



Fabrication of Pedal Powered Washing Machine

¹VARRI SIVANI [ROLL NO;31713220067] ,²P.ANJANI GNANA DEVI[317132920049],³K.SAI LOKESH[317132920031],⁴RAYUDU.SIVAJI[317132920054],⁵YELLANKI SHEKAR[317132920014],⁶DR.S.RAMANA BABU(H.O.D)

^{1,2,3,4,5}FINAL YEAR B.TECH STUDENTS

⁶HEAD OF THE DEPARTMENT

Department of Mechanical Engineering, Sanketika Vidya Parishad Engineering college

ABSTARCT:

Pedal power is the transfer of energy from a human source through the use of a foot pedal and gear system. This technology is most commonly used for transportation and has been used to propel bicycles for over a hundred years. Less commonly pedal powered is used to power agricultural and hand tools and even to generate electricity. Some applications include pedal powered grinders and pedal powered water wells. The project concentrates on pedal powered washing machine. The basic principle of this machine is compound gear system. The concept of this mechanism is that the pedaling is converted into rotary motion. Cloth washing is one of the essential parts of the life but it is considerable undesirable because of the involvement of efforts, time, energy and cost. Nowadays a wide variety of washing machine are available in the market. All of the available washing machines available in the market are electric power driven and basic principle of their operation depends upon creation of the turbulent flow of detergent around the dirty clothes. The main aim is to reduce the human effort for provides the light washing in the rural and dark areas which are very far from the electricity and development. In our country where approximately 70% of population is living with very poor economic status, those people cannot have a washing machine because of cost constraints and unavailability of electricity due to any reason according to survey 2013-2014, there are approximate 25722 villages are still not electrified, where 400 million people are suffering from this problem.

1.WORKING:

1. Manual pedaling.
2. Drive mechanism.
3. Compound gear system.

MANUAL PEDALING:

In this function manual pedaling plays vital role in working of the project. Effective washing must occur in soft and hard water at temperatures from 70-120F. Active pedaling time for effective washing is maximum 20 minutes each for wash and rinse cycles.

DRIVE MECHANISM: In our project the rotation drum is possible through wheel rotation. Wheel is rotated by chain drive. When a person start pedaling the gear connected through sprocket by chain start to transmit power, the rotation of drum is dependent on man power. In our project the complete process is depend on compound gear system.

COMPOUND GEAR SYSTEM: Gear drive is a way of transmitting mechanical power from one place to another. It is often used to convey power to the wheels of vehicle, particularly bicycles and motorcycles.



FIG: 1.0 [COMPOUND GEAR SYSTEM]

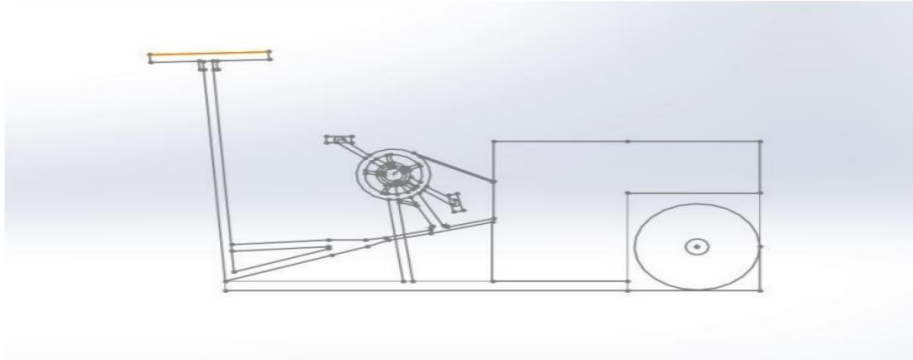


FIG: 1.1 [LAYOUT OF PEDAL POWERED WASHING MACHINE]

2.FUTUREDEVELOPMENT:

COMPOSITE STRUCTURE: To reduce the assembly time and prevent others from tampering with it in public areas, the structure will be made out of welded angle iron. Welding fixtures may be designed to make it easier to weld several structures with proper alignment of components.

TECHNOLOGY FOR THE POOR: With the help of the pedal powered machine, there are number of many other technologies are used such as: Operating a wood working lathe: The welding motion is used to rotate the wooden work piece and the tool is stationery. But in the villages the small workshop and shops are run with the slow cost machine. It doesn't require any electricity, so it is an one time investment.

3.CONCLUSION:

A Pedal powered washing machine would allow women to wash clothes faster with less strain.It can be use by man,women,old people etc. When asked what they would do with their free time,women said that they would try to generate income by making crafts or food to sell.Laundromat micro enterprises may even arise if pedal powered washing machines are successful. Conditions vary and developing countries, but women in many regions are washing clothes manually while they could be doing more profitable or rewarding work elsewhere. It is also helpful for maintaining fitness. We hope through our research and analysis we have designed or at least help clarify the design concept of a pedal powered washing machine. Hopefully in the near future such helpful tools become a common addition to remote villages and third world countries



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5. DR.S.RAMANA BABU (H.O.D OF MECHANICAL DEPARTMENT).

About Author



**Our beloved guide
Dr. S. Ramanababu garu (H.O.D.)
Mechanical department**