UNIVERSITI TEKNOLOGI MARA
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MEC 299 FINAL YEAR PROJECT

AUTOMATIC FLOUR SIFTER

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ABSTRACT

A sifter is a device for the flour to prevent the production of lumpy flour, typically using a woven screen such as a mesh or net. A lot of the sift product that is on the market is not suitable for the bakers out there that wanted to produce a larger amount of flour. Higher maintenance for the product is also one of the problems that a lot of the user face. The aim of this study is to design a product that can sift the flour automatically with the price of the product also must be affordable especially for small businesses. Finally, a low maintenance can equal with less money consumption. The first part for the methodology of research is to compare all the products that are in the market. Second, create a design that satisfy the objective. After finalizing the design, search material that are suitable for the spec of the product. The finding that can be gain after the finalized design for the flour sifting machine is suitable for small businesses to use because it satisfies their requirements without exceeding the need.

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CHAPTER 1
INTRODUCTION

1.0 Introduction

As generally known, baking either cookies or cake, the flour should be sifted first. The hardest part to sift the flour is when the baker does not have a suitable tool to sift the flour. When the bakers used unsuitable tools, the flour will produce more lumpy flour. There are already many existing designs that have in store but can be improved. From the design that has on the market, it gives the idea to produce this project which is called an automatic flour sifter.

The main reason to produce this project is to produce a product that can easily sift the flour and can produce less lumpy flour at an affordable price. It is also to help small business bakers out there to have a tool that can make their life easier. The design for this project is inspired by the sand filter and separation from the research. The research that has been done is to improve the design that already had in store.

1.1 Background of study

Sifter is one of the must-have things for every baker nowadays. The bakers use the sifter to break up any lumps that have in the flour. The main objective of this automatic flour sifter project is to produce a product that can make the baker's life easier. It is also to improvise and enhance the existing product in the store. This project is also necessary to help the bakers save time from using the regular sifter on the market and can give various advantages for the bakers out there to make their work easier.

This automatic flour sifter has various aspects from the one in the market, such as it uses a motor to vibrate the filter, so the baker does not have to use the energy to sift the flour. This product is also equipped with a tray for the sifted flour so that the baker does not have to provide another bowl/tray. This automatic flour sifter also has protection at the edge of both sides of the filter to prevent the flour from dispersing. It also has wheels to make it easier to move around but has the lock to lock the wheels whenever the user wants to use the sifter. The material used to make this automatic flour sifter is also strong and affordable, which are metal and hard plastics.

This project will also be considered the pros and cons that the baker will get in the future to get the best outcome throughout this discussion. After the analysis and design are complete, the ideas and design will be combined, and the production model will be shown using SolidWorks software.

1.2 Problem Statement

Some small business bakers have trouble using the regular sifter because it is small and uses a lot of energy to produce a larger amount of sifted flour. The sifter in the market is unsuitable for bakers who want to produce a larger amount of sifted flour. It is also will take more time for the bakers to sift the flour. The modern sifter in the market usually costs very high which is not worth it for the small business bakers to afford a high-cost machine.

1.3 Objectives

The objectives of this project as shown below:

I. To design and fabricate a product that can sift the flour using SolidWorks software.
II. To testing a product that can sift the flour.

1.4 Scope of Project

The scope is simply all the work that needs to be done in order to achieve a project's objectives. In other words, the scope involves the process of identifying and documenting specific project goals, outcomes, deliverables, technical requirements, and its limitation.

The project objectivity of this product is to produce a machine that can sift the flour easier and make the bakers live their life easily. This product is equipped with wheels that help the sifter to move around but it also included safety features such as a lock at the wheels to help the wheels not move while using it. The technical requirement is the sifter must meet the design of SolidWorks software. This product uses the dc motor to vibrate the filter of the sifter. High maintenance costs due to the presence of dc motor and material used. The expected product dimension is 50cm x 30cm x 45cm.[1]