

ABSTRACT OF THE DISCLOSURE

A SYNCHRONOUS CLOTH-ROLLING APPARATUS OF A KNITTING MACHINE

A synchronous cloth-rolling apparatus of a knitting machine, including a base fixed on the ground, lateral supports, a cloth-rolling mechanism and a cloth-pulling mechanism. The cloth-rolling mechanism and the cloth-pulling mechanism respectively include a cloth-rolling shaft and a cloth-pulling shaft respectively extending from two sides of the base to connect with bottom ends of the lateral supports. The top ends of the lateral supports are fixed under a knitting rotary disk of the knitting machine. A main shaft is disposed on a center of the base. A sleeve is fitted around the main shaft with two bearings positioned therebetween. A compound bevel gear is fitted around the sleeve with two bearings positioned therebetween. The compound bevel gear has upper teeth meshing with a cloth-pulling bevel gear disposed at a rear end of the cloth-pulling shaft and lower teeth meshing with a torque bevel gear of a torque motor. A fixed bevel gear is secured at a top end of the main shaft and meshes with a cloth-rolling bevel gear disposed at a rear end of the cloth-rolling shaft. When the knitting rotary disk is rotated to drive the two lateral supports to rotate about the base, the cloth-rolling bevel gear planetarily revolves about the fixed bevel gear to make the cloth-rolling shaft rotate. Meanwhile, the cloth-rolling shaft through a belt and an idle roller drives a cloth-rolling lever to roll the cloth passing through several cloth-pulling levers. The rolled cloth exerts a frictional force on the cloth-pulling



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levers and creates a torque to rotate the cloth-pulling shaft. The torque motor provides a stable rotary speed and torque in accordance with the planetary motion of the cloth-rolling shaft and cloth-pulling shaft relative to the main shaft so as to achieve a synchronous cloth-pulling and rolling operation.

FIGURE 2

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