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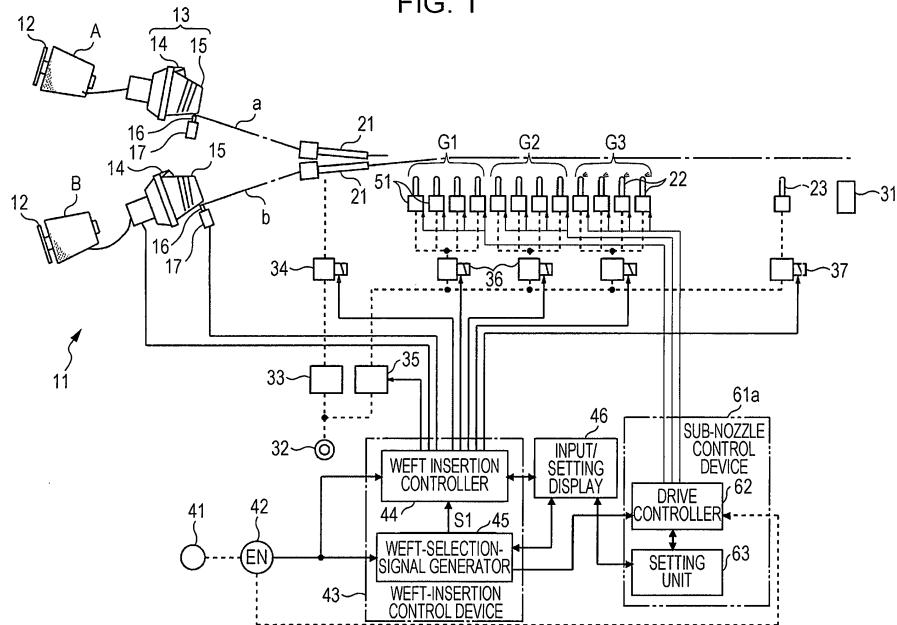
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(54) Method and apparatus for adjusting ejection angle position of sub-nozzle in an air jet loom

(57) A method for adjusting an ejection angle position of a sub-nozzle (22) in an air jet loom is provided. The air jet loom includes a plurality of sub-nozzles (22) arranged along a weft insertion path and a plurality of electromagnetic on-off valves (36) provided to supply compressed air to the sub-nozzles (22), each electromagnetic on-off valve (36) being connected to one or more of the sub-nozzles (22), the sub-nozzles (22) connected to each electromagnetic on-off valve (36) ejecting the air to

perform weft insertion. The method includes the steps of driving one or more sub-nozzles (22) that belong to an adjustment unit with at least one actuator (51, 74), the adjustment unit including at least one of the one or more sub-nozzles (22) connected to at least one of the electromagnetic on-off valves (36), and adjusting an ejection angle position of each sub-nozzle (22) included in the adjustment unit by the same angle.

FIG. 1





EUROPEAN SEARCH REPORT

Application Number

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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	JP H02 26958 A (NISSAN MOTOR) 29 January 1990 (1990-01-29) * abstract; figures 1-6 *	1-14	INV. D03D47/30
A	GB 2 060 720 A (RUETI TE STRAKE BV) 7 May 1981 (1981-05-07) * page 1, line 128 - page 2, line 65; figures 1a,1b,2 *	1-14	
A	JP S53 90663 U (.) 25 July 1978 (1978-07-25) * figures 1-4 *	1,8	
A	JP H06 257034 A (TOYOTA CENTRAL RES & DEV; TOYODA AUTOMATIC LOOM WORKS) 13 September 1994 (1994-09-13) * figures 1,6 *	1,8	
			TECHNICAL FIELDS SEARCHED (IPC)
			D03D
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
Munich	28 July 2016	Iamandi, Daniela	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone	T : theory or principle underlying the invention		
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28-07-2016

10	Patent document cited in search report	Publication date	Patent family member(s)		Publication date
	JP H0226958	A 29-01-1990	NONE		
15	GB 2060720	A 07-05-1981	CH 646213 A5		15-11-1984
			DE 3032929 A1		09-04-1981
			GB 2060720 A		07-05-1981
			JP S5685443 A		11-07-1981
20			JP S6363653 B2		08-12-1988
			NL 7907050 A		24-03-1981
			US 4487236 A		11-12-1984
25	JP S5390663	U 25-07-1978	NONE		
30	JP H06257034	A 13-09-1994	NONE		
35					
40					
45					
50					
55					

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