



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 031 652 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
06.09.2000 Bulletin 2000/36

(51) Int. Cl.⁷: **D03D 49/14**

(43) Date of publication A2:
30.08.2000 Bulletin 2000/35

(21) Application number: **99125153.9**

(22) Date of filing: **16.12.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **17.12.1998 IT MI982709**

(71) Applicant: **NUOVA VAMATEX S.p.A.**
24020 Villa di Serio (Bergamo) (IT)

(72) Inventor: **Nani, Roberto**
24020 Ranica (BG) (IT)

(74) Representative:
Faggioni, Carlo Maria, Dr. Ing. et al
Fumero
Studio Consulenza Brevetti
Franz-Joseph-Strasse 38
80301 Munich (DE)

(54) **Warp tension device with a gradual-action suspension for weaving looms**

(57) A warp tension device is disclosed, of the type comprising a compensating cylinder (1) supported on at least two stations arranged along the width of the loom and on at least two support elements (2,3) for each station, movable by the action of a force expressed by the tension of the warp yarns passing over it and an opposing action of a resilient element (7), wherein the dis-

placements of the two support elements (2,3) of each station are in a respective relationship established by a predefined kinematic mechanism, said resilient element (7) reacting to the displacement of at least one of said support elements (2,3).

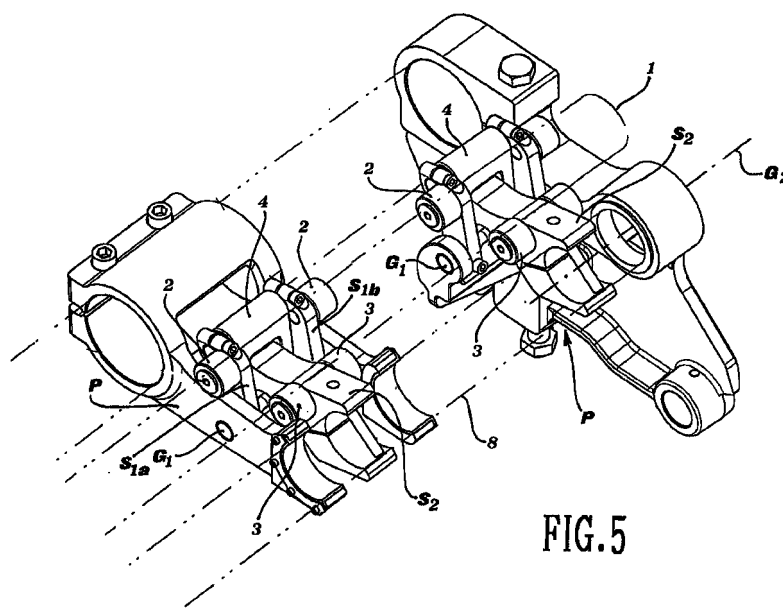


FIG. 5

EP 1 031 652 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 12 5153

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A,D	WO 97 30201 A (PICANOL NV ; SHAW HENRY (BE); MOERMAN ARNOLD (BE); LEFEVER BART (BE) 21 August 1997 (1997-08-21) * figures 12-14,16,18-22 * ---	1-3,10, 12	D03D49/14
A,D	EP 0 694 638 A (DORNIER GMBH LINDAUER) 29 November 1995 (1995-11-29) * the whole document * ---	1,2,10, 12	
A,D	EP 0 396 501 A (SULZER AG) 7 November 1990 (1990-11-07) * the whole document * ---	1,2,10, 12	
A	DE 44 27 126 A (DORNIER GMBH LINDAUER) 1 February 1996 (1996-02-01) * the whole document * ---	1,2,10, 12	
A	DE 195 38 121 C (DORNIER GMBH LINDAUER) 27 February 1997 (1997-02-27) * the whole document * -----	1,2,10, 12	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			D03D
Place of search	Date of completion of the search	Examiner	
THE HAGUE	30 June 2000	Rebiere, J-L	
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			

EPO FORM 1503 03/82 (P04C01)

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

EP 99 12 5153

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.

30-06-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9730201 A	21-08-1997	DE 19605908 A	21-08-1997
		BE 1010263 A	07-04-1998
EP 0694638 A	31-01-1996	DE 4427129 A	01-02-1996
		DE 59506836 D	21-10-1999
		JP 2812901 B	22-10-1998
		JP 8049139 A	20-02-1996
		US 5562128 A	08-10-1996
EP 0396501 A	07-11-1990	CH 681156 A	29-01-1993
		CN 1046948 A,B	14-11-1990
		DE 59002365 D	23-09-1993
		JP 2293447 A	04-12-1990
		JP 2706551 B	28-01-1998
		RU 2001978 C	30-10-1993
		US 5090453 A	25-02-1992
DE 4427126 A	01-02-1996	DE 59504323 D	07-01-1999
		EP 0707103 A	17-04-1996
		JP 2693408 B	24-12-1997
		JP 8049138 A	20-02-1996
		US 5558132 A	24-09-1996
DE 19538121 C	27-02-1997	DE 59603973 D	27-01-2000
		EP 0771896 A	07-05-1997
		JP 2983473 B	29-11-1999
		JP 9111599 A	28-04-1997
		US 5755268 A	26-05-1998