

IMPROVING THE QUALITY YARNS BY AUTOMATISATION MACHINES

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ABSTRACT: Development of production of goods and services and society in general was decisively influenced by the industrial revolution and scientific- technical revolution. The latter is characterized by automation in almost all fields and the computerization of the full human society. The automation is aimed : increased productivity , reduced specific consumption (raw materials , materials , fuel and energy), ensuring precision execution, increased operational safety, protect facilities , removing the human operator from hazardous environments, not least, releasing its direct participation in the production of goods and services. Reducing physical labor man participates directly in the production process leading, ordering and overseeing installations. In this work we present some elements of automation implemented in cotton spinning mill machinery .

KEY WORDS: automation, solutions,

1.INTRODUCTION

Long time cotton fiber was the most important raw material for the textile industry in terms of production volume, so that in 1970, more than half of all textiles are made from cotton fibers.

Due to population growth and increasing living standards, world production of textile fibers became, in 1970, about 21 million tons, compared to about 3.9 million tons as it was in 1900, and for 2020 will be cotton Processing cotton and cotton type fibers impose the following conditions:

- - appropriate choice of materials according to the destination will be made textile products;
- - optimization of process parameters for all machines in the stream;
- - continuous control of processing.

Growing demands on the characteristics and quality of textile products have imposed changes in technology and the construction of

machines that led to increased productivity and economic efficiency.

In this paper we address the main directions for automatisaton cotton spinning machinery of the preparation it will consider issues related to cards.

2.MODERNIZATION CARDS

Directions on Cards upgrades is to improve the quality and flexibility of their production [2].

Among the features of the new generation of the cards reads: generalization power systems cards with balls and their improvement, ensuring a uniform flow of raw materials, increased carding and cleaning operation using various constructive solutions for additional carding fiber, which is important having the trend of reducing the number of points of cleaning in blending-opening-cleaning line.

Also: extension points absorption of dust to ensure environmental considerations;

quality carding operation and the possibility of connection to a central system;
 equipment the self cards devices fineness tape imposed by shortening the technological process; generalization of the introduction of electronic systems of machine working parameters and carding process coordination, with bunkers linked to power and subsequent transport cups to

the drawing frame, mounting on - line of devices that will be control of production (Dynagraph HGM).

The above statements are supported by bibliographic information [10,9,7,11]: automatically adjust the feed rate to reduce irregularity sliver performed (Correctafeed-ICFD Cardcommander system);

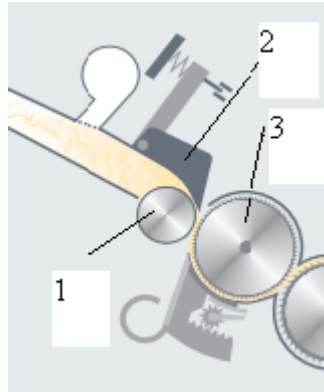


Fig.1. Correctafeed – ICFD – Cardcommander system

ICFD CORRECTAFEED system is self-regulating system that is used when the tape is required fineness variation strictly within certain limits. The thickness of the fibrous material is continuously controlled in the input, then is sent to Cardcommander that changes speed and speed rating of the blanket cylinder power supplied, if the

differences between the nominal thickness of the blanket fueled against actual thickness. Fibrous feed roller passes over one and laminated by 3 cylinder. Blanket thickness is permanently controlled device 2 and any modification will change the speed control power strip so made to be more uniform.

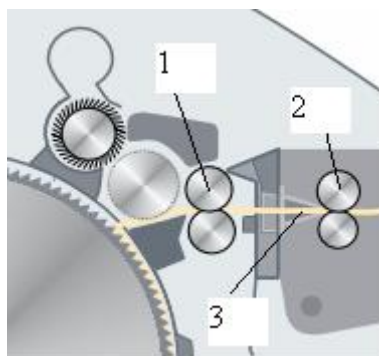


Fig.2. Correctacard CCD – system

If Correctafeed system is almost instantaneous reaction system. Any deviation of the thickness of the fibrous material immediately determine a change

in working arrangements so that card is supplied with quantities of fiber as constant unit of time.

In fig 2 tuning system is presented Correctacard long portion. Fibrous material is removed from the cylinder, with a removable cylinder.

The web is formed over the cylinders calendering note 1 and converted into tape by means of condensation WEBSPEED system, denoted by 2.

Condensing funnel may vary, the occurrence of thicker sections or

attenuated by the presence of a helical tension spring.

Oscillations occur when the condensation funnel smoothness enter a band different from nominal fineness.

Lever oscillations due to finite differences of the band cause changes an electrical signal which will give a command to a controller to change the speed of the card feeder roller. In this way the machine will be supplied with a flow of material as constant.

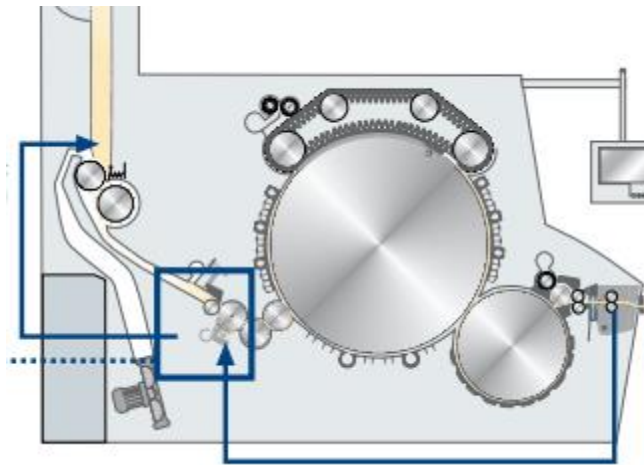


Fig.3. Block diagram of the feedback system

To better understand the function card systems self, in figure 3 presents the block diagram for the transmission of orders both self-regulating system Correctafeed short portion, and a CFD system self piecewise Correctacard long, CCD.

3. CONCLUSIONS

Following analyzes technical characteristics of equipment made by major manufacturers of textile machines we conclude that there have been significant advances in the following areas:

- For blending-opening-cleaning unit have pointed out the increase in production, achieving advanced opening of fibers combined with careful treatment, process automation using

computers and generalization aggregating blow room with cards;

- Some features of the new generation of the card reads: generalization power systems cards with balls and their improvement, ensuring a uniform flow of raw materials, increased carding and cleaning operation using various constructive solutions for additional carding fiber, which is important given the trend towards reducing the number of points of cleaning in blending – opening – cleaning line;

- Extension points of absorption of dust and lint to ensure environmental considerations, quality carding operation and the possibility of connection to a central system, equipped with devices for self carding sliver of fineness required by shortening the technological process; widespread introduction of electronic tracking working parameters of the

machine and carding process coordination, linked to power through bunkers and subsequent transport to the draw frame pots;

- Progress in the construction of draw frames are characterized by the following guidelines and trends: increasing delivery speeds, strict control of rolling trains rolling, changing the geometry of submission of bands in cups

for the development of high speed work agregatizarea mills with cards and other passages draw frames.

All these aspects have led to obtaining products and semi-finished quality, increase productivity, reduce maintenance operators, reducing energy consumption, reducing production areas, etc.

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