



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
09.10.2002 Bulletin 2002/41

(51) Int Cl.7: **G03G 15/09**

(43) Date of publication A2:
13.06.2001 Bulletin 2001/24

(21) Application number: **00310503.8**

(22) Date of filing: **27.11.2000**

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

- **Jugle, Kip L.**
Bloomfield, New York 14469 (US)
- **Rosdahl, Robert E., Jr.**
Ontario, New York 14519 (US)

(30) Priority: **02.12.1999 US 453053**

(71) Applicant: **Xerox Corporation**
Rochester, New York 14644 (US)

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

(72) Inventors:
 • **Maggio, Timothy M.**
Ontario, New York 14519 (US)

(54) **Developer roll and process for making it**

(57) A drawn stainless steel magnetic development roll (78) having a coating-free developer-receptive surface. A process for making such a development magnetic roll draws it from stainless steel, by a cold drawing

process through die (90). The stainless steel rolls (78) are drawn to have a desired grooved surface (92) finish, diameter, straightness, runout, and other mechanical tolerance requirements.

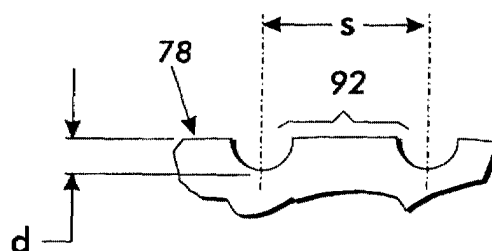


FIG. 6



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 31 0503

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.7)
X	EP 0 681 218 A (CANON KK) 8 November 1995 (1995-11-08)	1	G03G15/09
Y	* page 6, line 10 - line 42; figure 3 *	3-5	
X	US 4 377 332 A (TAMURA YASUYUKI) 22 March 1983 (1983-03-22) * column 7, line 66 - column 8, line 53 * * column 9, line 57 - line 62; figures 9,10 *	1,2	
Y	US 4 737 216 A (LOUNSBURY JR CHARLES W ET AL) 12 April 1988 (1988-04-12) * column 4, line 36 - line 42 * * column 6, line 34 - line 53; figures 4,8 *	3-5	
A	GB 2 007 544 A (IBM) 23 May 1979 (1979-05-23) * page 1, line 48 - line 90 * * page 2, line 44 - line 47; figure 1 *	1,3,8	
A	EP 0 474 460 A (MITA INDUSTRIAL CO LTD) 11 March 1992 (1992-03-11) * column 9, line 12 - line 50; figure 4 *	1,2,6,7	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	A. R. FABRELLO AND R.O. JONES: "Method for Pre-Sizing Copier Magnetic Brush Shells. June 1982." IBM TECHNICAL DISCLOSURE BULLETIN, vol. 25, no. 1, 1 June 1982 (1982-06-01), pages 236-237, XP002209979 New York, US * the whole document *	3,4,9	G03G
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15 August 2002	Examiner 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 02 (P04C01)

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

EP 00 31 0503

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.

15-08-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0681218	A	08-11-1995	DE	69518691 D1	12-10-2000
			DE	69518691 T2	16-08-2001
			EP	0681218 A2	08-11-1995
			JP	8015979 A	19-01-1996
			US	5729805 A	17-03-1998
US 4377332	A	22-03-1983	JP	1005711 B	31-01-1989
			JP	1521094 C	29-09-1989
			JP	56113172 A	05-09-1981
			JP	1028382 B	02-06-1989
			JP	1544989 C	15-02-1990
			JP	55140858 A	04-11-1980
			DE	3014849 A1	06-11-1980
US 4737216	A	12-04-1988	US	4646677 A	03-03-1987
GB 2007544	A	23-05-1979	AU	3829378 A	31-01-1980
			BE	871189 A1	01-02-1979
			BR	7807370 A	15-05-1979
			DE	2846430 A1	17-05-1979
			ES	474924 A1	16-03-1979
			FR	2408858 A1	08-06-1979
			IT	1160020 B	04-03-1987
			JP	54070049 A	05-06-1979
			NL	7810907 A	14-05-1979
			SE	7811380 A	11-05-1979
EP 0474460	A	11-03-1992	JP	4113377 A	14-04-1992
			JP	7117791 B	18-12-1995
			DE	69106087 D1	02-02-1995
			DE	69106087 T2	04-05-1995
			EP	0474460 A2	11-03-1992