

Power generation from rotating shaft of manual Treadmill

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Abstract: Electricity cost is increases day by day due to insufficient power generation and increase in energy demand.Power generation from non renewable sources have adverse effect on environment.So it is necessary to develop new ideas or processes for power generation.This paper involves such method for power generation i.e.from manual treadmill.

Index Terms: Manual treadmill,Dynamo,bus bar,charge controller,battery.

I.INTRODUCTION

Manual treadmill have rotating shaft.By connecting dynamo's to the rotating shaft it is possible to generate a power.This method of power generation is totally pollution free.It is possible to generate a 50-60 watt power per hour by using this method.When a person starts walking on a manual treadmill he exerts a force on surface of treadmill,this force cause to rotate the treadmill.Rotation of the shafts are directly given to small DC generators which are mechanically coupled to the shaft of treadmill.The DC generators give variable output because force exerted is not in continuous manner,it has deviations.To get constant output charge controller is used.The generated power is stored in battery.

II. BLOCK DIAGRAM

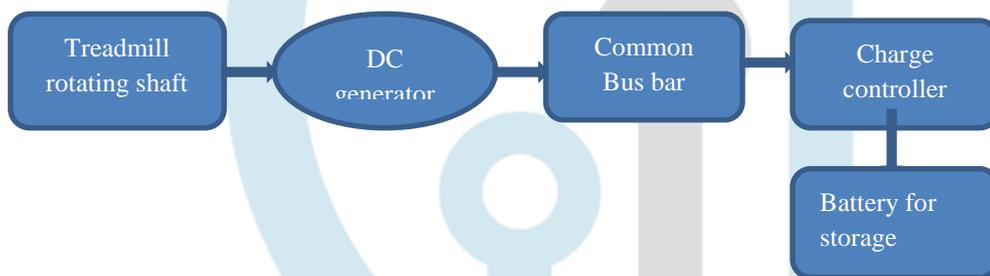


Fig. 1 Block Diagram

III. METHODOLOGY

A.Manual Treadmill-

Electric treadmills consumes energy for their operation, Hence use of manual treadmill is more efficient than electric treadmill for the power generation.

B.Dynamo-

The armature is made of coiled copper windings which rotate inside the magnetic field made by the stator. When the windings move, they cut through the lines of magnetic field. This creates pulses of electric power.



Fig.2 Dynamo

C.Bus bar-

Bus bar is used for the addition of the output of all generators.

D.Charge controller-

Power generated is not constant because force exerted by person is not continuous. So there are deviations in the generated power. Hence a charge controller is used to get constant power output.

E.Battery-

Battery is used for the storage purpose.

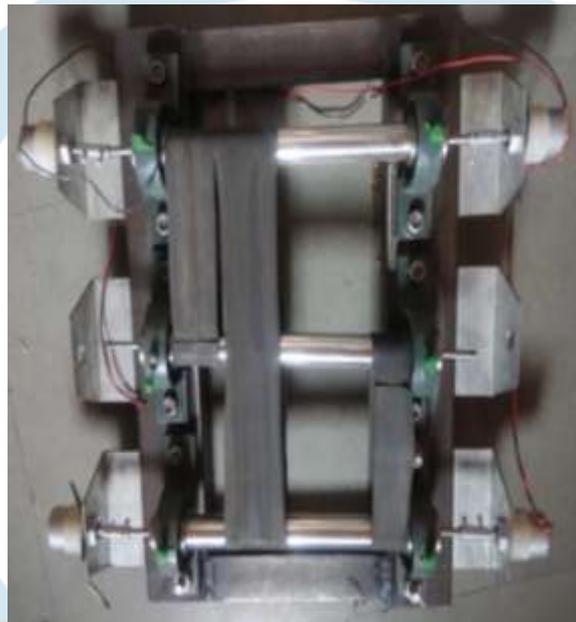
IV. MECHANICAL MODEL

Fig.3 Mechanical model

V.RESULT TABLE

Sr.No	Generator configuration	Voltage	Current	Power
1	Four generators in series	25-30 volt	0.7 amp	15-18 watt
2	Four generators in parallel	10-15 volt	1.2 amp	18-20 watt

VI. ACKNOWLEDGEMENT

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VII.CONCLUSION

Due to the growing energy needs in daily life, the conventional sources are out at an alarming rate. Hence it is getting principal requirement to make new discoveries & to fulfill the energy requirements of the world. The proposed project can achieve all the power requirements for basic daily household needs such as inverter battery charging for auxiliary power supply, mobile and other electronic device charging.

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