

IMPROVEMENT OF THE COTTON DRYING DEVISE

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Annotation: The new drying drum design has triangular scoops and angled grooves to ensure that portions A and B of the raw cotton are dried continuously.

Keywords: cotton, seeds, drum, working chamber, shovels,, tape, hot air, steel sheet, auger, triangular shovels, corner ditches, separator, stove, stone holder.

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SBO, SBT and 2SB-10 drying drums are used in cotton gins. 2SB-10 drying drum structure: The 2SB-10 dryer is equipped with lifting shovels, a drum, and direct flow, and it has a considerably higher moisture content and work efficiency than other dryers. The bevel screw feeder comprises of a drum mounted on a steel roller hinged to the front hollow shaft, as well as four nuts. An auger is used to insert the cotton into the dryer. Inside the shell is where the drying drum is located. The dried cotton comes out of the hole through the radius shovels inside the drum and falls into the auger. Through the tube, the utilized drying agent escapes.

The drying agent partially stops the spilled cotton from pouring into the surrounding air as it travels through the tube, and the cotton is pushed forward in the air stream. A reducer rotates the drum shaft in relation to the electric motor. Because there is no fear of scorching the fibers and seeds, the temperature of the drying chemical can be adjusted to 280 ° C in this dryer. When wet cotton is dried in this dryer, the temperature of the drying agent reduces from 280 to 125 degrees Celsius in the first 4 meters of the drum, where the cotton is primarily heated and moisture in the fiber with a large heating surface (250 m / kg) evaporates. In the next part of the drum, the temperature of the drying agent decreases to 70-80 ° C and the evaporation surface of the seed.

Working productivity is 8000-10000 kg / h. The wetting capacity is 600 kg /h. The temperature of the drying agent is 250-280°C at the dryer's inlet and 60°C at the dryer's exit. The diameter of the drum is 3200 mm. The diameter of the drum is 10000 mm. The drum rotates at a rate of 10 revolutions per minute. The electric motor has a power of 13 kW. 730 rpm rotation frequency The mass of the dryer is 10268 kg. Steel sheet with a thickness of 5 mm is used to cover it.

The first drum above has the wet cotton supply mark, and the shaft is fastened on. The drying agent (air heated to 250 degrees Celsius) enters the first drum and mixes with the cotton. Some cotton is flung to the top of the drum as the blades rotate, and some moisture is lost by mingling with the hot air.

MAIN PART.

The drying drum's main drawbacks are that it's on the inside, the paddles don't adequately shake the seed cotton, and it doesn't dry well in modern production. Increasing the drying temperature during the drying process will not improve the efficiency of seed cotton. If the cotton is divided into two pieces, A and B dry part A thoroughly, while part B dries it slowly. Seed cotton moisture content should be 8-9 percent during production. The humidity often exceeds these levels, which has a severe negative impact on the manufacturing process. Blades, rotation speed, and grooves are all important in the case of 2SB-10The paddles are positioned in a slanted position and have operated in the same manner when it was still manufactured. This is becoming one of the most serious flaws in cotton mills and businesses. The drying drum is responsible for ensuring the thickness of the paddles, the integrity of the grooves, as well as the location and structure of the seed cotton. One of the most critical challenges is effective drying.

There are 12 paddles proposed, and they are triangular in design. The triangle's inner surface is empty. Its inner gutters are angular in shape and are meant to facilitate the movement of cotton from one process to the next. The triangular shape of the paddles is intended to protect the seed cotton and reduce fiber tangling. Furthermore, there is a different rotating scheme on the inside of this drying drum, which causes the cotton to grind and dry well when crushed. The goal of establishing these schemes is

to improve cotton drying and subsequent processing. The paddles' triangle design guarantees that the collected seed cotton is thoroughly ground and that parts A and B are continuously dried. The inside surface is also angled at 150 degrees, allowing the cotton seed to exit the drum swiftly.

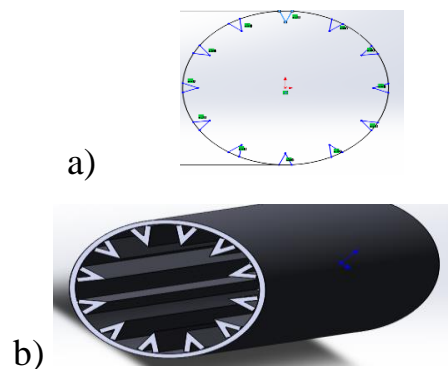


Figure 2.

Sketch of the proposed drying drum. Appearances of triangular blades of drying drum.

CONCLUSION.

Such methods are necessary for increasing the drying efficiency of seed cotton. Additional internal rotation is provided depending on the angular shape of the inner surface of the triangle paddles and the rotation system, which completely separates the two portions of the cotton and increases the drying of part A and B. In order to improve the drying efficiency of the drying drum, it aids in the resolution of faults and issues in the yarn fabric production process, which improves seed, fiber, and down cleaning, fiber birth, and seed cotton cleaning.

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