

**SAW IN THE CLEANER OF RAW COTTON FROM LARGE
CONTAMINANTS CLEANING THE DISTANCE BETWEEN THE
CHIMNEYS IN THE WORKING PART OF THE DRUM
ANALYSIS TO STUDY THE EFFECT ON EFFECTIVENESS**

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ABSTRACT

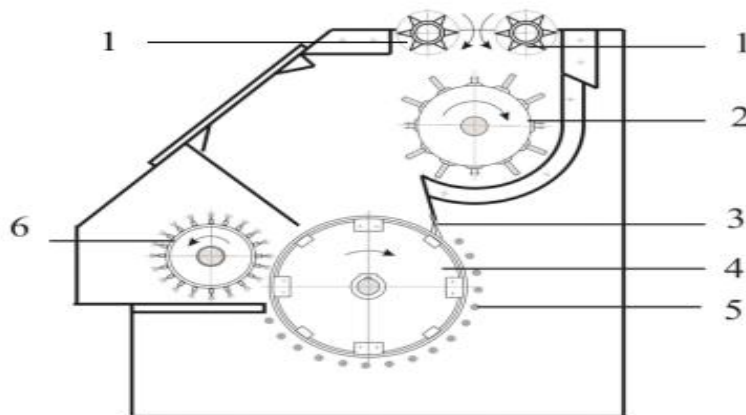
This article introduces changes to the equipment for large-scale decontamination of raw cotton, including the brush drum parts located in the UHC unit, and increased the efficiency of the equipment. The equipment for cleaning cottonseed from large contaminants mainly consists of a supply roller, a pile-bar drum, a saw drum, a brush drum and a dead conveyor. The function of the brush drum is to transfer the seed cotton from the pile-plank drum to the saw drum and to separate the contaminated seed cotton from the saw drum teeth and transfer it to the next process. In our experiment we used rubber to separate the cotton from the steel blades and saw drum teeth instead of the built-in brush drum brushes for conveying the seed cotton. the blade separator was replaced by drums. This has led to the elimination of defects such as abrasion, breakage, overheating, increased cleaning efficiency, work productivity.

KEYWORDS: *Seed Cotton, Fiber, Seeds, Impurities, Coarse Impurities, Brush Drum, Iron Drum Drum, Rubber Blade Separating Drum, Cleaned, Saw Drum.*

INTRODUCTION

The effectiveness of large-scale cleaning of raw cotton make full use of the length of the arc through which the cleaning process takes place of great importance. Technological process in ChX cleaner analysis, from the length of the arc through which the cleaning process takes place in the cleaning units showed that full use is possible, but this factor The effect on cleaning efficiency has not been studied in depth. [1]

Therefore, the cleaning process takes place at the maximum arc length tests were performed on laboratory equipment (Figure 1.1) to study the process. The width of the working part of the equipment is 300 mm.



1-supply rollers, 2-pile drum, 3-thrust brush, 4-saw drum, 5-column grille, 6-splitting brush drum

Figure 1.1. Laboratory equipment of raw cotton gin

Primarily available on the primary cleaning drum ChX the saw drum of the type cleaner is installed and its maximum working to the cleaning efficiency of the distance between the columns on the perimeter effects were studied. The diameter of the grate grate column The effect of cleaning has been studied in studies. and at work in series the effective diameter of the grate for cleaning technology is 30 mm found to be Therefore, the diameter of the column during the operation Taken as 30 mm.

The brush hoist is the first to be left unchanged The distance to the grate is 60 mm, as in the existing model ChX marked.

Given this situation, in the cleaning of raw cotton and the maximum arc length at which the waste is separated is 900 mm (at an arc angle of 2150). Between neighboring colonists to conduct the experiment the distance was changed from 20 mm.

The distance between the saw drum and the pulley is based on the work 16 mm. was obtained. During the experiment, the saw drum was of the ChX model the saw segment used in the cleaner was used. In this segment the distance between the two saws is 14 mm, the tooth is bent relative to the axis The angle is 460. During the experiment, 8.1% humidity, 4.8% pollution, Namangan-77 selection, industrial grade II, 1st grade raw cotton were cleaned. The tests were repeated three times. At each repetition, 10 kg of raw cotton was cleaned. The average value of the results obtained is given in Table 1.1. Based on these results, the dependence graphs are shown in Figure 1.2.

