

New Construction of the Loper Mechanism

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Annotation. A device is known that includes a looper rigidly mounted on an oscillating shaft and a stationary spreader that holds a loop of needle thread at certain moments of the loop formation process. The necessary rotational or oscillatory movement of the looper performed along the stitch line predetermines the presence of a looper shaft located in bearings across the stitch line and having elements of kinematic connection with the transmission link, in the form of a gear or rocker arm with a rotational kinematic pair. As a result, when using known methods of forming a single-thread chain stitch (the output link of the corresponding mechanisms, including a looper, a shaft located across the stitch line, with elements of kinematic connection with the transmission link and the stand), relatively large cross-sectional dimensions of the cavity of the hose platform in which the specified output link. This drawback of existing methods and corresponding mechanisms does not allow their use in cases where the cross-sectional dimensions of the hose platform, determined by the technological characteristics of the product being processed, for example, the diameter of the product having a cylindrical shape, should be smaller than those dimensions that can be obtained using known methods and mechanisms.

Key words: transmission link, corresponding mechanisms, sewing machine, reliability,

Introduction

In another known design, the looper mechanism of a chain stitch sewing machine contains a shaft with a looper located perpendicular to the main shaft of the machine and connected to it by means of a ball connecting rod and a crank mounted on the looper shaft to move the looper across the stitch, and by means of an eccentric, connecting rod and slider mounted on the looper shaft to move the looper along the stitch, while in order to improve the speed characteristics of the machine and increase reliability, the crank is located under the main shaft in the same vertical plane with it, and the attachment points of the crank to the looper shaft are located under the attachment point.

The design of the sewing machine looper consists of a crank 2 mounted on the main shaft 1. The connecting rod 3 is connected to the crank 2 by a hinge 4, and the other end of the connecting rod 3 is connected by a hinge 5 to the lever 6 of the right looper 8. The lever 6 is put on an axis 7 installed in the sewing machine body 15 cars. The right looper 8 is screwed to the second arm of the lever 6 with a clamping screw. The third arm of the lever 6, using two links 10, is connected to the lever 9 of the left looper 12. The lever 9 of the left looper 12 is put on the hinge pin 11, fixed in the body 15 of the machine. The left looper 12 is attached to the lever 9 with a tightening screw. The loopers 8 and

12 have grooves 19 and 20 with holes 13 at both ends. Barrel-shaped bushings 17 are installed in the holes 13 by means of rubber shock absorbers 18. In the working console parts of the loopers 8 and 12, removable overhead plates 16 and 14 made of wear-resistant steel are rigidly installed.

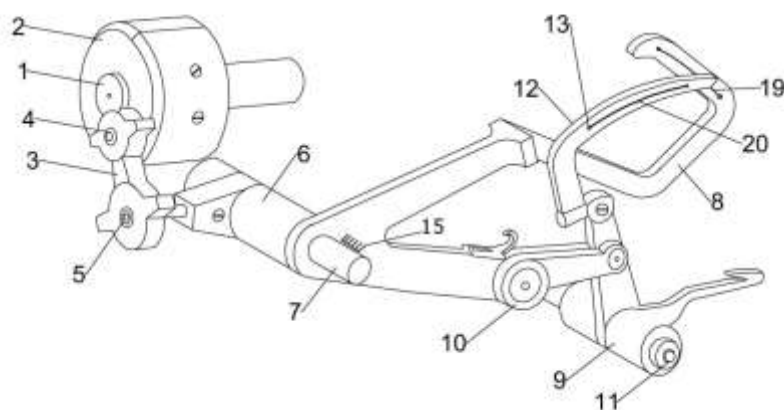
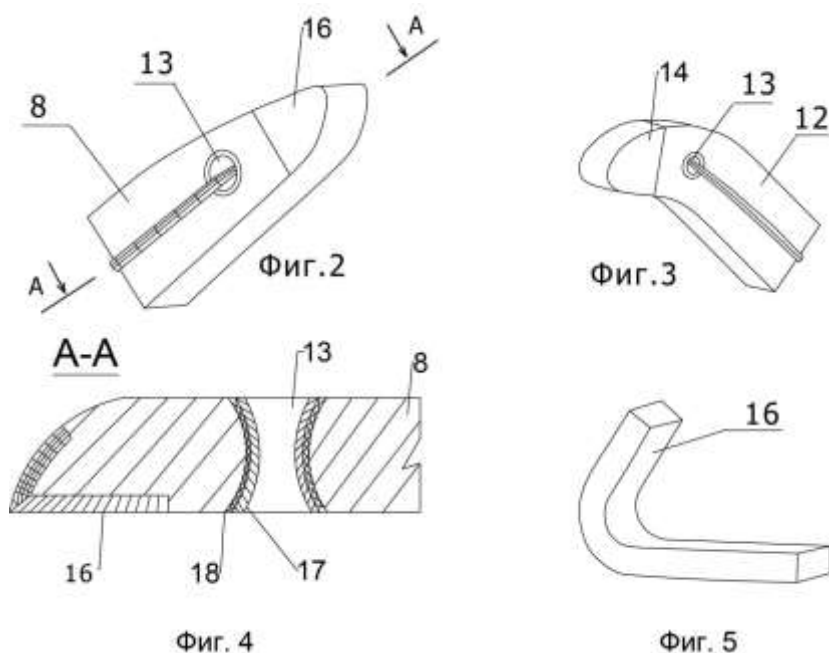


Figure 1.

During the formation of stitches, the threads pass through the hole 13 and mix along the grooves 19 and 20. At the same time, due to sudden changes in thread tension, vibrations in thread tension are reduced by damping and deformation of the elastic bushings 18. In addition, due to the vibrations of the sleeve 17, their wear when interacting with the thread is significantly reduced.



The recommended design of the looper of a sewing machine allows increasing the reliability of the loopers and ensures the production of high-quality stitches.

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