

PROPOSE AND DESIGN A CANVAS SHOES CLEANER MACHINE

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SUPERVISOR DECLARATION

“I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of the degree of Bachelor of Mechanical Engineering (Design and Innovation)”

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DECLARATION

“I hereby to declare that the work in this project thesis entitle PROPOSE AND DESIGN
A CANVAS SHOES CLEANER MACHINE is my own effort except for summaries
and ideas which I have clarified their sources.”

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ABSTRACT

The main purpose of this project is to design a canvas shoes cleaner machine to the industrial marketing. The project is primarily focus on the development of the shoes cleaner machine for student. This machine is unnecessary for one material only yet the idea on the production of this machine is based from the canvas material as the material is applicable to wash by a machine. Several aspects have been taken in order to design a good shoes cleaner machine such as the design with aesthetic value, the operation and the maintenance of machine, friendly user and so on. Washing machine that is available in the market is quite large in size and not suitable for the shoes which is not required a large space to wash them. The idea of proposing the canvas shoes cleaner machine is to ease and at the same time to reduce the time to wash the shoes especially when it requires a lot of energy to wash it manually. For some reason, the shoes are not clean enough by washing it manually using manpower because the energy applied is unequal. Since then, it will take a long time to clean up the shoes. Hence, the idea in designing canvas shoes cleaner machine is a good idea for future comfort.

ABSTRAK

Tujuan utama projek ini adalah untuk mereka bentuk mesin basuh kasut kanvas untuk pemasaran industri. Projek ini memberi tumpuan terutamanya kepada pembangunan mesin mencuci kasut untuk pelajar. Mesin ini tidak hanya bertumpu kepada satu bahan sahaja tetapi idea pada pengeluaran mesin ini adalah berdasarkan bahan yang diperbuat daripada kanvas atas kesesuaian bahan tersebut dalam penggunaan mesin basuh. Beberapa aspek yang telah diambil untuk merangka baik mesin basuh kasut seperti reka bentuk dengan nilai estetik, operasi dan penyelenggaraan mesin, mesra pengguna dan sebagainya. Mesin basuh yang boleh didapati di pasaran agak besar dari segi saiz dan tidak sesuai untuk kasut dimana ianya tidak memerlukan ruang yang besar. Idea dan cadangan dalam merangka mesin basuh kasut kanvas adalah untuk memudahkan dan pada masa yang sama untuk mengurangkan masa mencuci kasut terutama apabila ia memerlukan banyak tenaga untuk membasuh secara manual. Atas sebab tertentu, kasut tidak bersih dengan sempurna jika dibasuh secara manual kerana tenaga manusia yang digunakan tidak selari. Bahkan, ia akan mengambil masa yang lama untuk membersihkan kasut. Oleh itu, idea dalam mereka bentuk mesin basuh kasut kanvas adalah idea yang baik untuk kemudahan masa depan.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Automatic machine is a machine that operates by a power transmission that controlled by the automatic device. It is one of the modest mechanisms that help people to do some task especially when it requires force or heavy load. In the past, people mostly do their heavy task by their own that involve hard physical which somehow out of their capabilities. In some other reasons, it makes even the simplest things that can be done in a while take a long time and somehow been delayed.

As we know, there are many kind of automated machine that have been develop nowadays not just in the industry yet also for home care needs in every residence. The automated machine becomes more crucial as in most house have at least one automated machine such as a washing machine. At first, washing machine is designed to make life easier and at the same time to reduce the time needed. As the time goes by, the demand of needs become higher and there is so much improvement on the machine itself. However, this automated machine is basically for particular clothes in a large quantity that somehow is not suitable to wash something like shoes.

Automated machine is very useful other than traditional techniques. Washing such a rough and hard thing as shoes requires a lot of energy in order to brush it cleanly. Up until now, people still use brush or even toothbrush to clean their shoes. This is

because there is still no invention regarding on the shoes cleaner. Hence, the new automated machine for shoes has significant advantages for user and future generations.

1.2 PROBLEM STATEMENTS

In recent years people especially students most probably wash their shoes manually using brush which somehow take a long time to get clean and white. It is even hard for them to wash it by their own especially for primary students because it requires a lot of energy which is out of their physical ability.

In the other hand, most of the washing machine for every residence is not really suitable to wash the shoes as it could cause the loss of cushioning ability such as for a material that made up from canvas. Cleaning the shoes using regular washing machine also is not really convenient since most of the soles are made up of foam rubber. This could causes them to float and will not soak well in the drain. Moreover, since the regular washing machine is quite large for basically a pair of shoes, it could waste much water and power supply.

Therefore, with the new automated shoes cleaner machine, this will be definitely benefits on the user's desire. With the small machine which is perfectly fit with the size of the shoes, it can be useful enough as the important role in order to wash the shoes especially for material that made up of canvas.

1.3 PROJECT OBJECTIVES

To achieve the goal of this project, an objective is defined as a guided:

- i. To propose an automated canvas shoes cleaner machine.
- ii. To design a small size of an automated canvas shoes cleaner machine that easy to handle and could clean the shoes well.

1.4 SCOPE OF PROJECTS

This project aims to design a cleaner machine that can be useful to wash the shoes that made up of canvas material. The scopes are been emphasized based on project objectives. First, this project is to develop an automated canvas shoes cleaner machine with basic application that easy to operate. Besides, the project is also to provide a machine with a small size that suits on the size of the shoes itself. The software to be used in analysing and designing the machine is CATIA V5R20 which is practically used by the student.

1.5 PROJECT OVERVIEW

In the process of designing canvas shoes cleaner machine, several aspects have been collected by studying the concept and the patent of regular washing machine that is already available in the market. In order to make this project successful, project planning according to design phase has been made. This report has been divided into five chapters.

Chapter 1 is the introduction of the project which explains the general idea of canvas shoes cleaner machine. The element includes the background of the canvas shoes cleaner machine, the problem statement involves in this study, the objectives and scope

of the projects, and also the overall planning of this report. Chapter 2 represents the literature review of the studies which includes the information of previous product that is available in the industry. Chapter 3 is the explanation of the methodology that involves in this project. This chapter discusses the method used in the development of the canvas shoes cleaner machine. The concept selection is made by gathering the information from the customer requirement and the knowledge of the engineering characteristics.

Chapter 4 comprises the embodiment design of canvas shoes cleaner machine which involves the conceptual design with it specific details. The manufacturing of the product is been made by applying the interactive computer graphics system application such as CATIA Structural Analysis software. This software manipulates the 3D modelling drawing in both model part and product assembly that is to be designed. Last but not least, the conclusion and the recommendation of the project based on the objective and the problem statement are discussed in chapter 5.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In order to propose the new design of canvas shoes cleaner machine, some research on the invention of the regular washing machine since early stage of century has been made. The purpose on studying the type and the operations of the washing machine is a way to generate some ideas on designing shoes cleaner machine. This is due to the working application and concept is similar to the regular washing machine available in the market. The characteristic of the canvas material is also been emphasized in this literature studies. The quality of the canvas is to be considered in the study as it is important to meet the suitability of the material used especially for the brush.

2.2 HISTORY OF WASHING MACHINE

Referring to the history of washing machines up to 1800 from the Old & Interesting book (2011), Schaffer and Beetham were the two earliest washing machine promoters as its ad was targeted as “*the guardians of all charitable foundations, the governors of all public hospitals, and the commanders of ships and vessels appointed to long voyages*”.