

DEVICES FOR UNIFORM DISTRIBUTION OF AIR FLOW IN THE TUNEL DRYER

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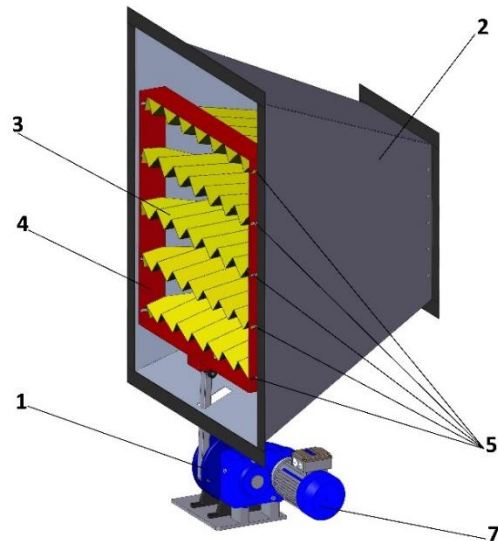
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Introduction. The mechanism refers to drying technique, particularly to devices for uniform distribution of the air flow in the tunnel dryer, and can be used in small farms to dry fruits, vegetables, etc.

Material and methods. To streamline the uniform distribution of air, a device has been designed. In the design process, the 2D method was used with the application of the **AutoCad** software version 2016 and the 3D method with the application of the **Solidworks** software version 2018. The design calculations were performed in the **MathCad** software version 2016.

Results. Using the results of the design calculations, a device was built for the uniform distribution of air flow in the tunnel dryer, which consists of: connecting rod-crank mechanism 1, which transmits the oscillating movements of the movable metal frame 4 mounted in the body 2 of the air flow passage, in which are installed the blown blades 3, fixedly mounted with one end on a fixed metal frame 6, and with the other end moving synchronously vertically by means of the movable metal frame 4, coupled to it by means of cylindrical couplings 5. The blown blades 3 are of identical shape and different sizes. The connecting rod-crank mechanism is driven by a gear motor 7.



Conclusions. 1. Uniform distribution of air in the cross section of the drying chamber was ensured; 2. It was ensured the adjustment of the uniformity of the distribution according to the speed of the air passing between the profiled panels using their oscillating movement.

Keywords: *drying technique, tunel dryer, air flow.*

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