NOVATEUR PUBLICATIONS
JournalNX- A Multidisciplinary Peer Reviewed Journal
ISSN No: 2581 - 4230
VOLUME 6, ISSUE 4, Apr. -2020

EFFECTIVE WAYS TO IMPROVE THE COTTON DRYING AND CLEANING PROCESS

SARIMSAKOV OLIMJON SHARIPJANOVICH
D. Sc., professor, Department of Initial Processing of Natural Fibers (Cotton), Namangan Engineering and Technological Institute, Namangan, Uzbekistan

KHAKIMOVA MAFTUNA YOQUBJON KIZI
Bachelor student, Department of Initial Processing of Natural Fibers (Cotton), Namangan Engineering and Technological Institute, Namangan, Uzbekistan

YUSUPOV ABROR KOZIBOY UGLI
Bachelor student, Department of Initial Processing of Natural Fibers (Cotton), Namangan Engineering and Technological Institute, Namangan, Uzbekistan

ABSTRACT:

This article examines the shortcomings of the existing ginning and drying equipment in ginneries. A new design of an improved device for cleaning and drying cottonseed from fine contaminants has been proposed.

KEYWORDS: Cotton, seed, cleaning, drying, efficiency, dirt, defects, scraper-guide, waste auger, mesh surface.

INTRODUCTION:

More on improving the techniques and technology of primary processing of cotton with high humidity and pollution around the world, especially machine-picked, to develop a theoretical basis for the process of cleaning cotton from small and large contaminants, to justify the parameters and operating modes of working parts and mechanisms [1-2].

Extensive theoretical and complex experimental research is being carried out to determine the optimal values of geometric and kinematic dimensions that ensure the ginning and cleaning of cotton. At the same time, to ensure the efficiency of cleaning cotton and maintaining the initial quality indicators of the product, including cotton

It is important to create mathematical models that allow to select the optimal modes of cleaning that do not adversely affect product quality and reduce strong impact effects on cotton ginning and cleaning from dirty impurities, development of soft mode cleaning technologies, creation of resource-efficient working bodies of cleaners.

Due to the uneven distribution of wet cotton inside the drum during the drying of raw cotton using existing drying drums in existing ginneries, the low level of moisture separation on its entire surface and the almost inability to remove contaminants from raw cotton adversely affects the continuity of subsequent technological processes.

Therefore, the introduction of the proposed new cotton drying and ginning machine in the ginning plant will increase the efficiency of the technological process of high-quality drying of wet cotton raw materials and the separation of contaminants.

The purpose of the proposed new cotton drying and cleaning device is to ensure the uninterrupted operation of the technological process by drying and cleaning cotton raw materials with high moisture content and pollution.

In addition to increasing the drying efficiency in the new proposed cotton drying and cleaning device, there is a mesh surface placed in several stages along the entire length of the dryer and a hot air transfer process under it in order to increase the efficiency and cleaning efficiency of the mesh surface. Due to the increase in the volume of the mesh surfaces, dusty air is expelled quickly and easily. As a result, a certain amount of cleaning efficiency is achieved. In addition, as a result of the movement of raw cotton on different surfaces, a high amount of cleaning is carried

out, and the separated impurities are discharged through a specially placed auger. The hot air transfer system is also supplied at the same rate between each mesh surface holes.

An important feature of this proposed device is that in addition to drying the wet cotton raw material, the useful surface of the net surface has been increased in order to remove impurities as a result of the movement of cotton on the mesh surface in the working chamber. In addition, in order to increase the work efficiency and cleaning efficiency, this drying cleaning process is carried out in two stages on the device itself.

