

## STUDY ON LOADING AND UNLOADING TELESCOPIC CONVEYOR

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**ABSTRACT** - In the era of increased energy consumption, shortage of manpower and economical manufacturing due to competition, Industries are seeking for better machines and material handling system consumes substantial energy during the transport. Our present work deal with utilization of telescopic material unloader for reduces the Manpower cost, time saving and safe loading and unloading the materials in industries. Our current attempt is towards developing an economical telescopic conveyor by adopting the exiting simple design.

Telescopic conveyor is working on sliding mechanism, which include one fixed link and two or more sliding links. Sliding link provide telescopic action. Because of the increasing length due to telescopic action, telescopic conveyor can go inside a truck or container & give access to loading & unloading operation. Telescopic conveyor is used for loading & unloading of boxes, bundles & bags from trucks or containers to warehouse & vice versa. It will move in to & fro direction with the help of geared motor. Telescopic conveyor is easy to shift from one platform to another platform with the help of trolley wheels within plant.

It is reliable to use, compact in size, adjustable. It also saves working man-hours & labor efforts which increases profitability of industries engaged in material handling.

**Keywords-** Telescopic Conveyor, Loading and Unloading equipment, Material handling equipment.

### I. INTRODUCTION

Now days because of increased energy consumption, shortage of manpower and economical manufacturing due to competition, industries are looking for better material handling equipment. Industries are still using traditional material handling equipment's like material loaders, lifts

and man power. Conveyor might be a best replacement for this method.

The Conveyor is used in many industries to transport goods and materials between stages of a process Conveyor systems is a good way to reduce the risks of injury in tasks or processes that involve manual handling, as they reduce the need for repetitive carrying. Conveyors are a material handling tool. The opportunity to boost productivity, reduce product damage, and minimize labor required in a manufacturing.

The system is a common piece of mechanical handling equipment that moves materials from one location to another location. The Conveyors System is especially useful in applications involving the transportation of heavy materials. The systems allow quick and efficient transportation for a wide variety of materials which make them very popular in the material handling and packaging. Various kinds of conveyor systems are available, and are used according to the various needs of different industries.

A telescopic belt conveyor is an economical & effective alternative to labor intensive routines. With little effort operators can move heavy or bulky packages into or out of a container/truck. Telescopic Conveyors are conveyors whose length can be varied by telescopic sliders. A telescoping conveyor is a flat belt conveyor that operates on telescopic sliders. They are popular at warehouses & docks where the conveyor is extended into trailers for unloading or loading. These conveyors used for loading and unloading of boxes and cartons in trucks and containers. The loading and unloading of the truck can be done quickly. Various configurations of telescopic conveyors are available. It consists of one fixed portion and two or more sliding portions for obtaining telescopic action. Projecting action can be in number of stages depending on requirement. This system can be made mobile by application of wheels in base and height adjustment or inclination of system is possible with pneumatic cylinder.

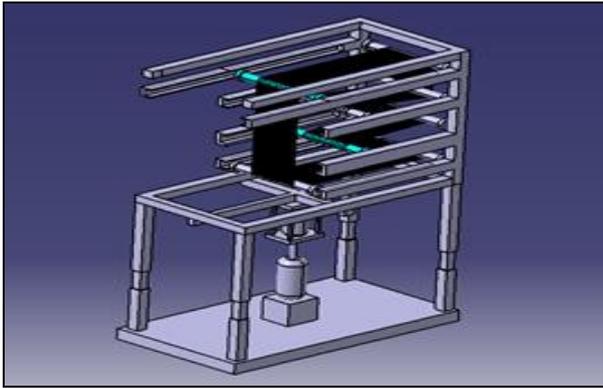


Fig.1 Model of Telescopic Conveyor

## II. EASY OF USE

Our project reduces the manpower required for loading & unloading of material. It is time saving than traditional material handling equipment and safe loading and unloading of the materials in industries, warehouse and docks. The space required for operation is less so that it becomes compact.

## III. REVIEW

The study of paper describes scientific literature on all kinds of fully automated conveyor based sorting system from an operational research perspective. It helps for study of types of belts in the market [1].

Study of existing conveyor system and optimize the critical parts like roller, shafts, C-channels for chassis and support, to minimize the overall weight of assembly and material saving. It helps for study of the frame channel selection with the optimization method [2].

How the starting & running characteristics of a belt conveyor are influenced by slip. Slip is the important part in the belt operation system it compare all the load data compare to all the system type loading and controlling system [3].

In Order increase, significant technology advances have been required in the field of Material handling system designs and development. The present paper shows the material method which can be used in the operation. It's very important to for selection of material [4].

In industries reducing saving time, manpower, Money and space purpose every one using simple equipment for loading and unloading purpose. The above paper shows the market survey and the automation system [5].

Belt conveyor system is comprised with high degree of automation, loading unloading and movement efficiency. It is also very flexible, safe, with low initial, operational and maintenance cost while neglecting repetitive short distance movement in the manufacturing industry [6].

Design is a critical part in the entire factor. If the design is safe then the operation is easy and ready to work. If the design is not safe then the trial and error method is done [7].

## IV. STUDY

Our project work deal with utilization of telescopic material unloader for reducing the Manpower cost, space required for operation so that it becomes compact, time

saving and safe loading and unloading the materials in industries. The current attempt is towards fabricating of an economical telescopic material unloaded by adopting the exiting simple design procedure. We are going to develop telescopic conveyor which can height adjustable also works on pneumatic cylinder.

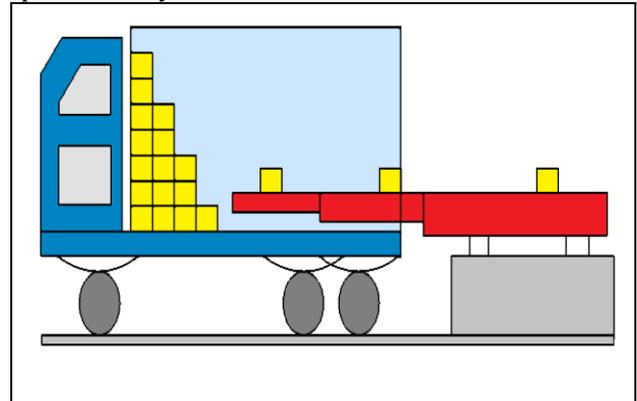


Fig.2 Working system of Telescopic Conveyor

## V. WORKING PRINCIPLE

Telescopic conveyor is working on sliding mechanism in which the first link is fixed and two or more links movable sliding links.

In first position all the links are retracted in first one making it compact and it goes easy to move at another position. When it is needed to load or unload material from container it goes in forward direction making loading and unloading easy.

Its length is adjustable as per material quantity in container or dock. It can be operated by pushing or pulling direct by operator or by hydraulic system as per requirement.

After work done it can be easily retracted to make it easy to store at minimum floor area.

## VI. CONCLUSION

Our Flexible Loaders and Unloader Conveyors are low cost and portable solutions for loading & unloading vehicles. This is an efficient, fast an economical solution for loading and unloading of product from trucks, Containers. Built belts ensure proper gripping of product while loading or unloading them.

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