

IEEE 2017-18 Pedal Operated Based projects

1) FABRICATON PEDAL OPERATED WATER PUMP

Main aim of this work is to design, fabricate, investigate the working of Pedal Operated Water Pump (POWP) which is used to lift water up to 20 feet to 30 feet height. POWP is used to lift water from sump to water tank in city when there is no electric power supply or load shedding. POWP main part is centrifugal pump which is operated by pedal power. The centrifugal pump is placed in such a way that driven shaft of the centrifugal pump is same shaft of pulley which is driven bicycle wheel. When pedaling is done, then bicycle wheel start rotating, so pulley will rotate and therefore rotating the centrifugal pump which will lift water from sump to 20 feet to 30 feet. POWP is used in irrigation in remote areas where there is no electricity. Using POWP we can save energy and no pollution. POWP pump can used for exercise purpose also. Index Terms – Centrifugal Pump, pedal, pulley, shaft.

2) HYBRID MULTIPURPOSE PEDDLING MACHINE

In this context, we are developing a hybrid multipurpose BI – Cycle. Which consists of 3 different features in one cycle? We are developing Washing machine, Hacksaw machine and a flour mill in one bi cycle mechanism. In which floor mill and hacksaw machine can be disabled and enabled as per the need. In the developing world, washing laundry is a difficult, time-consuming task that falls solely on women. Typically spend 8 hours each week scrubbing each piece of their family's clothing and wringing out the harsh washing solution by hand. Powered washing machines exist, but they are impractical in rural regions because running water and electric are expensive or unavailable. Several groups already tried to build machines for these regions but they have been unsuccessful. Their machines were either expensive to build and repair because they require imported parts or they do not wash effectively.

Our invention is that, a low cost, pedal-powered washing machine that is designed around readily available parts. Its innovation is its simple design and its use of inexpensive plastic barrels and bicycle components. It is reliable, easy to operate and uses no electricity. The parts are available locally, so it can be manufactured and repaired in the community without depending on imported goods.

3) HYBRID WATER PUMPING SYSTEM USING PEDDAL, SOLAR AND WIND MILL

Powered water pump exist, but they are impractical in rural regions because running water and electric are expensive or unavailable. Several groups already tried to build machines for these regions but they have been unsuccessful. Their machines were either expensive to build and repair because they require imported parts or they do not operate effectively. We are also combining hybrid energy like solar and wing for performing the water pumping operations. Our invention is that, a low cost, pedal-powered water pump that is designed around readily available parts. Its innovation is its simple design and its use of inexpensive plastic barrels and bicycle components. It is reliable, easy to operate and uses no electricity. The parts are available locally, so it can be manufactured and repaired in the community without depending on imported goods.

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4) PEDAL OPERATED REAL TIME HACKSAW MACHINE

Sawmill is an instrument or equipment used for cutting wood, plastic or any soft materials. It's one of the ancient equipment and required a kind of mechanical or physical energy to operate it. Here in our project we are developing a pedal operated real time hacksaw machine to minimize the human effort. We use a real time bi cycle which is attached to hacksaw machine. This reduces the human effort and as we are using bi cycle, it in turn increased your health level as by cycle driving is a mean for burning fat and a good physical exercise. The sawing machine is a machine tool designed to cut material to a desired length or contour. It functions by drawing a blade containing cutting teeth through the workpiece. few real time components are developing the project, few materials are listed below.

- Bi-Cycle.
- Hacksaw Machine.
- Pulley.
- Frame or stand
- And few connecting materials like Nuts, Bolts, Cycle Chains etc...

5) PEDAL OPERATED WATER PUMP

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6) PEDAL POWERED FLOUR MILL

Our work and the results obtained so far are Very encouraging and reinforce the conviction that pedal powered applications are practical and potentially very contributive to the operation of flour mill in the rural areas. This is made by using economically available materials for less amount of production of flour for the day to day household purposes.

The main objective is to design & develop a machine which uses human power as source of energy to drive the machine. It basically consists of a simple bicycle mechanism. In many developing countries like India, the gap between the ever increasing demand of power and its generation has prepared a daily busy schedule of load shedding (power cuts). There are millions of people in remote villages in India who lives day to day withoutreliable power supply. And thus to fulfill there demand of flour there are conventional hand cranked grain mill without an easy way to power it. This process of hand cranking of stone wheels is characterized by slow operation, fatigue and low production rate.

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7) PEDAL POWERED FLOUR MILL WITH ELECTRICITY GENERATION

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8) PEDDLING WASHING MACHINE

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