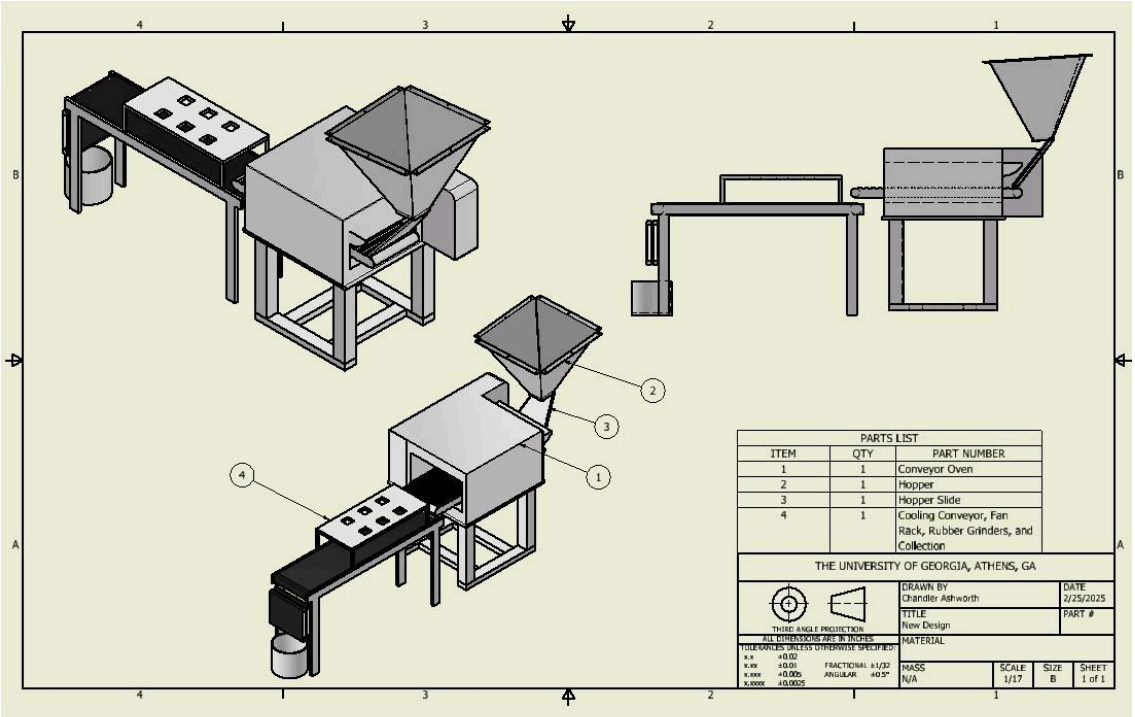
Capstone Design
College of Engineering
UNIVERSITY OF GEORGIA

Capstone Design Project Abstract

Project Title: Small-scale Blanching Peanut Kernels

Partner/ Client: Premium Peanut
Team Members: Alexis Hodnett, Chandler Ashworth, Jacob Richardson, Jackson Knecht
Project Supervisor: Kevin Wu
Instructor: Jorge Rodriguez

Premium Peanut is a grower-owner company that grows and shells their own peanuts for commercial sale. As such, each lot of peanuts that are grown, farmed, and marketed in the United States are graded by the USDA based on the size of the peanut kernels, the quality, and additional testing for underlying issues such as Aflatoxin or Burrow bugs, which are detrimental to the farmers' fields and affect the total crop and profit loss. Currently, Premium Peanut does not have a way to remove the skins off of the kernels in order to complete their own in-house testing, specifically for international commerce. Thus, this project aims to design and develop a device capable of removing the skins off of peanut kernels quickly and efficiently, in order to preserve kernel quality and reduce financial loss from rejected lots shipped internationally. The proposed machine consists of multiple prebuilt components brought together to create a new multi-stage machine. The process begins with a hopper where the kernels are placed and allowed to fall down to a conveyor oven, which heats the kernels without cooking them. After the heating stage, the kernels then fall to the next conveyor, designated as the cooling stage, in which fans are placed to increase total cooling. Following the cooling stage, the kernels then drop through a roller device designed to effectively and delicately remove the skins. The skinless kernels then fall into a bucket for collection and the next batch is allowed to begin. The multi-stage device is designed to be user-friendly, easy to operate, and provide quick batches for continuous use throughout the day. This will lead to increased savings from fewer rejected lots and allow the growers to tackle any issues devaluing their crops.



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