International Journal of Advanced Technology in Engineering and Science
Vol. No.08, Issue No. 05, May 2020
www.ijates.com
ijates
ISSN 2348 - 7550

ROLLER SKATE FOR FLAT TYRE IN FOUR WHEELER

Murugesan. S[1], R.Arun Kumar[2], D. Kannan[3], Y. Mathiyalagan[4], R. Sivanesh[5]

[1]*Assistant Professor, Department of Mechanical Engineering, Sengunthar Engineering College, Tiruchengode*

[2,3,4,5] *Final Year Mechanical Engineering, Sengunthar Engineering College, Tiruchengode*

ABSTRACT

The some of the four wheeler doesn't have the spare tyre for this purpose we are using an roller skate for flat tyre in four wheeler. The idea doesn't involves the use of an existing inflectual property. The product idea is mainly used for an automobiles. Car wheel Roller skating is the traveling on surfaces with roller skates. It is a form of recreational activity as well as a sport, and can also be a form of transportation. In fact, which help to transport the car if the tire get puncture . easy to access to project cost wise low more efficient .which constrain four wheel and its with stand with high load car.

1.INTRODUCTION

Roller skating is the traveling on surfaces with roller skates. It is a form of recreational activity as well as a sport, and can also be a form of transportation. In fact, as the United States readied for World War II, the government entertained the notion to add roller skates as essential equipment to move infantry around Europe to save gas. Skates generally come in three basic varieties: quad roller skates, inline skates or blades and tri-skates, though some have experimented with a single-wheeled "quintessence skate" or other variations on the basic skate design. In America, this hobby was most popular first between 1935 and the early 1960s and then in the 1970s, when polyurethane wheels were created and disco music oriented roller rinks were the rage and then again in the 1990s when in-line outdoor roller skating, thanks to the improvement made to inline roller skates in 1981 by Scott Olson, took hold.

Roller skating has had a checkered past over its nearly-three century history. Given its ebb and flow of popularity over the past century, writers labeled each generation's attraction a "craze!" The caption in a 1904 Decatur newspaper read, "Old Craze Comes Back," adding, "Roller skating promises to be as popular as it was twenty years ago." Reported on 11 October 1904, the statement announced the opening events of a new Decatur, Illinois

roller rink. In 1906, with the opening of another Chicago rink, the Inter Ocean newspaper complained that "after twenty years of exemption from the affliction the desire to roll is again taking possession of American adults...the mania has struck Chicago!" Nearly forty years later, Charlie Tyler would write, "This current roller skating 'craze' is nothing new."

Tyler wrote for Chicago's Herald-American in September 1941 and described the opening of Chicago's Madison Gardens Rink's thirty-fifth season on the eve of World War II. Tyler was referring to the first roller skate craze at the turn of the twentieth century, when ball bearings revolutionized roller technology and roller skaters staged spectacle events and speed-skating marathons. Clamp-on skates were mass-produced for those with great aspirations. Tyler's reporting attempted to temper the rebirth of enthusiasm for the new roller styles that had become popular, including roller derby and dancing on rollers, suggesting that we had seen this before. Today, the acceptance for roller skating is not unlike a waning moon but the sport persists. Roller skating continues to thrive as a part of pop culture in the form of recreation for leisure, dance and sport. Rollers, past and present are diehards.

2.COMPONENTS

1. **METAL FRAME**
2. **SHAFT**
3. **BEARING**

1.METAL FRAME:

The metal frame is generally made of **mild steel** bars for machining, suitable for lightly stressed components including studs, bolts, gears and shafts. It can be case-hardened to improve wear resistance. They are available in bright rounds, squares and flats, and hot rolled rounds

Suitable machining allowances should therefore be added when ordering. It does not contain any additions for enhancing mechanical or machining properties. Bright drawn mild steel is an improved quality material, free of scale, and has been cold worked (drawn or rolled) to size. It is produced to close dimensional tolerances. Straightness and flatness are better than black steel. It is more suitable for repetition precision machining. Bright drawn steel has more consistent hardness, and increased tensile strength. Bright steel can also be obtained in precision turned or ground form if desired.

2.SHAFT

Shaft is a common and important machine element. It is a rotating member, in general, has a circular cross-section and is used to transmit power. The shaft may be hollow or solid. The shaft is supported on bearings and it rotates a set of gears or pulleys for the purpose of power transmission. The shaft is generally acted upon by bending moment, torsion and axial force.

Design of shaft primarily involves in determining stresses at critical point in the shaft that is arising due to aforementioned loading. Other two similar forms of a shaft are axle and spindle.

BALL BEARING

3.BEARING

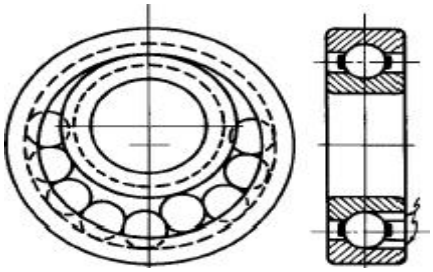
A bearing is a machine element that constrains relative motion to only the desired motion, and reduces friction between moving parts. The design of the bearing may, for example, provide for free linear movement of the moving part or for free rotation around a fixed axis; or, it may prevent a motion by controlling the vectors of normal forces that bear on the moving parts. Most bearings facilitate the desired motion by minimizing friction. Bearings are classified broadly according to the type of operation, the motions allowed, or to the directions of the loads (forces) applied to the parts.

