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A PORTABLE FOOT OPERATED TAP SYSTEM

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ABSTRACT

The water scarcity is very harmful problem facing by every person on this earth. The domestic, agricultural as well as industrialsector facing the water scarcity problem. The water availability is not problem but the usage methods of the water is real problem. The problem is to use effectively available water. If you turn off the water while brushing your teeth, you can save up to 8 liters of water per day—that's nearly 3,000 liters per year.

After making some analysis on the usage methods of water, the real problem found was improper water handling system. In this project the controlling action in done by human foot not by hand. The project will be helpful to minimize the use of water by instant closing of the water flow when user left the wash basin or the bathroom. The project will be very helpful and as per the industrial norms. The problem may be solve by this technique so that the water can be saved.

The saved water is very useful in another purpose or at another time so that the water will be conserved. The global problem will be solved in at least domestic uses by this project. The model will be fully practical approach and very economical in nature. The installment of this will also be very easy with no maintenance cost.

Keywords :-water scarcity, earth, usage methods, analysis, minimize water usage, domestic usage)

I.INTRODUCTION

The automatic shutting of the flowing and leaking taps would contribute to the large extent in order to save water... Isn't it? Sensors? But affording the price for each and the cost of the modification /maintenance goes very high for a common person. The idea of a portable mechanically foot operated tap is the tap operated mechanically and auto-closing when an individual left. Using some simple construction and mechanism. The project/model can be made portable and even can be implemented to modify the already fixed wash basin/sink. And the taps with nominal modifications and charges.

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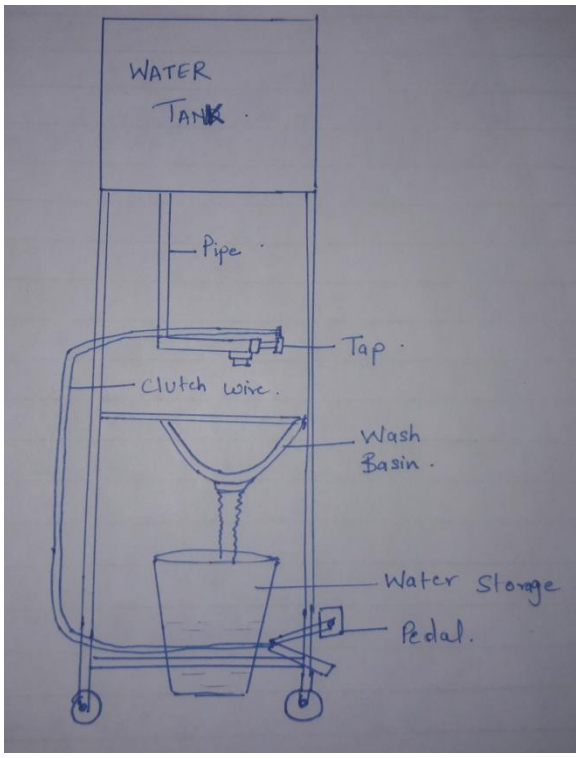
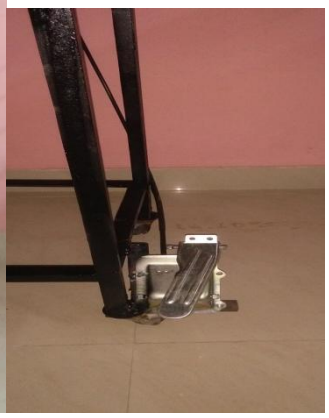
II.CONSTRUCTION OF A FOOT OPREATED TAP

The project consists of Tank, Wash Basin, Structure, Tap, Clutch wire, Clutch Lever(foot pedal), Bucket, Wheels, & Connector pipes.The structure is a metallic frame on which wash basin, tank, tap etc. are mounted. The tank is kept above the whole construction so as to get the gravitational force for the water to flow through the tap. The clutch wire is brazed on the tap from one end and the other end is left down where it is connected to the foot pedal. When the pedal is pressed, mechanical energy is converted into pressure energy and the water flows through the tap.



III.WORKING OF A FOOT OPREATED TAP& MODEL

It is most simple working in which no need to use the hand for the pressing the tap. First we need to full the water tank with at least two buckets than keep the water tank at the top of the frame. Now the pipe of 3/4 inch of diameter is connected with the water tank to tap-pipe with help of m-seal to avoid the leakages. Now the welded construction is done to the tap to hold the clutch wire and the end part clutch wire is connected to pedal. so the main process done from water tank to the tape-pipe will be operated by pedal. Because of the clutch wire is weld or connected to the tap it gets pressed with the help of pedal. The flow of the water from water tank will supply to tap then to water receiver .So we can control the flow the water by using this operation.



I. APPLICATIONS

- **Home**: Basins, Showers, Sink.
- **Industries**: Wash Basins Dispense Coolant, Oil.
- **Hospitals**: Operation theaters, Patient & for physically disabled people.
- **Hotels.**
- **Colleges**: Exam halls, Basins, Toilets.
- **Railways**: Public Toilets, Railway stations, water dispensing machines.
- **Restrooms.**
- **Weddings:** Lawns, halls.

II. ADVANTAGES

1. Portable wash basin.
2. Foot and tap operated system.
3. Simple in construction and working.
4. Low cost and negligible maintenance.

5. Water conservation for a large extent (up to 70%).
6. Can be easily operated by a physically challenged person.
7. Water flow rate can be controlled.
8. Auto-closing of the tap when the individual left.
9. Use of water from the drain can be re-usable for other applications.
10. Foot operated taps can be more hygienic. Promotes germ-free environment.
11. Easy to use and easier to install.
12. Affordable to buy as well as to modify old fixed wash basins, sink, shower etc..
13. Needs less space.

- **MAINTENANCE:**

If the clutch wire is used for a longer period, it can be changed.

The foot pedal would be needed to lubricate if friction is caused.

- **SOCIAL IMPACT:**
- Water demand management.
- Water resource planning.
- Controlled experiments.
- Water conservation.
- Water scarcity can be lowered mainly from urban areas and provision of clean water will be easy.
- Water pollution can be controlled.
- *Swach Bharat* –Public toilets, railway basins.

- **FUTURE USE:**
- Solution to water crises which would lead to water conservation.
- Can be implemented for all households. Like basins, sinks, shower taps etc..
- Implementation in colleges in exam halls.
- Can dispense any other fluid, food, oil, coolant.

IV.CONCLUSION

- **WATER CONTROL CHARTS**

HAND CONTROL TAP	**FOOT CONTROL TAP**
Washing 8 plates *Time – 4mins 48 sec.*	*Washing 8 plates* *Time – 4mins 30 sec.*

10 liters of water used.	*4 liters of water used.*

Over 70% of fresh water can be saved.

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