



# Universitatea Tehnică a Moldovei

## Bălan Mihail




a XXII-a editie

Salonul Internațional al Cercetării Științifice, Inovării și Inventicii



UNIVERSITATEA TEHNICĂ  
DIN CLUJ-NAPOCA

# PRO INVENT



UNIVERSITATEA TEHNICĂ  
A MOLDOVEI

## DEVICE FOR UNIFORM AIR DISTRIBUTION IN A TUNNEL DRYER

BALAN Mihail; ȚILINSKAIA Natalia; STURZA Rodica; POPESCU Victor; BALAN Tatiana; ȘENILĂ Lacrimioara-Ramona; JIAN Mariana; MELENCIUC Mihail; VIȘANU Vitali; GIDEI Igor; GUȚU Marin

**Purpose:**

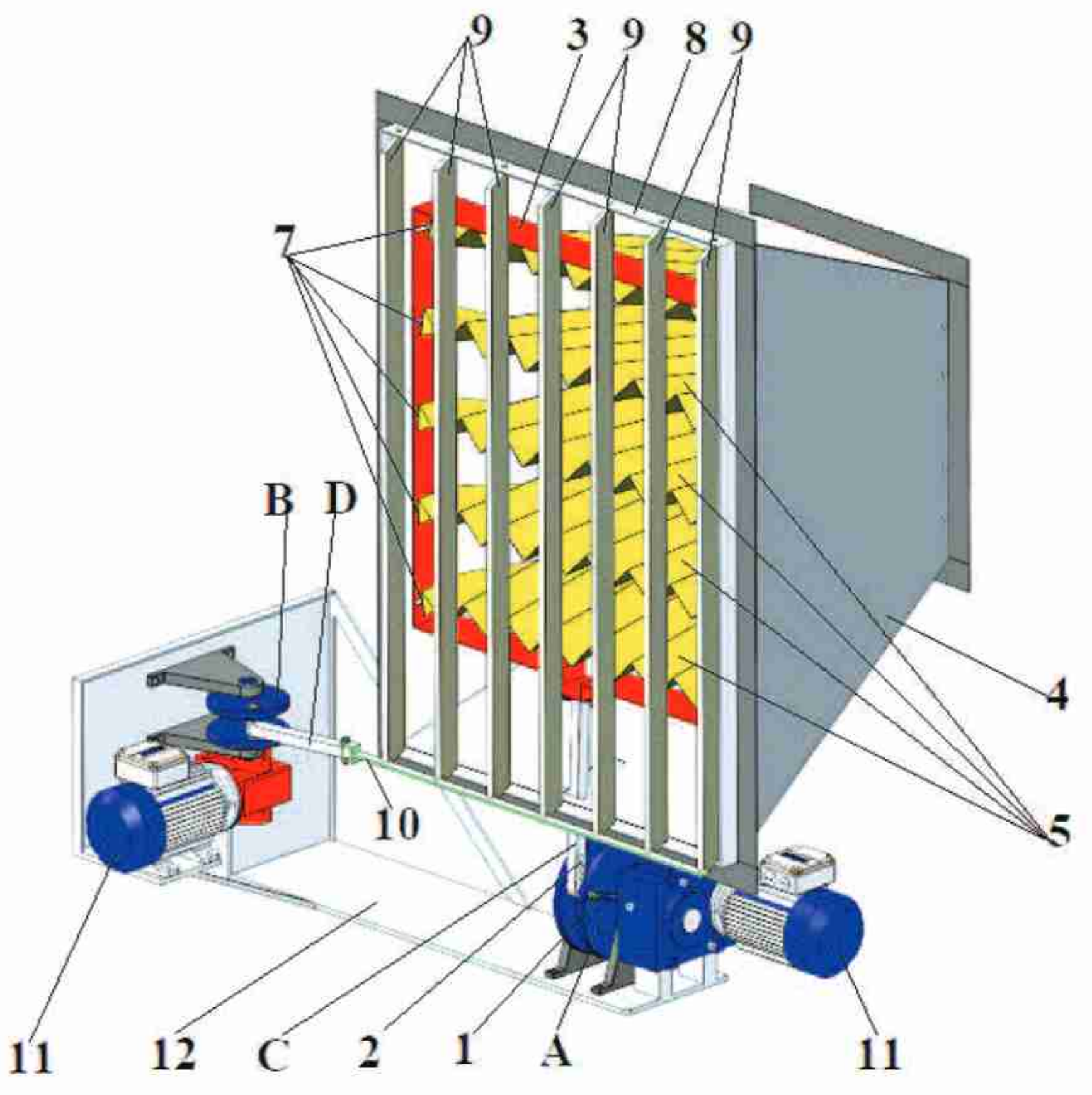
The purpose of the invention is to ensure uniform air distribution in the cross-section of the drying chamber, both horizontally and vertically. This provides the possibility of ensuring uniform distribution of the drying agent (air) throughout the entire section of the drying chamber of the installation, thus increasing the efficiency of the dehydration process by reducing energy consumption and increasing the quality of the finished product.

