

## FABRICATION OF PEDAL OPERATED FLOUR MILL

### INTRODUCTION

#### ENERGY

Energy is the capacity of physical system to do work. Energy exists in several forms such as heat, kinetic or mechanical energy, light, potential energy, electrical or other forms. Industries mainly use heat energy. With the depletion of main source of energy coal, the focus has now slatted towards the alternative source of energies like WIND, SOLAR, TIDAL, GRA VITATION, NUCLEAR, etc.

#### DISTINCTION BETWEEN POWER AND ENERGY

Although in everyday usage the terms energy and power are essentially synonyms, scientists and engineers distinguish between them. In its technical sense, power is not at all the same as energy, but is the rate at which energy is converted (or, equivalently, at which work is performed). Thus a hydroelectric plant, by allowing the water above the dam to pass through turbines, converts potential energy of water into kinetic energy and ultimately into electric energy, whereas the amount of electric energy that is generated per unit of time is the electric power generate. The same amount of energy converted through a shorter period of time is more power over that shorter time.

#### APPLICATIONS OF CONCEPT OF ENERGY

Energy is subject to a strict global conservation law; that is, whenever one measures (or calculates) the total energy of a system of particles whose interactions do not depend explicitly on time, it is found that the total energy of the system always remains constant.

The total energy of a system can be subdivided and classified in various ways. For example, it is sometimes convenient to distinguish potential energy (which is a function of coordinates only) from kinetic energy (which is a function of coordinate time derivatives only). It may also be convenient to

distinguish gravitational energy, electric energy, thermal energy, and other forms. These classifications overlap; for instance, thermal energy usually consists partly of kinetic and partly of potential energy.

The transfer of energy can take various forms; familiar examples include work, heat flow, and advection, as discussed below.

The word "energy" is also used outside of physics in many ways, which can lead to ambiguity and inconsistency. The vernacular terminology is not consistent with technical terminology. For example, while energy is always conserved (in the sense that the total energy does not change despite energy transformations), energy can be converted into a "form, e.g., thermal energy, that cannot be utilized to perform work. When one talks about "conserving energy by driving less," one talks about conserving fossil fuels and preventing useful energy from being lost as heat. This usage of "conserve" differs from that of the law of conservation of energy.

## **THE PRINCIPAL FEATURES OF THIS PROJECT ARE AS FOLLOWS:**

- In our project we have a flour mill which will be very helpful in the rural areas.
- In our project one can use the model as per the demand of the situation he/she is in. He/she can charge only the battery or grind only the cereals.
- In RURAL AREAS conventional method of grinding & chopping is done by using rural methods, if they have to grind large amount they have to travel a long distance to the flour mill for their needs. So we can use this to overcome this situation from the rural areas.
- It can be used in rural households for small amounts as they have to travel a long distance for the grinding purposes.

- It can be used for flouring of wheat grains, Ragi, Rice when attached to a flour mill
- We can attach other applications like grinding wheel or for generating power etc.

A dynapod is portable pedaling apparatus that consists of a stand, saddle, handlebar, pedals, and sprocket wheel. The name comes from the greek words for “power” and “foot”. Dynapod power varies according to the size and fitness of the operator and the length of time spent in pedaling.

## OTHER APPLICATIONS

- Coffee pulpers
- Cracking of oil palm nuts
- Fiber decorticators — sisal, manila hemp etc.
- Threshers & Balers
- Potter's wheels
- Flexible shaft drive for portable grinders, saber saws
- Saws and other equipment that use reciprocating motion
- Tire pumps
- Sewing machines
- Electricity generation

## ADVANTAGES

- Parts are easily available in areas where bicycles are common.
- Simple to build and operate.
- Relatively little maintenance.
- Adaptable to a Variety of situations where hand, motor, animal power are being

used till now

- Portable-can be assembled and de assembled easily anywhere.
- Relatively inexpensive.

## DISADVANTAGES

- Operation time must be allowed for operator fatigue.
- Maintenance of chain drives requires special skills and to be taken care of regularly for smooth work of the device.

TECHNOFIST