

Title (en)
Stop-motion bar

Title (de)
Fadenwächterleiste

Title (fr)
Barre de casse-fil

Publication
EP 1098025 B1 20030709 (DE)

Application
EP 00811040 A 20001106

Priority
CH 203299 A 19991105

Abstract (en)

[origin: EP1098025A1] The thread monitor bar, with a number of monitors for the thread tension at a number of embroidery points (S1-S8) of a shuttle embroidery machine, has an axis (29) for a number of swing drop wires (33) matching the number of embroidery points. Each drop wire (33) has a guide eyelet (39) at the free end for the thread (65) being monitored. The wire generates or interrupts a signal by an electrical contact with a swing movement. The tension of the thread keeps the wire in a position where it does not generate a signal. Spacers (43) maintain the intervals between the drop wires (33), and one spacer (43) has an independent switch (17) for an individual monitor switching on and off action. The spacer (43) has two separated limit arms (45) at the axis (29), to give the selected interval, and to restrict the sliding movements of the individual drop wire (33) along the axis (29). The separate drop wires (33) are placed between the limit arms (45) at their spacers (43). The dimensions of the spacers (43), along the line of the thread monitor, is max. the width of the separate embroidery points (S1-S8). The thread monitor bar has a longitudinal carrier profile (11), with the axis (29) and holder parts (15). The spacer (43) lies against the carrier profile (11), to prevent it swinging on the axis (29). The spacer (43) has a spring (50) to press the drop wire (33) into the signal generating position. The distance holder (43) is an injection molded one-piece component. At least one of the two limit arms (45), working with the same drop wire (33), has a slit opening to snap over the axis (29). The switch (17), working with the drop wire (33), is linked to the monitor bar and especially the carrier profile (11), which can be moved by the drop wire (33) into an off setting away from the signal generation position. The switch (17) has visible surfaces to give a visual indication of the switch setting. A limit at the drop wire (33) ensures that the thread (65) is deflected into a path change of at least 10-15 degrees . A rod (31) is aligned at right angles to the direction of thread travel, for the thread to pass around it into the eyelet with a path direction change by a max. angle of at least 45-90 degrees . A light diode indicator (59) is fitted for each embroidery point (S1-S8), with an electronic monitor system which trips an indication after a set number of contact signals in an uninterrupted sequence. An Independent claim is included for an embroidery thread monitor action where a loss of thread (65) tension causes the drop wire (33) to generate a signal through an electrical contact. An electronic system for each embroidery point (S1-S8) trips a fault indicator (59) after a given number of uninterrupted signals in sequence. Preferred Features: The monitor electronics counts the number of contact signals at one embroidery point (S1-S8) in an uninterrupted sequence, to indicate a fault at that embroidery point. The contact signals are passed to a central electronic evaluation unit (71) with a central screen display (73). The evaluation unit (71) identifies the faulty embroidery point (S1-S8), or group of embroidery points, and stops the embroidery machine when the fault is established. The contact signals are digitized by the monitor electronics, together with the embroidery point address, and transferred to the central electronic evaluation unit (71). The monitor electronics pass commands between the central electronic evaluation unit (71) and the embroidery points (S1-S8) in both directions.

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