



(11) **EP 2 397 590 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
14.11.2012 Bulletin 2012/46

(51) Int Cl.:
D04B 35/06 (2006.01)

(43) Date of publication A2:
21.12.2011 Bulletin 2011/51

(21) Application number: **11005006.9**

(22) Date of filing: **20.06.2011**

(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: **18.06.2010 JP 2010139815**

(71) Applicant: **Shima Seiki Manufacturing., Ltd.**
Wakayama-shi
Wakayama 641-0003 (JP)

(72) Inventor: **Sonomura, Minoru**
Wakayama-shi
Wakayama 6418511 (JP)

(74) Representative: **Wimmer, Hubert**
WAGNER & GEYER
Gewürzmühlstrasse 5
80538 München (DE)

(54) **Compound needle for flatbed knitting machine**

(57) [Problem to be solved] The present invention provides a compound needle for a flatbed knitting machine in which positioning of an opening/closing body and a base body is easily made when the opening/closing body and the base body are coupled to each other and a large force is hardly applied to the coupling portion.

[Solution] A coupling portion 16 between blades 13, 14 as an opening/closing body 12 of a slider 11 and a base body 15 is positioned in the front-rear direction by providing a coupling groove 15b formed so as to correspond to the lengths of upper stages 13e, 14e on one side face of the base body 15, fitting the upper stages 13e, 14e into the coupling groove 15b, and making rear

ends of the connecting portions 13d, 14d have in contact with an contacting portion 15c. Rear portions of the blades 13, 14 are divided into the upper stages 13e, 14e and lower stages 13c, 14c so that the lengths of the blades 13, 14 can be shortened in the front-rear direction. A force required for positioning the coupling portion 16 in the vertical direction can be made to act from the lower side easily. The lower stages 13c, 14c sag and absorb a force received by front portions of the blades 13, 14 from the bottom of the slider groove 17d so that the force is hardly applied to the coupling portion 16.

EP 2 397 590 A3



EUROPEAN SEARCH REPORT

Application Number
EP 11 00 5006

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 11 152664 A (SHIMA SEIKI MFG) 8 June 1999 (1999-06-08) * figures 1, 2, 3 *	1-4	INV. D04B35/06
A	US 5 186 026 A (TEUFEL ALBERT [DE]) 16 February 1993 (1993-02-16) * column 1, line 58 - column 2, line 54; figures 1-11 * * column 3, line 65 - column 4, line 65 *	1-4	
A,D	EP 1 229 158 A1 (SHIMA SEIKI MFG [JP]) 7 August 2002 (2002-08-07) * paragraph [0024]; figure 2 *	1-4	
A	JP 2001 032154 A (SHIMA SEIKI MFG) 6 February 2001 (2001-02-06) * figure 11 *	1-4	
			TECHNICAL FIELDS SEARCHED (IPC)
			D04B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 October 2012	Examiner Wendl, Helen
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			

 1
EPO FORM 1503 03.82 (P04C01)

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

EP 11 00 5006

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.

05-10-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 11152664 A	08-06-1999	JP 2946323 B2	06-09-1999
		JP 11152664 A	08-06-1999

US 5186026 A	16-02-1993	CA 2059429 A1	16-07-1992
		DE 4100931 A1	16-07-1992
		EP 0496048 A1	29-07-1992
		JP 2747457 B2	06-05-1998
		JP 4289252 A	14-10-1992
		US 5186026 A	16-02-1993

EP 1229158 A1	07-08-2002	DE 60031437 T2	01-02-2007
		EP 1229158 A1	07-08-2002
		ES 2270876 T3	16-04-2007
		JP 3577038 B2	13-10-2004
		TW 477845 B	01-03-2002
		US 6568223 B1	27-05-2003
		WO 0131101 A1	03-05-2001

JP 2001032154 A	06-02-2001	NONE	
