

Title (en)

Mounting apparatus of a cylindrical cleaning brush with automatic wear compensation for a cylindrical comb of a rectilinear comb

Title (de)

Montagevorrichtung einer zylindrischen Rundkamm-Reinigungsbürste mit automatischem Abnutzungsausgleich einer Kämmaschine

Title (fr)

Dispositif de montage d'une brosse cylindrique de nettoyage du peigne cylindrique d'une peigneuse rectiligne à compensation automatique de l'usure de ladite brosse

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Application

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Priority

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Abstract (en)

[origin: EP1016742A1] The mounting of a cylindrical cleaning brush at the circular comb of a comb is in an assembly which has a fixed comb (1), a cylinder (2), a cylindrical cleaning brush (3), a doffer (4) and a doffer comb (5) to work an incoming fiber web (6). A system (7) gives a rapid assembly and dismantling action on the brush cylinder (3) on a drive shaft (3'), together with an automatic compensation system (8) for the wear on the brush (3). The drive shaft (3') for the brush cylinder (3) is longer than the brush (3). One end of the shaft has a fitting for the assembly/dismantling system (7), and the shaft has an inner limit stop and centering unit for the fitted brush cylinder (3). The shaft fitting has a structured profile to be gripped by the assembly-dismantling system and give it an axial block at the shaft such as a tapping to take a locking bolt. The inner centering unit is a cone, fitted to the drive shaft (3'), working with a positioning cuff at the assembly/dismantling system (7) for the brush cylinder (3). The assembly/dismantling system (7) has a handwheel for movement with the positioning cuff. The far end of the handwheel is structured to fit the splined shaft and a female cone to work with the centering cone. An elastic stop acts on the positioning cuff, against a return spring without rotation. It also has snap connections to engage fittings at the end of the center tube of the brush cylinder (3). The snap connections are friction grips with at least one elastic, metal or synthetic rush in a circular groove which grips by friction within the brush cylinder tube with the elastic stop. The system (8) to give an automatic compensation for brush (3) wear has at least one actuator (19) working with the swing support (16) for the brush drive shaft (3'), to swing it on its axis in at least one perpendicular direction, through a control unit (20). The actuator (19) has a conventional or step electromotor (21), which is reversible and is fitted with a reduction gearing (22). The motor rotation is converted (23) mechanically into a setting movement for the brush cylinder (3). The motor drive output is engaged and disengaged by a clutch between the motor (21) and the mechanical movement converter (23) through a manual control (24). The mechanical movement converter (23) has an initial transmissions section such as a pinion, drive wheel or pulley (25) on the motor drive shaft. It acts with a second transmission pinion, drive wheel or pulley unit (26) and through a thrust bearing (28), to operate a screw bolt (27) through a screw block (29) at the support arm (16), to act as a spindle to move it in one of two directions. The spindle screw (27) can be operated by the electromotor (21) through a toothed segment which pivots on the frame (18) acting on a push rod, eccentric or cam to move the support arm (16). The set position of the swing support arm (16) for the brush cylinder drive shaft (3') is held in place by a variety of systems such as springs, elastic washers, pneumatic or hydraulic units, and the like. The control unit (20) has a programmable follow-up system, to set the phased shifts of the brush support arm (16), and operate the motor to ensure that the diameter of the brush cylinder is effectively placed as the bristles wear. The brush assembly/dismantling system (7) has a bearing for the movement of the positioning cuff, with bearing rollers at its guide. The guide has a curvature matching the swing movements of the brush support arm (16), and a guide plate to hold the roller bearing at the frame (18) in front of a passage opening at an upper covering surface. The automatic compensation system has a moving stop against the roller bearing of the assembly/dismantling system (7). It is mounted to a swing lever at one end of the frame (18) with an operating unit at the other end of the lever. The operating unit has a swing lever fitted to the frame (18) at one end with a rod of variable length at the other end. It is worked by a pedal or lever, with a limit stop to define the movement range. It is also fitted with a shock absorber. The rod with a variable length is telescopic, where an inner section slides within an outer sheath. It has a spring and a retaining ring. The operating unit can also be a piston acting on the lever, set by a control button.

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