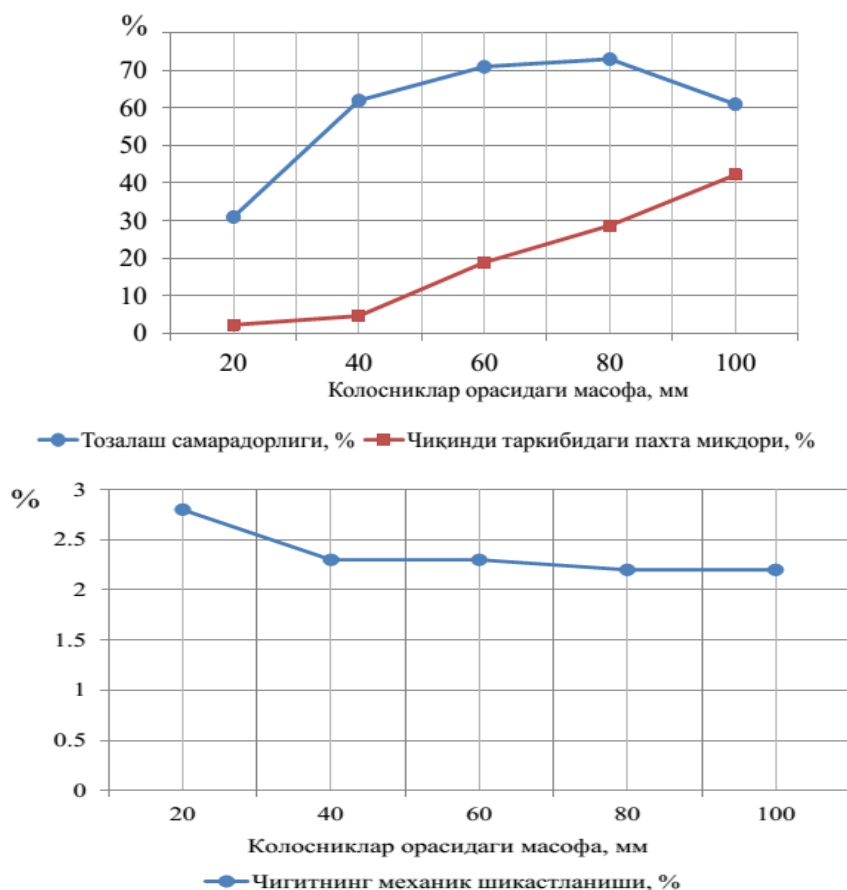


Figure 1.2. The cleaning of the space between the columns is technological effect on indicators

TABLE 1.1 THE DISTANCE BETWEEN THE COLUMNS AND THE NUMBER OF CLEANERS IMPACT ON TECHNOLOGICAL INDICATORS

№	Indicators	the distance between the columns is mm, and the number of columns				
		20/46	40/23	60/16	80/12	100/10
1	Cleaning efficiency, %	31	62	71	73	61
2	The amount of raw cotton in the waste, %	2,3	4,7	18,9	28,7	42,2
3	Mechanical damage to the seed, %	2,8	2,3	2,3	2,2	2,2
4	amount of free fiber, %	0,032	0,031	0,030	0,030	0,029

In this indicator, the amount of raw cotton in the waste is 18.9%. 28.7%, mechanical damage to the seed was at least 2.2-2.3% did.

The results obtained in the applied research are theoretical of E.F. Budin confirms his research. In short, there is the location of the separating drum and the cleaning drums in the cleaners When the maximum cleaning arc length is reached by changing the cleaner can increase efficiency.

A drum separating the raw cotton from the surface of the saw drum test results in production. The proposed separating drum was tested in production conditions at ginneries in Uzbekistan. The results of the initial test made it possible to identify some structural defects of this separation drum, i.e. the cases of loosening of its bolted joints. To overcome the shortcomings, an additional element was installed to ensure that the bolts do not loosen when fastening the rubber blades with bolt joints. During the study period, changes in the amount of raw cotton pieces and congestion occurred in 240 hours (10 days of production) in the UHK cleaning unit, where the existing brush separating drum was installed. [2]

The second stage is equipped with a rubber-blade separating drum 240 hours (10 days of production) at the UHK cleaning unit changes in the amount of raw cotton pieces in the waste studied and the condition in which congestion occurred was studied. Brush and rubber based on the results of production tests cotton in the waste when using vane separator drums in Figure 1.3 to estimate the change in the amount of raw material pieces the shown dependence graph was obtained. This is a brush separator from the graph 4.1% of raw cotton waste per 240 hours of drum operation increase by 9.3%, while the rubber-blade separator drum is running We can see the change from 4.0% to 6.1%. Congestion occurred 8 and 2 times, respectively. [3]

