIKO EPSON CORP [JP]) 1 October 2003 (2003-10-01) * paragraphs [0042], [0049], [0065]; figures 6,7 *	1-21	
X	WO 98/55318 A1 (HEWLETT PACKARD CO [US]; CHILDERS WINTHROP D [US]; BULLOCK MICHAEL L [US]) 10 December 1998 (1998-12-10) * figures 3,4 *	1-21	
X	EP 1 234 675 A2 (CANON KK [JP]) 28 August 2002 (2002-08-28) * paragraphs [0056], [0074]; figures 5,10 *	1-21	TECHNICAL FIELDS SEARCHED (IPC) B41J
X	US 2010/277555 A1 (KATO TOMOMI [JP] ET AL) 4 November 2010 (2010-11-04) * paragraph [0140]; figure 23 *	1,14,21	
X	EP 0 713 778 A2 (LEXMARK INT INC [US]) 29 May 1996 (1996-05-29) * column 2, line 36 - column 4, line 36; figures 2-4 *	1,14,21	
X	EP 0 778 145 A1 (HEWLETT PACKARD CO [US]) 11 June 1997 (1997-06-11) * figures 2,8 *	1,14,21	
	-/-		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 April 2016	Examiner Adam, Emmanuel
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			

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Application Number
EP 15 16 1567

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20

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30

35

40

45

50

55

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 2007/139495 A1 (HATTORI SHINGO [JP] ET AL) 21 June 2007 (2007-06-21) * paragraphs [0027], [0038]; figures 3, 5b *	1,14,21	
X	EP 1 164 025 A1 (SEIKO EPSON CORP [JP]) 19 December 2001 (2001-12-19) * paragraph [0032]; figures 9,12 *	1,14,21	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
The Hague	28 April 2016	Adam, Emmanuel	
CATEGORY OF CITED DOCUMENTS		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	
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			

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

EP 15 16 1567

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The members are as contained in the European Patent Office EDP file on
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28-04-2016

10

Patent document
cited in search report

Publication
date

Patent family
member(s)

Publication
date

15

EP 1512536 A1 09-03-2005 AT 396872 T 15-06-2008

CN 1659035 A 24-08-2005

EP 1512536 A1 09-03-2005

ES 2305500 T3 01-11-2008

JP 3867802 B2 17-01-2007

US 2006164480 A1 27-07-2006

WO 03103973 A1 18-12-2003

20

JP 2005007893 A 13-01-2005 JP 3948470 B2 25-07-2007

JP 2005007893 A 13-01-2005

25

EP 1348559 A2 01-10-2003 AR 039182 A1 09-02-2005

AT 382484 T 15-01-2008

AU 2003203214 A1 23-10-2003

BR 0301050 A 17-08-2004

CA 2423535 A1 29-09-2003

CA 2676080 A1 29-09-2003

CN 1449919 A 22-10-2003

CN 2673643 Y 26-01-2005

30

DE 10314194 A1 23-10-2003

DE 10362124 B4 14-04-2011

EP 1348559 A2 01-10-2003

EP 1759857 A2 07-03-2007

EP 1880858 A1 23-01-2008

35

ES 2297068 T3 01-05-2008

ES 2395041 T3 07-02-2013

FR 2837744 A1 03-10-2003

GB 2387353 A 15-10-2003

GB 2411863 A 14-09-2005

40

HK 1056343 A1 27-01-2006

HK 1085433 A1 30-03-2007

JP 3666491 B2 29-06-2005

JP 2004001430 A 08-01-2004

KR 20030078758 A 08-10-2003

MX PA03002796 A 19-04-2005

45

MY 134355 A 31-12-2007

NZ 524978 A 26-11-2004

SG 106139 A1 30-09-2004

SG 154325 A1 28-08-2009

SG 157950 A1 29-01-2010

50

SG 160226 A1 29-04-2010

TW 1280195 B 01-05-2007

TW 1299701 B 11-08-2008

US 2003214559 A1 20-11-2003

US 2006290757 A1 28-12-2006

55

US 2009251518 A1 08-10-2009

CRM P0459

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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

EP 15 16 1567

5 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.

