DECREASE PRODUCTION COSTS IN A COTTON SPINNING MILL BY AGGREGATISATION MACHINES

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ABSTRACT: In the cotton spinning mill was reached that stage, fully automatic spinning cotton and aggregatisation, the desired stage of any textile equipment manufacturer or any economic agent yarn manufacturer. Italian manufacturer succeeded Marzoli that all processes are aggregatisation and servicing is done only through two operators: one that supplies the technological and the second carrying products produced, packaged by a means of transport for delivery to by a truck. Production costs are all the costs of producing goods or services, in our case, production of cotton yarn or cotton blended chemical fiber.Production costs with productivity and profitability, quality and efficiency of economic activity characterized. The values of these indicators should be tracked and analyzed continuously as directly affects the selling price and profit. By aggregatisation machinery in spinning cotton mill is greatly reduced service times of the machines and eliminate human intervention with positive implications on both the production costs and the quality blanks and yarn. In this work we present some elements of aggregatisation that made possible the operation of all processes on a general aggregate.

KEY WORDS: cotton, cost, machines.

1.INTRODUCTION

Cotton and cotton-type chemical fiber spinning are received in the form of bales sizes and densities dependent on the source, type and nature of fibers. The fiber material, in blow room is subjected to the following operations:

- Blending form of balls, starting directly from the manual or automatic mixing piles and car bodies made directly;
- Division fiber material, which is reducing its mass by the action of working bodies;
- Cleaning, the fiber material is cleaned by removing a large percentage of impurities as weaker adhesion to fibers;
- Formation of a continuous layer and uniform density of predetermined length balls that are wrapped in a scroll when it ends blow room drive beaters, or fed directly to the card, if aggregatisation blow room with cards. By aggregatisation machinery in spinning cotton mill is greatly reduced service times of the machines and eliminate human intervention with positive implications on both the production costs and the quality blanks and yarn.

In this work we present some elements of aggregatisation that made possible the operation of all processes on a general aggregate.

2.AGGREGATE BLOW ROOM

BLENDOMAT-BDT system covers the full range of needs and has the following advantages:

- Provides fine-sparing absolute dissolution of the fibers and decrease the tendency of neps;
- High production;
- Order Microcomputed providing easy data management and special equipment reliability.

BLENDOMAT-BDT 019 characterized by flexibility, adapt their speed to the conditions of the production work, max. 1500 kg/h, the collection fibers can be

simultaneously on both sides or on only one area. In all cases a work area remains accessible so as to be able to put a new reserve bales. A working width of 1720 mm and a length of 50 m allows placement of bales 130 which provides an operator-free operation for 72 hours of a production line for cleaning of 550 kg / h.

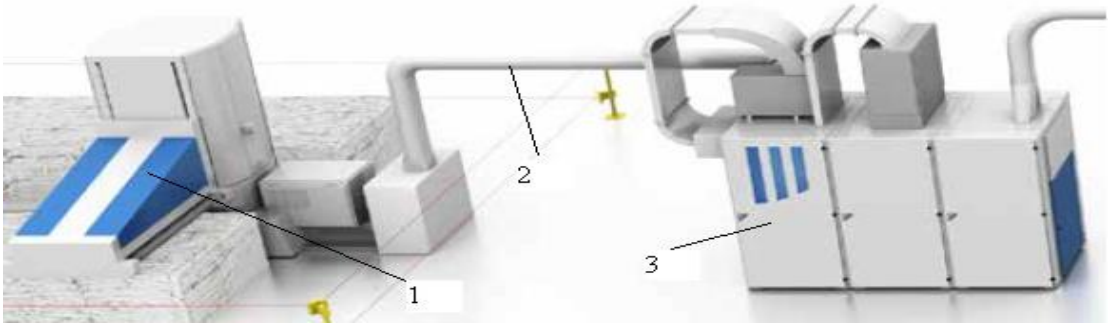

Fig.1. Aggregate Automatic bale opener – Multi function separator

In fig. 1 shows the aggregate feeder unit, 1, the connecting 2, and installation of special multipurpose dusting and cleaning 3. BLENDOMAT ensure the sampling in three dimensions and allows the operation of the principle of infinite batch the mixture is not only between but also between layers bales same bundle.

