



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
21.07.1999 Bulletin 1999/29

(51) Int Cl.⁶: **D21F 7/00**, D21F 3/00,
D21H 23/56, D21H 23/78

(43) Date of publication A2:
02.12.1998 Bulletin 1998/49

(21) Application number: **98303888.6**

(22) Date of filing: **18.05.1998**

(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

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(30) Priority: **30.05.1997 JP 14122497**

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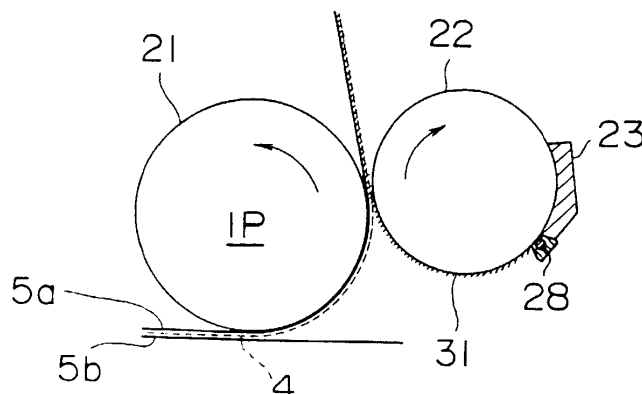
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(54) **Method and apparatus for adding minute fibers etc. at press section of a paper machine**

(57) After a film of a minute fiber suspension is formed on the surface of an applicator roll 22 disposed at a press section of a paper machine, the suspension is applied to at least one surface of a wet paper web 4. The weight concentration of minute fibers in the suspension used is set at 3.0 to 5.0%, the amount of minute

fibers applied to the surface of wet paper is set at 0.2 to 2.0 g/m² per one surface of the wet surface 4, and the amount of paper strength increasing agent is set at 0.5 to 2.0 g/m² per one surface of the wet surface 4. A paper strength increasing agent may be mixed with the suspension of minute fibers prior to forming the film on the roll 22.

FIG. 6





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 30 3888

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)
A	US 4 793 899 A (SKAUGEN BORGEIR) 27 December 1988 * abstract; figures * * column 5, line 22 - line 48 * ---	1-3,5	D21F7/00 D21F3/00 D21H23/56 D21H23/78
A	WO 85 03316 A (SVENSKA TRAEFORSKNINGSINST) 1 August 1985 * the whole document * ---	1-3,5	
A	US 5 152 872 A (RACINE JEAN-GUY ET AL) 6 October 1992 * abstract; figures * -----	1-3,5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			D21F D21H D21G
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 May 1999	Examiner Helpiö, T.
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 3888

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
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25-05-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4793899 A	27-12-1988	CA 1337857 A	02-01-1996
		JP 1034464 A	03-02-1989
		JP 1895781 C	26-12-1994
		JP 6024663 B	06-04-1994
WO 8503316 A	01-08-1985	SE 441109 B	09-09-1985
		EP 0198837 A	29-10-1986
		FI 862288 A	29-05-1986
		JP 61500448 T	13-03-1986
		SE 8400258 A	20-07-1985
US 5152872 A	06-10-1992	CA 2053427 A	16-04-1992