

IMPROVEMENT OF THE CHX-3M2 LARGE DIRT CLEANING EQUIPMENT BRUSH

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Abstract Cleaning equipment included in the technological process of initial processing of seed cotton in cotton ginning enterprises is installed in the cleaning departments of this enterprise, and their location can be different.

Keywords ChX-3M, UXK sections, 1XP type equipment, dirty mixtures.

Introduction

If equipment with two cleaning sections of the ChX-3M type is placed in a row (in the form of a battery) (4-6 equipment in each row), UXK sections and equipment of the 1XP type are installed in a row in one flow line [1].

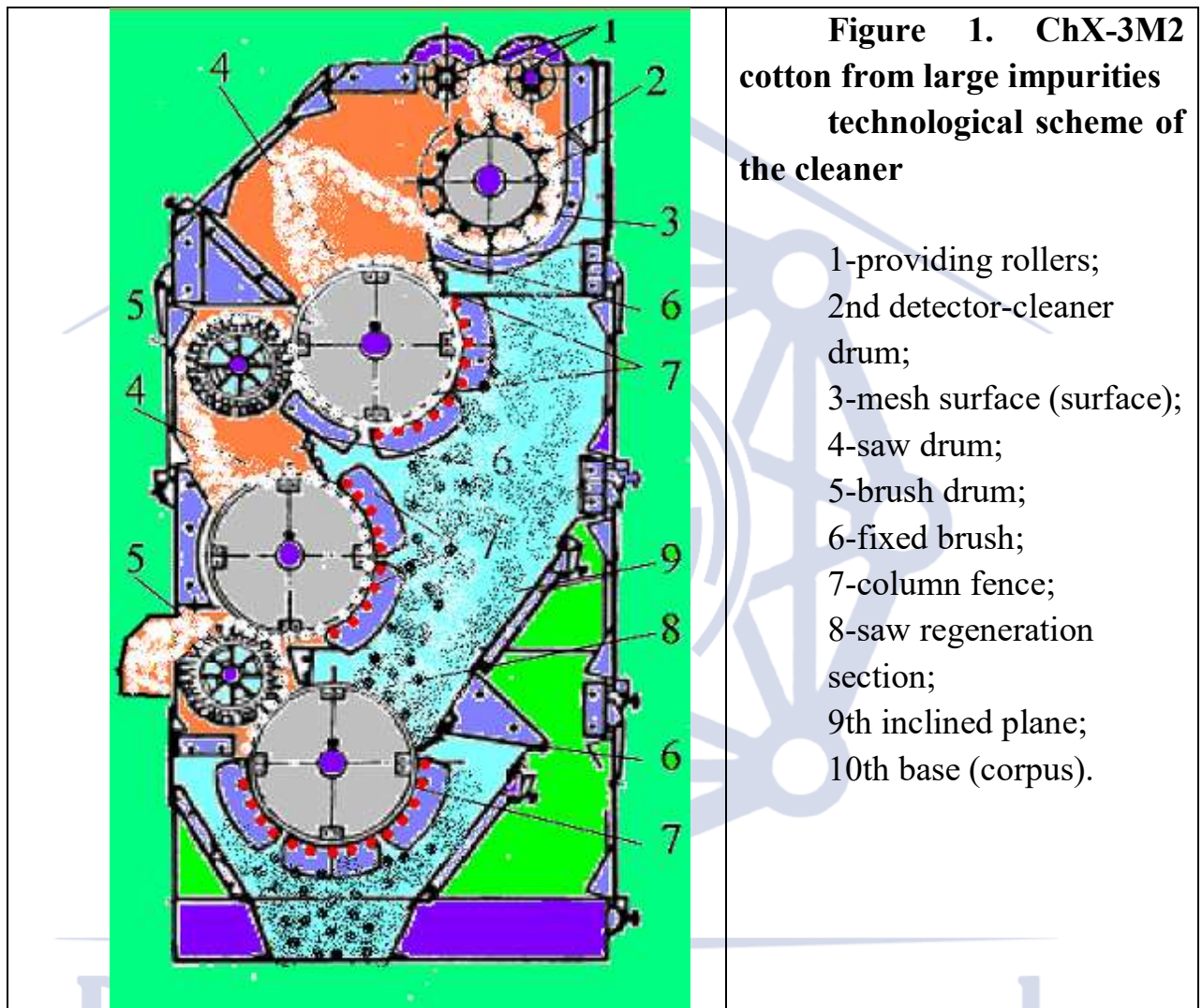
Although the working bodies used in the technology of separating large mixtures from seeded cotton are the same, the methods of their installation (saw drum, colosniks, brushes) in the equipment may be different. For this reason, the structures of cleaning machines from large impurities are also different from each other [2,3].