**Advantages:**

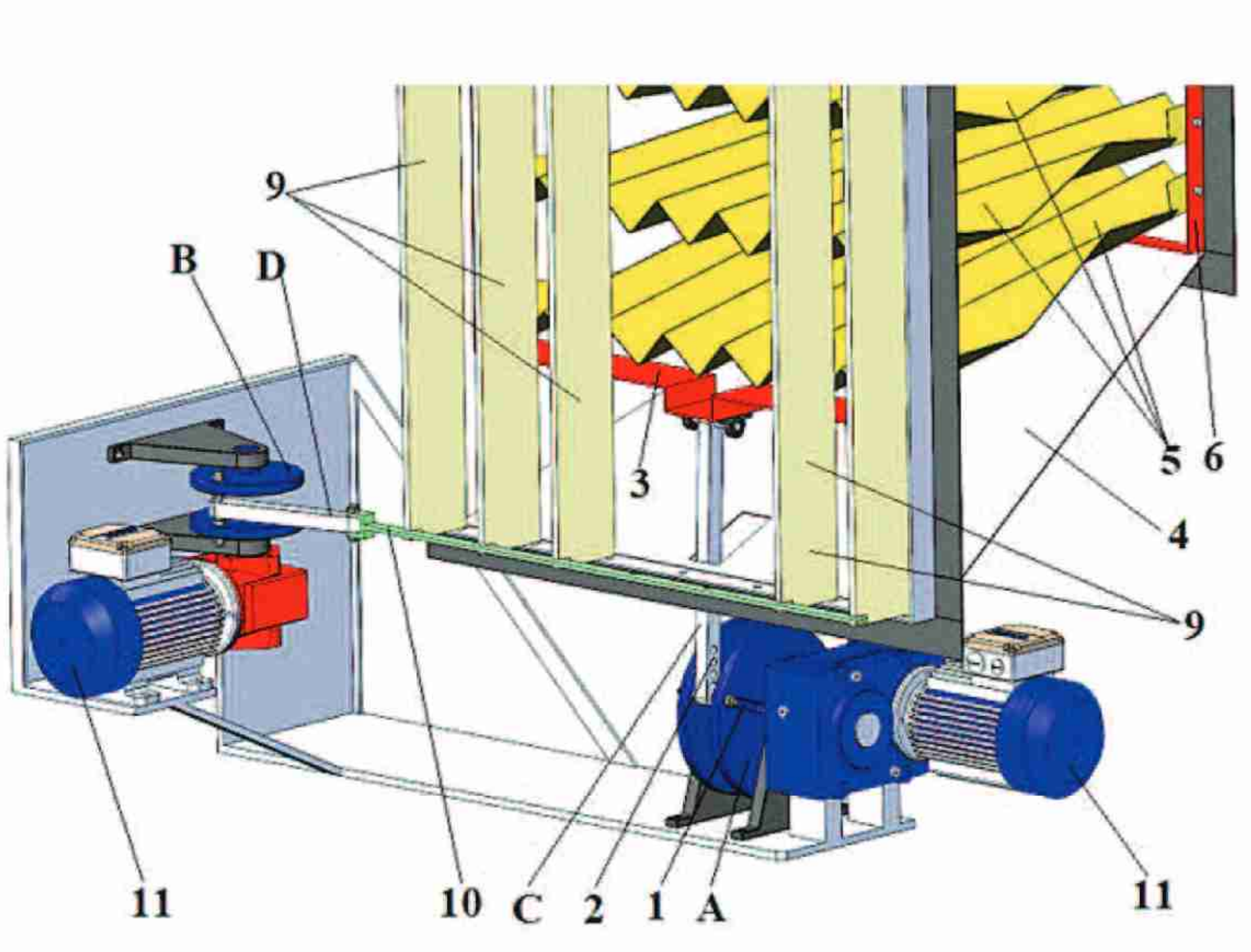
- Simple construction;
- Non-wastes technology application;
- Possibility of quick and easy modules interchange;
- Increase the quality and quantity of treated product.

