



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
08.08.2012 Bulletin 2012/32

(51) Int Cl.:
B65H 49/02 (2006.01) B65H 57/22 (2006.01)

(43) Date of publication A2:
30.09.2009 Bulletin 2009/40

(21) Application number: **09154194.6**

(22) Date of filing: **03.03.2009**

(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 MK MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA RS

(72) Inventor: **Inoue, Kei**
Kyoto Kyoto 612-8686 (JP)

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

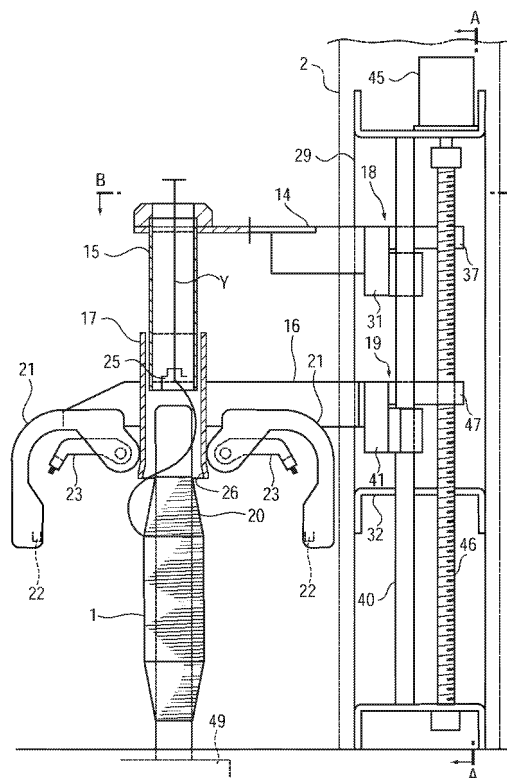
(30) Priority: **28.03.2008 JP 2008088647**

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

(54) **Yarn unwinding assisting device for automatic winder**

(57) The invention relates to a yarn unwinding assisting device provided in a winder unit, comprising a fixed cylinder (15) held in a fixed condition to assist unwinding of a yarn from a bobbin, and a movable cylinder (16) moving in conjunction with the unwinding of the yarn from the bobbin, while assisting the unwinding of the yarn from the bobbin. The fixed cylinder (15) is elevated and lowered by a first elevating and lowering mechanism (18) having a driving source, so as to change an initial position of the fixed cylinder (15), and the movable cylinder (16) is elevated and lowered by a second elevating and lowering mechanism (19) having a driving source. The driving source of the first elevating and lowering mechanism (18) and the driving source of the second elevating and lowering mechanism (19) each comprise a stepping motor (35, 45). Based on bobbin data pre-input to a control circuit (50) and position signals resulting from detection by position detectors on the stepping motors (35, 45), the control circuit (50) controls operating states of the stepping motors (35, 45). Thus, the initial positions and operating positions of the fixed cylinder (15) and the movable cylinder (16) can be automatically set depending on a change the vertical size of a bobbin. (Fig. 1)

FIGURE 1





EUROPEAN SEARCH REPORT

Application Number
EP 09 15 4194

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	DE 39 17 406 A1 (ZINSER TEXTILMASCHINEN GMBH) 6 December 1990 (1990-12-06) * figure 1 * -----	1-4	INV. B65H49/02 B65H57/22
X	WO 2007/014603 A1 (SAURER GMBH & CO KG [DE]) 8 February 2007 (2007-02-08) * paragraph [0069]; figures 1,2 * -----	1-4	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65H D01H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 June 2012	Examiner Guisan, Thierry
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	

1
EPO FORM 1503 03.02 (P04C01)

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

EP 09 15 4194

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.

28-06-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 3917406 A1	06-12-1990	DE 3917406 A1	06-12-1990
		JP 3027130 A	05-02-1991

WO 2007014603 A1	08-02-2007	CN 101233062 A	30-07-2008
		DE 102005036704 A1	15-02-2007
		EP 1917204 A1	07-05-2008
		JP 2009502692 A	29-01-2009
		WO 2007014603 A1	08-02-2007
