

Magno-Peller Hydro Turbine

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Abstract— In an era where demands of various sources of energy goes beyond the production rate in the World. Now, there is a need of an Alternative source of energy which is efficient enough to meet today's need. Extracting energy from any source became very difficult when an Environment Safety issue comes to a point. So, to meet high demands of energy we introduced a Technological system which will redress all this problems. A Hydro Turbine will be laid on river, pond, canal etc. The Movement of water will make a motion on blades of turbine but in our model there will be a magnets fixed at the ends of every plate. Like magnets will be stuck to its Neighbouring blade whereas unlike magnets will stuck on adjacent blade. Repulsion property of magnet will boost the Power supply from normal to very high extent. The most prevailing part of this model is its reliability, good packing efficiency, safe for Environment, comfortable to store, Eco- friendly and moreover efficient.

Keywords— Electricity, Hydro Turbine, Magno-Peller, Technology.

I. INTRODUCTION

The world's livelihood depends on energy or more precisely, it's Electricity. Electricity is a back bone to run whole planet and also to complete the needs and desires of human life. But, unfortunately nowadays the production rate of Electricity is not able to cope with such high demands. The most havoc like conditions are prevailing in developing and under developing countries. Furthermore, some nations have succeeded in making power for their citizens, but all those efforts drops in vain with high increase in population growth over past two decades. As a result about 1.3 billion people nearly as many as entire population of India still live without access to Electricity, while 2.8 million rely on fuels like wood, organic waste such as crop waste, dung and other bio-mass to cook and heat their homes. This problem is increasing day by day and needs an effective solution. So here we are with Technological solution i.e. Magno-Peller Hydro Turbine which is able to match present demands, reliable, safe for environment, possess low service requirement, eco-friendly and moreover efficient.

II. OBJECTIVE

The world needs to increase its production to match present demands. If they have to meet the United Nation goal of bringing clean and modern Electricity to all people by 2030, then they have to double or even triple its current consumption—estimated to about \$400 billion a year. Also one quarter of world's population lacks Electricity. India itself has 306.2 million people i.e. 24% of country's population lives without Electricity and 705 million have to rely on wood to cook food and other smoke generating fuels. Due to smoke generation in cooking about 3.5 million mainly women and children die each year for respiratory illness. So, now it's very high time to take stringent measures as soon as possible. So

the objective of our project is to establish a system which is efficient enough to tackle present issues on Electricity and trustable enough to combat this gigantic worldwide problem. There is a fact that in Asia 2 out of 10 people doesn't have access to Electricity. So, our main emphasis is to generate enough Electricity so that it can access to all the people and to make this fact into fiction.

III. MATERIAL REQUIRED

- Rotor Assembly (shaft and blades).
- Valves (main stop and control valve).
- Nozzle
- Water flow wicket gate
- Bearings
- Dynamo

IV. CONSTRUCTION

- The blades of the Turbine are given a specific curved shape which enhances the meshing process.
- The adjacent blades are fitted with like Magnets.
- The blades of adjacent Turbines are fitted with unlike Magnets.
- The meshing of the blades takes place in a definite pre-determined pattern.
- The like Magnets induce a repulsive force between them.
- The unlike magnets induces an attractive force between them.
- The Turbine is driven as a result of successive repulsive and attractive forces.

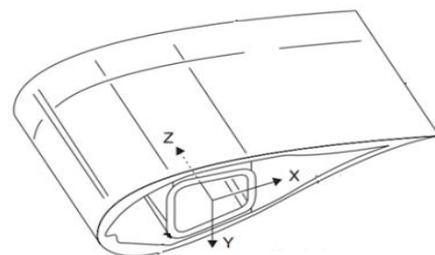


Fig. 1. Blade design in Magno-Peller hydro turbine.



Fig. 2. Blade Pattern in Magno-peller turbine.

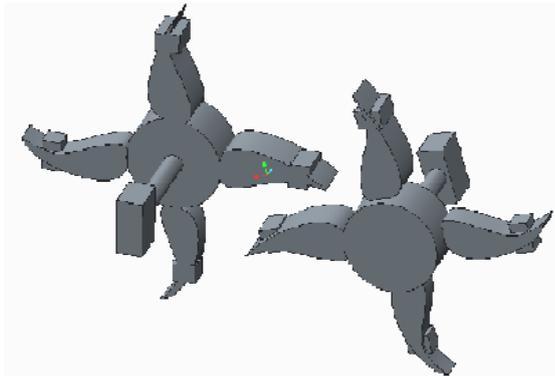


Fig. 3. Mesh analysis of blades.

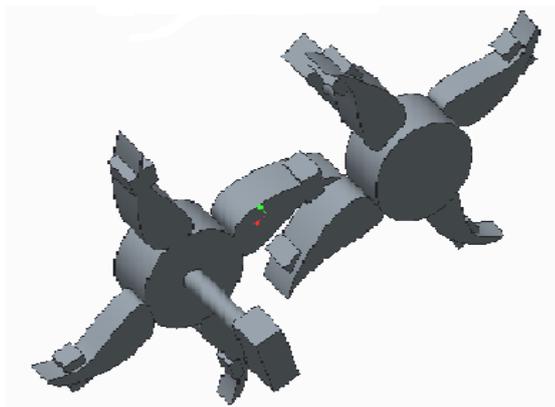


Fig. 4. Top view of mesh analysis of blade with attached Dynamo.

V. WORKING/PRINCIPLE

The working of our project is very simple and is based upon the basic principle of a Hydraulic Turbine in conjunction with the Magnetic action. Turbine is a hydraulic machine which converts kinetic and potential energy of water into useful work. Pressure at the inlet and outlet of turbine will be atmospheric pressure, and then hydraulic jet passes forcefully with the help of nozzle and spear arrangement. The jet issuing from the nozzle then strikes a series of suitably shaped blades fixed around the rim of wheel. The blades change the direction due to jet, resulting into change in momentum which sets the wheel into motion. Due to arrangement of magnets, repulsive and attractive property plays a very crucial role. Meshing of blade is done in a way that when two blades come in contact with each other they repel due to presence of like magnets. These magnets are very strong and very light.

Due to jet and magnetic repulsion there is a high increase in production of Mechanical energy. Dynamo or Alternator is

used to extract this Mechanical energy into Electricity. Dynamo or Alternator is a device which uses Rotating coils of wire and Magnetic field to convert Mechanical rotation into pulsing direct electric current through Faraday’s law of Induction. Braking jet is used to stop the runner when inertial forces acts over it by issuing opposite jet to the blades and these all components are enclosed in a casing which usually holds all components into it and transfers used water again in the tail race. After extracting mechanical energy into electricity it will be sent to nearby power stations for domestic or commercial use.

TABLE I. Cost estimation.

S. No	Material Required	Cost/Piece(\$)
[1]	Rotor	\$5
[2]	Light Magnet	\$1.5-\$2
[3]	Inlet And Outlet Valve	\$3
[4]	Nozzle	\$3-\$3.5
[5]	Dynamo	\$2

VI. CONCLUSION

Our paper deals with a clear solution of managing energy more appropriately. By applying one extra effort in an existing system there is a rapid increase in efficiency of machine and moreover obtaining higher input at the storing end. This will surely suffice our objective to generate enough Electricity. So that it is accessible by all the people in the world.

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