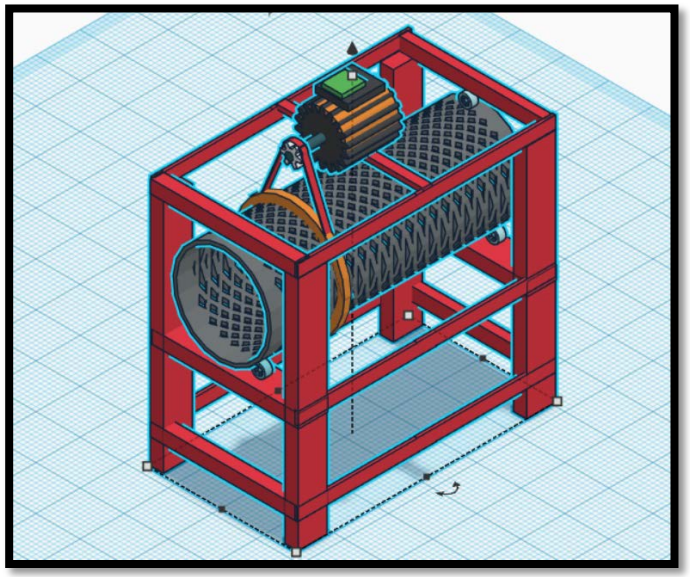
COMPOST SIFTER

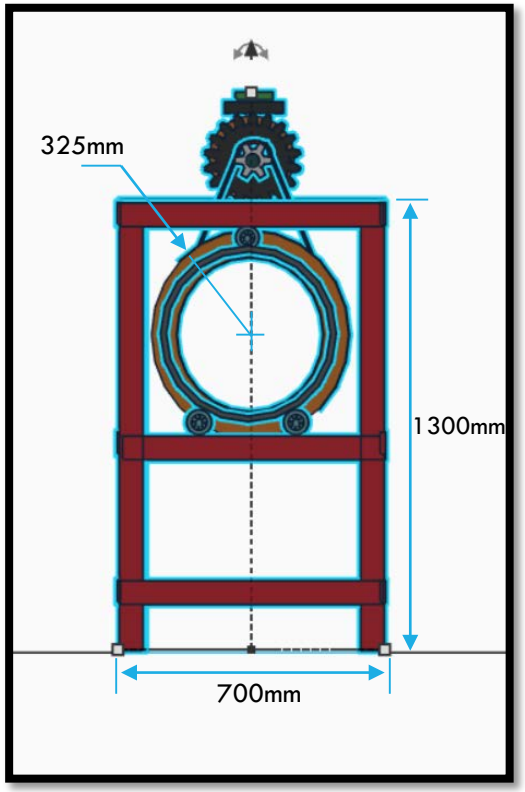
AMILA ALEXANDER
EN17003MEF0016

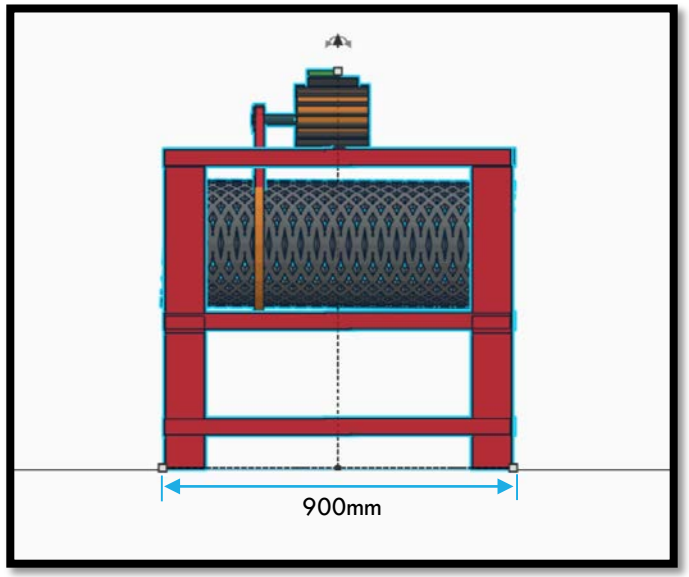
INTRODUCTION TO THE PRODUCT

- A compost sifter/trommel can filter compost efficiently
- Course rough compost is added at one end and filtered compost is extracted from the bottom
- Unwanted material exits from the side

SCHEMATICS OF THE PRODUCT







MATERIALS USED

Steel box bars

Rubber wheels, stainless steel casing

Steel Mesh

Vulcanized Rubber Belt

Aluminum alloy rims

MACHINES AND TOOLS

- Arc Welder
- Drilling machine
- Grinder
- Files
- Polisher
- Hand held drill
- Metal cutter

PROCESS PLAN

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Making basic structure of the machine							
Making the rotating mechanism							
Reinforcing the legs with proper supports							
Testing & Finishing							

DESIGNING AND MANUFACTURING

- Cutting the box bar pieces

- Welding the frame

- Completed piece

HOUSING UNIT

- Preparing the main housing and gathering required materials to craft the meshed cylinder

ROTARY MECHANISM

Initial Testing (trials)

FINAL PRODUCT IN ACTION

Compost produced after sifting

Compost deposition on the side of the machine enables easy shoveling

THE OUTCOME

Sifting process

Waste materials

Course unrefined compost; full of particulates and debris

Finer better grade compost; suitable for agriculture

Removed debris and unwanted particulates

PROBLEMS AND DIFFICULTIES

I. Producing the initially specified dimensions as proposed in the beginning turned out to be difficult due to mesh size limitations at the store

II. Controlling the speed of the motor to a suitable rate to suppress flinging of output materials

III. Finding a sufficiently powerful motor to engage the mechanism (initially designed fan motor proved to be underpowering)

IV. Purchasing the exact belt size was rather time consuming (trial and errors)

FUTURE WORK

- ✓Adding a hopper and collector tray on either sides to enable easier loading
- ✓Creating a modular design to facilitate easy removal/replacement of the net
- ✓Creating different grain size filters to sift different types of sand/gravel/cement etc.s

THANK YOU