

FIG. 1 : (a) TOP VIEW
(b) SIDE VIEW

15/02/2020

PROJECT REPORT

SHEET METAL DUSTBIN

AIM: To manufacture a Sheet Metal Dustbin.

BILL OF MATERIALS:

- ① Sheet metal : 32.5×12.5 in
- ② Sheet for bottom (circular base):
Radius = 14.5 cm, cutout from a sheet of $31\text{cm} \times 31\text{cm}$

For Dustbin stand, MS flat (mild steel) was used:

- ③ Circumference = 84 cm
- ④ Legs : $8.2\text{cm} \times 4$ pieces
- ⑤ Fitters near legs : $2\text{cm} \times 4$ pieces
- ⑥ L-shaped fitters : $5\text{cm} \times 4$ pieces
- ⑦ Long lever : 33.5cm (1 piece)
- ⑧ Base line for support : $26.5\text{cm} \times 2$ pieces
- ⑨ Pedal : $5\text{cm} \times 2$ pieces
- ⑩ Long back support (vertical) : 33.5cm

For Cover:

- ⑪ Top lid : Sheet metal \rightarrow radius = 14 cm
- ⑫ Metal strip : $81\text{cm} \times 5\text{cm}$ (1 piece)

Teacher's Signature : _____

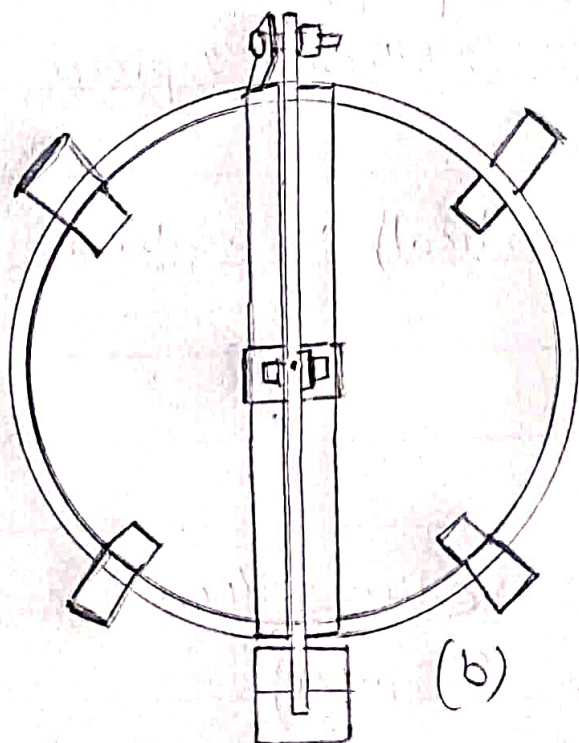
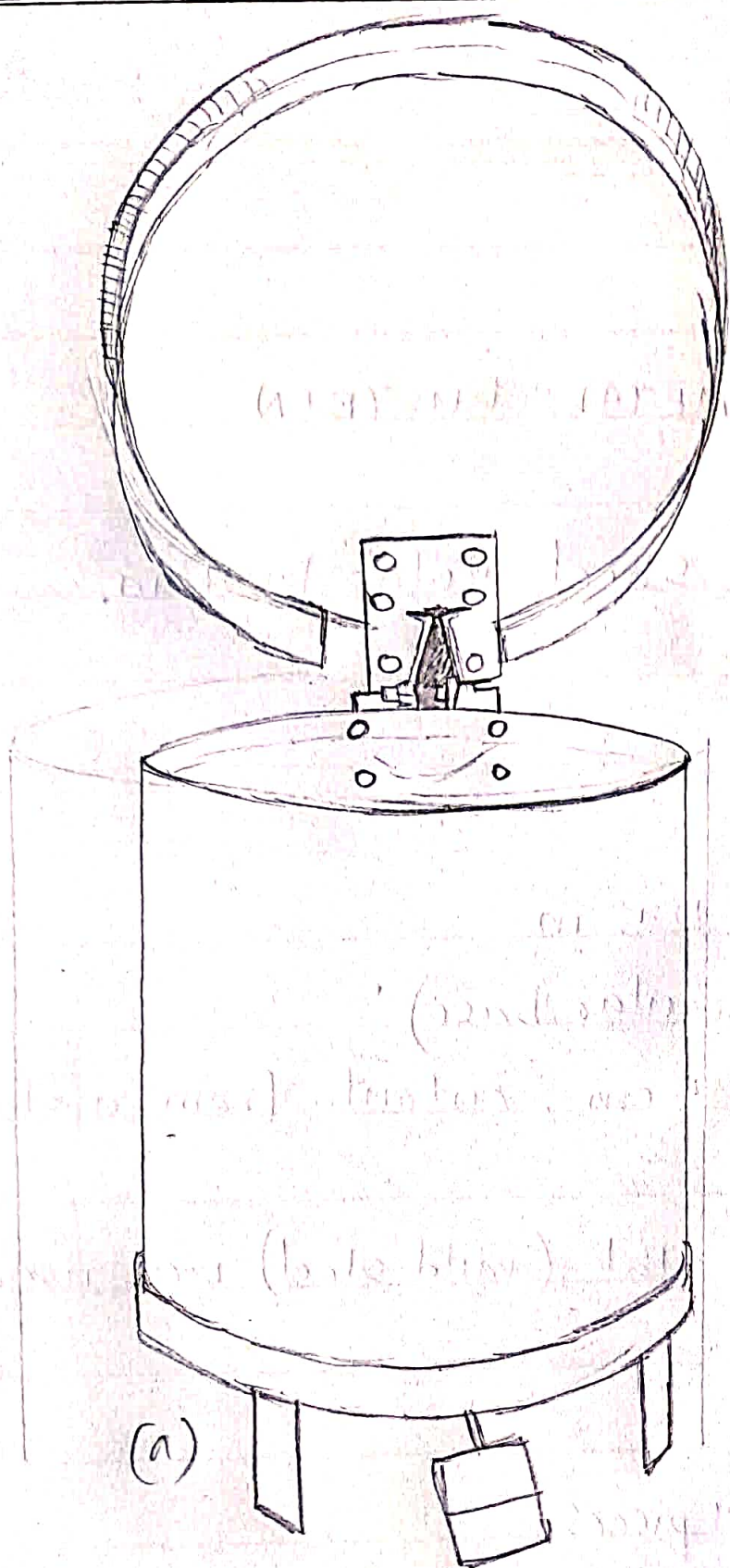


