



(11) **EP 2 397 589 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: **11005005.1**

(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 2010139816**

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

(72) Inventor: **Kitahara, Kenji**  
**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 sliding resistance can be made small and opening/closing accuracy to an aperture of a hook by a tongue can be enhanced with a simple structure.

[Solution] Tongues 1a, 2a have no bent and have linear shaped portions 1b, 2b provided at the rear side of the tongues 1a, 2a, so that the blades 1, 2 have stable finishing shapes and manufacturing thereof can be easily performed. Since lower portions of the blades 1, 2 are not bent in the blade groove, sliding resistance can be made small. Shoulder portions 1c, 2c which come out of

the blade groove from rear portions of the tongues 1a, 2a are bent inward between the shoulder portions 1c, 2c opposed to each other such that front ends of the shoulder portions 1c, 2c make closer to and contact with each other so as to form contacting portions 1f, 2f, therefore, a centering effect can be obtained. A space generated between the tongues 1a, 2a is kept so that resistance when the hook 3a opens between the tongues 1a, 2a can be made small and opening/closing accuracy of the hook 3a can be enhanced.

**EP 2 397 589 A3**



## EUROPEAN SEARCH REPORT

Application Number  
EP 11 00 5005

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	EP 1 178 141 A1 (SHIMA SEIKI MFG [JP]; GROZ BECKERT KG [DE]) 6 February 2002 (2002-02-06) * paragraphs [0007] - [0009], [0015] - [0017], [0021] - [0023], [0026]; figures 1-3 *	1-3	INV. D04B35/06
A,D	US 6 233 977 B1 (SCHULER BERNHARD [DE] ET AL) 22 May 2001 (2001-05-22) * column 4, line 45 - column 36; figures 1-7 *	1-3	
A	US 2003/019250 A1 (RUOFF KLAUS [DE] ET AL) 30 January 2003 (2003-01-30) * paragraphs [0026] - [0030]; figures 1-8 *	1-3	
A,D	EP 1 229 159 A1 (SHIMA SEIKI MFG [JP]) 7 August 2002 (2002-08-07) * paragraphs [0009] - [0012]; figure 3 *	1-3	
			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 2 October 2012	Examiner Wendl, Helen
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 ..... &amp; : member of the same patent family, corresponding document</p>			

1  
EPO FORM 1503 03.82 (P04C01)

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

EP 11 00 5005

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.

02-10-2012

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 1178141	A1	06-02-2002	DE	60037246 T2		09-10-2008
			EP	1178141 A1		06-02-2002
			JP	3379947 B2		24-02-2003
			US	6422045 B1		23-07-2002
			WO	0063476 A1		26-10-2000
-----						
US 6233977	B1	22-05-2001	DE	19913822 A1		28-09-2000
			EP	1039003 A1		27-09-2000
			ES	2198241 T3		01-02-2004
			JP	3232075 B2		26-11-2001
			JP	2000282353 A		10-10-2000
			US	6233977 B1		22-05-2001
-----						
US 2003019250	A1	30-01-2003	DE	10130365 C1		23-01-2003
			EP	1270785 A1		02-01-2003
			JP	2003055869 A		26-02-2003
			KR	20030001279 A		06-01-2003
			US	2003019250 A1		30-01-2003
-----						
EP 1229159	A1	07-08-2002	DE	60027753 T2		28-09-2006
			EP	1229159 A1		07-08-2002
			ES	2259614 T3		16-10-2006
			JP	3532897 B2		31-05-2004
			TW	528822 B		21-04-2003
			US	6510713 B1		28-01-2003
			WO	0131102 A1		03-05-2001
-----						