**Description of the invention**

The efficiency of air distribution in the drying plant is achieved through the oscillatory movement of the blades in the horizontal and vertical planes.




General view in 3D




Local view in 3D

The device for uniform air distribution in a tunnel dryer consists of: two cranks A and B, and two connecting rods C and D. Crank A and connecting rod C transmit the oscillatory movements of the mobile metal frame 3 mounted in the body 4 for passing the air flow, in which the fluted blades 5 are installed, fixedly mounted with one end on a fixed metal frame 6, and with the other end moving synchronously vertically with the help of the mobile metal frame 3, coupled to it by means of cylindrical couplings 7. On the perimeter of the large section of the body 4, a quadrangular metal plate 8 is mounted, in which flat blades 9 are movably articulated in a vertical position, the opposite end of which is movably articulated with the spacer plate 10, which is set in motion by the crank B and the connecting rod D.




UNIVERSITATEA TEHNICĂ  
A MOLDOVEI

Departamentul „Inginerie Mecanică”  
Tel: (+373 22) 50-99-27, e-mail: mihail.balan@pmi.utm.md




a XXII-a editie

Salonul Internațional al Cercetării Științifice, Inovării și Inventicii



UNIVERSITATEA TEHNICĂ  
DIN CLUJ-NAPOCA

# PRO INVENT



UNIVERSITATEA TEHNICĂ  
A MOLDOVEI

## MODULAR DRYING INSTALLATION

BALAN Mihail; ȚILINSKAIA Natalia; VIȘANU Vitali; MELENCIUC Mihail; POPESCU Victor; BALAN Tatiana; BERNIC Valentin; CAISÎM Natalia

**Purpose:**

The object of the invention is to optimize the drying process of fruits and vegetables by using the modular construction of the drying plant, with the addition or removal of a module in its construction, regardless of the quantity of product subjected to the drying process

