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(54) Ink cartridge

(57) An ink cartridge includes a case including a front face and a rear face opposite the front face, an ink supply portion positioned at the front face of the case, an air intake portion positioned at the case, and a movable member configured to move between a first position and a second position relative to the case. The ink cartridge

also includes a resilient member having a first end which is coupled to the front face of the case and a second end which is coupled to the movable member. Moreover, the resilient member is configured to expand and to contract to move the movable member relative to the case between the first position and the second position.

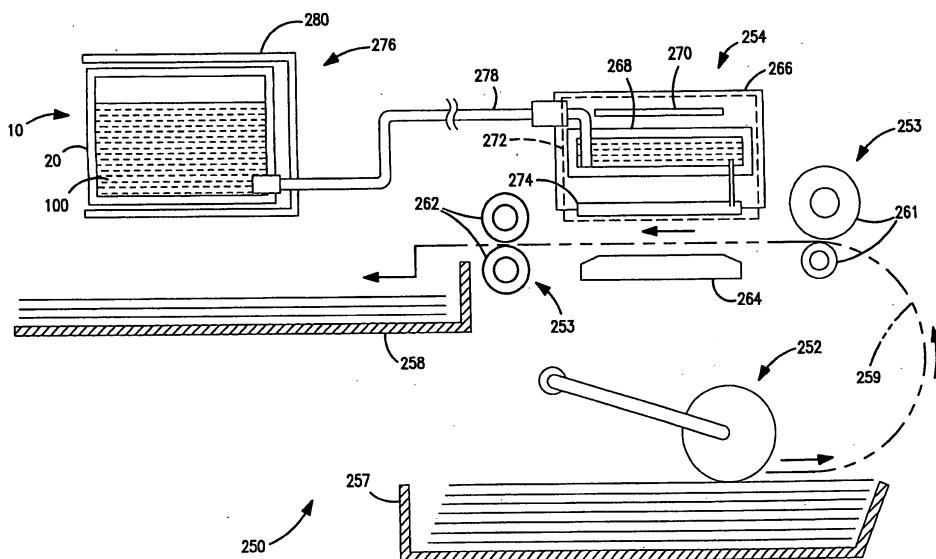


FIG. 1



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Application Number
EP 10 00 0115

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	US 2005/168540 A1 (WILSON JOHN F [US] ET AL WILSON JOHN FARRAR [US] ET AL) 4 August 2005 (2005-08-04) * paragraph [0069] - paragraph [0070]; figures 14-16,18 * * paragraph [0085]; figures 27-29 * -----	1-13	INV. B41J2/175
X	EP 1 772 270 A (BROTHER IND LTD [JP]) 11 April 2007 (2007-04-11) * paragraph [0074]; figure 8 * * paragraph [0273]; figure 39 * * paragraph [0287] - paragraph [0288]; figure 40 * * paragraph [0295]; figure 41 * * paragraph [0324]; figure 44 * -----	1	
X	EP 1 769 922 A (BROTHER IND LTD [JP]) 4 April 2007 (2007-04-04) * paragraph [0371] - paragraph [0377]; figure 33 *	1	
X	EP 1 190 861 A (OWENS ILLINOIS CLOSURE INC [US] HEWLETT PACKARD DEVELOPMENT CO [US]) 27 March 2002 (2002-03-27) * paragraph [0020] - paragraph [0021]; figure 7 *	1	TECHNICAL FIELDS SEARCHED (IPC)
A	US 2006/087532 A1 (TAKATA MASAYUKI [JP] ET AL) 27 April 2006 (2006-04-27) * paragraph [0037]; figures 3-8 *	1	B41J
A	EP 1 300 247 A (CANON KK [JP]) 9 April 2003 (2003-04-09) * paragraphs [0230], [0233], [0237]; figure 37 * -----	1	
The present search report has been drawn up for all claims			
1	Place of search The Hague	Date of completion of the search 16 March 2010	Examiner 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	
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 Application Number
 EP 10 00 0115