The main part

ChX-3M equipment is a cleaner with a complex structure in the category of large pollution cleaning equipment. Therefore, it is desirable to study the structure and technological process of the cleaning equipment ChX-3M2, which is more often used in cotton ginning enterprises, in depth [4-7].



The diagram of the technological process on the cross-section of the CHX-3M2 pile-saw drum cleaning equipment is shown. The cleaner is intended for cleaning the picked seed cotton from large and small weeds. It is mainly installed in cleaning departments of cotton cleaning enterprises.



The seed cotton with impurity impurities is conveyed by roller feeders (1) evenly to the pile squeegee-cleaning drum (2), which, in turn, is cleaned of small impurities by crushing the seed cotton into small pieces and dragging the shredded seed cotton over the mesh surface (3). Then it is fed to the first sawing drum.

The seeded cotton is leveled on the sawn surface with a fixed brush (6) and fixed to the teeth of the saws [8-10].

The pieces of seed cotton attached to the saw teeth hit the colostrums (7) during movement, so that the bond between the sawdust and the seed cotton is reduced. A part of the active properties turns into passive properties and falls through the colosniks under the influence of air due to centrifugal force. The seeded cotton is separated from the saw teeth by a brush drum, and the cleaning is repeated in the second section of the similar saw drum, from which the separated clean seeded cotton is transferred to the cotton collection conveyor (auger) through the brush drum.

The impurities separated during the cleaning of cotton are removed from the equipment with a common dirt auger placed under the equipment and sent to a special pneumatic conveyor system.

The cleaned seeded cotton is transferred to the equipment that performs the next technological process.

The cleaner is intended for cleaning the picked seed cotton from large and small weeds. It is mainly installed in cleaning departments of cotton cleaning enterprises.

Technological indicators of CHX-3M2 cleaner

1. Productivity of seeded cotton, t/coat	1-:-3.0
2. Cleaning efficiency,%.....	70-:-80
3. Rotational speed of working bodies, min-1	
a) supply chains.....	0-:-20
b) drum with pegs.....	450
c) saw drums.....	300
g) brush drums.....	960
4. Technological slots of working bodies, mm:	
a) between the pegs and the net.	14-:-20
b) between saw drum and colosniks.....	12-:-18
c) between saw drum and brushes.....	up to 1

The technological process of the ChX-5 seed cotton cleaning equipment from large impurities is the same as the ChX-3M2 cleaner, only it differs in the structural structure of some working bodies. For example: instead of the "pile drum" in the ChX-3M2 equipment, a "knife drum" is installed and a "bumpy surface" is placed on the opposite side. The "mesh surface" installed under the drum has been removed.



As a result of this design change, the productivity of the ChX-5 cleaner for seed cotton dyeing has increased to 6.0 tons per hour.

Effective operation of the designed cleaners is evaluated by its following technological parameters: cleaning efficiency, seed damage, waste fiber.



Figure 2. Improved CHX-3M2 large dirt cleaning equipment

Effective operation of the designed cleaners is evaluated by its following technological parameters: cleaning efficiency, seed damage, waste fiber.

Cleaning section. CH 3M-2 The cleaning section of the cleaning machine of the labor type is separated from large impurities due to the effect of centrifugal force on the surface of the cotton grate in saw drums (Fig. 2).

The cleaning section consists of sawed pile-plate drums 1 and grate 2. The performance of this section depends on cleaning efficiency and seed damage, drum and carbon grid construction, drum rotation speed and work efficiency.

The technological evaluation of the machines for cleaning the seed cotton from large impurities are indicators such as waste fiber, cleaning efficiency, seed damage and the amount of free fibers in the cleaned seed cotton.

The improvement of technological processes and equipment in cotton gins is a continuous process, until today the equipment of cotton gins has become the technological equipment of the competition. Scientific research works are being

carried out intensively on the production of fiber quality indicators, i.e., seeded cotton fiber, while preserving its natural properties.

In order to effectively use machines and equipment, I realized that it is necessary to know the main types of machines and equipment used in cotton ginning enterprises, their structure and operation process, which parts or mechanisms can quickly fail during work, and the use of equipment and equipment for repairing broken parts. At the same time, I also reviewed the methods and skills of assembling and testing machines and equipment.

In this article ChX3M-2 Work-type cleaning machine brush on the drum surface 15° It was proposed to place it in a rotating position, which in turn serves to increase the efficiency of the equipment.

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