



**IMPROVEMENT OF RING SPINNING MACHINE STRETCHING
EQUIPMENT**

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Abstract

The purpose of the shearing process is to create the necessary conditions for the next technological process of spinning to be at the required level. Such a broad definition of purpose is due to the large number of tasks performed in the process of combing in different manufacturing enterprises and the diversity of requirements for their implementation.

Keywords: Elongation, fiber, spinning, elasticity, tear, quality, density, flexibility, rubber.

Introduction

Development of production of finished textile and light industry products with high added value in the country on the basis of deep processing of raw cotton, improvement of quality and quantity of cotton products for the domestic and foreign markets on the basis of modernization of the ginning industry, special attention is paid to ensuring their competitiveness. In particular, the Action Strategy for the further development of the Republic of Uzbekistan for 2017-2021 provides for "increasing the competitiveness of the national economy, reducing energy and resource consumption in the economy, the widespread introduction of energy-saving technologies in production". After processing and refining of the fibers, 20-30% of the fibers remain intact. These abnormalities and defects in the fiber are so small that they are difficult to separate [1-6].



Materials and Methods

In order to spin yarns of any linear density in a straight line, they must be completely separated from each other, sufficiently cleaned and arranged in an orderly fashion. The fibers need to be parallelized and straightened to some degree to be orderly. In the production of textile products, the most optimal and unique technology for the preparation of fibers in the above conditions is carried out on snow-scraping or ordinary scraping machines. The purpose of the shearing process is to create the necessary conditions for the next technological process of spinning to be at the required level. Such a broad definition of the goal is due to the large number of tasks performed in the process of combing in different manufacturing enterprises and the diversity of requirements for their implementation [7-13]. The essence of the shaving process is to separate the fiber bundles into individual fibers, remove debris and defects, reduce short fibers, mix the fibers, and produce a smooth product.

The scraping process is carried out by balancing the workpieces. These parts have a special threaded or needle coating. There are several parts to a razor, which are commonly referred to as shaving zones. In one of these zones, the receiving drum section, the supply layer of the supplying fiber to the receiving cylinder is similar to that of the receiving drum. The same grinding is carried out on grinding machines, such as tuftomat, Klinomat. However, due to the large differences in the size of the teeth of the coatings, the fibers can be separated into individual fibers only on a razor [14-19]. The following functions are performed on fiber-spinning machines:

1. Divide the cotton on the canvas into small pieces and individual fibers.
2. Cleaning the fibers of debris and debris, removing some of the short fibers.
3. Thinning and spreading the incoming layer of canvas 100-120 times, straightening the ends of the fibers.
4. Form the wick and place them on the pelvis.

Hat and roller combing machines are used for shaving. Hat combing machines comb cotton and chemical fibers or their mixtures. Wool and its mixture with chemical fibers are combed on roller shears. The shaving rate is relatively low on roller shaving machines. The number of shaving zones is small, but the length is large, and each of them can be adjusted individually. Such machines are used for combing long chemical, wool and lub fibers. Machines are divided into simple, small and special types depending on the external size and mainly the diameter of the main drum. According to this definition, the level of shaving varies on cars. For small-sized and ordinary

combing machines, the fibers are delivered in the form of a sheet-wrapped canvas made by a combing machine or crushed by a special supply device. When secured to the canvas, the guide roller 2 rotates to spread the canvas 1 and directs it under the supply cylinder 4 along the surface of the supply table 3.

The supply cylinder passes the canvas to the receiving drum section. Here the canvas is pulverized using 5 drums, cleaned of dirt and defects [20-23]. Under the transmission drum there are 6 cleaners and a pair of working rollers 7. This double reception increases the scraping efficiency in the drum section. The fibers in the transmission drum pass to the surface of the main drum 8 and go to the main shearing zone (drum-hat). The hat plate consists of separate hats mounted on 9, covered with a needle cover and moves very slowly relative to the drum. The fibers scattered between the head drum and the hat pass from the surface of the head drum 8 to the separating drum 12. And it is separated by a roller mechanism 13,14,15. The compactor is then assembled at 16 and made into a wick. This coil stretcher is stretched at 17, and when the fibers are partially straightened and parallel, the coil is passed through the upper plate of the coiling mechanism and mounted on a roller 19 with a guide bearing 18. If the roller is replaced by a roller, the friction is reduced, productivity is increased, the degree of damage to the friction fiber is significantly reduced, and the quality of the product is improved.

