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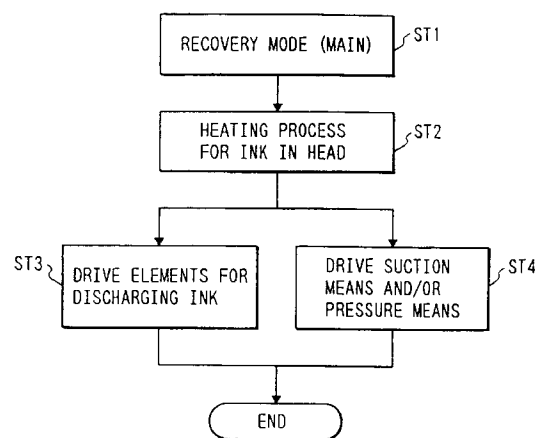
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(54) Discharge recovery method for an ink jet recording head and device for carrying out the same

(57) This invention provides a novel and effective recovery method and device for an ink jet recording head, which method or device has the step of or means for carrying out substantially at a time a condition for driving discharge energy generating elements to discharge ink from the discharge ports of the head and a condition for effecting the forced discharge of the ink by a suction or pressing pump. According to the present invention, the pump itself can be made compact and moreover, the recovery process of all the discharge ports can be carried out reliably within a short time.

FIG. 22





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EUROPEAN SEARCH REPORT

Application Number
EP 95 20 0807

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)
A	DE-A-36 33 239 (CANON K.K.) * abstract; figures 4,8 * ---	1-4,6, 8-14,16, 19-21, 23,26	B41J2/165
A,D	US-A-4 853 717 (J.P. HARMON ET AL.) * abstract * ---	1,12, 22-24	
A,D	US-A-4 800 403 (A. ACCATTINO ET AL.) * abstract * -----	1,12,16, 22,28	
The present search report has been drawn up for all claims.			TECHNICAL FIELDS SEARCHED (Int.Cl.5) B41J
Place of search BERLIN		Date of completion of the search 4 October 1995	Examiner Zopf, K
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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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.

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 1-24,26,28-34 (Recovery process)
2. Claim 25 (Recovery mechanism using high or low pressure)
3. Claim 27 (Ink tension reducing)

- 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 respects 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, **1-24,26,28-34** namely claims:



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1. Claims 1-24,26,28-34 (Recovery process)
2. Claim 25 (Recovery mechanism using high or low pressure)
3. Claim 27 (ink tension reducing)