

Title (en)

Device for adjusting the working gap between the tips of the clothings of the flats and the cylinder of a carding machine

Title (de)

Vorrichtung zum Einstellen des Arbeitsspalt zwischen den Spitzen von Deckelgarnituren und den Spitzen der Trommelgarnitur einer Karde

Title (fr)

Dispositif pour le réglage de l'espace de travail entre les pointes de la garniture de chapeau et les pointes de la garniture de cylindre de cardage d'une machine de cardage

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Application

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Priority

DE 10037710 A 20000802

Abstract (en)

The mechanism to adjust the gap between the points of the revolving flat clothing and the points of the drum clothing, at a carding machine, has sliding guides (100) for the carding-flat bars around part of the drum circumference on both sides of the card, with adjustable sliding surfaces (112) in relation to the drum axis (62). Each sliding guide has a sandwich structure with a radially inner support (102) divided into support zones, and an outer continuous flexible curve (104). A core zone (106) is between the outer and inner layers, with one or more adjustment units (108). The clothing gap adjustment system between the revolving flats and the drum in a carding machine, has a rigid mounting for the guide support(s) at each side of the card. The adjustment units are piezo elements, extending over the length of the flexible curve, in a multi-layer structure. A number of adjustment units are on each side of the card, with separate or common control. The adjustment units can be a pneumatic system, using inflatable elastic cushions where their dimensions are set by their inner air pressure, formed at least partially by the radial inner support and the outer flexible curve. A longitudinal groove is in a radial inner support and the sliding guide to take a spring in the hollow space formed between them, along the guide. The side walls of the groove act as a radial guide for the sliding guide. The adjustment system can be thermal expansion units, on both sides of the card, as a corrugated and heated plate bi-metal strip with secured ends. They resemble leaf springs, between the inner support and the sliding surface. Pressure springs on both sides of the card can be used as the adjustment units, formed of separate leaf springs. The adjustment can be through the drive belt or chain for the revolving flats, which alters the tension to set the radial position of the sprung flexible curve, or radial inward forces can be applied to each flexible curve. Friction dampers are between each flexible curve and its inner support, between the walls of a groove containing a spring to link elements. The friction damper is a cladding on the groove walls, or the spring. The adjustment system can be electromagnetic units on each side of the card, with a slide moved in a wedge gap by magnetic or electromagnetic force, forming an adjustment assembly with the flexible curve floating magnetically at a given gap from the support with springs between them. Permanent magnets can be fitted to the flexible curve(s) and electromagnets are mounted at the inner support(s), or vice versa. Or electromagnets are at the flexible curve(s) and the inner support(s). The magnets have a polarity to attract their facing magnets. A control (114) sets the current strength through the electromagnets, to control them separately or together.

Abstract (de)

Die Erfindung betrifft eine Vorrichtung zum Einstellen des Arbeitsspalt zwischen den Spitzen von Deckelgarnituren und den Spitzen der Trommelgarnitur einer Karde, wobei die mit Garnituren versehenen Deckelstäbe über einen Teilbereich des Trommelumfangs auf beiden Seiten der Karde auf jeweiligen, konvex gebogenen Gleitführungen geführt werden, deren Gleitflächen in bezug auf die Trommelachse radial verstellbar sind. Jede Gleitführung weist eine sandwichartige Ausbildung auf, mit einer radial inneren Abstützung, die auch in einzelne Stützbereiche unterteilt werden kann, und in einen radial äusseren, kontinuierlichen Flexbogen unterteilt ist, wobei zwischen dem Flexbogen und der radial inneren Abstützung ein Kernbereich vorliegt, der mit einem oder mehreren Verstellelementen ausgeführt ist. <IMAGE>

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