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| Research Article

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Positive Results of Operation of the Main Parts of the Mixer "Monapparat" in a New Production Construction

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Abstract: In devices with a longitudinal-radial medium, the components of the mixture move along the axis of the device body from the loading point to the unloading point using a working element (auger, belt, spiral, inclined blades, etc.). Mixers of this group have good grinding capacity, so they can be equipped with medium-precision dispensers. In "Diffusion S." devices, particles of one component are gradually introduced between particles of other components; from the outside, the process looks like pierce diffusion. Mixers of this group are drum mixers with a smooth body, a vibrating tube and a liquid layer of the mixed material. They are used to clean abrasive, explosive and other bulk materials.

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The grinding capacity of the device is determined by the volume of the mixture in it and the nature of the movement of the mixed mass.

In the pictures provided, the insertion of various types of parts into the design of the equipment considered suitable for processing textile waste increased its productivity and product quality indicators. Below is an analysis of the practical results reflecting the research into the reconstruction of the main parts of the new design mixer "MONAPPARAT" and the positive results.

That is, Fig. 4.11. Volumetric mixers: with A-Z-shaped blades; with B-Z-shaped blades and an unloading screw; plow, pneumatic nozzle, drum.

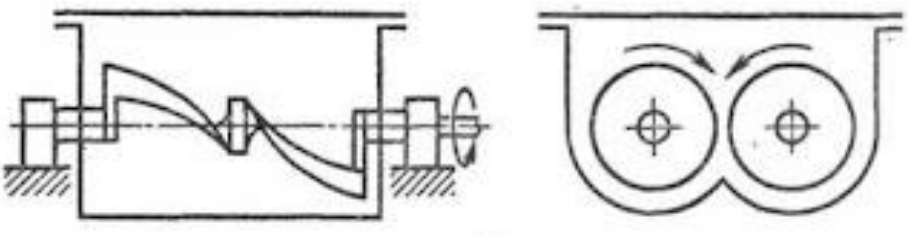
In "Diffusion" devices, particles of one component are gradually introduced between particles of other components; from the outside, the process looks like a pier. diffusion. Mixers of this group are drum mixers with a smooth body, a vibrating tube and a liquid layer of the mixed material. They are used to clean abrasive, explosive and other bulk materials.

In continuous-action devices. The homogeneity of the finished mixture depends on the accuracy of the dispensers. Therefore, mixers should not only ensure high-quality product of the components included in it, but also reduce (smooth out) fluctuations in the instantaneous flow rate of the supply currents to the required level. The grinding capacity of the device is determined by

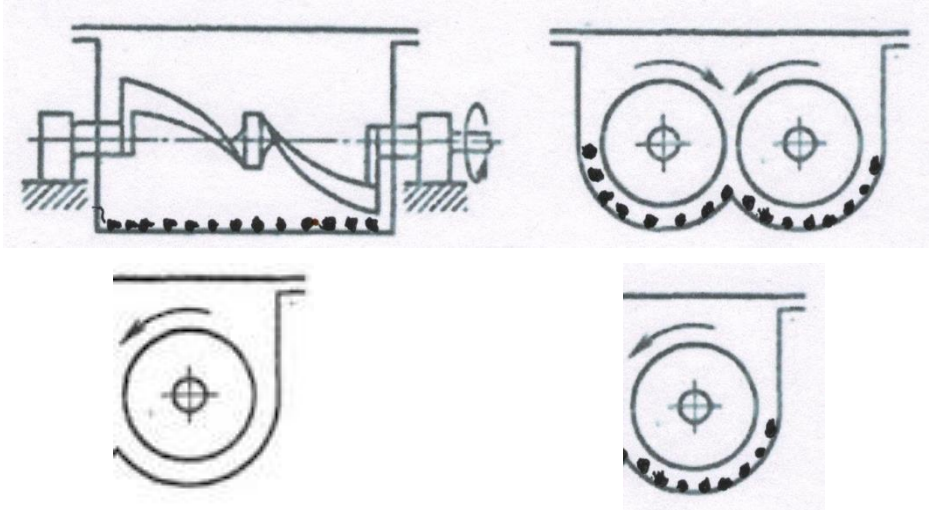
the volume of the mixture in it and the nature of the movement of the mixed mass. In direct-flow devices, the mixed material with its intensive radial mixer moves along the body almost without longitudinal particles mixer. These mixers have a low leveling capacity, are equipped with high-precision feeders and are used for mixing. materials. low degree of particle adhesion. In a rack device, mixed components are poured from top to bottom along inclined shelves due to gravity. power mixes in a centrifuge. element (up to 5 in total) consists of a rotating hollow cone and a funnel fixed on a drive shaft, the edges of which are rigidly attached to the body of the device. Mixed components enter the cone above. element, from where they are thrown inward under the action of centrifugal forces. surface of the funnel. Along it they move to the main element, where the process is repeated.