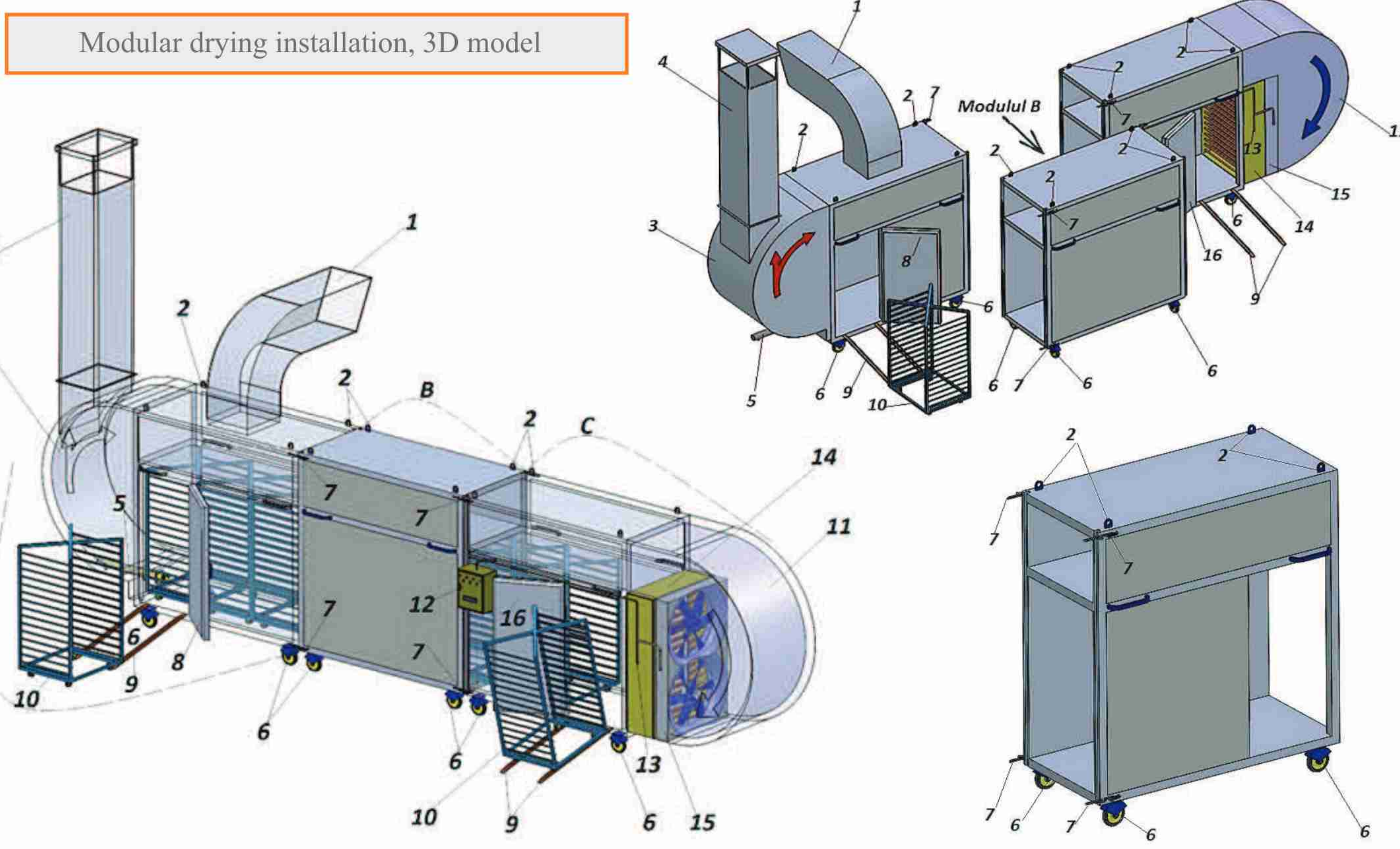
**Advantages:**


- Simple adjustable construction;
- The modular system permits to adapt the quantity of drying product;
- Increase the quality of the final product;
- Creating new jobs;
- Increasing the export of autochthonous production.

**Description of the invention**

The invention relates to the food industry, in particular to a modular drying plant, and can be applied to enterprises in the food industry, within peasant households engaged in growing orchards, as well as individually for the dehydration of agro food products

Modular drying installation, 3D model





UNIVERSITATEA TEHNICĂ  
A MOLDOVEI

Departamentul „Inginerie Mecanică”  
Tel: (+373 22) 50-99-27, e-mail: mihail.balan@pmi.utm.md