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Design and Fabrication of Treadmill Bicycle

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ABSTRACT: In the present living environment, transportation plays an important role, which includes movement of small things to very large equipment. Now a day, green transportation in becoming a significant part considering this situation, transportation using bicycle seems to be cheaper and greener. Also, transportation with physical exercise would be more useful for the end users. It enables the user to the transportation along with moderate physical exercise. In this project, an attempt has been made to design and fabricate the treadmill bicycle. Design calculations and CAD modelling have been carried out Based on this, the physical working model will be fabricated, the conclusion are presented finally.

Keywords: Treadmill bicycle, Walking cycle,

K. Ganesan was born on 30.05.1984 at Vellode, Erode District, Tamil Nadu. He did his schooling at Government Higher Secondary school, Vellode, Erode. He completed B.E - Mechanical Engineering (First Class with Distinction) at Kongu Engineering College affiliated to Anna University, Chennai in May 2005. He did Masters in M.E - Industrial Engineering (Gold Medal) at PSG College of Technology (Autonomous), Coimbatore affiliated to Anna University, Coimbatore in May 2009. At present he is working as Professor in the Department of Mechanical Engineering, Nandha Engineering College, Erode, Tamil Nadu, India. He is a life member in Indian Society of Technical Education. He has 9 years of teaching experience and two years of industrial Experience as a Quality Assurance Engineer at TVS - Brakes India Ltd, Chennai during June 2005 to July 2007. He has published 7 technical papers in various international and national journals and 9 papers in international and national conferences.

M.Sridhar was born on 1th February 1998 at Bhavani and his full name is Sridhar. He completed SSLC in bhavani boys higher secondary school in bhavani with 76.4% and also he completed HSC in grace school in bhavani with 70.75%.After completing his school studies,because of very much interest in mechanical engineering, he was enter into Nandha Engineering college which is located at Erode.Now he is studying final year of mechanical engineering with 80%. He was very much interested in the area of manufacturing, so he took his final year project as treadmill bicycle in the title of "Desing and Fabarication of Tread Mill bicycle".

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R. Sampathkumar was born on 14th febrauary 1997 at Dharmapuri and his full name is Sampathkumar.He completed SSLC in Dawn matriculation higher secondary school in Dharmapuri with 70% and also he completed HSC in same school with 65%.After completing his school studies,because of very much interest in mechanical engineering, he was enter into Nandha Engineering college which is located at Erode. Now he is studying final year of mechanical engineering with 66%. He was very much interested in the area of alternative fuel, so he took his final year project as alternative fuel in the title of "Design and fabrication of treadmill bicycle using automobile project either".

M. Selvakumar was born on 20th september 1998 at erode and his full name is selvakumar. He completed SSLC in Adharsh vidhyala matriculation higher secondary school in anthiyur with 65% and also he completed HSC in same school with 60%.After completing his school studies, because of very much interest in mechanical engineering, he was enter into Nandha Engineering college which is located at Erode. Now he is studying final year of mechanical engineering with 55% .He was very much interested in the area of alternative fuel, so he took his final year project as alternative fuel in the title of "Design and fabrication of treadmill bicycle using automobile industries."

1. Introduction

The treadmill bicycle is completely a new way of movement completely designed for runners. Typically using a treadmill basically is similar to running, hiking or walking. Think about the last time you were riding a bike over some kind obstacles such as train tracks, potholes, speed bumps. Possibilities are you stood up on the pedals to improve your balance when crossing the obstacle [1-6]. Basically, the treadmill bicycle will provide the rider a well-balanced position the entire time. People with busy schedule will also be able to take care of their health and physical fitness. Above all, it is not a conventional treadmill to make use of only in closed rooms, person using treadmill bicycle can roam on roads also.

For travelling over short distances people often use a commercial vehicle which causes pollution and unnecessary wastage of fuel. So, we came to a solution for this type of problem by providing wheels to the treadmill and the concept is termed as walking cycle.

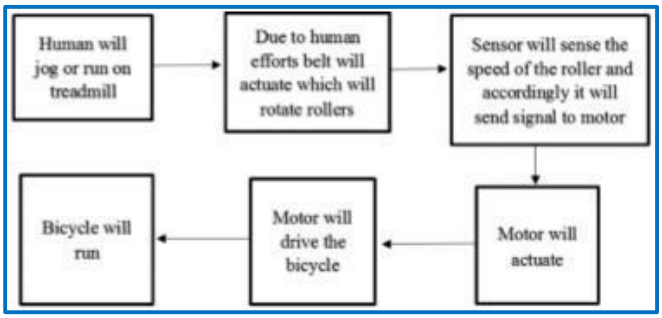

Fig 1. Working principle of treadmill bicycle

This project overcomes the drawback of the conventional treadmill which is stationary which in fact does not provide the jogger to get exposed to the natural atmosphere. So this proposed methodology

provides an ultimate solution by making use of wheels and making the treadmill bicycle a walking cycle.

