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Effect of Incredible Constitutional Elements on Product Quality Indicators

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ABSTRACT: In this article, a third-type drum between two-stroke gear and a flexible voltage drum was used to improve the performance of the discrete drum on pneumo-mechanical spinning machines and to efficiently absorb the amount of dust in the fiber. For this purpose, a disassembled drum of the pneumo-mechanical spinning machine was mounted with a metal-clad gear set. At the same time, the discrete drum cylinder was made in the form of an external screwdriver mounted on the base of a flexible plug. The inner surface of the gear heads and the outside of the helmet are made in a curved shape. The height of the articulated head teeth is about 0.4 ishlar 0.6 mm. The difference between the diameter of the saw and the diameter of the drum must meet the condition D-d = 8-1.2 mm.

This means the diameter of the drum along the edges of the arrows, and d - the diameter of the drum in the middle of the arrows, while the flexible and outer valves are connected to each other.

The results show that yarn made in two-winged machines with a flexible vacuum is much longer than yarn in the form of single-lined and two-wire rolls, which is so significant in the technology of yarn processing that it stretches to a certain value. which then creates tension in its effects. The 5% extension of the two-stranded headlamps is proved to be 9.19 sN / tex and 8.6 gs / tex in single-roll packages and 8.1 sN/tex in two-wheel drive machines.

KEY WORDS: headset drum, gear headset, external screwdriver, screwdriver, gear roller, slit attachment, arrays-type headset, flexible helmet.

I.INTRODUCTION

Currently, extensive work is being done on programs and activities aimed at the production of yarn and fabrics that meet international standards. A number of events in the country are aimed at introducing new methods of economic management of economic enterprises and increasing their independence in full economic management. The purpose of these activities is to increase the demand of the national economy for light industry products and to improve the quality of the products [1].

Since independence of the Republic of Uzbekistan, the number of joint ventures with foreign countries has been growing every year and is equipped with modern technologies and technologies. In addition, many modern types of equipment are being installed in laboratories established under joint ventures to control the quality of the yarn [2].

The quality of the yarn for the production of high quality cotton fabrics in the textile industry should also be high. To improve the quality of yarn, spinning enterprises need to maintain and keep up to date with technological processes and mechanisms. In addition, continuous monitoring is also one of the key components for the production of high quality yarn [3].

II. SIGNIFICANCE OF THE SYSTEM

Today the spinning factories are equipped with the equipment and technology of the world-renowned firms Rieter (Switzerland), Truetzchler (Germany), Marzoli (Italy), Savio (Italy), Murata and Tayota (Japan) [4].

Spinning chambers on pneumatic spinning machines RU-14, R-20, R-40, VT 905, VT-923 Riter range 80000 min^{-1} to 150000 min^{-1}, Autocoro-S360 and Erocon-Shlafhorst Spinning chambers in machines are used at speeds of 25000-120000 min^{-1}. [4].

Pneumatic spinning machines of leading companies also produce shaped and twisted yarn. These machines have cylindrical or cone-shaped coil production units.

Pneumatic spinning machines of Rieter, Erlikon-Schlafhorst, Erlikon-Czech companies are effectively used in the enterprises of Uzbekistan [5].

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The prospect of increasing the spinning speed and productivity of pneumatic spinning machines is a prerequisite for the process of yarn formation by separating only the baking and wrapping processes through separate working bodies. In this regard, pneumo-mechanical techniques are widely used in spinning, the machine's capacity is increased by 2-3 times and the baby's weight is increased to 4-5 kg [6].

The cyclic addition of fiber reduces the linear density and stiffness of the yarn by 30-40%, increasing the pneumo-mechanical properties of the thread [7].

Pneumatic yarn is wider, smoother, more pliable, cleaner and has more elasticity [8].

The disadvantage of this is that the range of pneumochanical yarn is limited and its strength is 15-20% less than the yarn.

