

# Advance Slab Finishing Machine

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**ABSTRACT:** The automatic slab finishing machine is designed to enhance the efficiency and quality of surface finishing in industrial settings, particularly in the manufacturing of slabs used in construction and other applications. This project integrates advanced automation technologies with precision engineering to create a machine capable of performing consistent and high-quality finishing operations. By automating the finishing process, this machine significantly reduces manual labor, enhances safety, and increases production throughput. It also ensures a consistent finish, minimizing defects and material wastage. The project demonstrates the potential of automation in industrial applications, showcasing improvements in efficiency, cost-effectiveness, and product quality. The automatic slab finishing machine represents a significant advancement in manufacturing technology, offering a robust solution for modern industrial needs.

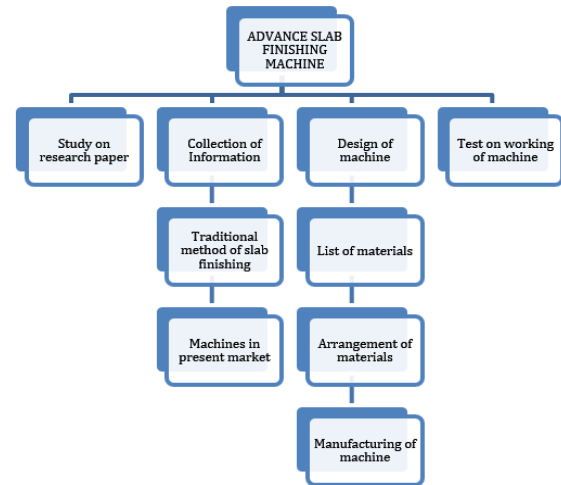


Fig. 1 Methodology

## 1. INTRODUCTION

The smoothing of a concrete floor is a laborious task which is to be executed in a hunched position, synchronized with the setting of concrete. In addition, at which timing to start the work entirely depends on the "intuition" of a skilled plasterer. In summer the work must be done in a short time while in winter it needs to be done slowly for many hours, from midnight to the next morning. Therefore the work mostly depends on the hands of skilled and experienced plasterers. However, the number of plasterers has decreased sharply. To overcome the shortage of labor, the industry has long desired to develop and introduce a labor-saving, automatized machine. And till now several types of concrete floor finishing robots have been developed

## 2. OBJECTIVES

- To study the machines used for slab concreting.
- To reduce number of machines used during the concreting work.
- To design and develop a machine which conduct all in one activity i.e., spreading ,vibrating and finishing.

## 3. METHODOLOGY

## DESIGN OF MACHINE

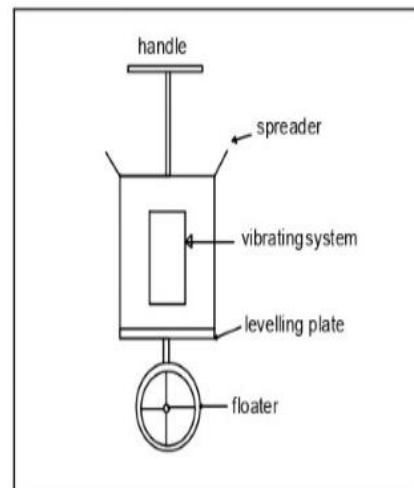


Fig 2 – design of machine

## MATERIAL

- Trolley brushcutter
- Stand arbour
- Gear box
- Pulley
- V Belt
- Nut bolts
- MS sheet
- MS plate
- Steel bar

MATERIAL SPECIFICATION

Sr.No.	Material	Specification	Weight	Price
1.	Trolley brush cutter	Gasoline engine with double grip handle.2 stroke engine	12.5 kg	9,500/-
2.	Stand arbour	12.5” , cast iron material	5 kg	1,600/-
3	Lawn mover gear box	Material – Aluminium	2.5 kg	1,500/-
4.	Gear box	Material -iron	4 kg	1,600/-
5.	Pulley	Material – Iron	400 gm	150/-
6.	V Belt	Size - A41	400 gm	250/-
7.	Nut bolts	3” – 6 1.5” – 4 1” - 6	500 gm	50/-
8.	MS Sheet	18 gaze – 20” * 24” 32” * 5” 24” * 2.5”	4 kg	320/-
9.	MS flate	25 * 5 mm 80”	2.29 kg	150/-
10.	Steel Bar	12 mm Square bar	500 gm	35/-

MATERIAL USED



Fig.3 trolley brushcutter



Fig.5 lawn mover gear box



Fig.4 shaft



Fig.6 gear box



Fig.7 pulley

#### 4.WORK PROGRESS



Fig no. 8-Fixing of shaft



Fig no. 9-Nut bolting of shaft



Fig no. 10- Fixing of Gear box



Fig no. 11- Fixing of shaft



Fig no. 12- Fixing of Floater



Fig no. 13- Aligning of Vibrator



Fig no. 14 Fixing of vibrator



Fig no. 15 Fixing of vibrator



Fig 16 Machine Photograph

## 5. CONCLUSIONS

The development of the Advance Slab Finishing Machine aimed to enhance the efficiency and consistency of slab finishing processes in industrial applications. The machine advances the surface finishing tasks traditionally done manually, reducing labor costs and improving product quality. The machine successfully advances the slab finishing process, significantly reducing the time required compared to manual methods. By standardizing the finishing process, the machine ensures uniform quality across all finished slabs, minimizing defects and variations. Advancement decreases the dependency on manual labor, leading to cost savings and allowing workers to focus on more complex tasks. The machine mitigates risks associated with manual slab finishing, such as repetitive strain injuries and exposure to hazardous materials.

## 6. ACKNOWLEDGEMENT

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## 7. REFERENCES

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