Sugarcane Lifting Trolley

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Abstract- *With the increasing levels of technology, the efforts being and by automating them you can get the added advantages of flexibility and safe practices. Besides, they also help in enhancing the performance and cost-effectiveness of your processes. This conveyor system we can modify according to put to produce any kind of work has been continuously decreasing. The efforts required in achieving the desired output can be effectively and economically be decreased by the implementation of better designs. The Indian sugar industry positions eleventh in size out of 200 sugar-creating nations; and constant progression is fundamental to guarantee that this industry stays aggressive. This project is about innovative idea used in sugarcane lifting process. Normally the sugarcanes are loaded in the trucks manually and by heavy machines, in order to simplify that we have designed a pulley and belt drive arrangement with arms for lifting the sugarcane to top of the trucks. Another important factor is this lifter is designed to accommodate different heights of trucks. Conveyor systems are one of the most commonly used equipment in almost every industry. They help in achieving different kinds of functions application and also can be develop as per height and width of job/ application. In this project, we have tried to develop a new mechanism for sugarcane lifter for tractor trolley loading and unloading purpose. Here we have used the chain/ belt conveyor concept to manufacture the proposed mechanism*

Keywords- Model Of Sugarcane Lifting Trolley

I. INTRODUCTION

India is one of the largest consumers and producers of sugar in the world and is the world's second largest producer next to Brazil of the sugarcane. The excess of bagasse is stored in open area so the lot of human health hazards is taking place due to loading of bagasse . Now a days industries are using the crane to lift the sugar canes which is very slow working. A conveyor system is a common piece of mechanical handling equipment that moves materials from one location to another. Conveyors are especially useful in applications involving the transportation of heavy or bulky materials.

The belt conveyors are used for transporting light and medium weight loads between operations, departments, levels and buildings providing considerable control over the orientation and placement of the load. Overview of that introduction we done our project to reduce the human efforts. Overview Sugar from sugarcane is an item which impacts on numerous economies including India. The sugar business in India faces numerous difficulties, which should be tended to so as to stay aggressive. Benefit in the global sugar industry has been stressed by expanding farming information costs, with one of the principle factors being transport costs. This part represents around 20 – 25 % of the complete expense of sugarcane generation in India, which likens to Rs. 750 million for each annum. Sugarcane in Indian is for the most part developed in the provincial locales of Maharashtra and Uttar Pradesh which had a yearly creation increment from 500 000 tons in 1950 to 21 million tons in 2000. This demonstrates sugarcane generation has quickly expanded. The vehicles vary concerning their administration, plan and abilities. The Indian sugar industry is expansive and positions eleventh among the 200 sugar creating nations on the planet which are overseen by 6 organizations. The sugarcane exchange framework contains sugarcane being Moved and stacked, trans-stacked and off-stacked, which adds up to more than 25 % of the all-out creation cost of sugarcane, henceforth little upgrades can have critical financial advantages. One such way of simplifying the loading process is done through the height adjustable sugarcane

II. PROBLEMSTATEMENT

Harvesting of sugarcane at a proper time i.e., peak maturity, by adopting right technique is necessary to realize maximum weight of the millable canes (thus sugar) produced with least possible field losses under the given growing environment. In many countries even today harvesting is done manually using various types of hand knives or hand axes. Among the several tools the cutting blade is usually heavier and facilitates easier and efficient cutting of cane. Manual harvesting requires skilled labor and improper harvest of cane leads to loss of cane & sugar yield, poor juice quality and problems in milling due to extraneous matter. During the manual harvesting there during loading of sugarcane in to the tractor trolley.

III. OBJECTIVES

a) Fabricate a new proposed conveyor system for human easy purpose.

b) Understanding the existing problems and finding out the proper and best solution.
c) Understand project planning and execution. D)Understand the fabrication techniques in a mechanical workshop.
d) E)Understand the usage of various mechanical

IV. LITERATUREREVIEW

R.B..Lokapure, A.P.Kadam, V.B.Nerle (2012):It is necessary to take some firm steps to avoid fire risk near storage of bagasse piles & loose bagasse yard and to save this valuable renewable fuel without damaging of plant, bagasse handling machinery & life of human being which captured by sudden huge fire. For protection of the plant against fire, main plant, transformer area, bagasse storage yard etc. are protected by Hydrant system apart from portable &mobile fire extinguishers. Fire water pumps of hydrants are installed in a fire water pump house located with pump suctions connected in the raw water reservoir. (Cap-10 Lac, Liter) Two fire water pumps one of which is electric motor driven & the other diesel engine driven which would be brought in operation automatically sensed by pressure transmitter. Thus hydrant system will feed pressurized water to hydrant valves located throughout the plant.