Pneumatic spinning machines differ in speed indicators, number of cameras, assortment of yarn, quality control devices and wrapping mechanisms [9].

III. LITERATURE SURVEY

It is well known that in pneumo-mechanical spinning machines it is important to disassemble the fibers and to obtain a good quality yarn. It should be noted that the quality of the yarn is evenly due to the uniform separation in the discrete zone and the formation of parallel threads. Therefore, the effects of the constructive properties of discrete drums on yarn quality were studied [10].

A schematic of a single boring discrete drum is shown in Figure 1. The drum gear on this drum is a single screwdriver mounted on the drum surface.

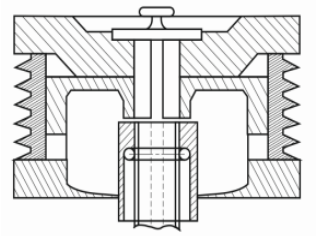

Fig1.Drawing of discrete pneumatic spinning machine's drum.

A two-stroke gear drum was created to improve the performance of the discrete process and to increase dust separation efficiency. At the same time the second packing teeth are made 0.3-0.5 mm smaller than the first one. In addition, to keep the separate fibers of different lengths well with headset teeth, the front bent angles of the first tooth were selected to be 20^0 and the second to 17^0.

The disassembling drum structure consists of cylinder 1, with a two-wire gear roll on the metal headset 2. Gear headset 1 rolling gear 3 h_1 gear head packs are -0.3-0.5 mm greater than the front teeth 20^0 mm for the front teeth and 17^0 for the second head teeth (Fig. 2).

In order to improve the performance of the pneumatic spinning and disassembling drum, we investigated the method of determining the tensile strength of the yarn obtained in different discrete drums to investigate its effect on elongation.

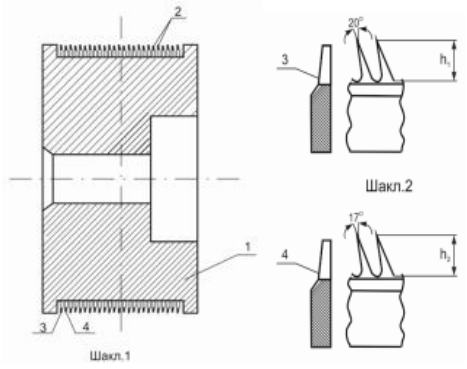

Fig 2. Discrete drum with two-stroke gear heads.

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IV. METHODOLOGY

The strip strength and elongation of the strands are defined in the "STATIMAT-C" device as follows. The temperature in the room should be 20 ± 30 C and the humidity should be 60 ± 5%. Before you begin, boot and then the computer program. It is not possible to test cords with a breaking power greater than 100 H. The device is powered by a compressor. Up to 10 samples can be installed at a time.

The rope is fastened through the guides. Before starting the workshop, the water in the air compressor filter must be removed and the following information is provided on the machine: distance between the clamps; power of disruption; number of samples; how many times each experiment was performed; enter the name of the operator you are working on and so on. The "Cont" (start) button is then pressed. The results will automatically be printed. The ropes are pulled into the drawer by means of the compressor. The following devices are required to determine the linear density of the strands: HM-3 yarn wrap and SK-60H special scales. The temperature in the room should be 20 ± 30C and the humidity should be 60 ± 5%. The diameter of the HM-3 yarn wrap is 1.25 cm. Before packing, the display should have a "0" mark and press "RESET" button if other digits are displayed. When the thread is mounted on the frame, the start button is pressed. You can get up to 3 loops at the same time.

The obtained yarn is measured on a special scale "SK-60H" [11]. After starting the scales, you should not start the experiment until the "0,0" indication appears on the display. The scales have the opportunity to determine the mass or direct line density of the sample. The linear density of the sample is measured on the scales of the Japanese system. Multiply it by 9 for the SI system.

The proposed device allows for uniform disintegration of fiber material and increased efficiency.