SPECIFICATION

INNER DIA :12mm OUTER DIA : 37mm

3.1 HISTORY

Although bearings had been developed since ancient times, the first modern recorded patent on ball bearings was awarded to Philip Vaughan, a Welsh inventor and ironmaster who created the first design for a ball bearing in Carmarthen in 1794. His was the first modern ball-bearing design, with the ball running along a groove in the axle assembly. Jules Suriray, a Parisian bicycle mechanic, designed the first radial style ball bearing in 1869, which was then fitted to the winning bicycle ridden by James Moore in the world's first bicycle road race, Paris-Rouen, in November 1869.



A linkage is a mechanism formed by connecting two or more levers together. Linkages can be designed to change the direction of a force or make two or more objects move at the same .time. Many different

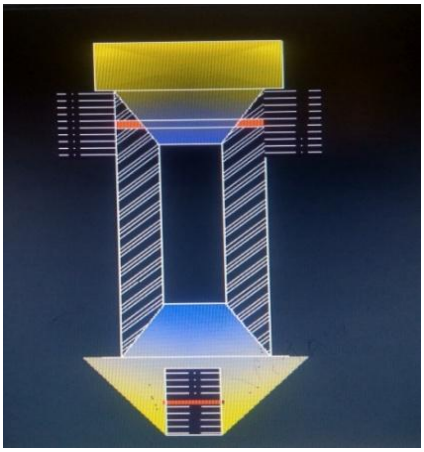
fasteners are used to connect linkages together yet allow them to move freely such as pins, end-threaded bolts with nuts, and loosely fitted rivets.

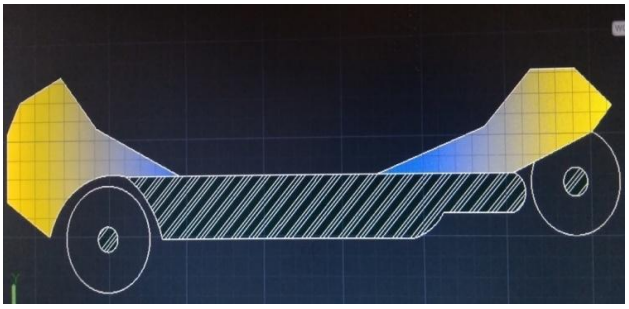
3.PROJECT DIAGRAM

It is a simple machine that consists of two circular objects, the wheel and the axle.

- The axle is placed into the center or middle of the wheel, so that way it reduces the force that is needed to be applied, in order to move it.
- It makes work easier by changing the amount on direction of the force applied to move the object.
- The object that is being moved is a resistance(load) and the force applied to the outer edge of the wheel, is located at the axle.
- Wheel and axle makes work easier by changing the amount of force applied **t**o the load.
- Work is equaled to the amount of force applied to an object multiplied by the distance over which the force is applied, or in mathematical equation: work=force x distance.
- The Mechanical Advantage of a Wheel and Axle measures how much the machine multiplies the force applied by the user. There are two kinds of mechanical advantages, ideal and actual.

4.PROJECT DESIGN



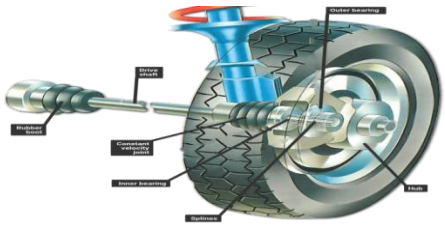


5.WORING PROCESS

WHEEL HUB

The WHA is located between the brake drums or discs and the drive axle. A wheel is bolted on it. Depending on the construction, the end of hub comes equipped with the splined teeth. They mate the teeth on the axle shaft. The axle hub spins along with the wheels bolted to it and provide the power to the wheels in order to rotate.A roller bearing between the axle hub and axle shaft ensures easy rotation of the non-drive wheels.

On the axle side, it is mounted to the holding bracket from the chassis; on the disc side, the wheel is mounted to the bolts of the WHA. When replacing, a wheel hub assembly should be torqued to the vehicle's specifications to prevent failure.



CAR AXLE

You should first understand the axle's role within the vehicle. All wheeled vehicles have axles. Axles are used for steering, driving, and braking, meaning they are important for basically every aspect of vehicle use. Essentially, the axles transfer power and torque from your engine to your wheels.

In performing this key function, the axle must be able to sustain the entire weight of the vehicle, cargo and passengers. The axle must also withstand the accelerated forces of driving and braking.

6.CONCLUSION

The product idea is mainly used for an automobiles. Car wheel Roller skating is the traveling on surfaces with roller skates. It is a form of recreational activity as well as a sport, and can also be a form of transportation. In fact, which help to transport the car if the tire get puncture . easy to access to project cost wise low more efficient .which constrain four wheel and its with stand with high load car**.**

7.REFERENCE

1. Kenneth T. Jackson; Lisa Keller; Nancy Flood (1995). The Encyclopedia of New York City: Second Edition. New York: Yale University Press. ISBN 978-0300055368.
2. Egli, ed. (1975). "Viking Press Is Sold To Penguin Books". School Library Journal. 22 (4): 16.
3 National Museum of Roller Skating. "National Museum of Roller Skating: History of Inline Skating". Archivedfrom the original on 22 February 2014.
4 "Viking Children's Books". Penguin Random House. Retrieved April 17, 2016.
5 "Brian Tart | The Bookseller". www.thebookseller.com. Retrieved 2017-09-13.