



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
26.04.2017 Bulletin 2017/17

(51) Int Cl.:
D03D 47/30 (2006.01) D03D 47/34 (2006.01)

(43) Date of publication A2:
22.03.2017 Bulletin 2017/12

(21) Application number: **16184668.8**

(22) Date of filing: **18.08.2016**

(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
Designated Validation States:
MA MD

(71) Applicant: **KABUSHIKI KAISHA TOYOTA JIDOSHOKKI**
Kariya-shi, Aichi-ken, 448-8671 (JP)

(72) Inventors:
• **MAKINO, Yoichi**
Kariya-shi, Aichi 448-8671 (JP)
• **ARAI, Ryuji**
Kariya-shi, Aichi 448-8671 (JP)

(30) Priority: **16.09.2015 JP 2015182415**

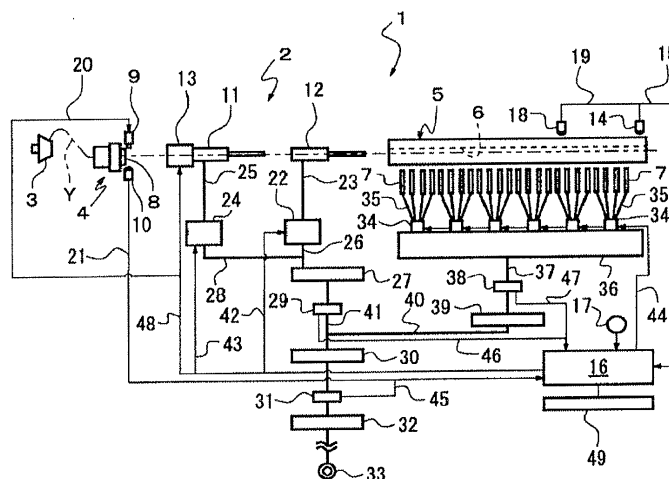
(74) Representative: **TBK**
Bavariaring 4-6
80336 München (DE)

(54) **METHOD FOR MONITORING WEFT TRAVELING CONDITION IN AIR JET LOOM**

(57) There is provided a method for monitoring weft traveling condition in an air jet loom that includes a weft measuring and storing device having a drum, a weft stop pin, and a balloon sensor that detects the release of the weft yarn. The air jet loom further includes a weft insertion nozzle, a plurality of sub-nozzles, a brake, and a weft sensor that is disposed within a width of cloth. The weft sensor is disposed upstream of a position of leading end

of the weft yarn corresponding to a brake timing of the brake in weft insertion direction. The weft traveling condition is monitored by grasping a time difference between a weft passage timing given by a weft detection signal generated by the weft sensor and a weft release timing given by a weft release signal generated by the balloon sensor.

FIG. 1A





EUROPEAN SEARCH REPORT

 Application Number
 EP 16 18 4668

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	JP H04 240249 A (NISSAN MOTOR) 27 August 1992 (1992-08-27) * abstract; figures 1-3 *	1-3	INV. D03D47/30 D03D47/34
A	WO 2010/136194 A1 (PICANOL NV [BE]; SMET BIANCA [BE]; PUISSANT PATRICK [BE]) 2 December 2010 (2010-12-02) * figure 1 *	1-3	
A	EP 0 554 222 A1 (TOYODA AUTOMATIC LOOM WORKS [JP]) 4 August 1993 (1993-08-04) * claims 1-8; figures 1-5 *	1-3	
A	JP H06 93534 A (TOYODA AUTOMATIC LOOM WORKS) 5 April 1994 (1994-04-05) * abstract; figure 1 *	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			D03D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 16 March 2017	Examiner Iamandi, Daniela
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	

 3
 EPO FORM 1503 03.82 (P04C01)

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

EP 16 18 4668

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.

16-03-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP H04240249 A	27-08-1992	NONE	
WO 2010136194 A1	02-12-2010	BE 1018762 A3 CN 102449216 A EP 2435609 A1 WO 2010136194 A1	02-08-2011 09-05-2012 04-04-2012 02-12-2010
EP 0554222 A1	04-08-1993	DE 69303184 D1 DE 69303184 T2 EP 0554222 A1 JP 3044897 B2 JP H05209342 A	25-07-1996 30-01-1997 04-08-1993 22-05-2000 20-08-1993
JP H0693534 A	05-04-1994	NONE	