

# NO HUMAN TO HUMAN CONTACT FOOD DELIVERY VAN MACHINE

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**Abstract** – Corona virus spreading expeditiously unprecedented scale across the globe and has dawn as the single biggest risk the plant has witnessed in modern times. Although india is by the quirk of fate behind other countries in terms of infections. In eventual analysis we realized nothing is more important than food. As we know government decided to provide food for free to all ration card holder. But as we see people rush at ration shop which can lead to the spread virus more. In this work, the model of FDVM is design in onshape software and then creates system which helps to distribute food with obeying rule of social distancing.

**Key Words:** food delivery van machine, food distribution system, food delivery system with social distancing.

## 1. INTRODUCTION

Food delivery van machine which can be use to deliver food without human to human contact. Because we cannot predict when next crisis will come. Viruses like corona can spread human to air to human. Also virus can live on metal for almost 2-3 days. So by using food delivery van machine we can decrease human to human contact and deliver food to people. Also we can decrease crowding at ration shop.

## 2. PROBLEM STATEMENTS

Virus spread through human-air-human

Inadequate amount of food delivered

No social distancing

Crowding at ration shop

Hoarding

## 3. DESIGN OF FDVM

This van machine work based on IoT. Whole van machine is made of steel body. Food enters from the top. FDVM has fitted automatic spray mechanism which clean van's outer surface. We deliver raw food material rice, wheat. Punching machine is at front left side of van. Which can makes distance with FDVM driver to people. Exit chamber is backside of the van from where food comes out and delivers.

### 3.1 DESIGN DIMENSIONS AND DISTRIBUTION

Food storage area 6\*5\*4ft. Storage amount of food is 2200Kg so 1100Kg rice and 1100Kg wheat. 5 people need 1.5 Kg wheat, 1Kg rice per day so 14 Kg food per week. So 1 food

delivery van machine provide food more than 115-130 family per week.

## 4. DESIGN

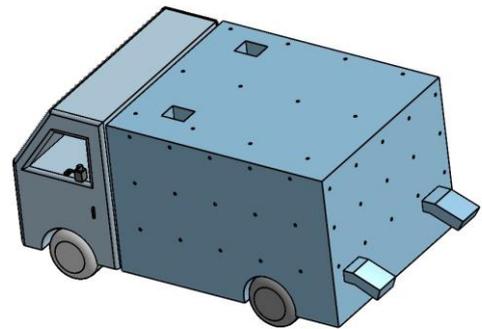


FIG.1- ISOMETRIC VIEW

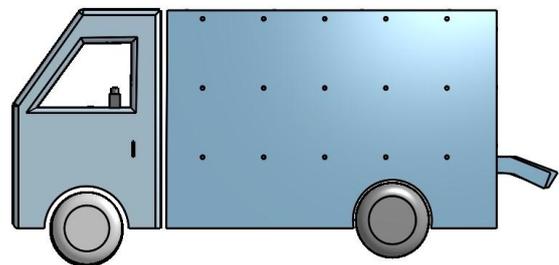


FIG.2- SIDE VIEW

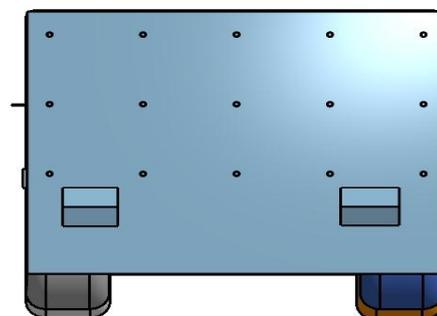


FIG.3- REAR VIEW

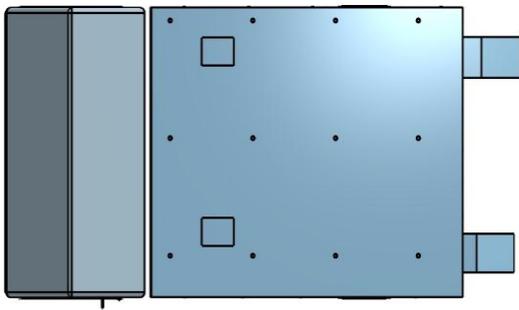


FIG.4- TOP VIEW

## 5. INNER CROSS SECTION DESIGN MECHANISM

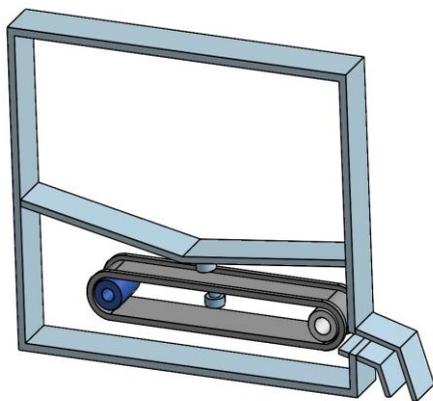


FIG.5- ISOMETRIC VIEW

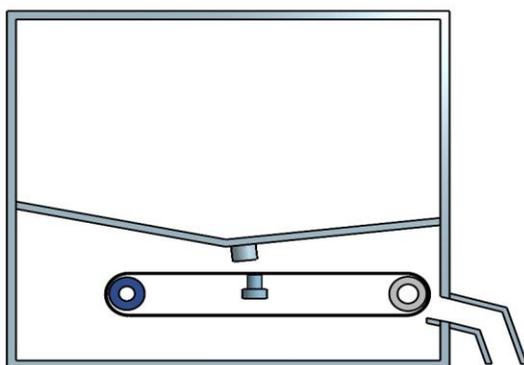


FIG.6- SIDE VIEW

### 5.1 WORK OF MECHANISM

Food store in upper portion as shown in fig. system is flexible so capacity can be differ as per requirement. Food fall on belt cause of gravity from storage through exit pipe. Capacitive

sensor is connected with belt which measures the weight of food on belt. When required food exit, pipe will automatically stop to deliver. When adequate amount food is on belt then it rotates and food exit through exit chamber.

## 6. DELIVERY PROCESS

Target one locality to deliver food by using food delivery van machine and driver call one person from one family. Only one person allow to come. Sanitizer fitted in front (as shown in fig.-2, front left) wash hand and punch as people do at ration shop and no need to show BPL or APL card. IoT based system calculate food requirement and delivered. Food delivered from the backside of the van. As per this method of delivering we decrease less spread of virus and less human contact directly at the home. Automatically spray sanitizer will active after minutes of period of time and clean the surface if any corona positive person come in contact with van so when others come for ration they will not get infect. Next person allow to come only when driver call. If anyone rush at van, deliver person have rights to block them for 1 time or take any legal action as per law.

## 7. CONCLUSION

Food delivery van machine can deliver food with obeying rule of social distancing. Van helps to deliver food by reaching at one locality so no need to go far from home and decrease human to human contact. That's how food can be delivered without spreading of virus. People get survival food for their families. No manual process. No hoarding in critical situation. Maintain social distancing.

## REFERENCES

- [1] CONVEYOR BELT SYSTEM Inventor: Joseph Fraioli, Sr., 300 Martine Ave., White Plains, N.Y. 10601
- [2] IoT Based Home Automation and Surveillance System.
- [3] Abbot dough, Linux for embedded and real time application.