

Design and Fabrication on Effort Adjustable Paddy Filler

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Abstract: A hand-operated grain collector and bagging system was designed, manufactured, and tested for collecting and bagging grains (paddy) dried on concrete pavement using locally available materials from the adjacent industrial era. The following major components made up a simple hand grain collection and bagging system: body, wheel, long pipe, vertical stand body (bars), horizontal bars, collector, and bag. Base plate with radial flat bladed kind, slot bar, sweeping box, bagging area, body, and conveyance system

1. INTRODUCTION

The improvement of a developing populace will increase the want of meals day through day. This task goals to layout and fabrication of amassing and storing of grains through manually. Main goal in the back of designing and fabricating the bagging and amassing of grains is to lessen the human attempt and additionally lessen time taken for storing. This task especially useful to the previous the troubles confronted through small scale farmers pertaining to with availability of labours and fee of amassing and storing ultimately. It is likewise able to lowering time wastage, discount in breakage of the grains. Several drying technology had been brought to farmers, massive rice millers and traders.

Nowadays each packaging gadget is being atomized accordingly it vital to broaden paddy packaging gadget for following reasons.

- To obtain excessive efficiency
- To lessen the fee
- To lessen time consumption
- To lessen the mechanisms involved
- To deliver up smooth man-dealing with gadget
- To obtain transportable gadget
- To lessen fatigue of workers

2. METHODOLOGY

2.1 Purpose

The main purpose of this project work is to design and develop a manually operated grain collector that can be easily manufactured on-site from available local materials and replaces the old traditional process.

- The result is a manual grain collector with important goals. Used to create and collect designed grain gatherers.
- The grain collector is a small device for all kinds of small length grinning green series.
- The gadget is easy to make and lightweight, so it's easy to handle.
- To limit people and reduce hard painting.

- Limit the collection time.

This method includes the following steps With Figure and its operating principle

The Construction method includes Proposed raw material procurement Manufacture of character parts Cost estimation and final assembly.

2.2 Working principal:

As the grains fall to the ground, they can be lifted and gathered with this collector. The hopper can be placed on the front of the device, and the bag is always returned to the device. The machine can be controlled manually when the hopper is in its resting position. The grains that are provided on the ground must be gathered within the hopper, which may hold up to 10 to 20,25 kg of grains. Anything grains gifted within the hopper are gathered into the bag using the handle that's connected to the hopper that can be dragged down; this can be done as much as fill the bag.

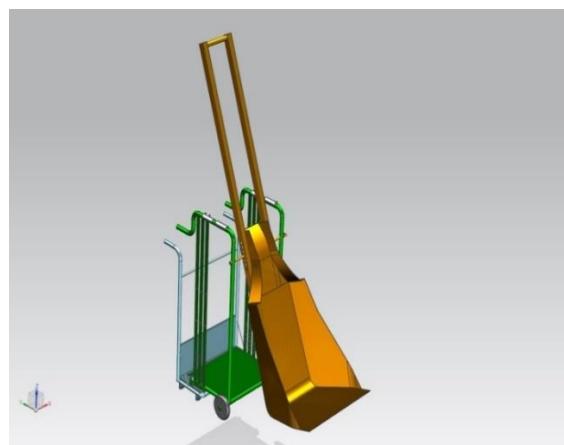


Fig.1: Isometric view of the very last meeting

3. FABRICATION TECHNIQUES AND PARTS

Metal fabrication is a fee-based service that entails the creation of machines and systems from a variety of raw materials. After assessing the store's abilities in steel cutting, foaming, welding, and machining, the fabrication process begins within the fabrication keep on the idea of engineering drawings developed during the layout approach. Metal fabrication jobs typically begin with keep drawings, such as specific measurements, and then progress to the fabrication level, and finally to the task meeting.

The grain collector, in particular, is made up of six sections. Frame, Bottom Plate, Hopper, Lifter, Handle, and Wheels are the components.

The body is an important component of the system. It must provide the same level of flexibility as a suspension system.

