

Design of Hopper and Feeding Mechanism for Coconut Dehusking Machine

Raghuraddi S Sangalad

**Department of Mechanical Engineering, R.T.E. Society's Rural Engineering college
Hulkoti, Gadag, Karnataka, India-282205, Email : raghu9164114464@gmail.com**

INTRODUCTION

Today the industrial revolution in automation dealing with technological innovation is with more comforts, high efficiency, efficient. Automation removes human error from processes and ensures accuracy every step of the way. Building an automation road map can help reduce errors in most cases and even eliminate birth on new errors. The functions storage, sorting, orientating, allocating, positioning and inserting have to be performed quickly, safely and without damaging the product. Part manipulation is an important but time-consuming operation in manufacturing automation. obtaining particular orientation of an object during a process is a tedious work in a shorter lead time to overcome this problem, part feeding system is used in automated system to segregate and orient parts (object) prior to the next stage of the process.

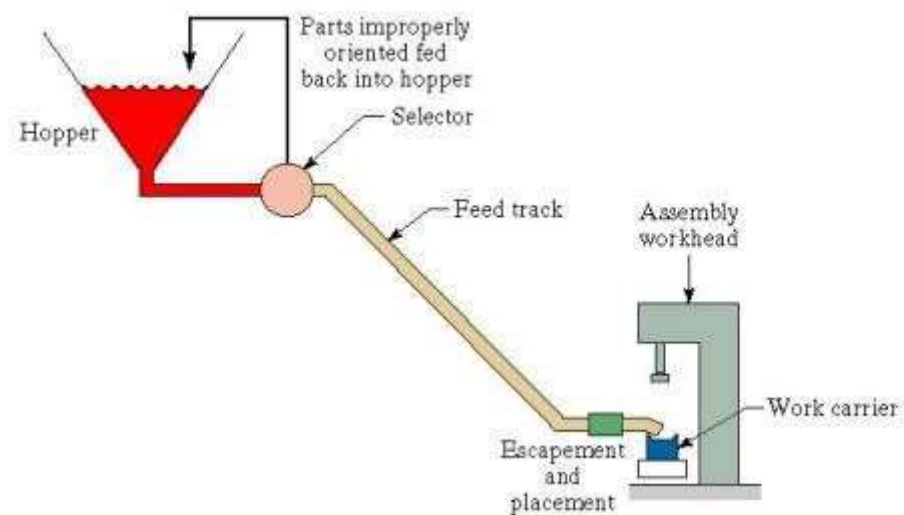
As objective is to drive greater efficiency by either increasing production capacity or reducing labour costs, often both. Hopper and feeder also being an important role in automation knowing that precise and accurate distribution of the components is the basis for an efficient and economical automation of manufacturing/assembly lines and is therefore indispensable.

Hoppers are used primarily in materials handling as parts storage vessels, transporters, and feeders. As rolling out from hopper to orientation the parts are to be oriented in desired manner for automated operation. If the most probable natural resting orientation of the part is chosen as the preferred orientation, the need to re-orient parts would be minimized. Most probable natural resting is the orientation which has the highest probability of occurrence. Greater the number of parts in preferred orientation, higher is the efficiency of the part feeder. components have to be fed and aligned in a proper orientation at required speed in automated assembly. They determined the probability of natural resting orientations of parts using drop test.

In our country INDIA more than 70% people are farmers. India holds 3rd place in world's coconut growing is 17 percent, it produces 13 billion nuts per annum and 6% is utilized for coconut virgin oil and commercial purpose other being exported to other country. The automation today supports a large agriculture and industry aspect in India can be used for various purposes, Automation increases the productivity of agricultural machinery by increasing efficiency, reliability, and precision, and reducing the need of human intervention. So as to eliminate the labour as well as improve feed rate increasing its efficiency.

As commonly small-scale coconut farmers buy dehusker machine but end up with labour problems, life risky, and used methods is manual method of de-husking using the iron spike, which possess many problems like chance of injury to worker, availability of labours, high labour charges, more time consuming and less productivity. As coconut to be sold have to be in market need to dehusked its outer fibre in coconut dehusking machine.

This project aims, Proper oriented automatic coconut feeder at controlled feed rate for coconut dehusking machine. In view of the above said facts a project work which is entitled as “**Designing Hopper and Coconut Feeder** to Dehusking Machine is taken as a project work by a batch of four members.



