



DIPLOMA IN CIVIL ENGINEERING

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TITLE : SCISARROW

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CHAPTER 1.....	4
1.1 INTRODUCTION	4
1.2 PROBLEM STATEMENT.....	5
1.3 OBJECTIVE	5
1.4 SCOPE OF PROJECT	6
CHAPTER 2	6
2.0 LITERATURE RESEARCH.....	6-14
CHAPTER 3.....	15
3.0 METHODOLOGY.....	15-24
CHAPTER 4.....	25
4.0 DATA ANALYSIS& CONCLUSION.....	25-27
CHAPTER 5.....	28
5.0 DICUSSION.....	28
REFERENCE.....	29

SCISARROW

Jabatan Kejuruteraan Awam

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Abstract- This study discusses about a wheelbarrow modified for facilitate daily work. This wheelbarrow is named 'Scisarrow'. In accordance with the name of this wheelbarrow uses a mechanism found on the control. The car This wheelbarrow is modified from the regular wheelbarrows available in the market with introduced the concept of 'control' where the user of this wheelbarrow is not necessary uses a lot of energy to unload the goods to be carried.

The researchers of this study targeted three main objectives of the results of this study where the first, produce an innovation wheelbarrow, next produce a wheelbarrow capable of reaching load limits more than ordinary and latter wheelbarrows creating a wheelbarrow that is able to shorten the time of the process of unloading goods.

The authors of this study were inspired by last semester's student projects and a study of the 'control' innovations found in machines that use this concept. The data of this study can be shown with the researcher distribute questionnaires to the respondents involved in development. In addition, the researcher also asked the respondents to try the stroller ordinary and this 'Scisarrow' in the process of unloading loads involving 20kg, 40kg, 60kg, 80kg and 100kg. In conclusion this innovative wheelbarrow can meet the objectives of this study and this innovation product is able to be used in the market as daily aids.

Chapter 1

INTRODUCTION

1.1 Introduction

Wheelbarrows are one of the complex machines consisting of simple machines, wheels, levers and sloping planes.



Figure 1.1 control wheelbarrow

While conducting a survey on existing carts from construction workers, most of them made the same complaint. Among them is a hard handle that can cause injury to the arm. Consumers also need to use more energy because they need to lift the cart first to remove the goods, and to bend down to lift the cart. Based on the information on existing wheelbarrows obtained from short interviews with users and workers, the researchers have agreed to produce a better-quality innovative wheelbarrow and make it easier to work on the site and help student for doing their lab.

1.2 Problem Statement

Operating a wheelbarrow expend quite a significant amount of energy. Aside from consuming a lot of energy, prolong use of wheelbarrow will cause compilation to the human body causing discomfort or pain to different parts of the body. During unloading for example, the average user will often lost balance while lifting and moving the wheelbarrow to the left or right. Also, to note, during loading the average person will feel that the heavy load will cause fatigue to the forearm. Having an extra wheel for balance can make all the difference when transporting heavy loads. Because the wheelbarrow won't be trying to lean one side or the other, energy can be directed towards lifting the wheelbarrow without fear of the wheelbarrow tipping over.

1.3 Objectives

- i) To produce an innovation wheelbarrow "Scissarrow".
- ii) To reduce labor consumption and save time
- iii) To determine the time taken for wheelbarrow to unload

1.4 Scope of project

The inspiration the researchers obtained to create this wheelbarrow came from the difficulties of students of our prestigious institution, to complete tasks that are related to using the wheelbarrow. In some classes in which female student are the majority, they would often get fatigued after one use. Thus, the researchers think it is most appropriate that the scope of our project appeal to the general masses and not only focusing on the female students.

The comparison we make for the standard wheelbarrow and our innovation wheelbarrow is.

- i) Time
- ii) Maximum load that can be lifted
- iii) Unloading process
- iv) Suitable for construction industry use