

UNIVERSITI TEKNOLOGI MARA

**TRI-WHEEL TROLLEY WITH
ADJUSTABLE HOLDER**

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ABSTRACT

The world right now full with mechanical things that we use to doing work at office, outdoor and more. However, there are still changes in process of moving an item or load to higher place compilation using stairs. The first solution for this like elevators that can transfer load to the from ground to high place, however the facilities of elevators is not available. Like example, school, construction side, colleagues and so on. In this project target is to create a mechanism that can use to transfer load thru stairs either going down or up. As example, hand trolley that human can use to transfer the load but it has their fails, such as trolley usually can't transfer the load thru stairs because the structure of wheel of hand trolley that just suitable for flat ground and the holder of hand trolley can't adjust to place we wanted to place. So this project target to create trolley in upgrade structure that can lift heavy load, can adjust the holder and most important is can use thru the stairs. The main objective of this project is to make the trolley in user-friendly so the movement will smooth and can carry heavy load while climb the stairs. In this project we will use dynamic method for the movement of trolley, strength and static method to know how strong the structure of trolley. The trolley will be the best because two things will upgrade and more effective in real life.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Trolley is a mechanical lifting device that use to lift heavy objects. Like most of time is hand trolley, which all industry, school or office. It help human to carry heavy objects that need to place somewhere [2]. Through time, numerous types of trolley have been developed such as platform trolley that really light because made of aluminum. Then, tool trolley that used for technicians and maintenance. It also has molded tops provide space that can use for laptop or smart devices.

1.2 Problem Statement

The most common problem for the trolley is type of wheel that just suitable for flat surface but not to climb stair. One of the most problem is its need more energy to take item from holder. This is huge problem because it waste energy and take more times to finish the work. Therefore, it is necessity for every trolley to have the adjustable holder and tri-wheel for easy work.

1.3 Objectives

The main objectives of this project are:

- a) To analyze and design the wheel and holder for user use in anytime of motion and weight.
- b) To develop a trolley with many type of function and mechanical function.