2. Working Principle

When we walk or run on the walking surface it gives rotation the treadmill bicycle is forward moving. The consists of the treadmill bicycle is moving belt and a rigid plate placed between the two surfaces of belt provided backing when the transverse load is applied [7-8]. The original and unmodified mill is 0.75 inches pressed in the support plate. According to the manual provided with the treadmill, the design behind the flexible multi point mounting system to reduce the stiffness plate by providing less support than direct attachment of the two solid rails. In actual practice, the thickness and stiffness when additional aluminium when inserted between the sheets and rails.

We concluded that modifications would be necessary to achieve an idelly complaint walking surface capable of reducing the impact related walking and running. Thus, the bottom face of particle board sheet held two outwardly angled metal brackets.

Model of Treadmill Bicycle

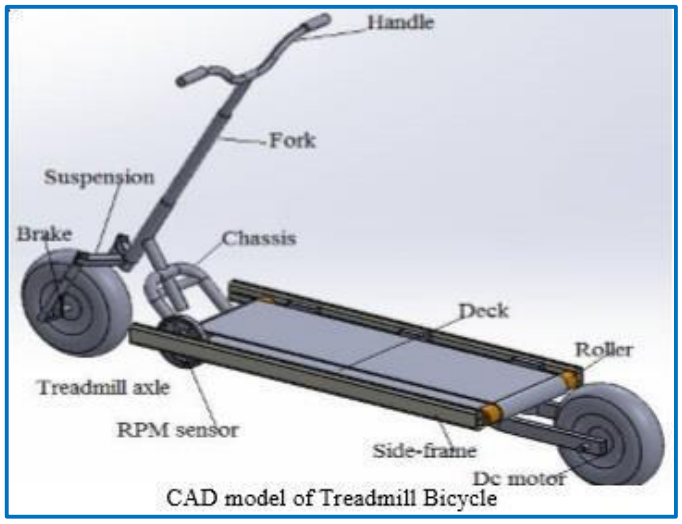

Fig 2. Model of Treadmill bicycle

3. Methodology

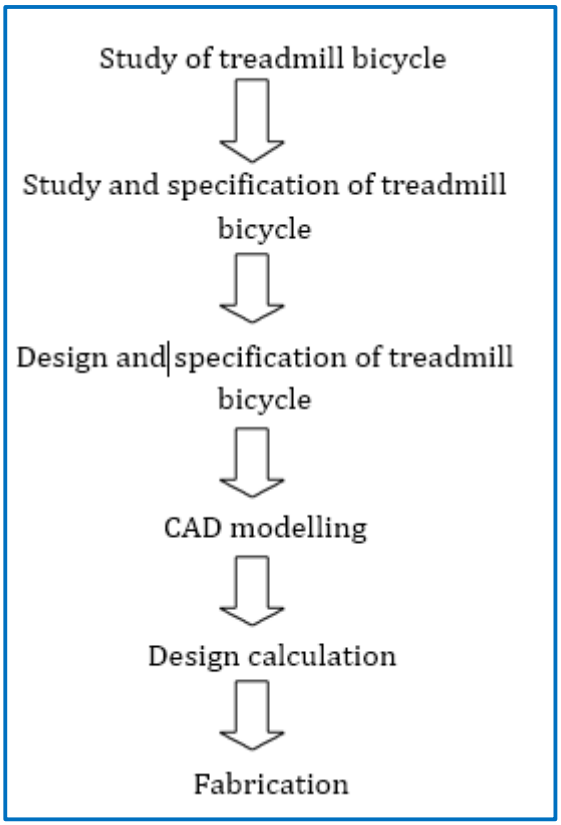

Fig 3. Methodology

4. Conclusion

In this project, an attempt has been made to design and fabricate the treadmill bicycle. The following conclusions are drawn. Design and fabrication of treadmill bicycle has been done successfully. The proposed physical model is more environment friendly.

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Competing Interests:

The authors declare that they have no competing interests.

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