



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
12.03.2014 Bulletin 2014/11

(51) Int Cl.:
D06M 16/00 (2006.01) D01H 1/115 (2006.01)

(43) Date of publication A2:
27.03.2013 Bulletin 2013/13

(21) Application number: **12179703.9**

(22) Date of filing: **08.08.2012**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(72) Inventors:
• **Sakamoto, Naotaka**
Kyoto-shi, Kyoto 612-8686 (JP)
• **Ota, Naritoshi**
Kyoto-shi, Kyoto 612-8686 (JP)

(30) Priority: **21.09.2011 JP 2011206505**

(74) Representative: **Zimmermann, Tankred Klaus et al**
Schoppe, Zimmermann, Stöckeler
Zinkler & Partner
P.O. Box 246
82043 Pullach (DE)

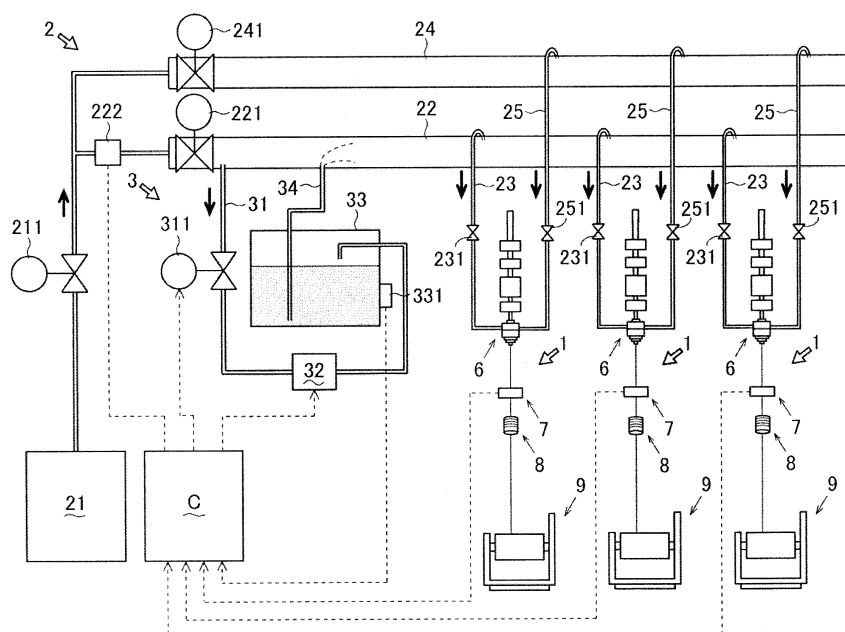
(71) Applicant: **Murata Machinery, Ltd.**
Kyoto-shi, Kyoto 601-8326 (JP)

(54) **Spinning machine and spun yarn producing method**

(57) A spinning machine (100) that produces a spun yarn (Y) by spinning fibers using whirling airflow includes an additive supplying device (3) that supplies an additive to air to apply a prescribed function to the spun yarn (Y). The additive supplying device (3) supplies the additive

for applying at least one of an antibacterial function, an odor preventing function, an odor eliminating function, and an unwinding function to the spun yarn (Y). A volume of the additive to be supplied to the spun yarn (Y) is set to at least 0.01% and at most 0.2% of a weight of the produced spun yarn (Y) per unit length.

FIG. 7





EUROPEAN SEARCH REPORT

Application Number
EP 12 17 9703

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 724 947 A1 (VANHILLE MICHEL EUGENE ALBERT [FR]) 29 March 1996 (1996-03-29) * abstract * * page 2, line 10 - line 17 * * figures 1,2 *	1,2,4,8	INV. D06M16/00 D01H1/115
X	EP 2 302 114 A2 (MURATA MACHINERY LTD [JP]) 30 March 2011 (2011-03-30) * abstract * * claim 1 * * paragraph [0031] - paragraph [0034] * * paragraph [0040] * * paragraph [0047] * * paragraph [0057] * * figures 4,5 *	1,2,4-7	
X,P	EP 2 450 478 A2 (MURATA MACHINERY LTD [JP]) 9 May 2012 (2012-05-09) * paragraph [0005] * * paragraph [0032] * * figures 4,7 * * claim 1 *	1,2,4-7	
A	EP 1 655 393 A2 (MURATA MACHINERY LTD [JP]) 10 May 2006 (2006-05-10) * abstract *	1,4,8	
A	US 4 064 684 A (NIJHUIS JAN) 27 December 1977 (1977-12-27) * abstract *	1,8	
A	DE 40 07 389 C1 (ZINSER TEXTILMASCHNEN GMBH) 16 May 1991 (1991-05-16) * abstract *	1,8	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 4 February 2014	Examiner Humbert, Thomas
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	

 2
EPO FORM 1503 03.82 (P04C001)

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

EP 12 17 9703

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.

04-02-2014

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2724947	A1	29-03-1996	NONE	
EP 2302114	A2	30-03-2011	CN 102021688 A	20-04-2011
			EP 2302114 A2	30-03-2011
			JP 2011084854 A	28-04-2011
EP 2450478	A2	09-05-2012	CN 102465363 A	23-05-2012
			CN 202347163 U	25-07-2012
			EP 2450478 A2	09-05-2012
			JP 2012097391 A	24-05-2012
EP 1655393	A2	10-05-2006	CN 1769551 A	10-05-2006
			EP 1655393 A2	10-05-2006
			JP 3925533 B2	06-06-2007
			JP 2006132035 A	25-05-2006
			US 2006096271 A1	11-05-2006
US 4064684	A	27-12-1977	AU 8339975 A	27-01-1977
			BE 831263 A2	03-11-1975
			CA 1025737 A1	07-02-1978
			CH 582760 A5	15-12-1976
			CS 185580 B2	31-10-1978
			DD 120480 A5	12-06-1976
			DE 2537024 A1	04-03-1976
			ES 440170 A1	01-03-1977
			FR 2282492 A1	19-03-1976
			GB 1496233 A	30-12-1977
			IN 143708 A1	21-01-1978
			IT 1040989 B	20-12-1979
			JP S5143445 A	14-04-1976
			NL 7411139 A	24-02-1976
			PL 97699 B1	30-03-1978
			SE 400996 B	17-04-1978
			SU 648126 A3	15-02-1979
			US 4064684 A	27-12-1977
DE 4007389	C1	16-05-1991	DE 4007389 C1	16-05-1991
			EP 0445541 A2	11-09-1991
			JP H06116823 A	26-04-1994

EPO FORM P0459

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