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(54) **Inkjet printers.**

(57) In an ink jet printer (110), the time that has elapsed since the ink jet cartridge (220) last printed is timed and after one hour has elapsed with no printing, all the nozzles (222a-222b) of the cartridge are caused to print, to prevent clogging of the nozzles. Also, a line of constant average dot density along its length is plotted, regardless of the orientation of various segments making up the plotted line. For any one increment of chart movement, each point in the other dimension is plotted only once, to conserve ink and prevent heavy buildup of ink on the chart. When the printer (110) is in plot mode, the nozzles are used in sequence, instead of always using the same nozzle, so as to lengthen the life of the cartridge (220).

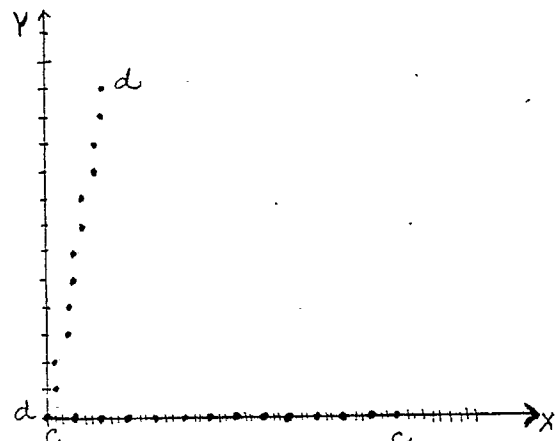


Figure 6

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## EUROPEAN SEARCH REPORT

Application Number

EP 89 31 2409

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.5)
X	PATENT ABSTRACTS OF JAPAN, vol. 11, no. 28 (M-557)[2475], 27th January 1987; & JP-A-61 199 954 (CANON INC.) 04-09-1986 * Whole abstract *	1,2	B 41 J 2/17 G 01 D 9/38
X	GB-A-2 000 344 (KONISHIROKU PHOTO) * Page 1, lines 31-43; figure 1 *	1,2	
X	PATENT ABSTRACTS OF JAPAN, vol. 9, no. 290 (M-430)[2013], 16th November 1985; & JP-A-60 129 266 (SHARP K.K.) 10-07-1985 * Whole abstract *	9-10	
A	IDEM	11	
A	EP-A-0 104 628 (SIEMENS AG) * Page 10, lines 1-30; figure 1 *	9,10,11	
X	US-A-4 654 805 (SHOUP, II) * Column 1, line 37 - column 3, line 2; figure 5 *	3-5	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
X	IBM TECHNICAL DISCLOSURE BULLETIN, vol. 29, no. 9, February 1987, page 3861, Armonk, New York, US; "Overpaint function for color printer" * Whole document *	6,8	B 41 J G 01 D G 06 K G 06 F
X	US-A-4 629 342 (FUTAKI) * Abstract; figure 8 *	6,8	
A	US-A-4 698 779 (HOLDEN et al.) * Column 1, line 51 - column 2, line 39 *	6,8	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 04-10-1990	Examiner JOOSTING T.E.D.
<b>CATEGORY OF CITED DOCUMENTS</b>			
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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## CLAIMS INCURRING FEES

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

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees 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 claims:
- ☐ 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.

## x LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement 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.
- ☐ 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 has 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:



#### LACK OF UNITY OF INVENTION

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

1. Claims 1-2,9-11: Ink jet printer with timed priming to prevent clogging and nozzles used in sequence in plat mode.  
o
2. Claims 3-8: Quality of printed output.