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Power Generation by Gym pull up

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Abstract –Man has needed and used energy at an increasing rate for his sustenance and well being ever since he came on earth for few million year ago. Due to this lot of energy resources have been exhausted and wasted. Proposal for the utilization of waste energy of power generation by gym pulley is very much relevant and important for highly populated countries like india and china the people are crazy about gym .

In this project we are generating electrical power as non conventional method by simply pull up and pull down. Non conventional energy system is very essential at this time to our nation. Non conventional energy using pull up pull down is converting mechanical energy into electrical energy.

In this project the conversion of force energy intoelectricalenergy. The use of human-power in more efficient manner for generation has been possible due to modern technology. Pull up pull down power is an excellent source of energy, 95 percentage of the exertion put into pull up pull down power converted into energy. Aa human-powered electricity generation has been unveiled by company. In this apparatus, the user has to pull up pull down the gym equipments for generating power. Another one is a foot- powered device that allows individuals to pump out power at a 40-watt clip to charge its own internal battery. Then this battery can be used for powering ac and dc devices, car batteries etc.

Key Words:*Haptics, human-machine interaction system, robotic arm control, robot, transceiver module.*

INTRODUCTION

Pull up pull down power is the transfer of energy from a human source through the use of rack an pinion system. This technology is most commonly used for gym centre or house .less commonly gym power is used to power agricultural and hand tools and even to generated electricity. Some application include battery charge home appliance. The articles on this page are about the many wonderful application for power generation by gym pulley technology.

Whenever the person is allowed to pass over the gym pull up pull down. As the spring are attached to gym equipments, they get compressed and the rack, which is attached to, the bottom of the rod moves down reciprocating motion of rack in to rotary with certain RPM these shafts are connected through a chain drive to the dynamos, which converts the mechanical energy into electrical energy.

Now made to rotate a wheel in one direction by supplying power to shaft, while other made to rotate freely on the shaft, as the free wheel is inserted in the gears.

RACK-

Material- Mild steel
Function- To change the translator motion in to rotary motion
Properties- strength, Rigidity,Resistance to shock loads, less wear tear

MANUFACTURING PROCESS

Required square rod is cut from the bar fit in the vice of milling machine id to cut on teeth according to dimensions of the drawing. Gears at infinite no.of. Teeth are called RACK. With the help of rack and pinion, we can convert reciprocating motion inn to rotary motion and vice versa.

SPUR GEAR-In precision machine, in which a definite velocity ratio is of importance, the only positive drive is by gears or toothed wheels. A gear drive is also provided, when the distance between the driver and follower is very small.

CLASSIFICATION OF GEARS

1.According to the position of axis of shaft.

a) Parallel b) Interseting c) Non-intersecting

2.According to peripheral velocity of gears.

a) Low velocity b) Medium velocity c) High velocity

3. According to type of gearing.

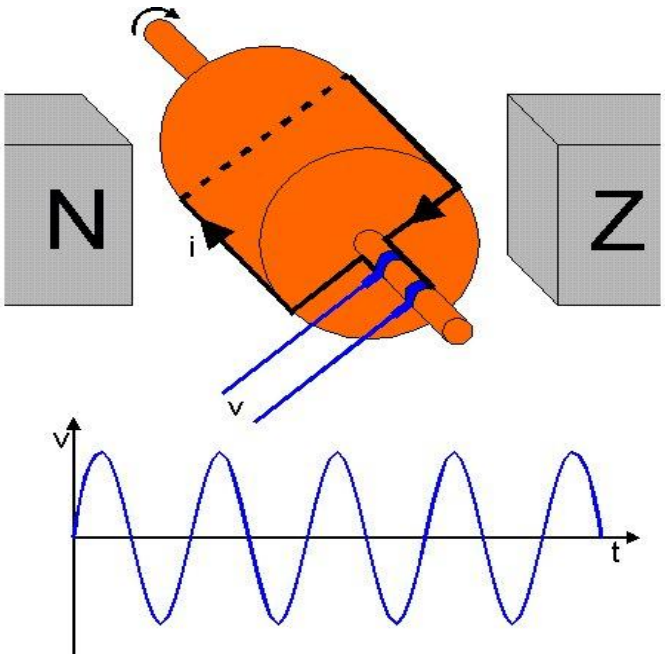
a) External gearing b) Internal gearing c) Rack and Pinion

4.According to position of teeth.

a) Straight b) Inclined c) curve

SPRINGS-A spring is define as an elastic body whose function is to distort when loaded and to recover its original shape when the load is removed.

ELECTRIC DYNAMO-It is well known that whenever electric current flow through the conductor a magnetic flux is immediately brought 10 existence in the space surrounding the conductor. We say that when the electrons are under motion they produce magnetic field. The converse is also true , i.e., when magnetic field embracing a conductor moves relative to the conductor, it produces a flow of electrons.



ADVANTAGES

-Power generation is simply walking on the step.
-Power is also generated by running or exercising on the step.

-No need of fuel input
-This is a Non-conventional system.
-Battery is used to store the generated power

DISADVANTAGES

-Only applicable for the particular place
-Mechanical moving parts are is more
-intial cost of this arrangement is high
-care should be taken for batteries

APPLICATIONS

Power generation using gym pulling can be used most of places such as
Colleges
Schools
Gym centre

CONCLUSIONS-

The project 'power generation by gym pulley' has been successfully designed and tested.
It has been developed by integrating features of all the hardware components used. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit.

REFERENCES-

[1]S. Sri GurudattaYadav, Research Scholar, *Dr. R.V .Krishnaiah*"POWER GENERATION BY GYM PULL UP" International Journal of Computer Engineering & Applications, Vol. II, Issue I/III July 2014

[2] AishwaryaPatil, AnilkumarDaharwal, AnkurHarshe, MohnishGakare, Monika Sajjanwar.
"HUMAN POWER GENERATION"
International Journal of Advanced Research in Computer and Communication Engineering Vol. 2, Issue 3, March 2013

3]Mohamoud A. Hussein, AhmedS.Ali , A.B. Sharkawy and Abdelfatah M. Mohamed.
"POWER GENERATION BY GYM"
International journal of control, automation and systems vol.3 no.3 JULY 2014

[4]Ritesh Kumar, ShubhamJha, Manish Thigale, AkritiChadda, Neha Thakur.
"POWER GENERATION APPLICATIONS IN ELECTRICAL SYSTEM"
IOSR Journal of Electrical and Electronics Engineering (IOSR-JEEE) Volume 10, Issue 1 Ver. IV (Jan – Feb. 2015)

[5] A.Reshamwala, R.Singh."A REVIEW ON POWER GENERATION USING RACK AND PINION"
International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering,Vol. 4, Issue 4, April 2015

[6]Jainish S Kothari, Tanay S Vaidya.
"ANALOG GYM POWER GENERATION"
International Journal of Scientific & Engineering Research, Volume5,Issue1,January-2014.