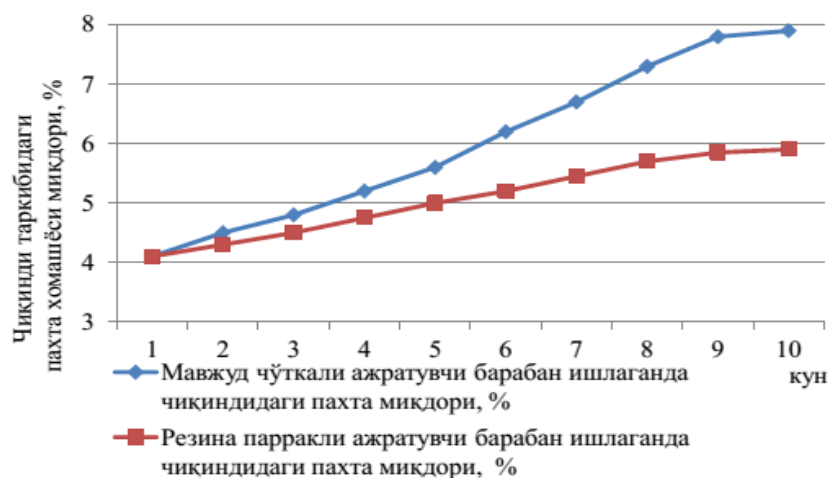
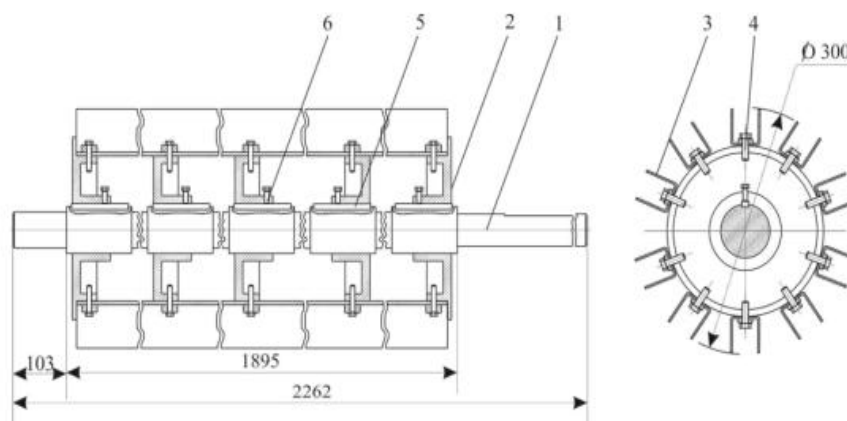


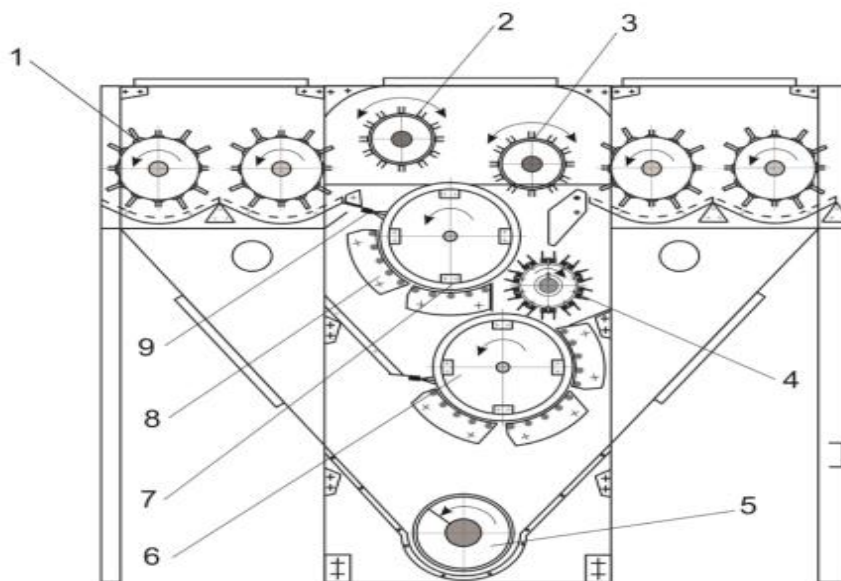
Figure 1.3. UXK with brush and rubber blade separating drums pieces of raw cotton in the waste in the aggregate unit change in quantity

Brush guide in the intermediate section UXK.02 of the UXK unit drum is used. Its structure is available with a separating drum the same. The distance to the saw drum is 45-50 mm. This with foreign compounds when using a metal-bladed drum in the section there is no risk of sparks when exposed. Therefore, these drums were replaced by a metal-blade guide drum as shown in Figure 1.4.