Any of these batch mixers can be used as a constant-volume device. actions with the organization of a continuous supply of components to it and the selection of the finished mixture. Often, to improve the homogeneity of the mixture, such mixers consist of two periodically connected devices. Mixers of this group differ the most. high leveling capacity, which allows separating low-precision nutrients and even loaded materials, and is also used to prepare homogeneous mixtures with high particle cohesion, as well as wet ones.

In devices with a longitudinal-radial medium, the components of the mixture move along the axis of the device body from the loading point to the unloading point using a working element (auger, belt, spiral, inclined blades, etc.). Mixers of this group have good grinding capacity, so they can be equipped with medium-precision dispensers. In "Diffusion S." devices, particles of one component are gradually introduced between the particles of other components; from the outside, the process looks like a pier. diffusion. Mixers of this group are drum mixers with a smooth body, a vibrating tube and a liquid layer of the mixed material. They are used to clean abrasive, explosive and other bulk materials. The grinding capacity of the device is determined by the volume of the mixture in it and the nature of the movement of the mixed mass.



Drawing 4.11.



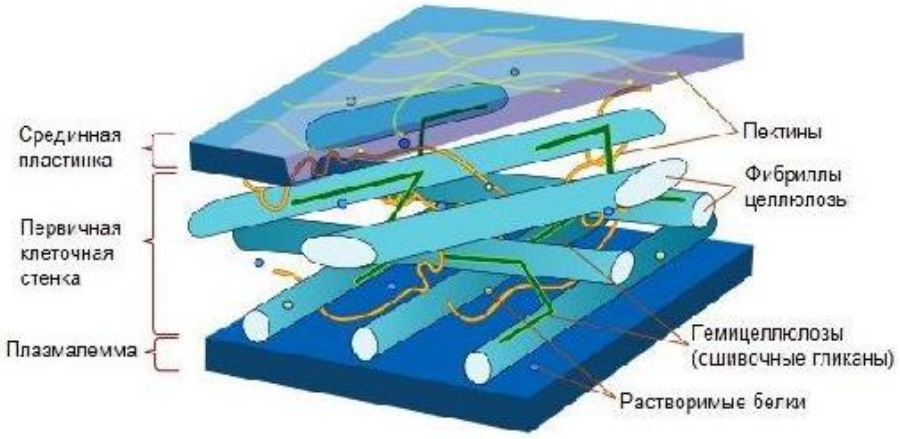
Drawing 4.12.

In the above pictures, the insertion of various types of parts into the design of equipment considered suitable for processing textile waste has increased its productivity and product quality indicators. The figure below shows natural cellulose fibers. During the research period, in the process of mechanical processing of these textile wastes, when determining the main parameters, dismantling and reconstruction of the working parts of the equipment allowed increasing the profitability of production several times.

A complex carbohydrate from the group of polysaccharides, which is part of the cell wall of plants, is called cellulose or fiber.

Despite the common features, cellulose differs from another plant polysaccharide - starch. The cellulose molecule is a long, exclusively unbranched chain of saccharides. Unlike starch, which consists of α-glucose residues, it includes many β-glucose residues linked together.

LOCATION OF CELLULOSE AND OTHER POLYSACCHARIDES IN THE PLANT CELL WALL



Due to the dense linear structure of the molecule, fibers are formed.

In industrial conditions, cellulose is boiled from wood (chips). For this, acidic or alkaline reagents are used. For example, sodium hydrosulfite, sodium hydroxyl, lye.

As a result of boiling, cellulose with an admixture of organic compounds is formed. To purify it, an alkali solution is used.

Physical properties

Fiber is a tasteless solid fibrous substance of white color. Cellulose is poorly soluble in water and organic solvents. It dissolves in Schweitzer's reagent - an ammonia solution of copper (II) hydroxyl.

Main physical properties:

- ✓ decomposes at 200 ° C;
- ✓ burns at 275 ° C;
- ✓ spontaneously ignites at 420 ° C;
- ✓ melts at 467 ° C.

Chemical properties

Due to the presence of three hydroxyl groups in one saccharide, cellulose exhibits the properties of polyhydric alcohols and is capable of entering into esterification reactions to form esters. When decomposed without oxygen, it decomposes into charcoal, water, and volatile organic compounds.

Cellulose or cellulose is a polymer from the class of carbohydrates, consisting of β-glucose residues. It is part of plant cell walls. This is a white, tasteless substance that forms fibers that are poorly soluble in water and organic solvents. Cellulose is isolated from wood by cooking. The compound enters into esterification and hydrolysis reactions and is capable of decomposing in the absence of air. When completely decomposed, it forms water and carbon dioxide.

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