



Europäisches
Patentamt
European
Patent Office
Office européen
des brevets



(11)

EP 2 664 572 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
18.06.2014 Bulletin 2014/25

(51) Int Cl.:
B65H 63/08 (2006.01)

(43) Date of publication A2:
20.11.2013 Bulletin 2013/47

(21) Application number: 13165639.9

(22) Date of filing: 26.04.2013

(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

(30) Priority: 18.05.2012 JP 2012114442

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

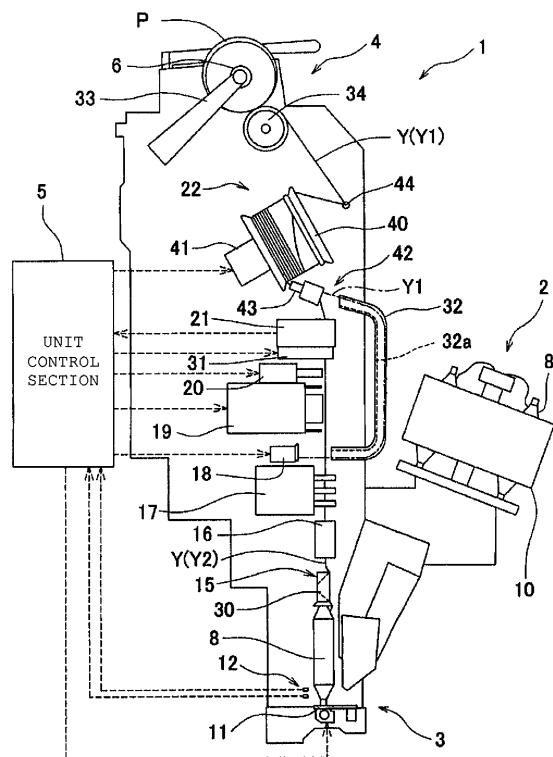
(72) Inventor: Sone, Yoshifuto
Kyoto, Kyoto 612-8686 (JP)

(74) Representative: Beck, Alexander
Hansmann & Vogeser
Patent- und Rechtsanwälte
Maximilianstrasse 4b
82319 Starnberg (DE)

(54) Yarn winding device and yarn winding method

(57) A winding unit (1) of an automatic winder includes a bobbin supporting section (3) adapted to support a yarn supplying bobbin (8) in a replaceable manner; a yarn accumulating device (22) adapted to wind a yarn (y) unwound from the yarn supplying bobbin (8) to accumulate the yarn; a package forming device (4) adapted to wind the yarn (y) unwound from the yarn accumulating device (22) to form a package (P); a yarn amount detecting section (12) adapted to detect an amount of yarn left on the yarn supplying bobbin (8); and a unit control section (5) adapted to predict an end of unwinding of the yarn (y) of the yarn supplying bobbin (8) based on a detection result of the yarn amount detecting section (12) and to decelerate a winding speed of the yarn accumulating device (22) prior to the end of unwinding of the yarn (y).

FIG. 1





EUROPEAN SEARCH REPORT

Application Number
EP 13 16 5639

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	EP 0 311 815 A2 (SCHLAFHORST & CO W [DE]) 19 April 1989 (1989-04-19)	1,2, 6-11,13, 16-18	INV. B65H63/08
A	* column 1, lines 15-41 * * column 11, line 50 - column 13, line 6; claims 1,2,3,11,14,15,16; figures 1,6,7 * -----	3-5,12, 14,15	
X	US 4 805 846 A (UEDA YUTAKA [JP] ET AL) 21 February 1989 (1989-02-21) * column 3, line 34 - column 6, line 24; figures 1,5,7,9 *	1,2,12, 13,16-18	
X	US 2 226 135 A (NEWTON JR WILLIAM A ET AL) 24 December 1940 (1940-12-24) * page 1, column 1, line 37 - page 1, column 2, line 50 *	1,12,17, 18	
X	JP H09 77374 A (MURATA MACHINERY LTD) 25 March 1997 (1997-03-25) * abstract; figures 1,3 *	17	TECHNICAL FIELDS SEARCHED (IPC)
X	JP H09 151033 A (BRIDGESTONE METALPHA CORP) 10 June 1997 (1997-06-10) * claim 3; figure 6 *	17	
X	IT MI 910 518 A1 (SAVIO SPA) 1 September 1992 (1992-09-01) * abstract; figures 1,2 *	17	B65H
The present search report has been drawn up for all claims			
1	Place of search The Hague	Date of completion of the search 9 May 2014	Examiner Pussemier, Bart
CATEGORY OF CITED DOCUMENTS		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	
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			

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

EP 13 16 5639

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.

09-05-2014

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0311815	A2	19-04-1989	EP JP	0311815 A2 H01231769 A		19-04-1989 18-09-1989
US 4805846	A	21-02-1989	IT US	1205846 B 4805846 A		31-03-1989 21-02-1989
US 2226135	A	24-12-1940	FR US	862980 A 2226135 A		20-03-1941 24-12-1940
JP H0977374	A	25-03-1997	JP JP	3564817 B2 H0977374 A		15-09-2004 25-03-1997
JP H09151033	A	10-06-1997	JP JP	3847821 B2 H09151033 A		22-11-2006 10-06-1997
IT MI910518	A1	01-09-1992		NONE		