V. EXPERIMENTAL RESULTS

A new flexible vacuum drum was also recommended to ensure uniform separation of fibers from the coil [12]. This increases the dust separation rate and reduces the rope break (Figure 3).

The discrete drum consists of an external voltage 1 with integrated metal handle 2. In the middle of the outer foil 1, the teeth of the headphone jack 2 are made by 0.4-0.6 mm higher than the teeth on the outside of the headset. The spacer is mounted on the drum, which disassembles the headset 2 with the outer voltage 1 flexible voltage 3. A flexible hinge 3 and an external hinge are coupled with a slit connection. The inner surface of the Arrowhead 2 and the outside of the helmet 1 are made in a curved shape, with D-d = 0.8-1.2 mm. (D_1 is the diameter of the edge of the headphone jack 2 and d is the diameter of the middle of the headphone jack 2).

The disassembly of the fibers in the product (tape), ie the disassembly process, is as follows:

The bulk of the fiber is transferred to the working area by air flow, with the disassembled drum head detachment 2 allowing the fibers to separate the fiber from the main mass due to the high velocity of the saw teeth.

It generates additional high-frequency rotation vibrations due to the high rotational speed of the discrete drum and the technological resistance of the external headset of the discrete fiber 1. Due to these rotational and vibrating movements, the efficiency of the separation of fibers due to additional inertial forces increases. At the same time, there is a slight reduction of the fiber elasticity.

The thickness between the slab being 2 mm in width and 9 mm in width is slightly larger. Removal of the Gear Head 2 by 0.4-0.6 mm higher than the height of the teeth at the edges, due to the large teeth in the middle, allows the fiber to retain and release more of the core mass.

The dismantled drum of the pneumatic spin machine is mounted on the surface of a metal metal arrays, with an external screwdriver mounted on the cylinder base. The inner surface of the gear heads and the outside of the helmet are curved and the height of the arrows is between 0.4-0.6 mm and the difference between the diameter of the headphone jack and the drum diameter is D d = 8-1,2 mm, where the diameter of the drum heads is the diameter of the head, and d is the diameter of the drum in the middle of the saw head, while the flexible and external screws angan [13].

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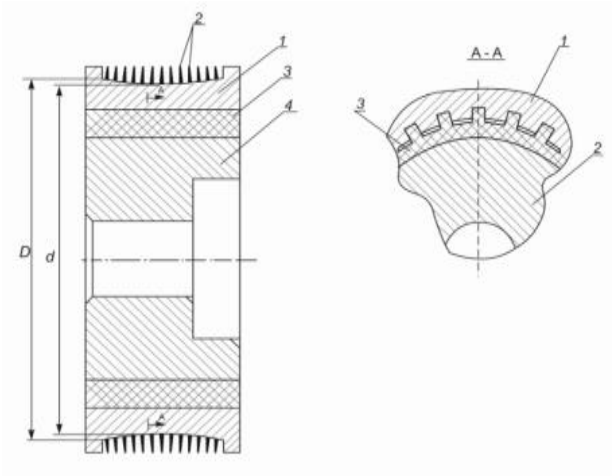

Fig.3. Discrete drum with a flexible screwdriver.

The effects of these discrete drum structures on the physical and mechanical properties of the yarn were studied, the results of which are presented in Table 1.

As can be seen from the table, the threads in all experiments meet 1 grade according to GOST requirements. The coefficient of the use of the fiber strength of the threads is 0.406-0,412 with a single-roll, 0.383-0.404 and 0.383-0.39, respectively. The disassembly of the fiber and the formation of the yarn would be much better in two-stranded flexible vacuum rolls.

The mechanical properties of the strands are best described in stretch diagrams. The "average force elongation-diagrams" was obtained on a STATIMAT-C machine tester that cuts the curves, and a strip with a linear density of 37 is also tested for comparison.

