

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A MANUALLY
OPERATED CRANE**

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ABSTRACT

Work that needs to be done by people has never been simpler than it is now that machines exist. This project is about designing and fabricating a manually operated crane. Despite the fact that certain crane are more expensive, complicated, large, and immobile. Many people cannot afford a crane due to its high price. Grocery store need to use manually operated crane so that the work done is more efficient and less energy used. The manually operated crane is suitable use for grocery store. It is easy to move around in restricted space. The manually operated crane is smaller in size than other crane. It is using gear and chain for the lifting part. As a result, the goal of this project is to develop and build a machine that is not only portable and affordable, but also compact. This machine can be very useful and affordable for doing heavy work in grocery store. In this project, cutting, drilling, and welding is used to fabricate the manually operated crane. First hang the load to the end of the rope, then we can pull the rope with the handle attached. And finally we can move it around where we want and pull back the load down.

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TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	ii
AUTHOR’S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE : INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Objectives	2
1.4 Scope of Study	2
1.5 Significance of Study	3
CHAPTER TWO : LITERATURE REVIEW	4
2.1 Benchmarking/Comparison with Available Products	4
2.2 Review of Related Manufacturing Process	7
2.3 Patent and Intellectual Properties	8
2.4 Summary of Literature	10
CHAPTER THREE : METHODOLOGY	12
3.1 Overall Process Flow	12
3.2 Detail Drawing	15
3.3 Engineering Calculation and Analysis	17
3.4 Bill of Materials and Costing	21
3.5 Fabrication Process	22

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Cranes have been a part of human history for thousands of years. In ancient Mesopotamia, shadoofs were used as an irrigation tool as early as 3000 BCE. By 2000 BCE, these innovative tools had found their way into the neighboring civilizations of ancient Egypt.[1]

Shadoofs, the earliest ancestors of cranes, were essentially pivoting levers with a bucket attached. The operator would lower the bucket into a body of water, allowing it to fill. Once full, they would raise the arm of the lever and spin it to deliver water to crops, irrigation channels, or basins of some sort.[1]

Although cranes may not be familiar to everyone, they are in fact a lifting tools. Cranes are compact and versatile lifting equipment that find applications in various industries, including construction and manufacturing. Their lifting responsibilities will be made easier by using these specific tools. It can be completed quickly and with a significant time and energy savings. Mini cranes are very great aids in safe and efficient lifting or in material-handling operations. This study aims to design and fabricate mini cranes, emphasizing their capabilities, safety features, performance specifications, maintenance requirements, and compliance with relevant regulations and standards.