A Review Based on COVID-19 Machine

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***Abstract*: In the era of transformation in the living styles, Personal Protection Equipments (PPEs)-Masks, Sanitizer's, Hand gloves have become a part of our daily lives. Disposable Masks, must be properly disposed in order to cut down the possibility of human contract.**
To combat this, the project – "E-FIGHTER AGAINST COVID-19" has been proposed. This innovation primarily targets on ensuring the health of the workers in a workplace. It is a multi-system consisting of a display, infrared temperature sensor, auto liquid dispenser, mask and gloves dispenser. It will be placed in an orderly manner and works on a no-touch principle. This system ensures that the entering worker is fit enough to work among a group of people. Sanitizing hands-on entry ensure that the worker on entry is contamination-free. Upon exiting, the worker is made to drop the used mask and gloves into separate boxes. These disposable masks and gloves will undergo completely sanitizing and will be cut into finer pieces.

Keyword: **Microcontroller, Sensor, GSM**

1. Introduction

In the era of transformation in the living styles and streamlining with the "new normal", it is clear-cut that the Personal Protection Equipments (PPEs)-Masks, Sanitizer's, Hand gloves have become a part of our daily check list now. Still learning, however majority of the human race has gotten into this use of dining a mask, to save themselves from this dreaded Covid-19 virus, rather than just argue. However, what is more dreadful than the virus itself is the improper disposal of these Equipments. Researchers say inconclusively that viruses can stay onto surfaces for as long as 48 hours, so anyone, especially people from the municipal department, coming in contact within this period can contract the virus.
Ignorance is deadlier than a highly virulent organism and these days are rightly proving it so. Irresponsibility is hitting its peak as people out of unawareness or "who cares" attitude litter masks all around the city, to the extent of throwing it loose next to a bin and not responsibly putting into it. Upon research learned,

medical wastes such as the Surgical Disposable Masks predominantly used today, must be properly disposed in order to cut down the possibility of another human contracting the virus from it. Retrospectively, this Covid-19 virus has reminded us, or rather threatened us into doing something we should have meticulously followed anyway to maintain good hygiene in and around us. However, in today's fast paced life, it has become a matter of joke to even have such "basic" expectations from the population. Today, only a handful are conscious of maintaining a good hygiene and the rest simply blame it on the "lack of time" in their fast-moving lives.
To combat this, Our innovation project "E-FIGTHER AGAINST COVID -19". This innovation project primarily targets on ensuring the health of the workers in a particular workplace and secondarily to cut down the amount of contact of people. This is a multisystem device which consists of: a display which gives the reading of human body temperature using touchless infrared temperature sensor, an automatic hand sanitizer and touchless mask and gloves dispenser (it consists of three segments: only masks, only gloves, mask and gloves). These are placed in an orderly manner so as to no man can escape these basic steps due to any excuse. It works on a no-touch principle to maintain the levels of social distancing.
This system ensures that the entering worker is fit enough to work among a group of people and provides him with a fresh set of PPEs for a safe work environment within the workplace. Post-work, it clinches on the safe disposal of the used masks and gloves which further undergoes UV sterilizer killing all the bacteria present in them and will be shredded into finer pieces by choppers. This will ensure almost zero contact with anyone in transit.
Our innovation project can both streamline the population that is too busy to not mind the litter they create and help in ensuring the safety of those who are busy picking it up for a cleaner and healthier world.

2. Literaturesurvey

A. *Microcontroller Based Self Dispense Detecting Liquid Dispense, Ezekwe Chinwe Genevra, Mbonu, Okafor, IEE 2014 international conference on National agency for Science and Engineering Infrastructure (NASENI), Federal Ministry of Science and Technology.*

This paper developed a liquid dispenser leveraging microcontroller technology with added features that eliminates manual operation of the dispenser's pumps. This is achieved by the use of cup sensor in the control unit that automatically detects the presence of cups or another container. It also solves the issue of overflow of fluid due to loss of concentration by the introduction of electronic keypad which enables the users to input their desired quantity. The system code implementation was implemented with Assembly language via a notepad editor saved as .asm file. The saved file was compiled with an assembler (MIDI - 51) which generated three files; hex file, obj file and list file. The hex file was used for the simulation of the design in Proteus 7.7 professional and burning of the microcontroller for construction. The outcome at the end of the specified design period was a working prototype that was able to dispense a liquid if the user activates the button from the keypad. The results show that cup sensor carries out its sensing functionality satisfactorily.

B. *Automatic Sanitizer Dispensing Machine, International Journal of Engineering Research & Technology (IJERT) Vol. 9 Issue 07, Akshay Sharma A S, July-2020.*

This paper provides an automatic hand sanitizer dispensing machine which is automated, non-contact, alcohol-based hand sanitizer dispenser, which finds its use in different workplaces. Alcohol is basically a solvent, and also a very good disinfectant when compared to liquid soap or solid soap, also it does not need water to wash off since it is volatile and vaporizes instantly after application to hands. It is also proven that a concentration of >70% alcohol can kill Coronavirus in hands. Here, an ultrasonic sensor senses the hand placed near it, the Arduino uno is used as a microcontroller, which senses the distance and the result is the pump running to pump out the hand sanitizer. From the above paper, we come to know that alcohol-based hand sanitizers are more effective than soaps, and also easy to use. The paper also says that non-contactdispensing is again important to prevent pathogen spreading and finally, hand hygiene is most important and must be part of our daily life.

