“PEDAL OPERATED HACKSAW MACHINE”

Under the Guidance of **Er. Jitendra Kumar**

INTRODUCTION

Pedal power is the transfer of energy from a human source through the use of a foot pedal and crank system. This technology is most commonly used for transportation and has been used to propel bicycles for over a hundred years. Less commonly pedal power is used to power agricultural and hand tools and even to generate electricity. Some applications include pedal powered laptops, pedal powered grinders and pedal powered water wells. Some third world development projects currently transform used bicycles into pedal powered tools for sustainable development. This project concentrates on pedal powered hacksaw machining.

An individual can generate four times more power (1/4 HP) by pedalling than by hand-cranking. At the rate of ¼ HP, continuous pedalling can be served for only short periods, approximately 10 minutes. However, pedalling at half this power (1/8 HP) can be sustained for close to 60 minutes but power capability can depend upon age. As a consequence of the brainstorming exercise, it was apparent that the primary function of pedal power one specific product was particularly useful: the bicycle. Many devices can be run right away with mechanical energy. A saw is a tool that uses a hard blade or wire with an abrasive edge to cut through softer materials. The cutting edge of a saw is either a serrated blade or an abrasive. A saw may be worked by hand, or powered by steam, water, electric or other power. An abrasive saw uses an abrasive disc or band for cutting, rather than a serrated blade.

The aim of this work is to design and construct a pedal driven hacksaw machine that will use a less effort pedalling power to produce uniform cutting of PVC pipes, metals, wood and as the same time serve as an exercising machine for fitness. It is also done to show the performance difference between hand driven and pedal driven hacksaw. This work is design to overcome the stress attached to hand cutting of engineering materials by turning it into an exercise for body fitness. In this Pedal operated hacksaw machine which can be used for industrial applications and Household needs in which no specific input energy or power is needed. This project consists

of a crank and slider mechanism. In the mechanism pedal is directly connected to the hacksaw through crank and slider mechanism for the processing of cutting the wooden blocks, metal bars, PVC materials. The objective of the modal is using the conventional mechanical process which plays a vital role. The main aim is to reduce the human effort for machining various materials such as wooden blocks, steel, PVC etc. The power hacksaw machine, which runs on human power, works on the principle of the conversion of rotational motion to oscillatory motion. Importance of this project lies in the very fact that it is green project and helps us to reduce our electricity need. Secondly, this cutter can be used and transferred to our working place easily. Moreover, if we want, we can generate electricity with our project by connecting it to dynamo, diode and battery.

Project group members photo with design model (Padel operating Washing Machine).

Group members in this project-

Priyanka yadav	**SarbeshKumar**	**VaishaliLahoria**	**Siyol Verma**