

IMPROVEMENT OF THE WORKING CHAMBER OF THE SAW GIN

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ABSTRACT

This article refers to the cotton gin industry and concerns the designs of machines for separating the fiber from cotton seeds. Saw gin works like cotton. Raw cotton through the neck enters the working chamber 1, where it is ginned. The objective of the present invention is to increase the reliability of the saw gin by a stable supply of raw cotton to the dusty cylinder.

KEYWORDS: *Saw gin, working chamber, rib gin, seed cotton, and saw discs.*

INTRODUCTION

Known saw genie, containing a working chamber with a grate and a saw cylinder, made in the form of a set of disk dust on a horizontal shaft, installed with the possibility of passage into the corresponding gaps between the grates [1].

Main part

The disadvantage of the known technical solution is the rigid fixation of the lower grate bar to the body of the gin, which leads to a disruption in the process of shaping the raw roller and possible hanging of the raw cotton before entering the dusty cylinder zone; this is especially true when processing under-dried or low-grade raw cotton.

The objective of the present invention is to increase the reliability of the saw gin by a stable supply of raw cotton to the dusty cylinder.

To achieve this task, in a saw gin containing a working chamber with a grate, consisting of grates installed with their paws in the upper and lower grate bars and a saw cylinder made in the form of a set of circular saws mounted on a rotating horizontal shaft and located between them in the transmitting order, dividing smooth disks installed with the possibility of passing in the gaps between the grate bars and between the saw pads, the lower grate bar is mounted on a compression spring located between the dusty side of the bar and the threaded stop, and the front bar interconnected with the upper grate bar is spring-loaded relative to the genie body . [2]

The principle of operation of the device

The saw gin contains a working chamber 1 mounted on a suspension bolt 2 and including a grate 3, installed with their legs 4 and 5 on the upper and lower grate bars 6 and 7, forming a grate, a frontal curved bar 8, a front apron 9 with a seed comb 10, and placed in the chamber, a dusty cylinder 11. The latter is made in the form of a set of circular saws 12 fixed on a rotating horizontal shaft 12 and located between them, in alternating order, separating smooth disks 14,

installed with the possibility of passing in the gaps between the grates 3 of the grate into the working chamber 1 and between the saw pads 15, while the diameter of the smooth discs is less than the diameter of the circular saws 13. upper grate bar 6, spring-loaded by a spring 18 relative to the body 19 of the genie. The grates 3 with their lower and upper paws are attached respectively to the bars 6 and 7 by means of screws 20 with a countersunk head.

The essence of the article of the saw gin is illustrated by the figures, where figure 1 schematically shows a cross section of the gin; figure 2-section A-A in figure 1; figure 3-section B-B in figure 1; figure 4 - view B in figure 1; figure 5-grate, on a scale of 1:1; Fig.6-section D-D in Fig.5; Fig.7-section GG in Fig.5.

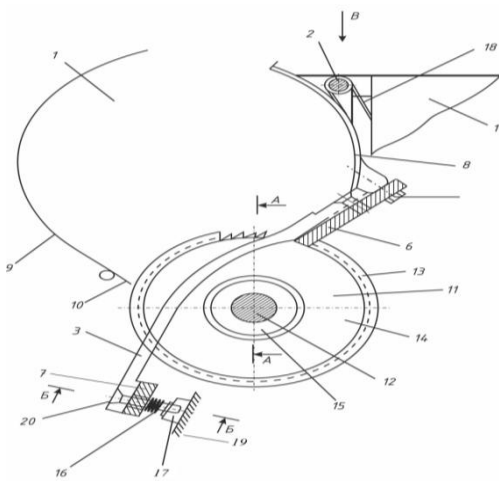


Fig 1.

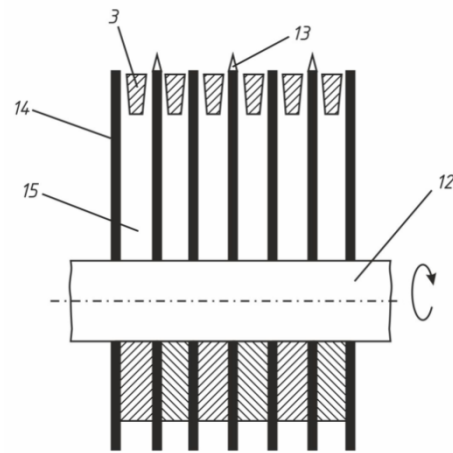


Fig 2.

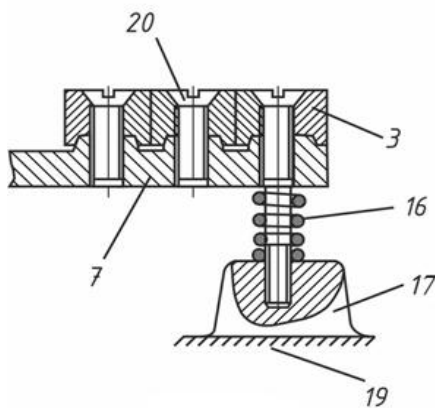


Fig 3.

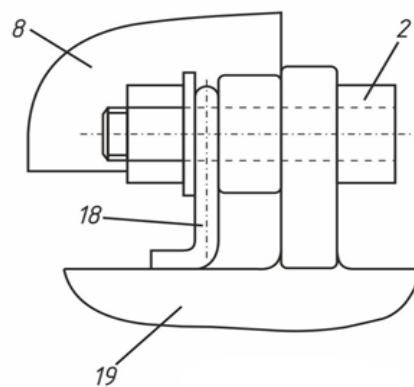


Fig 4.

Saw gin works like cotton. Raw cotton through the neck enters the working chamber 1, where it is ginned. The teeth of the rotating circular saws 13 grab the strands of raw cotton fiber, drag them through the crevices of the grate 3, tear them off, and direct them to the fiber removal zone.

Bare seeds, in the process of multiple processing in the raw roller zone, go down and are removed from the working chamber 1 through the seed comb 10 to the withdrawal vehicles.

In the process of ginning, the dusty cylinder 11 interacts with the raw roller, which evenly descends onto the surface of the grate, which, being spring-loaded by springs 16 and 18, slightly vibrates in the vertical plane and prevents the raw cotton from hanging in the area of the saw cylinder.

CONCLUSIONS

Thus, due to the presence of separating smooth disks 14 and a vibrating grate, the ginning process of low-grade raw cotton is stabilized.

REFERENCES

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