



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 333 115 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
02.01.2004 Bulletin 2004/01

(51) Int Cl.7: **D03D 47/34**, B65H 59/26,
B65H 51/22, B65H 59/40

(43) Date of publication A2:
06.08.2003 Bulletin 2003/32

(21) Application number: **03001430.2**

(22) Date of filing: **22.01.2003**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT SE SI SK TR
Designated Extension States:
AL LT LV MK RO

(72) Inventors:
• **Zenoni, Pietro**
24026 Leffe (Bergamo) (IT)
• **Castelli, Rosario**
24024 Gandidi (Bergamo) (IT)

(30) Priority: **01.02.2002 IT TO20020089**

(74) Representative: **Spandonari, Carlo, Dr. Ing.**
Spandonari & Modiano s.r.l.
corso Duca degli Abruzzi 16
10129 Torino (IT)

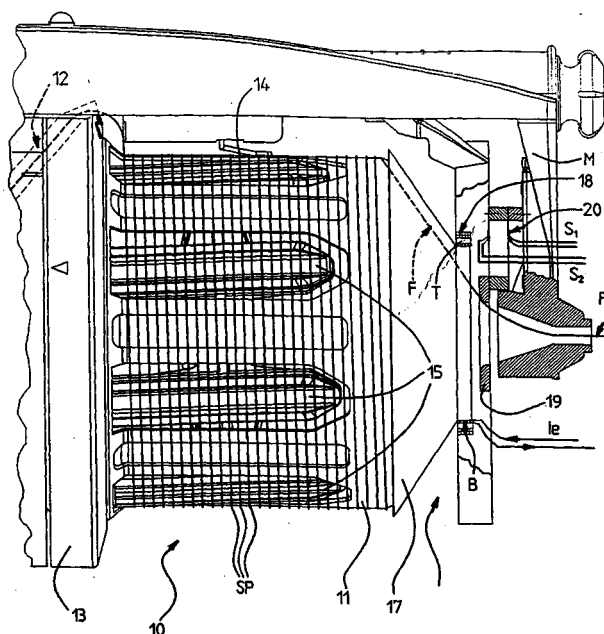
(71) Applicant: **L.G.L. Electronics S.p.A.**
24024 Gandino (Bergamo) (IT)

(54) **A tension-sensing device for the thread of weft feeders in textile machines**

(57) A device for sensing the mechanical tension of the thread (F) and for converting it into electrical signals for driving modulated braking means (17) in weft feeders (10) for textile machines comprises a thread-guiding bush (19) crossed by the thread that unwinds from the drum (11) of the feeder (10) and means (24-25) for sensing and converting the mechanical tension that the thread transmits to the bush. According to the invention,

the thread-guiding bush (19) is rigidly coupled to one of the rigid elements of a suspension frame (20) so as to be an integral part thereof, and the frame comprises at least two rigid frame elements (19a-21) and at least two elastically deformable elements (22-23), which are mutually and rigidly connected to each other according to a configuration shaped substantially like an elastically deformable quadrilateral.

Fig. 1



EP 1 333 115 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 00 1430

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)
X	DE 43 00 633 A (BARMAG BARMER MASCHF) 22 July 1993 (1993-07-22) * column 8, line 33 - column 9, line 10; figure 4 *	1-4	D03D47/34 B65H59/26 B65H51/22 B65H59/40
A	EP 0 536 088 A (LGL ELECTRONICS SPA) 7 April 1993 (1993-04-07) * abstract; figures 1,2 *	1-4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			D03D B65H
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 31 October 2003	Examiner Louter, P
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 03 00 1430

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.

31-10-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 4300633 A	22-07-1993	DE 4300633 A1	22-07-1993
EP 0536088 A	07-04-1993	IT 1251209 B	04-05-1995
		DE 69209424 D1	02-05-1996
		DE 69209424 T2	05-09-1996
		DE 69223575 D1	29-01-1998
		DE 69223575 T2	16-04-1998
		DE 534263 T1	02-09-1993
		DE 536088 T1	02-09-1993
		EP 0534263 A1	31-03-1993
		EP 0536088 A1	07-04-1993
		ES 2110458 T3	16-02-1998
		HK 1012683 A1	05-05-2000
		JP 3423015 B2	07-07-2003
		JP 5195376 A	03-08-1993
		KR 245609 B1	02-03-2000
		US 5409043 A	25-04-1995
		US 5316051 A	31-05-1994