UNIVERSITI TEKNOLOGI MARA

FABRICATION AND MANUFACTURING OF SEMI-AUTOMATIC BARBEQUE GRILL

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ABSTRACT

The semi-automatic barbeque grill is a project targeted at designing and fabricating a novel barbeque grilling solution that will involve convenience as well as modern technological advancement. Major objectives of this paper include the design a semi-automatic barbeque grill using SolidWorks, produce as a proof of its concept, enhance creativity and productivity using mechanical systems. Issues in traditional grilling addressed here are uneven heat distribution, potential health risks from environmental dust and waste or inefficiency in energy application. This semi-automatic barbeque grill achieves consistent results with minimal supervision and easy to disassemble and reassemble. In addition, saving energy remains one of the features with which the grill design is concerned, hence environmentally friendly. The outcome anticipated is a hassle-free, time-saving and reliable grilling experience while upholding the high quality of food preparation standards. It will also serve as a learning resource for Do-It-Yourself (DIY) electronics and mechanical design skills due to the fact that it will give out new skills and knowledge. The semi- automatic barbeque grill will bring revolution in this outdoor cooking by making the grilling solution practical, enjoyable and technologically advanced.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

The background of the study provides information or context and justification in a research work. It sets out the statement of the problem, states the significance of the study and indicates any earlier relevant research. This shows that this section simply establishes what motivated the research. The background of study gives reasons for conducting the research by showing what information is lacking or what knowledge gap exists at that particular time when the study was done [1].

Automation and mechanization that keeps on advancing and progressing make an influence and impact to the outdoor activities such as barbecuing in Malaysia. Barbecuing is generally an individual, collective or group activity which is a safe to take part in. Barbecuing is fun and great activity to spend time with family and friends. This is because it is very well liked and popular in the time for relaxation and entertainment. Under Environmental Quality Act 1974 [Act 127] Environmental Quality (Prescribed Activities) (Open Burning) Order 200 exposed and stated that open burning from outdoor grills, barbeques or fireplaces for the planning and preparation of food which is not followed through at any peat soil area is allowed in Malaysia [2].

Over the last couple of years, there has been a significant amount of automation in various fields. Improvements in robotics, artificial intelligence and sensor technology were the catalysts for such phenomena. This trend also reached ateliers of leisure activities, one of which is outdoor cooking. The semi-automatic barbeque grill was thus born by the mix of ease brought by modern technology and classic taste of wood or charcoal cooking. Barbequing over charcoal or wood-fired is famous and well-known across the world owing to the fact that it provided a consistent heat source and gives rich smoky flavor to food. This is based on the type of barbeque system. Hence, consumers are allowed and free to decide from a number of types of charcoal grills that are offered in all shapes and sizes. Charcoal grills are preferred in an area of 30 minutes or more to get the coals to a temperature that will allow safe, effective, and healthy cooking.