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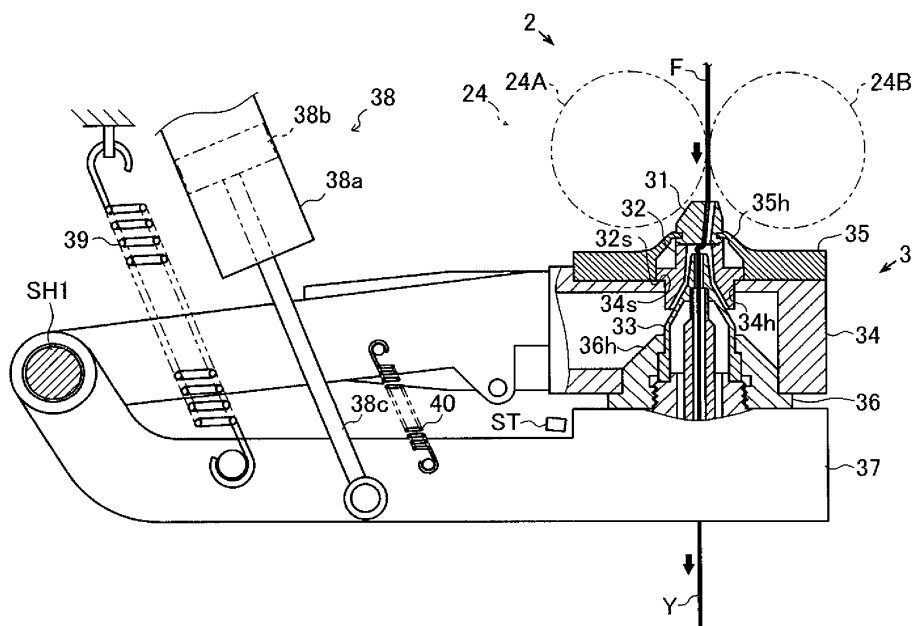
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(54) **Spinning unit and spinning machine**

(57) A spinning unit includes a drafting section (2) adapted to draft a fiber bundle (F), a spinning section (3) adapted to twist the fiber bundle (F) drafted by the drafting section (2), a pneumatic actuator (38) adapted to move

the spinning section (3) in a direction away from the drafting section (2), and an elastic member (39) adapted to move the spinning section (3) in a direction towards the drafting section (2).

FIG. 3





EUROPEAN SEARCH REPORT

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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,D	JP 2011 038210 A (MURATA MACHINERY LTD) 24 February 2011 (2011-02-24) * paragraphs [0057], [0058]; figures 3,5,6 *	1-12	INV. D01H1/14
X	US 4 819 419 A (STAHLECKER FRITZ [DE] ET AL) 11 April 1989 (1989-04-11) * column 11, lines 40-67; figure 8 *	1-12	
X	JP 2002 155432 A (MURATA MACHINERY LTD) 31 May 2002 (2002-05-31) * the whole document *	7-11	
			TECHNICAL FIELDS SEARCHED (IPC)
			D01H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 September 2016	Examiner Wendl, Helen
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 17 2780

5 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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06-09-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2011038210 A	24-02-2011	CN 101994172 A	30-03-2011
		JP 2011038210 A	24-02-2011
US 4819419 A	11-04-1989	DE 3638110 A1	11-05-1988
		US 4819419 A	11-04-1989
JP 2002155432 A	31-05-2002	NONE	