Table 1.Physical and mechanical properties of yarn

T / r	Indicators	Discrete drum in one-part series			Two-stroke discrete drum			Discrete drum with two-input gear heads and a flexible element		
		6000	6500	7000	6000	6500	7000	6000	6500	7000
1	Break power, sN	450,12	442,7	464,1	414,2	426,3	435,1	448,6	456,8	454,7
2	Coefficient of variation in shear strength,%	6,28	5,59	6,11	6,22	6,90	7,21	4,99	5,4	6,2
3	Comparative break power, sN / tex	11,87	11,71	12,22	11,11	11,51	11,46	12,6	12,36	12,76
4	Coefficient of using fiber strength in yarn strength, bale	0,401	0,102	0,391	0,38	0,387	0,87	0,431	0,419	0,416
5	Interrupt work, sN / cm	863,53	872,6	965,2	793,14	851,2	844,6	903,2	942,2	1002,7

The diagrams generated by striping yarn by three different threads are shown in Figure 4 below at the rotation frequency of the discrete drum 6500 min^{-1}.

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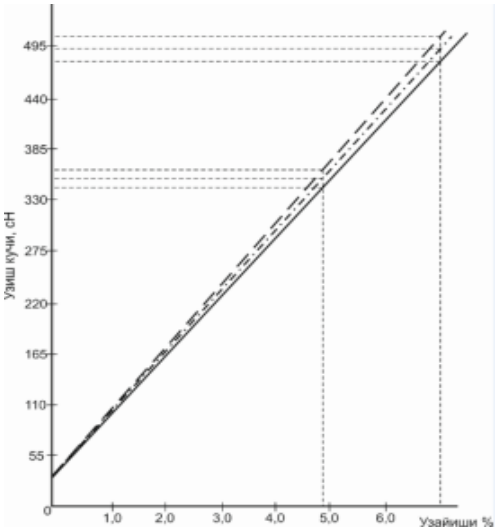

Figure 4.Effect of rope elongation on discrete drums on different discrete drums.

As shown in Figure 4 and Table 1 the yarn produced in two-winged machines with a flexible voltage is slightly longer than the yarn in the form of single-lined and two-lined rollers, which is of great importance in yarn processing technology initially extends to a certain value and then generates voltage at its effects. With a 5% extension of the two-stranded headlamps, the voltage is 9.19 sN/tex, the single-roll packs are 8.6 gs/tex and the 8.1 sN/tex in two-wheel drive machines. This indicates that deformation is of great importance for yarn processing technology.

The importance of discontinuity is determined by weighing in subsequent processes and technological processes. Successful yarn processing and elastic modulus are also affected. It can be observed that it is faster when it returns to its initial state after a short period of loading.

Depending on the rotation frequency of the discrete drum, the elastic modulus of the yarn in a single-roll package is 149.7-158 in double-roll rolls with 161,9-162,8 flexible voltages and 158.5-159,6 in double-roll. Relaxation time after short-term loading is 5.35-5.31 s in single-roll rollers, 4.69-4.84 s in two-wire rollers and 4.84-5.52 s in double-roll rollers

VI.CONCLUSION AND FUTURE WORK

Based on the results obtained, we examined the effect of the structural elements of the discrete drum on the quality characteristics of the product with a single-input gear set, a two-wire gear set, and a third-type drum between two-toothed gear and a flexible voltage discrete drum. Two-threaded gear heads with two-threaded gear heads and a flexible-voltage detector arabanchalar in the third version of the drummer from the application of high quality yarn.

The yarn made in two-winged machines with a flexible vacuum is much longer than the yarn in the form of single-lined and two-lined rollers, which is of great importance in the technology of yarn processing, since the yarn initially stretches to a certain value. formation of With a 5% extension of the two-stranded headlamps, the voltage is 9.19 sN/tex, the single-roll packs are 8.6 gs/tex, and the 8.1 sN/tex in two-wheel drive machines. This indicates that deformation is of great importance for yarn processing technology.

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