Elements of parts delivery system

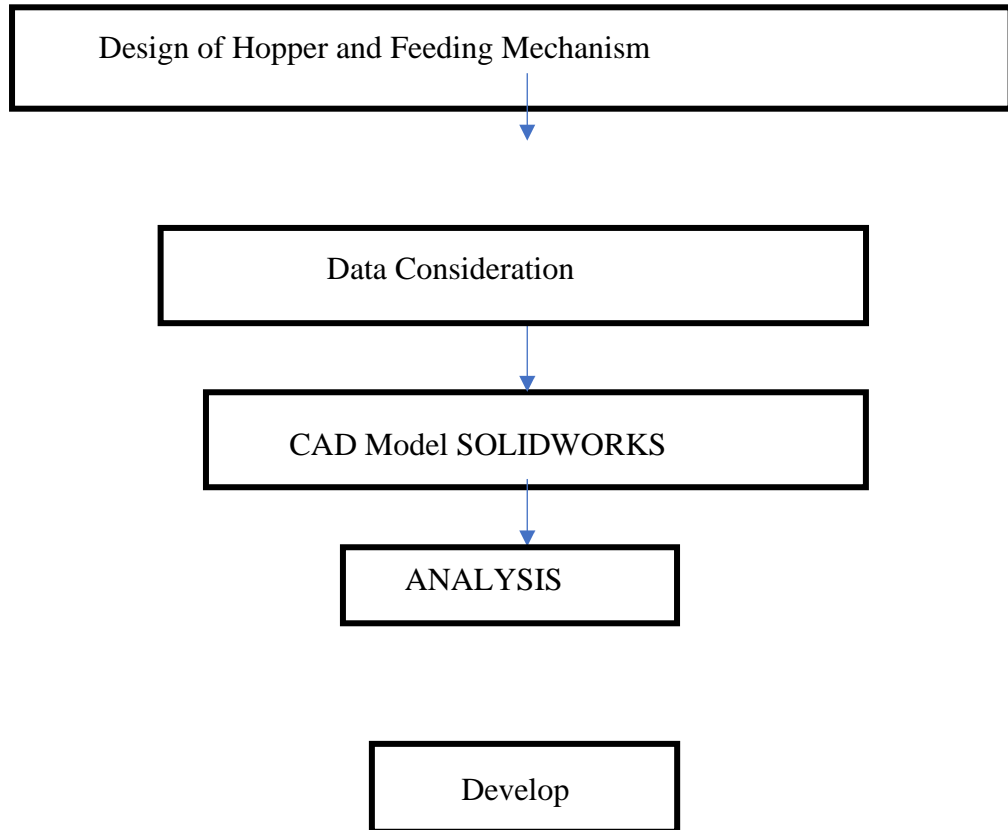
PROBLEM STATEMENT

Designing hopper and coconut feeder to coconut dehusking machine focusing to solve problem of manually man labour feeding of coconut to dehusking machine.

OBJECTIVE

- To eliminate the Human labour involved
- To automate the feeding process of coconuthusking
- To Reduce the overall cost involved in the dehusking process.

METHODOLOGY



DESIGNED CADMODEL

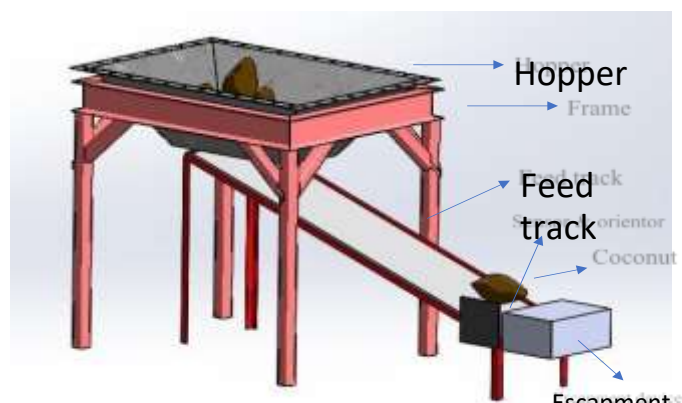


Fig 9 3-D Designed CAD Model

EXPECTED OUTCOME

- Elimination of humanlabour
- Automated feeding of coconut to dehusking machine
- Reduction in overall cost involved in the dehusking process.
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CONCLUSION

An automated machine for coconut feeding for its dehusking process has been developed for the small-scale farm holders in the agricultural and rural areas. The operation of the machine is simple and the maintenance of the machine is also not expensive. The machine can feed an average coconuts per hour. Introducing this machine in the farm areas can reduce the risk involved in the use of spikes in dehusking the coconut and also eliminates the skilled manpower required for dehusking the coconuts. The machine can also be integrated along with the further processing steps of the nuts such as the production of copra.

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