Patent Search

Invention Title	A DOUBLE CHAMBER SOLAR AIR DRYER WITH SOLAR COLLECTOR ASSEMBLY
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Abstract:

ABSTRACT The present invention describes a double chamber solar air dryer with solar collector assembly and working method thereof. The assembly is provided with a Solar a heater with solar collector. Direct solar dryer is also getting the hot air circulation for fast drying of food products by removing moisture. Both the chamber will have a layer of phase change material (Paraffin waxes) that will absorb heat in daytime and use this heat in the night to dry the products. The temperature of the chambers can be controlled automatically. Temperature sensors, fans in both the chambers to maintain the temperature will be connected to the electronic control Unit (ECU). The power to ECU is provided by solar energy system.

Complete Specification

DESC:FIELD OF INVENTION:
The present invention in general relates to the field of the solar air dryer assembly. In particular, the present invention relates to a double chamber solar air dryer with solar collector assembly and working method thereof.
BACKGROUND OF THE INVENTION
To make balance between the population increase and food supply the developing countries has to develop different techniques to avoid food wastage during harvesting and selling. Open Sun Drying of crops is an old technique that led to spoil of food material due to contamination by dirt, dust, pollution, damage by animals, birds or insects and their dropping, degradation through exposure to direct sun radiation, storm, and dew, additional losses during storage due to insu?cient or non-uniform drying. It is stated that the post-harvest loss of fruits and vegetables accounts for around 30–40% of the overall yield in underdeveloped countries. To avoid such kind of wastage Double chamber solar dryer is designed that provide fast drying of food items. The dryer has two chambers one for indirect heating with hot air and second will be kept in the direct sunlight to absorb solar radiations. Both these dryers will get hot air through a solar collector. The temperature of both the chambers can be controlled with blowers operated through the solar energy. All the chambers are equipped with the temperature sensors.
There are few references made to the present invention as given below:
US20140182158A1 discloses an improved solar dryer with improved. The dryer consists of a solar absorber/collector and a drying chamber. One end of the collector is connected to a forced draft fan and the other end connects the drying chamber. The drying chamber has a drawer in which the material to be dried is kept on a wire mesh. The dryer further has the provision for placing color indicative silica gel under the wire mesh when operated in recirculation mode. The other end of the drying chamber has

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