Referral drums to UHK cleaning units when installed (Fig. 1.5) the flow of raw cotton is pile-pounded is transmitted from the drum to the vane drum and the vane drum is formed is affected by the air flow it makes and its feathers. Such an effect as a result, the flow of raw cotton is directed to the saw drum. [4]



1- shaft, 2 - disc, 3 - blade, 4, 6 - bolt, 5 – dowel Figure 1.4. **Metal parrakli drum**



1-pile-blade drum; 2,3-metal blade drum; 4-rubber blade separating drum; 5 waste shnegi; 6, 7- arrali drum; 8-kolosnikli grid; 9 brush hoist

Figure 1.5. **Metal blade guide drum and rubber blade UXK unit with separating drum**

Proposed guide drum blades (Figure 1.6) without removing the existing drums, just remove the brushes, mounted on its disks (Figure 1.7). This is to produce them facilitates implementation.



Figure 1.6. Drum blades



Figure 1.7. General of the drum appearance

In the cleaning shop to conduct production tests installed two streams all 16 in one stream of the UXK unit metal fragments were placed on the guide drum. The second stream while the existing brush guide drum was used. This while the performance of metal blade and brush guide drums is comparable helps to compare and evaluate effectiveness.

Tests AN-Boyovut selection grade I, III industry of raw cotton conducted in varieties. Production of industrial grade I raw cotton productivity is 6.5-7 tons / hour, industrial grade III is 4.5-5 tons / hour did. Test results 1. are presented in Table 2.

I Industrial grade Cotton raw material cleaning of the aggregate The efficiency is in the aggregate on which the drums are mounted, brush drums 2.0% higher than in the installed unit, 2.7% higher when cleaning raw cotton of the 3rd grade, mechanical damage to the seed increases in both drums at the same rate, pieces of raw cotton in the waste are also 0.4 when cleaning the raw material of industrial grade I in the drum with a brush drum. %, industrial grade III cotton is 0.8% higher when refined.

Metal and rubber blade drums in the cleaning unit Their full use during the PTK season makes them reliable and effective confirmed performance. Metal blade drums are practically inedible and that there is no need to replace them, in rubber drum drums the tires were found to work effectively until the overhaul period. A guide in the full season of processing raw cotton The use of spinning drums is a waste of raw cotton fragments will fall and blockages will occur in the UHC unit reduced. Labor productivity increased by 3-5%. Technological efficiency in comparison, the created drums are present in the installed UXK unit cleaning efficiency was observed in relation to the UHK unit on which the drums were placed. [5]

TABLE 1.2 THE RESULT OF COMPARATIVE EXPERIMENTS

№	Indicators	aggregate with metal drum drums		unit with brush drums	
		1-nav	2-nav	1-nav	2-nav
1	condition before cleaning of raw cotton, %	8,1	9,4	8,1	9,4
	pollution of cotton raw materials,%	7,1	10,8	7,1	10,8
	the degree of mechanical damage to the seed,%	0,6	3,9	0,6	3,9

2	Cleaning efficiency, %	82,1	85,0	80,1	82,3
3	Increased mechanical damage to seeds, %	1,1	1,5	1,1	1,5
4	the amount of pieces of raw cotton in the waste	4,9	6,8	5,3	7,6

In this case, the drumsticks are completely raw cotton means that the saw is directed to the drums. Seed mechanic no significant increase in injury rate was observed.

CONCLUSION

Metal instead of a guide brush drum in the UXK unit cleaning efficiency when flanged guide drums are installed I industrial grade cotton by 2.0% when refined, III industrial grade cotton increased by 2.7% when the raw material was refined. [6]

- in the UHK unit with a guide metal sheet drum mechanical damage to the seed 1.2% due to reduced congestion decreased;

- pieces of raw cotton in the waste to the UHC unit I industrial grade cotton when the reference metal is placed on a drum with a blade by 0.4% in the case of refined raw materials, and by 0.8% in the case of industrial raw cotton III decreased.

- When installing a metal blade drum on the UXK unit the number of congestions was reduced by 3-4 times.

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