(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 457 446 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
27.04.2005 Bulletin 2005/17

(43) Date of publication A2:
15.09.2004 Bulletin 2004/38

(21) Application number: **04003082.7**

(22) Date of filing: **11.02.2004**

(51) Int Cl.[7]: **B65H 51/22**, B65H 59/18, D01H 13/10

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(30) Priority: **13.03.2003 JP 2003067526**
14.03.2003 JP 2003070122
17.03.2003 JP 2003072677

(71) Applicant: **Murata Kikai Kabushiki Kaisha**
Minami-ku, Kyoto-shi, Kyoto 601 (JP)

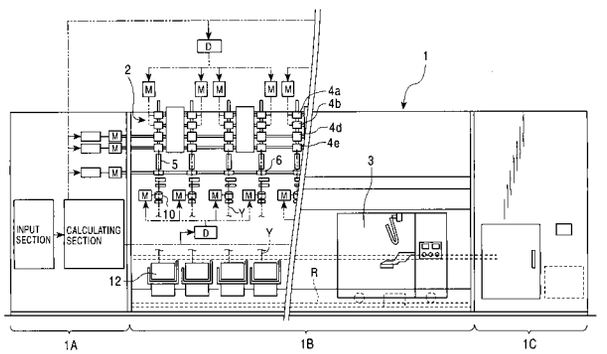
(72) Inventors:
- **Hirao, Osamu**
  Uji-shi Kyoto (JP)
- **Shigeyama, Masazumi**
  Shiga-gun Shiga (JP)
- **Yagi, Hiroyuki**
  Izumiotsu-shi Osaka (JP)
- **Sawada, Harutoshi**
  Charlotte NC 28226 (US)

(74) Representative: **Liedl, Christine et al**
c/o Hansmann & Vogeser,
Albert-Rosshaupter-Strasse 65
81369 München (DE)

(54) Tension control and slack eliminating device for a yarn winder

(57) The present invention prevents a yarn from being excessively tensed and broken owing to an increase in yarn tension when the yarn is wound around a slack eliminating roller during a yarn splicing operation. A yarn threading member 22 is arranged at a position where it can engage with a yarn on the shortest yarn path between an upstream side guide 23 and a downstream side guide 36 arranged upstream and downstream, respectively, of a slack eliminating roller 21. The upstream side guide 23 constitutes yarn moving means for moving the yarn from the shortest yarn path to a yarn path on which the yarn does not engage with the yarn threading member 22. If a yarn splicing operation is to be performed, then before the start of the operation, the yarn moving means holds the yarn away from the yarn path corresponding to the shortest distance and at a position at which the yarn does not engage with the yarn threading member 22. Then, immediately before the yarn splicing operation, the yarn is moved to the position of the yarn path corresponding to the shortest distance and is then engaged with the yarn threading member 22. Accordingly, the direction of the operation of engaging the yarn with the yarn threading member 22 does not involve an increase in yarn tension. Therefore, the yarn can be reliably prevented from being excessively tensed and broken (Fig. 4).

FIG. 1



EP 1 457 446 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 00 3082

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	EP 0 108 195 A (SCHUBERT & SALZER MASCHINENFABRIK AKTIENGESELLSCHAFT) 16 May 1984 (1984-05-16) * page 15, line 14 - line 29; figures 1-4 *	1-6	B65H51/22 B65H59/18 D01H13/10
A	US 5 224 330 A (STAHLECKER ET AL) 6 July 1993 (1993-07-06) * column 3, line 68 - column 4, line 6; figure 1 *	1-6	
A	US 4 132 056 A (HUSGES ET AL) 2 January 1979 (1979-01-02) * column 3, line 25 - line 36; figures 1-4 *	1-6	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

D01H
B65H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 February 2005	Henningsen, O

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

EPO FORM 1503 03.82 (P04C01)

3

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 00 3082

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.

28-02-2005

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0108195 A	16-05-1984	DE 3238376 A1	26-04-1984
		CS 8306264 A2	16-09-1988
		EP 0108195 A1	16-05-1984
		GB 2128213 A ,B	26-04-1984
		HK 30187 A	24-04-1987
		IN 161751 A1	30-01-1988
		JP 1725573 C	19-01-1993
		JP 4013272 B	09-03-1992
		JP 59138563 A	09-08-1984
		MY 35987 A	31-12-1987
		SE 454876 B	06-06-1988
		SE 8305087 A	17-04-1984
		US 4553709 A	19-11-1985
US 5224330 A	06-07-1993	DE 4104863 A1	20-08-1992
		JP 4316621 A	09-11-1992
US 4132056 A	02-01-1979	DE 2558419 A1	07-07-1977
		BE 849617 A1	15-04-1977
		BR 7608317 A	29-11-1977
		ES 454534 A1	16-12-1977
		FR 2336500 A1	22-07-1977
		GB 1567617 A	21-05-1980
		IT 1065039 B	25-02-1985
		JP 52077239 A	29-06-1977
		NL 7614342 A	27-06-1977
		CH 594075 A5	30-12-1977

EPO FORM P0459

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