



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**08.05.2024 Bulletin 2024/19**

(51) International Patent Classification (IPC):  
**B65H 57/00** (2006.01) **B65H 57/28** (2006.01)  
**B65H 57/16** (2006.01)

(43) Date of publication A2:  
**28.02.2024 Bulletin 2024/09**

(52) Cooperative Patent Classification (CPC):  
**B65H 57/003; B65H 57/16; B65H 57/28;**  
**B65H 2701/3132; B65H 2701/38**

(21) Application number: **23218623.9**

(22) Date of filing: **25.11.2022**

(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 ME MK MT NL**  
**NO PL PT RO RS SE SI SK SM TR**  
Designated Extension States:  
**BA**  
Designated Validation States:  
**KH MA MD TN**

- **Morinaga, Ryo**  
**Kyoto-shi**  
**Kyoto 612-8686 (JP)**
- **Araki, Shumpei**  
**Kyoto-shi**  
**Kyoto 612-8686 (JP)**
- **Okada, Keisuke**  
**Kyoto-shi**  
**Kyoto 612-8686 (JP)**
- **Kobayashi, Shuhei**  
**Kyoto-shi**  
**Kyoto 612-8686 (JP)**

(30) Priority: **21.12.2021 JP 2021206858**

(62) Document number(s) of the earlier application(s) in  
accordance with Art. 76 EPC:  
**22209610.9 / 4 215 469**

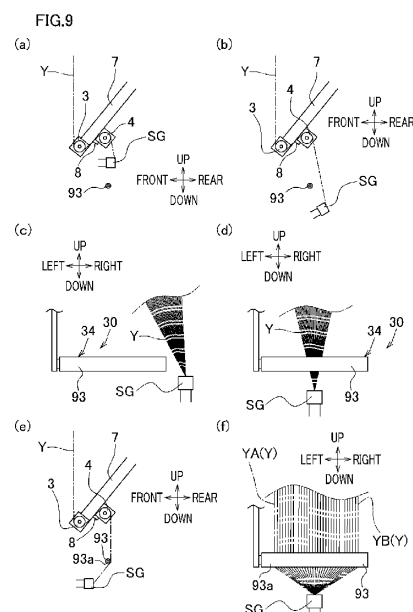
(71) Applicant: **TMT Machinery, Inc.**  
**Osaka-shi, Osaka 541-0041 (JP)**

(74) Representative: **Hoffmann Eitle**  
**Patent- und Rechtsanwälte PartmbB**  
**Arabellastraße 30**  
**81925 München (DE)**

(72) Inventors:  
• **Matsui, Takanori**  
**Kyoto-shi**  
**Kyoto 612-8686 (JP)**

(54) **YARN WINDER**

(57) The efficiency in yarn threading is improved when yarn threading to yarn guides of a pair of winding units is performed. Each of paired winding units 5 of a spun yarn take-up machine 1 includes fulcrum guides 20 aligned in a front-rear direction. The spun yarn take-up machine 1 includes a yarn threading mechanism 30 configured to perform yarn threading to the fulcrum guides 20. The yarn threading mechanism 30 includes paired holding units 31 which are provided to correspond to the respective winding units 5 and are configured to hold respective groups of yarns Y and a drive mechanism 32 configured to move the paired holding units 31. The drive mechanism 32 moves the paired holding units 31 from capturing positions where the yarns Y can be captured to yarn threading start positions that are rearward of the capturing position and further moves the paired holding units 31 to yarn threading completion positions that are forward of the yarn threading start positions, so as to thread all of the yarns Y to the fulcrum guides 20.





## EUROPEAN SEARCH REPORT

Application Number

EP 23 21 8623

5

10

15

20

25

30

35

40

45

50

55

1

EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	EP 3 184 475 A1 (TMT MACHINERY INC [JP]) 28 June 2017 (2017-06-28) * figures 1-13B *	1-6	INV. B65H57/00 B65H57/28 B65H57/16
Y	EP 3 312 121 A1 (TMT MACHINERY INC [JP]) 25 April 2018 (2018-04-25) * paragraphs [0025] - [0027], [0040] - [0043], [0048] - [0055]; figures 3,8-11 *	1-5	
Y	EP 3 162 749 A1 (TMT MACHINERY INC [JP]) 3 May 2017 (2017-05-03) * paragraphs [0038] - [0073]; figures 9-13 *	1-5	
Y	EP 2 407 407 A2 (TMT MACHINERY INC [JP]) 18 January 2012 (2012-01-18) * the whole document *	1-6	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65H
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		22 March 2024	Pussemier, Bart
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 23 21 8623

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

22-03-2024

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 3184475	A1	28-06-2017	CN	106976755 A	25-07-2017
			EP	3184475 A1	28-06-2017
			JP	6527818 B2	05-06-2019
			JP	2017114573 A	29-06-2017
-----					
EP 3312121	A1	25-04-2018	CN	107964691 A	27-04-2018
			CN	113753680 A	07-12-2021
			CN	113753681 A	07-12-2021
			CN	113862804 A	31-12-2021
			EP	3312121 A1	25-04-2018
			EP	3659953 A1	03-06-2020
			EP	3663246 A1	10-06-2020
			EP	3838824 A1	23-06-2021
			JP	6829044 B2	10-02-2021
			JP	2018066088 A	26-04-2018
			TW	201815651 A	01-05-2018
-----					
EP 3162749	A1	03-05-2017	CN	106917149 A	04-07-2017
			EP	3162749 A1	03-05-2017
			JP	6756573 B2	16-09-2020
			JP	2017082379 A	18-05-2017
			TW	201715104 A	01-05-2017
-----					
EP 2407407	A2	18-01-2012	CN	102328850 A	25-01-2012
			EP	2407407 A2	18-01-2012
			EP	2639191 A1	18-09-2013
			JP	5642441 B2	17-12-2014
			JP	2012021240 A	02-02-2012
-----					