28-04-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9855318	A1	10-12-1998	
		CN 1259086 A	05-07-2000
		DE 69812950 D1	08-05-2003
		DE 69812950 T2	11-12-2003
		DE 69833054 T2	07-09-2006
		DE 69833983 T2	23-11-2006
		DE 69834142 T2	28-12-2006
		DE 69834143 T2	21-12-2006
		EP 0994779 A1	26-04-2000
		EP 1219448 A2	03-07-2002
		EP 1275512 A1	15-01-2003
		EP 1287997 A1	05-03-2003
		EP 1287998 A1	05-03-2003
		EP 1293347 A2	19-03-2003
		ES 2191304 T3	01-09-2003
		ES 2251562 T3	01-05-2006
		ES 2257504 T3	01-08-2006
		ES 2257507 T3	01-08-2006
		ES 2257508 T3	01-08-2006
		JP 4088353 B2	21-05-2008
		JP 2002513340 A	08-05-2002
		WO 9855318 A1	10-12-1998
EP 1234675	A2	28-08-2002	
		AT 173677 T	15-12-1998
		AT 187126 T	15-12-1999
		AT 213999 T	15-03-2002
		AT 227649 T	15-11-2002
		AT 311985 T	15-12-2005
		AT 361838 T	15-06-2007
		AU 648985 B2	12-05-1994
		CA 2022756 A1	06-02-1991
		CN 1051011 A	01-05-1991
		CN 1141241 A	29-01-1997
		CN 1491798 A	28-04-2004
		DE 9018060 U1	15-09-1994
		DE 69032780 D1	07-01-1999
		DE 69032780 T2	02-06-1999
		DE 69033377 D1	05-01-2000
		DE 69033377 T2	29-06-2000
		DE 69033928 D1	11-04-2002
		DE 69033928 T2	18-07-2002
		DE 69034019 D1	19-12-2002
		DE 69034019 T2	09-10-2003
		DE 69034212 T2	13-07-2006
		DE 69034240 T2	10-01-2008
		DK 0997296 T3	03-04-2006

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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

EP 15 16 1567

5 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.

28-04-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		EP 0412459 A2	13-02-1991
		EP 0610965 A1	17-08-1994
		EP 0729836 A1	04-09-1996
		EP 0872347 A1	21-10-1998
		EP 0997296 A1	03-05-2000
		EP 1234675 A2	28-08-2002
		ES 2124212 T3	01-02-1999
		ES 2185722 T3	01-05-2003
		ES 2252908 T3	16-05-2006
		HK 1011647 A1	01-09-2000
		HK 1011655 A1	24-03-2000
		HK 1047910 A1	14-09-2007
		KR 960000542 Y1	17-01-1996
		SG 54174 A1	16-11-1998
		SG 85110 A1	19-12-2001
		US 5506611 A	09-04-1996
		US 6062667 A	16-05-2000
		US 6312084 B1	06-11-2001

US 2010277555	A1	04-11-2010	NONE

EP 0713778	A2	29-05-1996	DE 69513787 D1
			DE 69513787 T2
			EP 0713778 A2
			JP 3985062 B2
			JP H08224894 A
			US 5661510 A

EP 0778145	A1	11-06-1997	DE 69602710 D1
			DE 69602710 T2
			EP 0778145 A1
			JP 3222394 B2
			JP H09174876 A
			US 5777646 A

US 2007139495	A1	21-06-2007	US 2007139494 A1
			US 2007139495 A1

EP 1164025	A1	19-12-2001	AT 447488 T
			AT 552980 T
			AT 554936 T
			AU 2708301 A
			CN 1358137 A
			CN 101372176 A
			CN 101386229 A
			CN 101386230 A

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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

EP 15 16 1567

5 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.

28-04-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		EP 1164025 A1	19-12-2001
		EP 2052862 A1	29-04-2009
		EP 2052863 A1	29-04-2009
		EP 2055489 A1	06-05-2009
		EP 2105308 A1	30-09-2009
		ES 2334100 T3	05-03-2010
		ES 2382127 T3	05-06-2012
		ES 2383777 T3	26-06-2012
		ES 2386656 T3	24-08-2012
		KR 20040007752 A	24-01-2004
		KR 20040007753 A	24-01-2004
		KR 20040014587 A	14-02-2004
		US 2002196312 A1	26-12-2002
		US 2003071874 A1	17-04-2003
		US 2006028517 A1	09-02-2006
		US 2007195140 A1	23-08-2007
		WO 0153104 A1	26-07-2001
