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Power Generation by Gym Equipment

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ABSTRACT: Now-a-days due to failure of conventional energy sources there's a need to use renewable sources of energy. This design deals with the system which will develop power using gym instrument. We're using human as the power source operating the gym instrument. This outfit is designed to act as exercise outfit as well as a source of power generation. For this operation the repaying stir of the outfit will be converted into rotary stir using rack & pinion arrangement & the speed of gyration will be increased by using chain drive as the system of gear reduction. Further alternator will be used to convert the rotary rotation into electrical energy.

KEYWORDS: Human Power, Gym Equipment, , Mechanical system, Gear ratio, Dynamo, Electrical power .

I. INTRODUCTION

In this design we are generating electrical power as nontraditional system by simply pull up and pull down. Nontraditional energy system is veritably essential at this time to our nation. Non-conventional energy using pull up pull down is converting mechanical energy into electrical energy this Design the conversion of force energy into electrical energy. The use of human- power in more effective manner for generation has been possible due to ultramodern technology. Pull up pull down power is an excellent source of energy, 95 chance of the exertion put into pull over pull down power converted into energy. A mortal-powered electricity generation has been unveiled by company. In this outfit, the stoner has to pull up pull down the gym equipment for generating power

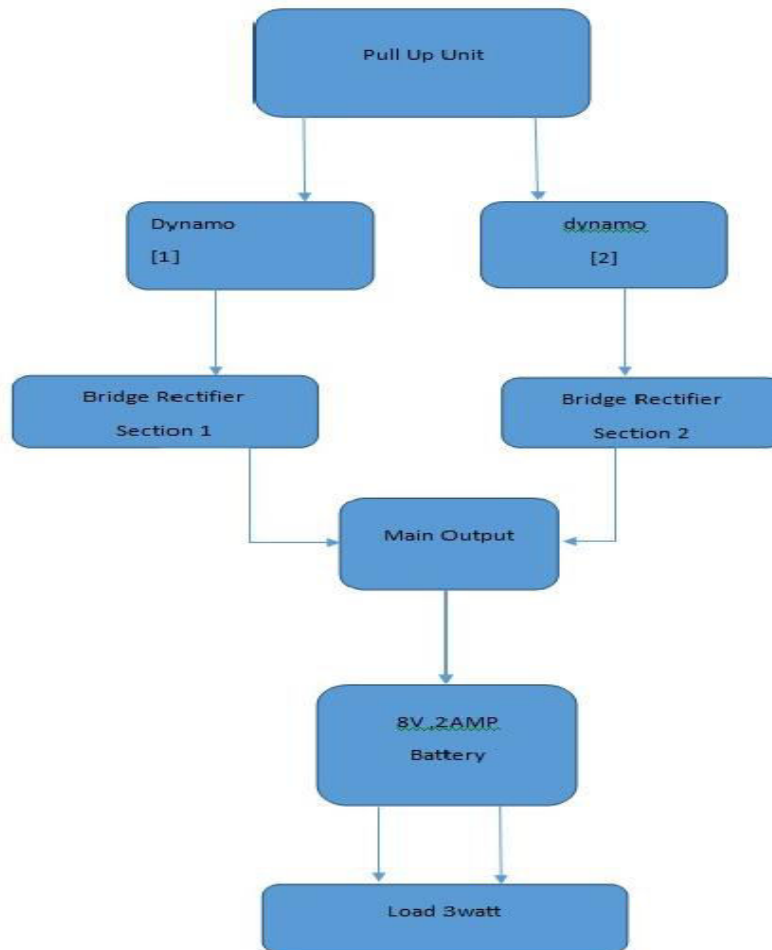
II. LITERATURE REVIEW

[1] The main sources of energy that we're using are from fossil energies. But these are finite and environmental expensive. Further operation of fossil energies will increase the carbon dioxide position in the atmosphere. Because Of that it causes an imbalance in the atmosphere. Reducing the operation of reactionary energy will affect in lower global warming. Figure1 shows Total worldenergy consumption by source (2021).

[2] obviously just about 78.4 of the general vitality devoured is created by the petroleum derivations. Yet, these non-renewable energy sources are the non-in exhaustible well springs of vitality. In the interlude we as a whole realize that the non-renewable energy source depositories are running low as the application is exorbitantly. Latterly, as the power prerequisites on the earth are Power generation by gym equipment 4 expanding its obligatory to examine further about the sustainable wellspring of vitality. Reasonable, condition inviting vitality can be created by catching powers from the common and human made sources that encompass us in the earth or by infinitesimal splitting. The encompassing wellsprings of vitality are accessible in huge quantum and the inventions are enhancing to liberate these powers consummately. A many cases for these feathers of vitality sources

[3] Is wind vitality, sun grounded vitality, hydroelectric vitality, surge vitality, mortal vitality, infinitesimal vitality and so forth. Also again, little measure of vitality which is squandered amid any operation can be changed over into helpful type of vitality. Subjoining dynamo to a turning wheel to produce power is one of the illustrations.

III. BLOCK DIAGRAM



III. METHODOLOGY

The design aims to construct and manufacture an entirely unique electric generation system that fuses both form and function into a cost-effective and accessible result. The methodology of the design is as follows: At first the frame of the setup is made which is also called as the body of the setup which consists of all. The frame is taken from a lat pull down machine and modified as per convenience. Pulleys are mounted on the shaft of proper dimension and the shaft is fitted inside the bearing which also is supported in the frame. Pulleys are added in between of frame in order to reduce the human trouble. Driver pulley of 100 mm is also mounted on the same shaft. Driver pulley is attached on the shaft and lower pulley (driven) is attached in the dynamo. An essence corroborated plastic wire is used which one end is attached with the handle other end is attached to dead weight through pulley connections. Dynamo along with pulley is supported on the frame is connected to the Driver pulley via rope. All the electrical connection is attached through the dynamo via electrical cables. The affair from the dynamo is being tested in colorful loading conditions and average power is calculated. The AC affair from the dynamo needs to be converted to the suitable DC affair, which is done by using rectifier circuit. The affair from the circuit is extended by using extension circuit and connected to 12V battery. The output from the battery is gained by affair circuit at 12v. While performing the exercise the weight is lifted by handle thereby rotating the main shaft which is also connected to the dynamo in order to produce the electrical current which can be used incontinently or can be stored in the battery.



IV. RESULTS AND DISCUSSION

- 1) On an average we were able to produce 15 Volt on operating the machine.
- 2) And we can store 4.5 volt in battery in one Hour

V. CONCLUSION

The use of machine and free wheel makes the one stroke of gym machine causes the electrical output up to 15V that can be used for several electrical elements. The output electrical energy is hold on in battery if required. The verification of the created system is completed by activity output by multi-meter.

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