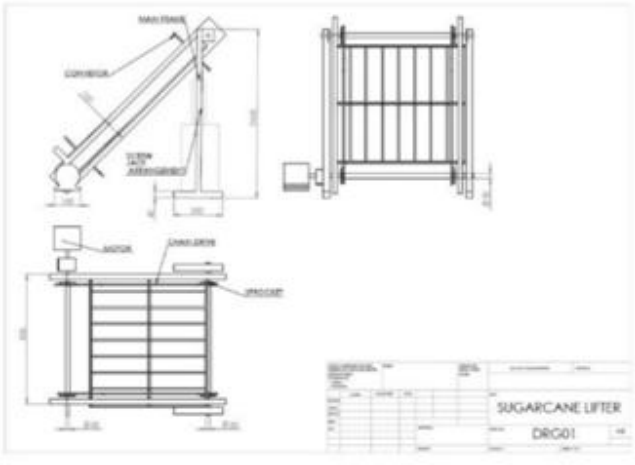
Remark: While facing with fire risk of bagasse only one person could not be able to fight, but taking some essential steps such as action plan, knowledge of fire fighting system with safety awareness among workers etc. one can easily come over the risk of bagasse fire & save this renewable fuel along with minimum loss of property.

Mukesh Kumar Mishra, Dr. NilayKhare, Dr. AlkaBaniAgrawal(2014):India is one of the largest consumers and producers of sugar in the world and is the world's second largest producer next to Brazil of the sugarcane. Sugar production is an energy intensive industry and requires both steam as well as electricity. Bagasse is the leftover of the sugarcane after crushing and is burnt as a fuel in the boiler of sugar mill. Bagasse cogeneration has been practiced in sugar mills since long to meet sugar mills own energy needs. However, supplying excess electricity to the grid has gained momentum worldwide in last one decade. It offers several advantages such as near – zero fuel cost, increased viability of sugar mills, energy security, fuel diversity, reduced transmission and distribution losses and carbon emission
SantoshKunnur, S. N. Kurbet, M MGanganallimath (2013): In all sugar industries the cane after processing is left with the waste product called "Bagasse". The Bagasse produced in the mills is used as a fuel to boilers and the generation of steam.
The steam thus produced is expanded in turbines and the power is generated. The excess bagasse is then stored in an open area. Lot of human health hazards is taking place due to loading of bagasse. Nowadays, the industries are using the crane systems to load the bagasse into the tippers, which is a very slow task and causing more dust. The bucket conveyors are used to move bulk materials in a vertical or inclined path. Buckets are attached to a cable, chain, or belt. Buckets are automatically unloaded at the end of the conveyor run. The belt conveyor is used for transporting light- and medium-weight loads between operations, departments, levels, and buildings, providing considerable control over the orientation and placement of the load. The belt is roller or slider bed supported; the slider bed is used for small and irregularly shaped items.

V. CONSTRUCTION ANDWORKING

The arrangement shown of schematic diagram of Proposed mechanical system of conveyor for lifting purpose. In this screen, the collecting plate and chain drives are rotating continuously by the motor. The collecting plate is coupled between the two chain drives for collect the sugarcane materials from the bottom place. Here only a single person is enough to load the sugarcane in the equipment. Then the collected sugarcane is lifted to the top of the truck another' son the truck collect the sugarcane. Our project is having wheels for movable application. In addition to that this project can be adjusted to various height depends on the truck size It is an advantages that it could handle trucks of different loading height. Structural parts and conveyor parts we are going to design and develop. When the motor rotates at that time the conveyor also rotates with 30 rpm. Conveyor have buckets.

These buckets fabricated in such a way that, The distance between two strips are changed to lift the sugarcane as per there size. The motor have given
Connection 230 V AC Supply



Components Used In Project

1. MS Pipe
2. 2Pulley
3. 3Chain Conveyor
4. Bearing
5. DC Motor 6.Battery

VI. ADVANTAGES

1. An investment project with a short payback period promises the quick inflow of cash. It is therefore, a useful capital budgeting method for cash poor firms.
2. A project with short payback period can improve the liquidity position of the business quickly. The payback period is important for the firms for which liquidity is very important.
3. An investment with short payback period makes the funds available soon to invest in another project.
4. An short payback period reduces the risk of loss caused by changing economic conditions and other unavoidable reasons.
5. Payback period is very easy to compute.

VII. CONCLUSION

In this project we have conclude that the human can face to more problems in industry, specially in sugar industry. They have many hazards to lift the sugarcane , it fill in tractor trolley like that so we have tried to develop a new mechanism for humans in sugar industry, to lift the sugarcanes in tractor trolley. This mechanism is flexible in terms of motion due to the presence of a driving mechanism, above suggested real time application will be the best to suit the company requirements& prevents human labors from hazardous environment

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