BLENDCOMANDER with your display, ensure steering and monitoring sampling cycle.

The latest generation BLENDOMAT BDT 020 is a good choice for a long period of processing a large amount of cotton.

Feed new balls supply can be either manually or using a forklift truck, or automatically by preparation station Bale, SV, which ensures the cutting and removal of container connections.

Sampling is done on the diagonal, the mixture is two-dimensional. This process allows the last balls while the first fiber bundle are taken, the first balls of the last bale starting to be feed into the machine and placed in the mix.

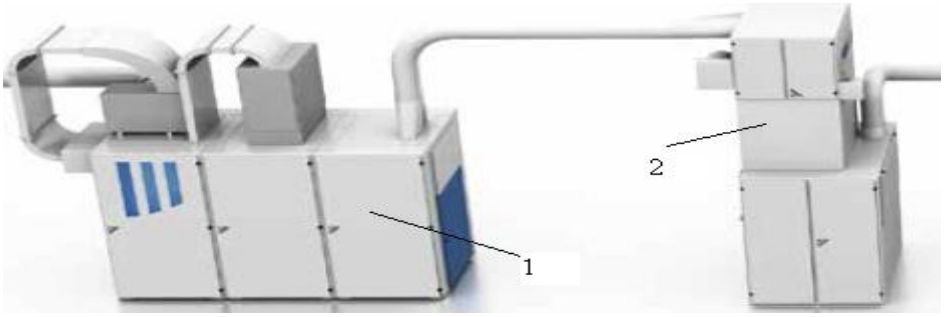

Fig.2. Aggregate Multi function separator – Pre cleaner

In fig. 2 shows the aggregate installation of special multipurpose dusting and cleaning,1 and a unit Pre cleaner, 2. Trutzschler Company produces one of the most effective systems for cleaning. It is composed of three sections:

- compartment fire detection and removal of;
- section for detecting separation and removal of metal objects;
- section for separating heavy particles of fibrous material;

During sampling, along the diagonal, not only to obtain a mixture of fibers that originate from several balls arranged side by side, but also a mixture of the different layers of balls.

The fiber material from the top of a ball of mixed layers in the middle of a ball and fiber material the residual layer of a third bundle.

The principle of operation of the machine ensures optimal mixing by collecting the same amount of fiber.

The plant is designed to process continuous ball.

Both supply a new group and are finishing a game automatically.

After positioning balls and start installation diagonal occurs during several passages.

Only when working diagonal formed about 4-10º system starts working in normal (continuous sampling go - come).

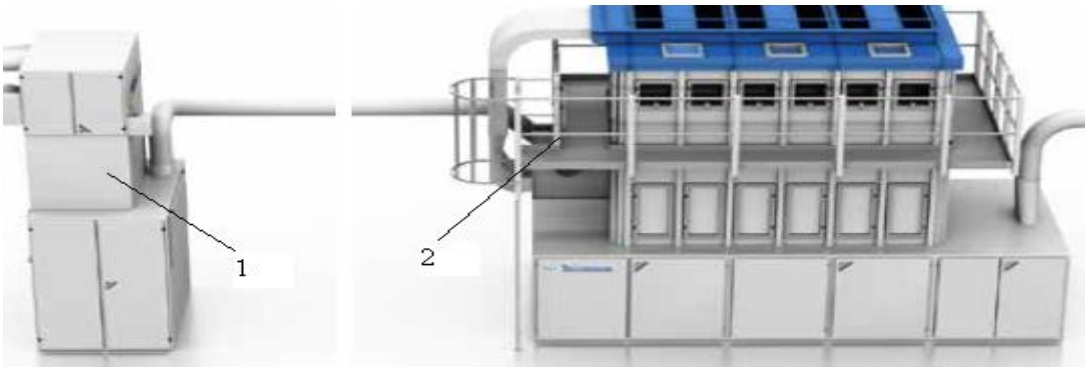

Fig.3. Aggregate Pre cleaner – Universal mixer MPM 6

In fig.3 shows the aggregate pre cleaner, 1, and universal mixer MPM 6, 2. So, before mixing unit is a very efficient machine for cleaning. Cleaners can be of several types depending on the raw material used. They are recommended for medium or lower cotton processing with high content of impurities as it provides a thorough cleaning without intense stress fibers. Universal mixer has a number of 6-10 compartments in which the fibrous material is deposited in a controlled and continuous and sewer ensure the formation of layers after which the fibrous material is conveyed pneumatically to the next car. This processing unit is used with very good results for mixtures of synthetic staple fiber or synthetic fibers together.