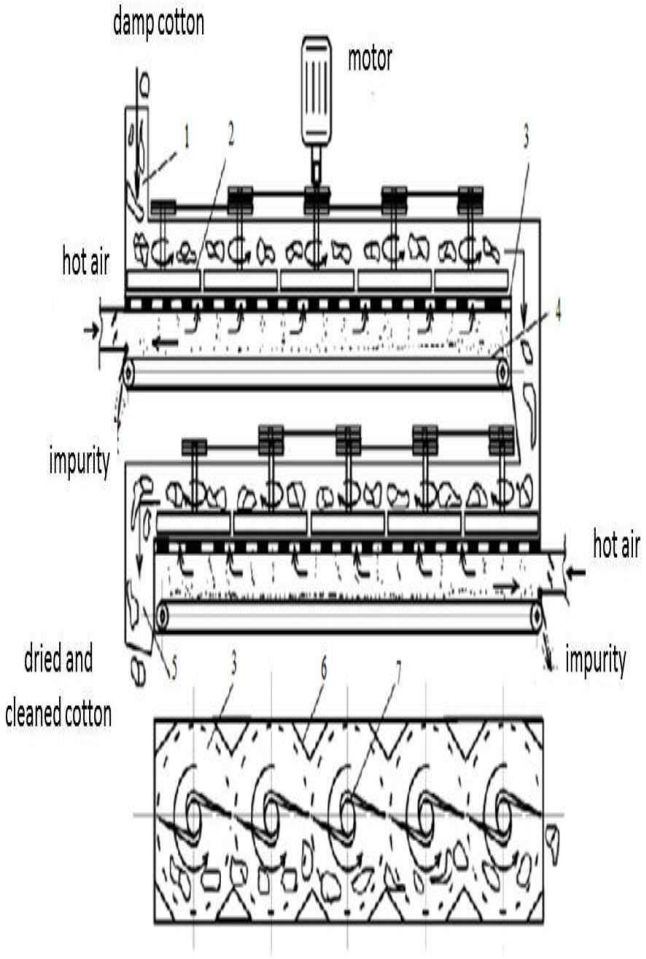

Figure 1. Cotton drying and cleaning machine
1 wet cotton inlet shaft, 2 nipple-guide, 3 mesh surface, 4 outlet screw, 5 outlet groove, 6 barrier guide, 7 nipple shaft.

The cotton drying and cleaning machine consists of the following working bodies: wet cotton inlet shaft 1, suction-guide 2, mesh surface 3, waste screw 4, outlet groove 5, barrier guide 6, suction shaft 7. It works as follows: it contains moisture and dirt the cotton raw material enters the inlet shaft (1) of the drying and cleaning machine by pneumatic transport. The cotton raw material moving along the mesh surface (3) through a system through the gin-guide (2) is cleaned of contaminants during the movement and at the same time the drying process is carried out as a result of hot air flow between the mesh surface holes. The separated contaminants are discharged through the waste screw (4). In addition, the raw cotton that has passed the first drying and cleaning process is distributed evenly along the surface of the net using a barrier-guide (6) and transferred to the drying and cleaning process located in the second lower part. During this process, the entire movement of the slider is fully ensured by means of the slider shaft (7). The dried and ginned cotton raw material is transferred to the next technological process through the outlet (5).

The main essence of this proposed dry cleaning machine is that the device is designed to solve the most pressing problems facing ginners. In this case, depending on the level of moisture and contamination, raw cotton undergoes both cleaning and drying technological process, ie in the process of drying and cleaning, which is carried out in several stages on the equipment. The meeting will take place in full. In this way, the proposed cotton drying and cleaning machine will improve the quality of fiber and fiber products from the ginnery and ensure that the products meet international standards, as well as reduce excess energy consumption and lead to economic growth.

CONCLUSION:

In the new design of the improved device for cleaning and drying of cotton seeds, which can be used instead of the existing cotton ginning and drying equipment in ginneries, cotton does not spin during ginning, and various knots are not formed in the fiber.

At the same time drying is effective and energy consumption is achieved. If the proposed cleaning machines are introduced into production, the production efficiency of the enterprise will increase, the cleaning and drying process will be accelerated, and defects will be reduced.

REFERENCES:

1) Jabborov G.J. and others. The technology of initial processing of raw cotton. // T: Teacher, 1987.
2) FB Omonov "Handbook of primary processing of cotton", Tashkent, "Voris" publishing house, 2008.