3.1 Frame

The body is an important component of the system. It must have the same amount of flexibility as a suspension system in order to provide optimal grip. As a result, any suspensions are no longer included in the proposed mode system. It's comprised of a mild metallic L-segment with a 31mm X 31mm go segment. It includes four channels that can be cut down to 610 mm in length and two pieces that can be cut down to 550 mm in length. It could also be organised in accordance with the requirements, as shown in the diagram. To shape the system's bottom body, the organised pieces are fused to the segment's becoming a member. Metallic, the most traditional body textile, has been used by body designers for over a century.

3.2 Bottom Plate

The bottom plate is comprised of a 3mm thick mild metallic square plate. The plate is 610mm by 550mm in length and width. This plate is welded to the collector's body, and its main function is to keep the bag close to the collector.

3.3 Hopper

Hopper is utilised for the temporary storage of materials; they're constructed so that the saved fabric can be dumped and supplied to the machine without difficulty. The job hopper in this project is made of galvanised sheet steel. These are fee-deliverable metallic items that are robust, sturdy, light weight, brilliant, corrosion-resistant, and easy to move. These are typically produced in thicknesses ranging from 0.15mm to 2.0mm and widths ranging from 522mm to 1560mm. Sheets of steel.

4. ADVANTAGES, APPLICATION OF PADDY FILLER MACHINE

Some of the main advantages of these machines are as follows,

- Manually operated, no gasoline and electricity
- Ease of operation
- Single consumer is sufficient
- Single time funding and existence time validity
- Reduces the mechanisms involved
- Brings up smooth man-dealing with gadget
- Achieves transportable gadget
- Reduces fatigue of workers
- Reduces the manufacturing time

4.1 Applications:

- It is used for small scale farmers.
- It is utilized in rice mills.
- It is likewise utilized in constructing creation subject for filling the sand, cement etc.
- It is used for shift a few a part of sand from one vicinity to another.
- Its allows to triumph over labour shortage
- This gadget may be carried to the from used at residence and at paddy procurement centre (ppc)

You can extend your current work in any of the following ways:

The grain collector can be implemented in the future to mount motors and lift grains. The system can be easily configured to require one.

In the future, it can be implemented by using battery-powered solar panels to power the vehicle. The developed minigrain collector has the opportunity to be larger, more compact and lighter. Fig 2 shows the Final Assembly of Paddy Filler Machine

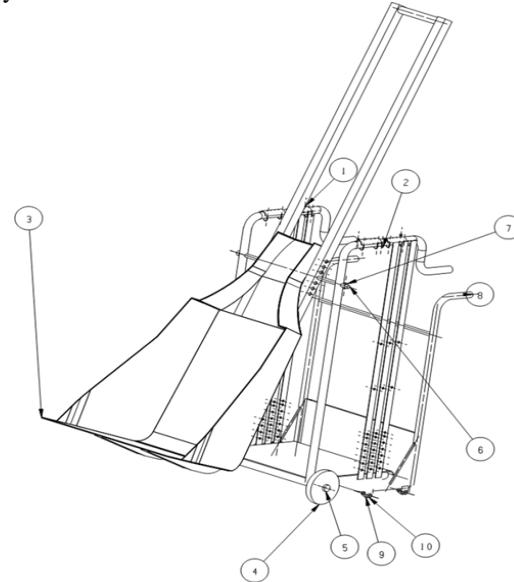


Fig 2. Final Assembly part of Paddy Filler Machine

5. CONCLUSION

The project is carried out using pre-planning procedures such as direct inspection of grain collection plants and daily collection of workers' labor usability characteristics, the labor efficiency of which is calculated by flexible means. Therefore, design and work principles are primarily based on work elements and work participation. It is more desirable and economical.

Our GRAIN COLLECTOR project was developed with the expectation that it would be very economical and useful for industrial factories that depend on agriculture. The machine also allows the vehicle to be operated by all average and tall people, the ground clearance and collector can be adjusted, the speed can be changed by changing the gear system, friction loss is taken into account, etc. Equipped with many flexible settings, the minimum value of all moving parts is determined and the handling of the machine is guaranteed with good linear guidance.

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