

Title (en)

DEVICE FOR SEPARATING THREADS FROM A LAYER OF THREADS, AND METHOD FOR OPERATING AND USING THE DEVICE

Title (de)

VORRICHTUNG ZUM SEPARIEREN VON FÄDEN AUS EINER FADENSCHICHT, VERFAHREN ZUM BETREIBEN DER VORRICHTUNG UND VERWENDUNG DER VORRICHTUNG

Title (fr)

DISPOSITIF POUR SÉPARER DES FILS D'UNE COUCHE DE FILS, PROCÉDÉ POUR FAIRE FONCTIONNER CE DISPOSITIF ET UTILISATION DU DISPOSITIF

Publication

**EP 1943380 A1 20080716 (DE)**

Application

**EP 07720206 A 20070621**

Priority

- CH 2007000309 W 20070621
- EP 06405270 A 20060623
- EP 07720206 A 20070621

Abstract (en)

[origin: EP1870501A1] The device for separating quantity of threads from layer of threads in knotting machine/drawing machine/cross reading machine, comprises a moveable separating unit (10), a movement device (4, 15) for moving the separating unit relative to the layer of threads, a control device (20) for the movement device and a detection device (25) for threads. The thread layer is composed of a multitude of threads arranged next to the other. The quantity of threads is arranged at an edge of the thread layer. The detection device permits a reference position with respect to the layer of threads. The device for separating quantity of threads from layer of threads in knotting machine/drawing machine/cross reading machine, comprises a moveable separating unit (10), a movement device (4, 15) for moving the separating unit relative to the layer of threads, a control device (20) for the movement device and a detection device (25) for threads. The thread layer is composed of a multitude of threads arranged next to the other. The quantity of threads is arranged at an edge of the thread layer. The detection device permits a reference position with respect to the layer of threads. The movement device can be controlled in such a way that the separating unit can be placed at an operating position with respect to the layer of threads and can be carried out a separating movement (18) during which the separating unit is introduced partially between two adjacent threads. A relative coordinate of the working position with respect to the operating position is a variable parameter of the control device, and a value for this relative coordinate can be made available to the control device. A place is intended at an edge of the thread layer or at a thread of the thread layer or in a given interval to the thread layer as a reference position. The relative coordinate is spacing between the operating position and the reference position. The value for the relative coordinate is given in advance as function of thread strength of the threads and/or as function of the average value of the thread strengths of a majority of the threads of the thread layer and/or as function of a given number of threads to be separated. A monitoring device is intended for the monitoring of the number of threads, which is separated after implementing the separating movement of the thread layer. The detection device comprises a mechanism for contact-free detection of threads. The mechanism comprises a first optical system for the production of a first picture of the threads, first light-sensitive detector for detecting the first picture and an image processing system for the determination of the reference position from signals of the first light-sensitive detector. The mechanism comprises a second optical system for the production of a second picture of the threads and a second light sensitive detector for detecting the second picture. The two pictures represent the respective threads from different perspectives and an image processing system for the determination of the number of threads separated from signals of the respective light sensitive detectors is intended. The movement device comprises first degrees of freedom of movement that enables a movement of the separating unit relative to the thread layer to the operating position and a second degree of freedom of movement that enables to carry out the separating movement. For the realization of the first degree of freedom of movement the movement device has a linear guidance for the separating unit, and for the realization of the second degree of freedom of movement the mechanism has a pivot bearing, which enables a rotation of the separating unit around an axis of its rotation. A measuring device is intended for determining the respective thread strength and/or the average value of the respective thread strengths. An independent claim is included for a method for the operation of device for separating quantity of threads from layer of threads.

IPC 8 full level

**D03J 1/00** (2006.01); **D03J 1/14** (2006.01)

CPC (source: EP US)

**D03J 1/00** (2013.01 - EP US); **D03J 1/14** (2013.01 - EP US)

Citation (search report)

See references of WO 2007147282A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

**EP 1870501 A1 20071226**; AT E431449 T1 20090515; BR PI0713356 A2 20120131; BR PI0713356 B1 20170321; CN 101360855 A 20090204; CN 101360855 B 20121128; DE 502007000728 D1 20090625; EP 1943380 A1 20080716; EP 1943380 B1 20090513; ES 2327292 T3 20091027; JP 2009541601 A 20091126; PT 1943380 E 20090812; TW 200809026 A 20080216; US 2010031484 A1 20100211; US 8032995 B2 20111011; WO 2007147282 A1 20071227

DOCDB simple family (application)

**EP 06405270 A 20060623**; AT 07720206 T 20070621; BR PI0713356 A 20070621; CH 2007000309 W 20070621; CN 200780001637 A 20070621; DE 502007000728 T 20070621; EP 07720206 A 20070621; ES 07720206 T 20070621; JP 2009515686 A 20070621; PT 07720206 T 20070621; TW 96122058 A 20070620; US 30431907 A 20070621