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim													
A	US 2002/063759 A1 (HIRANO HIROFUMI [JP] ET AL) 30 May 2002 (2002-05-30) * paragraph [0244] - paragraph [0246]; figure 25 * -----	1													
A	US 6 464 339 B1 (ARDITO MICHAEL S [US]) 15 October 2002 (2002-10-15) * abstract; figures 10a-10c * -----	1													
A	EP 1 792 737 A (SEIKO EPSON CORP [JP]) 6 June 2007 (2007-06-06) * paragraph [0052] - paragraph [0056]; figures 12,13 * -----	1													
A	EP 1 637 332 A (SEIKO EPSON CORP [JP]) 22 March 2006 (2006-03-22) * abstract; figure 10b * -----	1													
A	US 7 188 939 B1 (SASAKI TOYONORI [JP]) 13 March 2007 (2007-03-13) * the whole document * -----	1													
A	EP 1 839 871 A (BROTHER IND LTD [JP]) 3 October 2007 (2007-10-03) * paragraph [0032] - paragraph [0036]; figure 3 * * paragraph [0064] - paragraph [0065]; figure 9 * -----	1													
A	EP 1 839 873 A (BROTHER IND LTD [JP]) 3 October 2007 (2007-10-03) * page 1; figure 3 * -----	1													
A	EP 1 792 736 A (BROTHER IND LTD [JP]) 6 June 2007 (2007-06-06) * abstract; figures 14,16 * -----	1													
		-/-													
1	The present search report has been drawn up for all claims														
<table border="1"> <tr> <td>Place of search</td> <td>Date of completion of the search</td> <td>Examiner</td> </tr> <tr> <td>The Hague</td> <td>16 March 2010</td> <td>Adam, Emmanuel</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	The Hague	16 March 2010	Adam, Emmanuel						
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The Hague	16 March 2010	Adam, Emmanuel													
<table border="1"> <tr> <td>CATEGORY OF CITED DOCUMENTS</td> <td>T : theory or principle underlying the invention</td> </tr> <tr> <td>X : particularly relevant if taken alone</td> <td>E : earlier patent document, but published on, or after the filing date</td> </tr> <tr> <td>Y : particularly relevant if combined with another document of the same category</td> <td>D : document cited in the application</td> </tr> <tr> <td>A : technological background</td> <td>L : document cited for other reasons</td> </tr> <tr> <td>O : non-written disclosure</td> <td>.....</td> </tr> <tr> <td>P : intermediate document</td> <td>& : member of the same patent family, corresponding document</td> </tr> </table>				CATEGORY OF CITED DOCUMENTS	T : theory or principle underlying the invention	X : particularly relevant if taken alone	E : earlier patent document, but published on, or after the filing date	Y : particularly relevant if combined with another document of the same category	D : document cited in the application	A : technological background	L : document cited for other reasons	O : non-written disclosure	P : intermediate document	& : member of the same patent family, corresponding document
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Application Number

EP 10 00 0115

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	US 2008/002003 A1 (KOBAYASHI SATOSHI [JP]) 3 January 2008 (2008-01-03) * paragraph [0074]; figures 7,10 * -----	1	
A	US 6 152 558 A (TOGASHI SHIGEMI [JP] ET AL) 28 November 2000 (2000-11-28) * column 3, line 47 - line 66 * -----	1	
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	16 March 2010	Adam, Emmanuel	
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P : intermediate document	& : member of the same patent family, corresponding document		

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EP 10 00 0115

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16-03-2010

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 2005168540	A1	04-08-2005	W0	2005075206 A1		18-08-2005
EP 1772270	A	11-04-2007	DE 602006000459 T2		08-01-2009	
			WO 2007037536 A1		05-04-2007	
			US 2007070146 A1		29-03-2007	
EP 1769922	A	04-04-2007	W0 2007037542 A1		05-04-2007	
EP 1190861	A	27-03-2002	NONE			
US 2006087532	A1	27-04-2006	NONE			
EP 1300247	A	09-04-2003	AT 326348 T		15-06-2006	
			AU 2002301397 B2		14-10-2004	
			CA 2406571 A1		05-04-2003	
			CN 1410269 A		16-04-2003	
			DE 60211443 T2		16-11-2006	
			HK 1055413 A1		04-08-2006	
			KR 20030029513 A		14-04-2003	
			SG 134971 A1		28-09-2007	
			TW 241961 B		21-10-2005	
			US 2003067520 A1		10-04-2003	
US 2002063759	A1	30-05-2002	NONE			
US 6464339	B1	15-10-2002	EP 1306218 A2		02-05-2003	
EP 1792737	A	06-06-2007	AT 386640 T		15-03-2008	
			AT 441530 T		15-09-2009	
			AT 263028 T		15-04-2004	
			DE 69915999 D1		06-05-2004	
			DE 69915999 T2		10-02-2005	
			DE 69930171 T2		23-11-2006	
			DE 69938202 T2		12-02-2009	
			EP 1348561 A1		01-10-2003	
			EP 1440808 A1		28-07-2004	
			EP 1914080 A1		23-04-2008	
			EP 2108513 A1		14-10-2009	
			EP 1016533 A1		05-07-2000	
			ES 2260546 T3		01-11-2006	
			ES 2301888 T3		01-07-2008	
			ES 2330682 T3		14-12-2009	
			JP 3874067 B2		31-01-2007	
			JP 2008247042 A		16-10-2008	
			JP 2008247043 A		16-10-2008	
			JP 2008260311 A		30-10-2008	

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

EP 10 00 0115

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.

16-03-2010

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1792737	A		US	2008303883 A1		11-12-2008
			US	7090341 B1		15-08-2006
EP 1637332	A	22-03-2006		NONE		
US 7188939	B1	13-03-2007	US	7226155 B1		05-06-2007
			US	2007229616 A1		04-10-2007
EP 1839871	A	03-10-2007	AT	420770 T		15-01-2009
			CN	101258034 A		03-09-2008
			JP	4400590 B2		20-01-2010
			JP	2007268793 A		18-10-2007
			WO	2007116546 A1		18-10-2007
EP 1839873	A	03-10-2007	CN	101015992 A		15-08-2007
			DE	602006000196 T2		14-08-2008
			JP	2007261051 A		11-10-2007
EP 1792736	A	06-06-2007		NONE		
US 2008002003	A1	03-01-2008	JP	2008006723 A		17-01-2008
US 6152558	A	28-11-2000	JP	10226086 A		25-08-1998