



(11)

EP 2 028 304 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
19.02.2014 Bulletin 2014/08

(51) Int Cl.:
D01H 15/00 (2006.01)

(43) Date of publication A2:
25.02.2009 Bulletin 2009/09

(21) Application number: 08011813.6

(22) Date of filing: 30.06.2008

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

Designated Extension States:
AL BA MK RS

(30) Priority: 20.08.2007 JP 2007213340

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

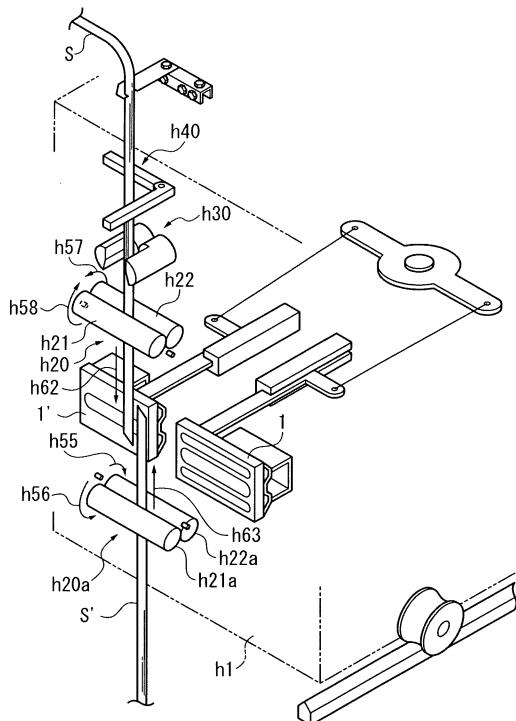
(72) Inventor: **Tsuji, Hiroshi**
Kyoto-shi
Kyoto (JP)

(74) Representative: **Liedl, Christine et al**
Hansmann & Vogeser
Patent- und Rechtsanwälte
Maximilianstrasse 4b
82319 Starnberg (DE)

(54) Sliver piecing device

(57) The present invention allows sliver ends to be stably pieced together so that the resulting slivers exhibit a required strength. A sliver piecing device includes a pair of piecing members 1, 1' that slide alternately with ends S11, S11' of a pair of slivers S, S' sandwiched between the piecing members 1, 1' to rub and piece the ends together. The piecing members 1, 1' both comprise respective entanglement preventing groove portions 10, 10' preventing entanglement during rubbing, on respective surfaces 1a, 1a' between which the sliver ends S11, S11' are sandwiched. Each of the entanglement preventing groove portions 10, 10' is formed in a central portion of the sandwiching surface 1a, 1a' so as to extend in a sliding direction 1b, 1b' (Fig. 12).

FIGURE 12





EUROPEAN SEARCH REPORT

Application Number
EP 08 01 1813

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A,D	JP H09 105036 A (MURATA KIKAI KK) 22 April 1997 (1997-04-22) * abstract * * figure 3 * -----	1-3	INV. D01H15/00
A	EP 0 621 358 A1 (MURATA MACHINERY LTD [JP]) 26 October 1994 (1994-10-26) * column 36, line 56 - column 37, line 10 * * figures 35-41 *	1-3	
A	JP H07 118968 A (MURATA MACHINERY LTD) 9 May 1995 (1995-05-09) * abstract *	1-3	
A	DE 44 38 659 A1 (MURATA MACHINERY LTD [JP]) 4 May 1995 (1995-05-04) * claim 7 * * figure 3 *	1-3	
A	JP H06 108330 A (MURATA MACHINERY LTD) 19 April 1994 (1994-04-19) * figure 9 * -----	1-3	TECHNICAL FIELDS SEARCHED (IPC)
			D01H B65H
The present search report has been drawn up for all claims			
4	Place of search Munich	Date of completion of the search 14 January 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	

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

EP 08 01 1813

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.

14-01-2014

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP H09105036	A	22-04-1997		NONE		
EP 0621358	A1	26-10-1994	DE	69404366 D1	04-09-1997	
			DE	69404366 T2	26-02-1998	
			EP	0621358 A1	26-10-1994	
			US	5535581 A	16-07-1996	
JP H07118968	A	09-05-1995		NONE		
DE 4438659	A1	04-05-1995	CH	691184 A5	15-05-2001	
			DE	4438659 A1	04-05-1995	
			JP	2636708 B2	30-07-1997	
			JP	H07118971 A	09-05-1995	
			US	5488758 A	06-02-1996	
JP H06108330	A	19-04-1994	JP	3003417 B2	31-01-2000	
			JP	H06108330 A	19-04-1994	