

Title (en)

Device for separating yarns from a yarn layer, method for operating said device and use of said device

Title (de)

Vorrichtung zum Separieren von Fäden aus einer Fadenschicht, Verfahren zum Betreiben der Vorrichtung und Verwendung der Vorrichtung

Title (fr)

Dispositif de séparation de fils d'une couche de fils, procédé pour opérer le dit dispositif et utilisation du dit dispositif

Publication

**EP 1870501 A1 20071226 (DE)**

Application

**EP 06405270 A 20060623**

Priority

EP 06405270 A 20060623

Abstract (en)

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.

Abstract (de)

Die Vorrichtung (1) dient zum Separieren einer Teilmenge von Fäden (5.1) aus einer Fadenschicht (5) mit einem bewegbaren Separiermittel (10), wobei die Fadenschicht (5) aus einer Vielzahl von nebeneinander angeordneten Fäden gebildet ist. Die Vorrichtung umfasst eine Bewegungsvorrichtung (15, 4) zum Bewegen des Separiermittels (10) relativ zur Fadenschicht (5), eine Steuervorrichtung (20) zum Steuern der Bewegungsvorrichtung (15, 4) und eine Erkennungsvorrichtung (25) zum Erkennen von Fäden, wobei die Erkennungsvorrichtung (25) die Erkennung einer Referenzposition (R) bezüglich der Fadenschicht (5) ermöglicht und die Bewegungsvorrichtung (15, 4) derart steuerbar ist, dass das Separiermittel (10) an eine Arbeitsposition (A) bezüglich der Fadenschicht (5) bringbar ist und eine Separierbewegung (18), bei welcher das Separiermittel (10) zumindest teilweise zwischen zwei benachbarten Fäden eingeführt wird, ausführen kann. Mindestens eine Relativkoordinate (#) der Arbeitsposition (A) bezüglich der Referenzposition (R) ist ein variabler Parameter der Steuervorrichtung (20) und mindestens ein Wert für diese Relativkoordinate (#) kann der Steuervorrichtung (20) zur Verfügung gestellt werden.

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CPC (source: EP US)

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Citation (search report)

- [A] WO 02088445 A2 20021107 - STAEUBLI AG PFAEFFIKON [CH], et al
- [AD] EP 0206196 A2 19861230 - ZELLWEGER USTER AG [CH]
- [A] EP 0388880 A1 19900926 - WANGNER GMBH CO KG HERMANN [DE]
- [A] US 2005028335 A1 20050210 - BACHMANN WALTER [CH]

Cited by

EP2147993A1; EP2881506A1; EP2147992A1; CN104404699A; US9200387B2; WO2010009566A3

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JP 2009541601 A 20091126; PT 1943380 E 20090812; TW 200809026 A 20080216; US 2010031484 A1 20100211; US 8032995 B2 20111011;  
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