

CRANK PEDAL OPERATED WASHING MACHINE

¹Mr. V. V. Korshetti, ²Mr. S. A. Balurgi, ³Mr. M. N. Patel, ⁴Mr. B. S. PALKAR, ⁵Mr. B. B. KOLI, ⁶Mr. S. S. SAMAN

Lecturer in Department of Mechanical Engineering, SVSMD's KKI Polytechnic, Akkalkot, Solapur, Maharashtra, India¹, Student, Department of Mechanical Engineering SVSMD's KKI Polytechnic, Akkalkot, Solapur, Maharashtra, India^{2,3,4,5,6}

ABSTRACT

Peddling washing machine is a very great innovation in its own. Peddling washing machine is specially made for the purpose of its utilization to wash the cloth by means of applying pedal. Today due to non-renewable energy cries its basic need to utilize the energy from other way or save the energy. This project includes the construction and utilization of the peddling washing machine which can with any amount of requirement. The following pages in the report includes about the constructions of peddling washing machine, its raw material, it's working, benefits of the peddling washing machine with respect to actual electronics washing machine save the time, water, electricity, and not very expensive. Its main expect is exercises with applying the pedal to wash the cloth.

WORKING PRINCIPLE OF WASHING MACHINE:

A washing machine has become a vital household item that most people simply cannot do without these days. For one, it is designed to make washing clothes a lot easier. If you have already tried washing your clothes by hand, then you'll certainly understand what it means not to have this appliance with you. A washing machine is a pretty straightforward piece of contraption which can be run by practically anybody. It is designed to remove dirt and stains from your clothes and make them suitable for wearing again. The machine moves the clothes about in soap suds and spins them around to separate water later on. One thing that you should understand about how washing machines work is that these contraptions are actually made of two drums instead of one. The inner drum works to let water in and out to spin your clothes and clean them and has a lot of small holes on it for that purpose. The bigger drum, that you really don't see works to hold water while the inner one works on spinning your clothes around. The machine also has an electrically-powered pump which works to remove water from the drum after you're done with the laundry. All these parts are controlled by a central programmer. The programmer is an essential part that will explain how washing machines work. You can probably think of it as the brain of the whole machine because it regulates all sorts of tasks. It makes the machine goes through the whole process of washing clothes – wash, rinse, and spin. The programmer also dictates the wash cycle to use according to your specifications. Clothes have different wash requirements so it's important for the programmer to be given specific instructions to enact. Once the detergent has done its job in removing dirt from your clothes, the drum opens to drain the wastewater and then replace it with a cleaner one. This will then be used to rinse your clothes. After rinsing, the drum will rotate at high speed to spin your clothes around, separate water from them and dry your laundry.



Fig. pedal operated washing machine.

We could summarize the process in the next steps:

- Open the door.
- Pour the detergent in the right place. You should use low-foam detergents and, in case water is very heavy, you could use a smoothing product.
- Classify clothes: Clothes with different types of fabrics or colors should be washed separately from the others.
- Select the program.
- Introduce the clothes.
- Close the door.
- Press the on/off button.
- When the washing process ends, press the same button again.

1) ADVANTAGE AND DISADVANTAGE:

ADVANTAGE:

Having a washing machine will make you forget about Laundromats. If you buy one, you will have enough freedom to wash clothes when you need to with comfort. The greatest washing machine's advantage is time. Just think about all the things you could be doing while clothes are being washed. Although prices are high, your time is precious. Specially, if you are with your family or performing activities you like. If you have your own washing machine, you can determine what kinds of washing procedures you need for each piece of cloth and you do not need other people to do it for you. Uses less water, power, and soap

- Cleans as well as commercial washer with similar capacity
- Spin dries so no wringing needed
- Comfortable to use • Enables women to do more rewarding things
- Technology for women
- Community investment that also benefits the poor
- Sustainable with local production and maintenance

- Replicable anywhere with bicycles
- Save the water.
- It is a non-polluting, as well as not using any types of electricity.
- Also we get the advantage of exercises with washing the cloth by means of applying the pedal.

DISADVANTAGES:

- The washing machine needs detergent, and water. This means an increase of consumption and expenses in your house. If you are about to buy a washing machine, you should bear these items in mind as future expenses and analyze your economic possibilities.
- The washing machine occupies too much space. If you generally change spaces or live in small apartments, having a washing machine will be a disadvantage for you to move around and for the machine too.

APPLICATION:

- It is very useful into the local rural areas.
- Saving in detergent and the water
- Scale free tub
- Reduced traces of detergent on clothes
- Better wash quality
- Softer clothes
- Easy to operate and the less effect of chemical on the women hand.
- Exercise is also done with the applying the pedal.

CONCLUSION:

From the above project, it can be concluded that the “peddling washing machine” is a very simple yet very powerful design of washing cloth which if brought into application in the rural areas of the developing countries can aid a lot of plight and the suffering of the poor peoples who find it very difficult to wash cloth by means of hand. Thus it is used as a application keeping in mind the social welfare of the peoples of the rural areas. Also It is safe in working condition and hence it does not require any safety guards during operation. The cost of maintenance is a low and it has a long life.

REFERENCES

- [1] R.S.Khurmi “Design of Machine Elements”, Eurasnia publishing house 3 Pvt Ltd, 14th revised edition.
- [2] Prof. Nitinchandra R. Patel, Mohammed A. Vasanwala, Balkrushna B. Jani, Miteshkumar D. Rathwa & Ravi A. Thakkar “Material selection and testing of hacksaw blade based on mechanical properties’ international journal of innovative research in science, engineering and technology vol. 2, issue 6, June 2013
- [3] S.M. Moghe & K.S. Zakiuddin (2013) “Design and Development of Turmeric Polishing Machine Energized
- [4] By Human Power Fly wheel Motor.” - A past review, Proceedings of the 1st International and 6th National
- [5] Conference on Machines and Mechanisms IIT Roorkee, India, Dec 18-20 2013
- [6] Bicilavadora: The Pedal-Powered Washing Machine - IDEAS 2005 Proposal.
- [7] Bruzzone, M. & Wieler, A. (2010) “Reflecting on an Inter cultural Design-Build Project in the Kat

hman du Valley” Final Draft, February5,2010.

[8] <http://en.wikipedia.org/washingmc/pedal-powered-washing-machine.htm>

[9] <http://en.wikipedia.org/wiki/Washingmachine>.

[10] <http://www.ideafinder.com/history/inventions/washmachine.htm>

[11] <http://home.howstuffworks.com/washer1.htm>

http://www.apparelsearch.com/definitions/miscellaneous/washing_machine.htm

