

PROTOTYPE DESIGN COLLECTION

SERIES 2



Prototype Design Collection

Series 2



AHMAD NAJMIE RUSLI

**UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
KAMPUS PASIR GUDANG**

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FOREWORD

This digital book on Prototype Design Collection Series 2 (PDC Series 2) is published as a reference design for mechanical engineering students. The designs presented experience a few phases of analysis before fabrication of prototype. Each project summarises the project description, prototype, figures, and design parameter. The design products vary in tools or equipment for household, workshop, entrepreneur, etc. Suggested material and detail of prototype dimension are also mentioned in this book.

It is hoped that this book will assist the students to have more ideas on innovation design products in the future.

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CHAPTER 54

Rubber Tapping Machine for Plantation Industry

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PROJECT DESCRIPTION

The process of tapping rubber usually takes a long time and requires awkward positioning. In the long run, rubber tappers might experience backaches especially the elderlies. Rubber tapping machines have been created to facilitate the process. However, these machines are high in cost and are not affordable. Therefore, a new product called "wind-up rubber tapping machine" were developed to overcome this problem. The objective of this project is to design and create a tool that could tap rubber from the rubber tree with a comfortable movement and to fabricate a physical prototype. Several research and observations were made to ensure the success for the specific mechanism to work in the project. This machine is designed to tap rubber from the rubber tree without having to manually estimate the angle of tapping. The front plate already has the direction and angle for the tapping process which is 30 degrees. This makes it easier for beginners who is just learning how to tap rubber. This would also help to test the tapping availability for the tree. As a conclusion, a much easier product to tap rubber were successfully developed and it can help to reduce the burden of rubber tappers.

Keywords: *Rubber tapper, Rubber, Plantation industry*

PROTOTYPE



DESIGN PARAMETER

