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COTTON SEED CARRIER SCREW CONVEYOR CONSTRUCTION IMPROVEMENT

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Abstract
Through this work, great attention is being paid to the creation of effective raw material processing technologies and equipment and their introduction into production. In this direction, it has been shown that the creation of adaptive automated systems for the implementation of raw material processing technology, the development of new methods and directions of processing technology, and the implementation of targeted scientific research are important tasks.

Keywords: Lint quality, seed husk, screw conveyor, fibrous waste, seed husk, linter.

Introduction

It is known that a modern cotton ginning enterprise has to undergo complex mechanization of the technological process of pre-treatment of cotton, using mechanical and pneumatic types of transport devices, all the transportation of cotton, fibers, fluff and seeds. will be in the form of a continuous technological process with maximum mechanization of operations. Screw conveyors have a special place in the technological process of cotton ginning enterprises, they are considered to be a highly efficient tool in the transportation and distribution of cleaning cotton to the batteries of the cleaning lines and the main technological machines to the gins and batteries.

They are also widely used in transporting cotton seeds from gins to linter batteries and distributing them among the linters, taking the seeds to the loading areas after lintering. A similar situation can be observed in foreign cotton ginning enterprises.

It is worth noting separately that screw conveyors also perform the main volume of work in removing waste from technological machines in cotton ginning production.

Usually, screw conveyors can be horizontal, vertical or inclined. The advantages of screw conveyors are simplicity of construction and uncomplicated maintenance, relatively small dimensions, ease of intermediate unloading, hermeticity, etc.

In screw conveyors, the load-carrying body is a closed shell, on which the material that is poured into it from one or more places slides. In this case, the material moves along the working surface of the rotating screw, whose axis is along the axis of the shell.

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Organizational parts of the screw conveyor are presented in Fig. 1.a. It consists of part 1, which carries the material to be transported, part 4, which ejects the material, and the shell 3, inside which the rotating screw 5 is placed. The screw shaft is supported by two end bearings and intermediate suspension bearings 2 . Conveyor drive includes electric motor 6, reducer 7 and two couplings 8.

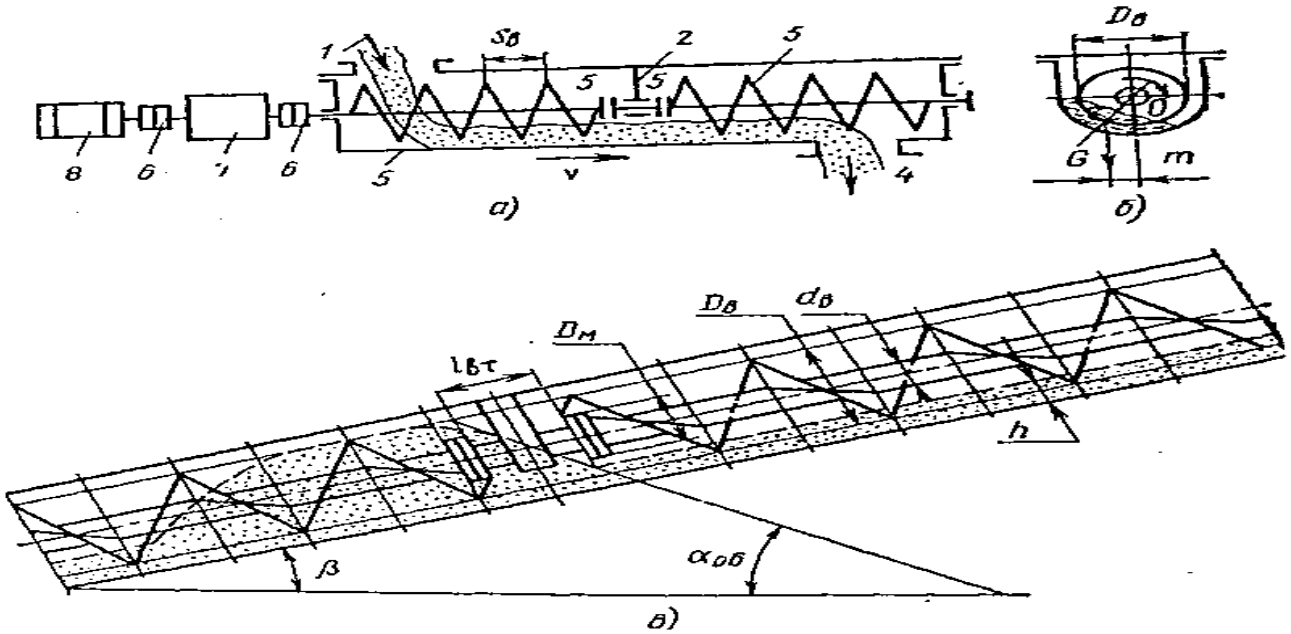

Figure 1. screw conveyor scheme

The shaft (Fig. 1.b), the load is affected by the screw forces. As a result, the center of gravity of the material shifts to the left. In this case, the torque of the weight of the load relative to the center O of the screw opposes the rotational movement of the load and the material moves along the axis of the conveyor in the same way as the nut moves along the screw.
Examples of the use of screw conveyors in the technological process of primary processing of cotton, as shown above, can be given a lot, and based on their analysis, the use of screw conveyors can be shown. That is, until recently, 6A-12M screw cleaners were used in cotton ginning enterprises for the purpose of cleaning, but now such cleaners can be found only in some cotton ginning enterprises. On the shafts of these machines, piles are installed along the screw line, which cleans the cotton due to impact-shaking effect.
Their main disadvantage is the increase in entanglement during cotton cleaning.

Summary

It can be concluded that it is recommended to combine the technological process of transporting cotton seeds on a screw conveyor with the technological process of cleaning it from waste in order to ensure the production of cotton wool with the required quality indicators.

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