Flexible (Portable) COVID 19 Detecting Device using Arduino and Sensors

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Abstract--- We all know that after several rounds of lockdowns in several places, again a brand-new batch of rapid increase in COVID-19 is seen worldwide[1]. New borns are coming during this world crisis unknown to the harmful state of the world it has opened its eyes into. During this time of crisis, the people cannot afford to lose time and money or another recession for lockdowns. But what else can be done? This study enlightens an idea of innovating a Flexible COVID 19 detector, using the concept of Arduino and sensors[2] which would help people in a possible way, has been discussed.

Keywords--- COVID 19, Arduino, Sensor, Temperature rise

I. INTRODUCTION

COVID 19 is one in all deadliest diseases of the year 2020. We all know that due to this disease voluminous people everywhere are suffering and dying. The rate of recovered patients is kind of low. In America,1300 people have died in an exceeding rate[3]. Other countries are suffering on a higher rate. Many medicinal experiments are going on right now to invent a vaccine for this ill-fated disease[4]. Some medicine like hydroquinone, though could not prove its effectiveness on eradicating the disease completely but has been quite promising in treating it. Well, besides medicines, all the people of all the nations have been asked by their government and doctors to use hand sanitizers and face mask as a mode of prevention from the disease. Most of the people are following those rules and maintaining the safe distance while breathing and communicating with other as well. But what about the people working in congested places like coalmines, the doctors, ambulance operators, nurses and other health workers who are working and have to work in the proximity of the COVID 19 patients, what about them? Also, there are several other people like janitors without whose contribution our day-to-day life would be miserable Maintaining safe distance from those patients is not possible for them every time[3]. Therefore, the doctors and other health workers are getting affected by this COVID 19 and getting sick as well. Here comes the role of Flexible COVID 19 detector.

II. PROPOSED MODEL

The Flexible COVID 19 detector is a solution for those people who have to work in crowded places like doctors, nurses, fire fighters, military etc. They are dedicating their life for the common people; it's our duty to save them. the mask would be working in the following way: As it is known, COVID 19 is an airborne disease and can spread by droplets[4]. Safe distancing while breathing must be kept. The COVID 19 detector device the user to work with full concentration without the thought of maintaining a safe distance constantly nagging them. It would be a portable and small device that could be attached outside the mask of the user or on the wrist, in whatever way the user wants it. The user can carry it separately and can use it on her/his communicator when needed. Like its name, its flexible and can be used either by attaching to yourself or carrying it in your pocket as well. When a living being respire air, the exhaled air is comparatively warmer than the immediate air surrounding it. It's warm, moist and humid in vaporized form. When the detector would be brought near the communicator, the kit fitted outside the, detector would detect the warm breath of the communicator, if the user gets too close to the respired air zone of the communicator. After detecting it would start buzzing/beeping[5]. Once it starts making the noise the user in the communicator's proximity gets alert and immediately starts maintaining the required safe distance again. In this way people are saved at least from going too close to the diseased person. This detector can be used

anyone and everyone who need too have to work in close proximity.

III. METHODOLOGY

Following are the parts necessary:

- Arduino chip- to control the sensor accordingly[6].

- Digital temperature checker- to check the surrounding temperature so that comparatively higher temperatures can be detected.

- Sensor – to detect the exhaled air.

- Speaker – to buzz/beep.

The device would be made by attaching the parts accordingly. A prototypic model diagram has been given below:
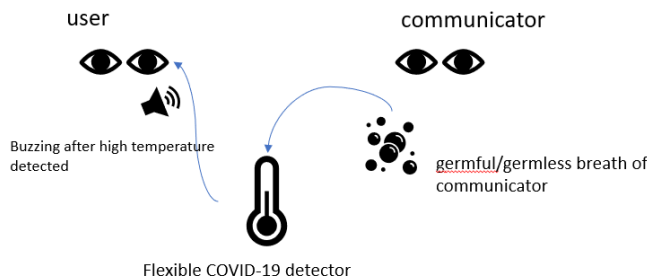

Fig.1. System Working of the Flexible COVID 19 Detector

Once went the near the proximate respired zone (will be set as per the user), the sensor detects it and starts making noise, which alarms the user.

IV. CONCLUSION

This is 21st century. This has proved to be a time which saw surge in professions, technologies and diseases as well. It would be of great loss to lose anyone to this deadly disease because every worker and laborer is unique. The community needs them. Most importantly, the community itself is in danger, if the doctors , the health workers , the restaurant servers, teachers and other important workers are themselves sick, how would the world get better?

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