<u>ENT600</u>

TECHNOLOGY BLUEPRINT

UNIVERSITI TEKNOLOGI MARA MALAYSIA

THE CARRETILLA (SMART CLICK TROLLEY)

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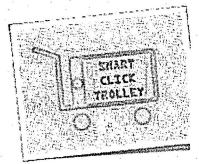PUAN ZANARIAH ZAINAL ABIDIN

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CHAPTER 1

1.0 PRODUCT DESCRIPTION

1.1 Introduction

The product to be developed is a Smart Click Trolley which is a trolley that suit the convenience of customers provided with wireless function which works automatically to climb the stairs. The trolley is controlled by application that can installed for free in our smart phone.

The idea to develop this trolley is invented from a problem in our college. Whenever the lift at our college was out of service due to hard rain and thunder, students was having a hard time bringing big stuff such as a box of mineral water to their room. They had to use the stairs to reach to their college level, it is quiet worrying since this also can cause incident to the students while reaching to their floor. Due to this problem, we also imagine that how residence that live in flat or apartment that does not have lift or the lift maybe out of service too, how they want to carry a heavy load to their home such as gas to cook.

Therefore, our team took an initiative to innovate a smart, effective and high functionality trolley so that the user can use it to climb the stairs without using much energy.

1.2 Purpose of development

The purpose of the product development are:

- To help the users carrying heavy load especially when lift is out of service.
- To save energy of the users where the trolley will works automatically to climb the stairs.

1.3 Product concept
- To help in reducing difficulties for user to carrying heavy load. The trolley can be access easily and control the movement of the trolley until it arrived to the destination by application.
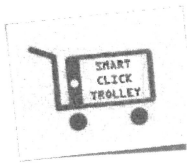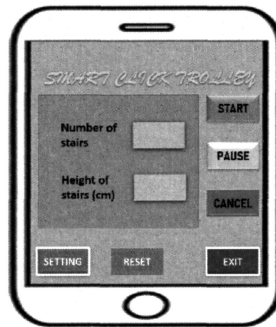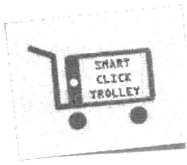
1.4 Application

Figure 1. Smart Click Trolley Apps Interface

- Start/pause/cancel button- A button which controlled the trolley by making it started, pause it and also cancel the movement of the trolley.
- Exit button- To leave the page
- Reset button- To remove the information of number of stairs and height of stairs
- Setting button- To the page where consists of language and sound
- Number of stairs- The information of number of stairs that required the trolley to climb.
- Height of stairs- The approximate height of the stairs

1.4.1 Functions

- Tri-wheel Tyre - To balance the trolley when climbing the stairs.
- Carrier plate - Can be folded and suspended at any angle
- Support wheel - A new material with high toughness that can help to climb the stairs
- Battery - An automatic power supply (Lithium battery)
- Control panel - Contains of switch on and switch off button which make connection to apps button
- Motor - A brushless induction motor which produce small vibration, low noise and long life.
- Handrail - A telescopic adjustment to be adjust according to height operator
- Operate button - A point touch button that easy to operate and can ensure the safety.

1.5 Unique feature

The uniqueness of the product for availability in Malaysia market consists of:

- ➢ Lift heavy load
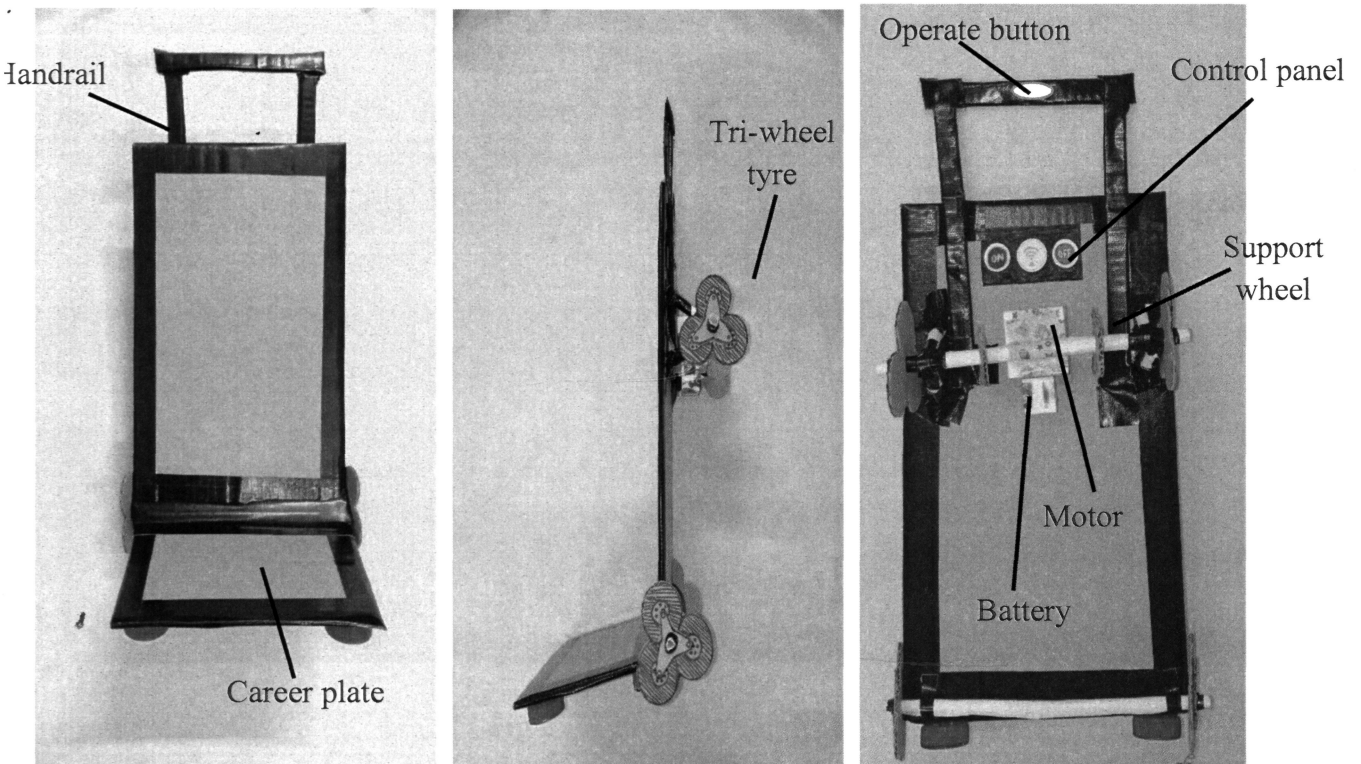- ➢ Control trolley using an application
- ➢ Reduce manpower

1.5.1 Picture description

Figure 2. Smart Click Trolley front, side and back view