UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF POTATO PEELING MACHINE

MUHAMMAD FIRDAUS BIN HAFIZ

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

College of Engineering

Feb 2024

ABSTRACT

A technical advancement that tries to make peeling potatoes more effective is the potato peeling machine. Potato peeling traditionally takes a lot of times and effort, especially when there are a lot of potatoes to peel. In order to improve the effectiveness and efficiency in the food businesses, the adoption of automatic potato peeling machine is a desireable choice. In this study, I wish to use a variety of cutting edge technologies to construct a potato peeling machine. This machine has a blade to effectively scrape the skin. Utilizing this potato peeling machine has a number of benefits, including the ability to boost production, reduce labour and time requirements, and enhance product quality. Additionally, using this device might lower danger of accidents that comes with laborious potato peeling.

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. My gratitude and thanks go to my supervisor, Muhamad Faris Syafiq Bin Khalid.

Finally, 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. Alhamdulilah.

TABLE OF CONTENTS

		Page			
CON	NFIRMATION BY SUPERVISOR	ii			
AUTHOR'S DECLARATION		iii			
ABSTRACT ACKNOWLEDGEMENT TABLE OF CONTENTS LIST OF TABLES LIST OF FIGURES LIST OF ABBREVIATIONS		iv v vi xx xx			
			CHA	APTER ONE : INTRODUCTION	1
			1.1	Background of Study	1
			1.2	Problem Statement	1
			1.3	Objectives	2
			1.4	Scope of Study	2
1.5	Significance of Study	2			
CHA	APTER TWO : LITERATURE REVIEW	3			
2.1	Benchmarking/Comparison with Available Products	3-4			
2.2	Review of Related Manufacturing Process	4-8			
2.3	Patent and Intellectual Properties	8-10			
2.4	Summary of Literature	11			
CHA	APTER THREE : METHODOLOGY	12			
3.1	Overall Process Flow	12-14			
3.2	Detail Drawing	15-19			
3.3	Engineering Calculation and Analysis	20-22			
3.4	Bill of Materials and Costing	23-24			
3.5	Fabrication Process	25-30			

CHAPTER ONE INTRODUCTION

1.1 Background of Study

With the passing of time, the potato peeling procedure must now go more quickly. A potato peeling machine will be highly beneficial to small and medium-sized industries, restaurants, and even domestic usage in the industrial sector. It will take a long time to peel it manually with a simple potato peeler. Furthermore, users will utilise their own energy to peel the potatoes using a knife. Users will spend more time and energy peeling potatoes fast as a result, and they will be at greater risk of injury. The purpose of this project is to design and construct a transportable machine that may solve the challenges faced during the peeling process, particularly for individuals who use it at home and in small and medium-sized industries. This project's concept is titled Design and Fabrication of Potato Peeling Machine.

1.2 Problem Statement

Standard potato peelers are primarily reliant on physical labour, necessitating a substantial amount of work and time to peel potatoes. The requirement for physical labour not only slows down the process but also raises labour expenses, affecting the overall profitability of the food processing industry. Furthermore, the physical use of a typical potato peeler entails repetitive motions and manual handling, which can result in user fatigue, strain, and injury. Accidents are more likely when there is a lack of ergonomic design and safety features.