The basic settings relate to timing of opening and closing the valves at the top of the cell and speeds cylinders collapse

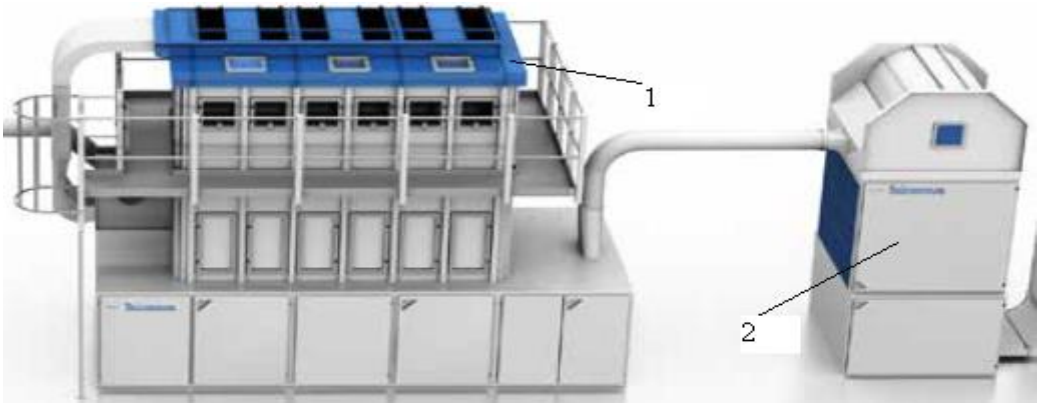

Fig.4. Aggregate Universal mixer MPM 6 – Cleaner Cleanomat

In fig.4 shows the aggregate universal mixer MPM, 1, and the cleaner Cleanomat, 2. So, after mixing unit is a very efficient machine for cleaning and opening.

In the aggregate blow room, openers make an action flick of the fibrous material bound state. These are located after the stage, in step, or the axial cleaning. They are equipped with striking

bodies that ensure a high degree of dissolution and removal of a large percentage of impurities, due to a more intense action on the fibrous material.

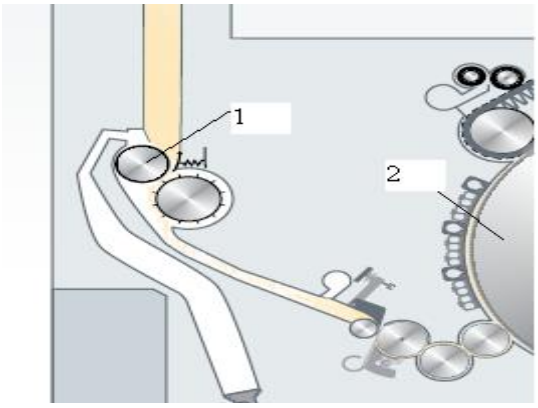

Fig.5. Aggregate Blow room – card

At the end of aggregate blow room is a hopper of staples. In figure 5 this bunker is denoted by 1, and the card that is supplied is denoted by 2. So, blow room can delivery fibrous material directly to the card, up to 10 cards, by coupling them with automatic transmission and pneumatic systems that works in synchronized with cards.

3. CONCLUSIONS

A line of blow room, usually, contains two machines for opening and cleaning, 4-5 openers bales and a number of openers which depends on the nature and quality of raw material processed. For superior, higher cotton it use 3- 4 points of impact, for the average cotton 4-5 points of impact, and the lower cotton 5- 6 points of impact.

When working with higher cotton should ensure the possibility of bypassing the at least two points of impact in order to prevent degradation of the fibers.

Any line of blow room starts with a bales openers group, or a power plant directly to the bales and ends with two beaters machine or a group of 6 to 8 feeders with balls of staples. Between these machines will be installed machines that perform cleaning and dissolution. Is mounted cleaners to achieve dissolution in the free state, followed by opener machines, which break will be carried out in the state held.

So, first, break in the free state is achieved, when you remove most of the impurities, followed by dissolution in a state held.

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