C. *Non-contact infrared thermometry temperature measurement for screening fever in children, Daniel K. Ng, Chung-Hong Chan, Robert S. Lee & Lettie C. Leung,2016.*

This paper provides the study of non-contact temperature measurement for screening fever. During the severe acute respiratory syndrome (SARS) epidemic, a non-contact method of measuring forehead temperature by infrared thermometry was used for mass fever screening. The non-contact infrared forehead temperature (NIFT) measurement is based on the principle that the amount of infrared radiation emitted from human faces can be converted to temperature readings. This paper has published accuracy of measurement of NIFT for fever screening in children. Thus, a study has been conducted to compare NIFT with temperature readings obtained by tympanic thermometry in children.

D. *Design and Implementation of Automatic Medicine Dispensing machine,Mahaveer Penna, Daankan V Gowda, Jijesh J J, Shivashankar, May 19-20, 2017.*

They have aimed at developing a medicine dispensing machine based on a microcontroller and a motor based system. Medicine distribution for the people in the remote tribal areas is finding tedious task for the Government's, the Automatic medicine dispensing machine can aid to resolve the above-mentioned requirement. This machine is equipped with some basic and emergency medication and can be refilled. It is a kind of computerized medicine storage system which can be easily accessed by the people in emergency without approaching any pharmacy, this machine can be easy installed in the remote areas like long highways, desert areas, remote tribal areas and rural areas. It is a microcontroller and motor-based system to dispense the medicines when accessed by the user through an input event, the data pertaining to the medicine storage can be ascertained from the remote area and based on that information refilling the machine can be easily done. Basic human parameters like Blood pressure (BP), Temperature can also be tested through this machine and the specified medicine will be dispensed based on the patient condition.

E. *Automatic Paper Vending machine ,Kamalanathan.P, Irshath Ahmed. R, Mohamed Aamir. M, Kalaiselvan. P, April 2015.*

This paper has designed a machine based on mechatronics principles. The usage of paper is inevitable and its demand is increasing steadily particularly in the places such as educational institutions, government

offices, etc. In stationary shops it is quite difficult to buy papers during rush time period and the counting of the paper depending on the requirement would cause further time delay and there is a chance for the error in the manual counting of paper. It is proposed to deliver the paper to the public by using the sensors and microcontrollers based on the Mechatronics principles. It will be cheaper and more economic for the bulk production and it will be very useful for the college and school students. Here it is designed to deliver sheets by inputting the respective coin in the system. It will help us to save more time and manual work will be nullified.

3. Methodology

In the proposed project,At the entry of workplace, the employee will check his/her body temperature by keeping his/her hand near to the contactless temperature sensor. If the temperature is normal, he/she will place hands beneath the automatic hand sanitizer. If the temperature is high then the alert message will be sent to the supervisor.

If the employee does not have basic precautionary measures of COVID-19 such as masks and gloves then the employee will choose according to his/her requirement i.e. either only mask or only gloves or a pair of both (mask and glove) can be taken by placing his/her hand near to the respective IR sensor segment. If the mask and gloves seem to get reduced from dispensing unit then the alert message will be sent to the respected supervisor to refill it.

While exiting, if the employee wants to dispose the used mask and gloves thenhe/she can put it in the disposal box. Once, disposal box is filled with the used mask and gloves then it will undergo UV sterilizer to kill the virus and same will be shredded into pieces by inbuilt cutters. Then the supervisor will be notified to empty the disposal b.
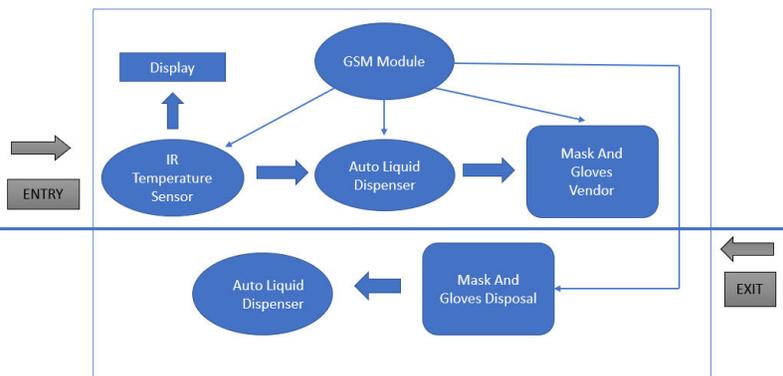

Fig. 1. Block diagram for the proposed system

4. Conclusion

The proposed project of implementing the contactless Automatic mask and gloves Dispenser with additional features ie. IR temperature sensor and automatic liquid dispenser is efficient in this covid-19 pandemic. It is designed to prevent the contact of human virus which ensures a good health and hygiene of the worker. This system can be utilized in malls, schools, colleges and various institutions. It aims to be cost effective, reduces time, human effort and yet user friendly. Designing of this multisystem machine, reduces the contact of human virus and assures a healthy work environment pace to the workers.

5.Acknowledgement

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