FIG 2: (a) FRONT VIEW, (b) BOTTOM VIEW

(13) Metal strip : 22.5cm x 5.5cm (1 piece)

(14) Metal strip : 20cm x 6.5cm (1 piece)

(15) Metal strip : 6cm x 4cm (2 pieces)

(16) Nut and bolt (3 pieces)

(17) Washer (3 pieces)

(18) Hinge (1 piece)

(19) Rivets (17 pieces)

TOOLS REQUIRED:

(1) Hammer

(2) Mallet

(3) Drilling machine

(4) Grinding machine

(5) Shear

(6) Rolling machine

(7) Circular saw

(8) Vice grip

(9) Welding torch.

PROCEDURE:

(1) First, a rectangular sheet metal piece of dimensions 32.5 in x 12.5 in was cut using a shear which acted as the lateral surface of the dustbin.

(2) The base of the dustbin was prepared by cutting the sheet metal

Teacher's Signature : _____

In a circle of radius about 13.37 cm ~~by m~~ after marking it using a divider.

(3) Multiple strips of mild steel flat were prepared using the Circular Scale where the longest one (of length 84cm) was made circular using the Rolling machine for the base.

(4) 4 of the smallest strips and the two strips for the supports were drilled at specific spots for fitting the nut and bolt and rivets

(5) 4 L-shaped strips were prepared by fixing them in vice grips and then hammering them into shape accordingly. Here, two of them ~~were~~ were drilled at the centre for pre fitting the nut and bolt.

(6) The entire assembly of strips was welded together as in the figures.

(7) Later, the top lid was prepared similarly like the base having a radius of 14cm.

(8) Another metal strip of dimensions 81cm x 5cm was fitted perpendicularly on the top lid.

(9) The hinge and the rest of the smaller metallic strips were used to prepare the pedal mechanism of the dustbin.

Teacher's Signature : _____

PRECAUTIONS:

- (1) Care was taken to handle the sheet metal articles carefully so as not to get injured in any way.
- (2) Heavy duty gloves were used when using the mallet, hammer, throughout the manufacturing process.
- (3) Special care was taken while handling the circular saw and when welding the base support.
- (4) The drilling and rolling machine were used only under careful supervision.

CONCLUSION: A sheet metal dustbin was manufactured successfully.

Teacher's Signature : _____