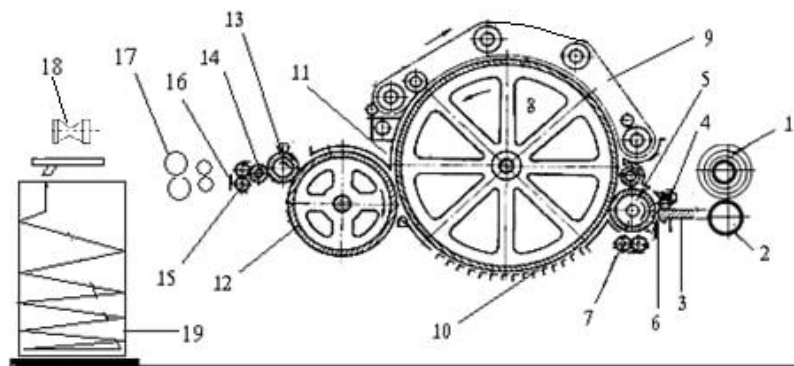


Figure 1. The cross-sectional area of the proposed shaver

Spinning mills are equipped with combing machines manufactured by various factories and companies. The design and technical capabilities of each model have its own characteristics. The working parts that carry out the main scraping process in their

operation do not differ significantly from each other in the physical sense. The essence of the process is even closer. As you can see, the hairdressing machines are used to clean the fibers and separate the short fibers. When this is not necessary, the main drum rollers are used to scrape the fibers. Such machines are called roller combing machines. On the shaving machine, the surface of the fibers is combed and cleaned of defects under the influence of wrapped parts with an elastic needle or a non-metallic coating. The term “snow” for a machine is actually derived from the coating of its working parts. Because the surfaces covered with these coatings are needle-shaped, they are called snow-scrapers, which translate from the Latin word "cardos" - the word "needle". The coatings are usually in the form of a continuous thread with needles or sharp stones on one side. They are very small in size, allowing the fibers to grind quickly for the purpose of combing. Depending on the type and location of the working part of the combing machine, the following types of coatings are used, depending on the type of combed fiber:

- a) Solid;
- b) Elastic;
- c) Needle (semi-rigid).

Hard metal cladding is made of steel wire. First, the cross section of the wires is shaped to the required shape. The bottom of the form is thicker, the top is made thinner. In the second stage, sharp teeth are cut in the upper part. In the industry, pure metal saw tape is produced under the brand name TSMPL. Such coatings are made in the form of sharp-toothed saws with a height of 1.2-2.3 mm and a thickness of 0.7-1.2 mm (Fig. 2, b). The upper part of the tooth does not require sharpening as it is refined. Since the base of the coating teeth is not hardened, they can be tightly packed evenly on the surface of the drum. The size and type of coating are selected according to the properties of the fibers and the function of the working member.

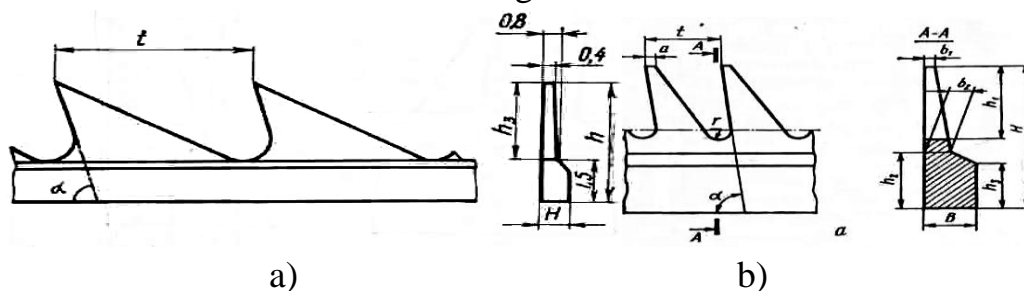


Figure 2. Intermediate threaded (a) and non-metallic saw (b) coatings



Conclusion

When used in the manufacture of equipment, the quality of the spinning yarn (yarn toughness, elongation, reduction of the amount of neps in the yarn, roughness of the yarn) increases by 20-25%. Currently, this equipment is used in the technological production of Tashkent textile group.

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