UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF 3 IN 1 FOLDABLE HAND TROLLEY

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ABSTRACT

The project "Design and fabrication of 3 in 1 foldable trolley" that has been proposed is from facing difficulties when trying to move a lot of heavy items while using a regular trolley. Older people who use a regular trolley to move heavy items can experience backache. This 3 in 1 foldable trolley project target is to facilitate and save energy for users. This project intends to design and fabricate a 3 in 1 foldable hand trolley to consume less energy especially workers or peoples who need to lift a lot of heavy items daily. This 3 in 1 trolley have 3 style to lift items. To make this project, the most suitable and affordable material is by using steel as the main material. Other than that, such as rubber tires and non-slip fabric for the handle. There is also an idea about putting a pedometer to record the distance when using the trolley, and even how much our calorie burned. The objectives of this project are to upgrade a regular trolley to a trolley that can make lifting heavy items easier and more comfortable. Hoping that this project will achieve the objectives.

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INTRODUCTION

1.1 Background of Study

Transporting of moving large and heavy object have been a problem, especially to warehouse workers who need to transport heavy items from point A to point B. The force required to push or pull materials may overload the musculoskeletal system and could injure various body parts. The neck (Cervical spine), shoulders, elbows, hands, low back (Lumbar spine), knees and feet are the most injured body parts. Nobody in this world would want an injured body part.

Trolleys are an incredibly practical material handling solution for transporting both light and heavy items. They increase warehouse efficiency by allowing employees to load, transport and locate items quickly and efficiently. This in turn reduces the operational costs of the warehouse and contributes towards worker safety. There are various types of trolleys, all made for carrying out specific tasks. Some of the most popular types include the platform trolley, cage trolley, tool trolley and the shelf trolley.What if there a 3 in 1 trolley that can be change to 3 different types.

1.2 Problem Statement

Nowadays, having a healthy body is really important for everybody. According to the National Medical Care Statistics (NMCS), approximately 12% of the Malaysian population are facing with the issue of back pain. Back strains and sprains are the most common cause of back pain. Muscles, tendons or ligaments injuries might occur by lifting something too heavy or not lifting safely. This is when hand trolley is needed. It is a compact transport equipment that is used to move heavy loads from one location to another. It can be used by warehouse employees or anybody who need to lift heavy or many items. Using hand trolley takes less effort and can prevent from having body pain.