

UNIVERSITI TEKNOLOGI MARA

**AN EXTENDABLE AND FOLDABLE
STAIRCASE CLIMBING TROLLEY**

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

College of Engineering

Feb 2023

ABSTRACT

A fabrication of an extendable and foldable staircase climbing trolley will be proposed to this project. The objective and the main purpose of this project is to reduce the burden of people who live in high rise building such as an apartment. The extendable function enables users to carry more stuff at one time while the foldable function enables users to keep it in a compact space so that it doesn't use up so much space. Some fabrication process of this product includes cutting, joining and welding. To conclude, people who live in a high rise building can carry stuff up the stairs easily.

ACKNOWLEDGEMENT

First and foremost, I would like to thank Allah for this opportunity on continuing my studies in Diploma level and for easing my journey throughout this 3 years.

I would like to express my deepest appreciation to my supervisor, Dr Najibah Binti Ab Latif for her never ending support and help that has been given from the first day until the end. Without her guidance, I may not be able to handle this project titled “An Extendable and Foldable Staircase Climbing Trolley” with ease.

Finally, words cannot express my gratitude to my parents who never stopped giving me words of advice and that have supported me all the way in everything that I do especially in my studies.

TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	vii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE : INTRODUCTION	11
1.1 Background of Study	11
1.2 Problem Statement	11
1.3 Objectives	12
1.4 Scope of Study	12
1.5 Significance of Study	12
CHAPTER TWO : LITERATURE REVIEW	14
2.1 Benchmarking/Comparison with Available Products	14
2.2 Related Manufacturing Process	17
2.3 Sustainability/Ergonomic Related Items	17
2.4 Patent and Intellectual Properties	17
2.5 Summary of Literature	18
CHAPTER THREE : METHODOLOGY	19
3.1 Overall Process Flow	19
3.2 Detail Drawing	21
3.3 Engineering Calculation and Analysis	24
3.4 Bill of Materials	26

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Now-a-days simple mechanical devices like hand trolleys with single and dual wheel are finding their use in large number of industries as well as for household purposes. But their usage is limited to carry stuff along the floors from one location to another. Out of the formulated designs that are available in the market, no design fulfills the need of support in shifting the load over stairs. To eliminate this difficulty, three stair wheels which are the combination of three wheels are used as a substitute which will reduce the effort of lifting [1].

Trolley is an essential thing that is used by people to carry stuff around. Living in a high rise building is very common nowadays as the population increases. High rise building such as apartments have facilities that is very common which are lift and having this kind of facilities also needs to be serviced as it might face some damages or just needs to be serviced from time to time. Hence, the need for people to carry stuff up and down the stairs is very normal. Therefore, a tool is needed for people to carry stuff up to their houses in a bulk or in a certain amount without having to do it one-by-one.

Most of the buildings in the country are structurally congested and unavailing of elevator facility so it is difficult and laborious to lift up heavy loads. The stair climbing trolley can play an important role in those areas to lift loads over a short height, like libraries, hospital [2], apartments and many more.

1.2 Problem Statement

Nowadays, living in a high rise building such as apartments has become very common as the population increases day by day. Therefore, the need for people to use the stairs to bring stuff up to their houses are common as well as there are some buildings that doesn't provide lift or even if there's lift in the building, it might