UNIVERSITI TEKNOLOGI MARA

DESIGN, ANALYSIS AND FABRICATION 2 IN 1 FRENCH FRIES MACHINE

AHMAD HAKIM BIN KHAMIS

Dissertation submitted in partial fulfillment
of the requirements for the degree of
Diploma
(Mechanical Engineering)

College of Engineering

March 2022

ABSTRACT

Knife and potato peeler are typically used by people to peel and cut the potatoes. People still use this manual method because it gives no cost and no use of electricity. This manual method consumes time and energy of human manpower that can lead to the risk of injuries. Therefore, this project aims to overcome the issue rise with analysis, design and fabrication 2 in 1 French fries machine. This machine consists of two processes which are peeler and cutter. Next, 2 in 1 French fries machine is a semi-automatic machine that is able to peel two kilogram potatoes per process and cut the potatoes to the French fries' size and shape. The peeler machine uses the abrasive technique to peel the potato skin. The potato skin peels off when the disc rotates and it collides with the cylinder drum wall. The cutter machine uses the electric linear actuator to push the potato to the cutting blade. The fabrication of this machine mostly uses the stainless steel material. Other than that, simple machine material like motor and shaft used to rotate the disc on the peeler machine. Last but not least, this product has the potential to grow and be commercialized as it gives an alternative way to the user during the peeling and cutting process.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my diploma and for completing this long and challenging journey successfully. Next, I would like to express my gratitude to Mr. Ahmad Najmie Bin Rusli as my final year project supervisor for his guidance and constructive suggestion from the first day until the last in completing my final year project report.

I would like to express my deepest appreciation to my parents and families for their support and encouragement throughout the process of completing this project report. This dissertation is dedicated to my father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you.

Lastly, thanks to all my friends and everyone who had been involved and contributed in supporting and give encouragement to me from the beginning until this final year project report was fully completed. Alhamdulillah.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Nowadays, the process of peeling and cutting potatoes requires time consuming and human manpower. The manual method like using potato peeler and knife for cutting is too dangerous and risk of injuries to the operator. Aim of this project are to analysis, design and fabrication 2 in 1 French fries machine. This machine is semi-automatic machine are able to peel and cut the potatoes to French fries' size and shape. The peeler machine uses an abrasive technique and cutter machine uses a pusher to push the potato to the cutting blade. With the development of this machine, it will reduce time consuming, human manpower and risk of injuries during the process of peeling and cutting potatoes.

1.2 Problem Statement

In the previous manual method, the potato needed to peeled off before it can be cut to specific sizes and shapes. Manual method requires human manpower to peel and cut the potatoes. Thus, it makes this method need more time and energy-consuming methods. In the market, manual peelers and cutters came with various designs from the simplest to complicated design. The manual potato cutter device needs human energy to press the cutter by hand. Usually, the sharp cutter for manual design is exposed and can be dangerous to the users.

Furthermore, the other alternative method and the higher cost than the conventional method is a semi-automatic machine. This machine are peeler machine and cutter machine where the process of peeling and cutting potatoes is usually made separately.

There are lacking from the manual and alternative methods. The lack of manual method is time consuming and a lot of manpower. This can affect the French fries' production and risk of injuries. Besides, the lacking of alternative method is time