(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 913 744 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
28.07.1999 Bulletin 1999/30

(43) Date of publication A2:
06.05.1999 Bulletin 1999/18

(21) Application number: **98308759.4**

(22) Date of filing: **27.10.1998**

(51) Int Cl.[6]: **G03G 15/10**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **03.11.1997 US 963301**

(71) Applicant: **XEROX CORPORATION**
Rochester, New York 14644 (US)

(72) Inventors:
- **Liu, Chu-heng**
  Penfield, New York 14526 (US)
- **Zhao, Weizhong**
  Webster, New York 14580 (US)

(74) Representative: **Rackham, Stephen Neil**
GILL JENNINGS & EVERY,
Broadgate House,
7 Eldon Street
London EC2M 7LH (GB)

(54) Liquid developing material layer charging

(57) An electrostatic latent image development method and apparatus, wherein a thin layer (58) of liquid developing material (54) is brought into a process nip (59) formed by operative engagement of first (10) and second (40) movable members for positioning the thin layer (58) of liquid developing material in pressure contact with the electrostatic latent image. An ion source (48) is provided for selectively charging the layer (58) of liquid developing material prior to entry into the process nip (59). By applying a charge to the layer (58) of liquid developing material, image separation in the nip (59) is optimized and the use of liquid developing materials (54) having toner particles with poor or neutral charge thereon, as well as toner particles having reverse charge polarity thereon is enabled.

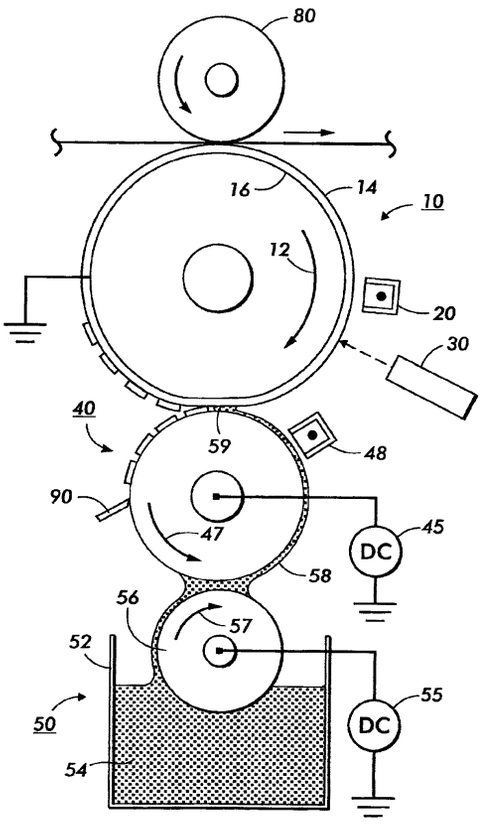

FIG. 1

EP 0 913 744 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 30 8759

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 788 035 A (SONY CORP) 6 August 1997 * page 13, line 8 - page 15, line 26; figures 21-24 *	1,2,5-8	G03G15/10
D,Y	US 5 436 706 A (LANDA BENZION ET AL) 25 July 1995 * column 4, line 53 - column 5, line 25 * * column 11, line 57 - line 61; figure 1 *	1,3,5,8	
Y	FR 2 256 451 A (XEROX CORP) 25 July 1975 * page 19, line 26 - page 21, line 12; figures 3-5 *	1,3,5,8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6) G03G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	7 June 1999	Cigoj, P

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 98 30 8759

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.

07-06-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0788035 A	06-08-1997	JP 9062109 A	07-03-1997
		US 5738967 A	14-04-1998
US 5436706 A	25-07-1995	US 5596396 A	21-01-1997
		DE 69125853 D	28-05-1997
		DE 69125853 T	27-11-1997
		EP 0593488 A	27-04-1994
		HK 1000169 A	09-01-1998
		JP 7500679 T	19-01-1995
		CA 2113169 A	21-01-1993
		EP 0764891 A	26-03-1997
		WO 9301531 A	21-01-1993
FR 2256451 A	25-07-1975	DE 2454295 A	10-07-1975
		JP 50099157 A	06-08-1975
		NL 7415356 A	27-03-1975

EPO FORM P0459

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