

Transaction Sanitization Tunnel for Infection free transactions

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Abstract:

We propose to design a compact and portable disinfection tunnel for business and bank setups. A transaction sanitization Tunnel (TST), is a container/tunnel like structure that needs to be used while a physical transaction of cash/cheque/packed goods takes place at a bank/a shop of any kind. This will ensure safe transaction of between customers and vendors.

Motivation

As the pandemic escalates, the demand for disinfection tunnels have started rising but with very less scientific support. The disinfection tunnel sprays a mist of disinfectant on the person passing through it, killing most of the germs and viruses probably including Novel Coronavirus. The disinfectant used in the tunnel is a chlorine compound called sodium hypochlorite which is a component used in commercial bleaches and cleaning solutions. There has been a lot of discussion on the installation of such tunnels lately because of the more harm it does than the good. It is because, firstly this tunnel gives a false sense of security to the people and they begin to interact closely with others without taking necessary precautions. Secondly, the whole body of the person is exposed to the hypochlorite solution mist increasing the risk of adverse health effects on the human body. But a similar type of tunnel which we name as a TST, if used for hand transactions only is expected to sanitize the main carrier of infection i.e hands and also the cash or goods which we buy from the market and could be infected.

It is a well-known fact that cash goes everywhere from the drawer of a banker to the containers of our kitchen. During this process it travels through different environments there by increasing its chances of being a good carrier of viruses and other disease causing pathogens. This is not only true for the cash we carry in our pockets but also true for the packed food items that travels miles before they reach out departmental stores and from the shelves of store to our home. Thus we find it pertinent that a small tunnel like structure be placed at every bank and every store where a transaction of such items takes place such that they can be properly sanitized during the transaction through the tunnel.

Working:

The working of this system is based upon usage of electronically controlled fumigation nozzle system. The nozzle system will be installed on the top of the tunnel from inside. The operation of fumigation is controlled by a proximity sensor. The proximity sensor upon sensing any object/hand that will pass through the tunnel will trigger a fumigation session. The duration of this session can be controlled electronically by the user using suitable interface. The complete illustration of the system is described in figure 1. The fumigation system that we propose to use shall comprise of a 12V DC operated fumigation pump that will pump out the disinfectant liquid from a refillable cartridge transporting disinfectant solution towards a mist nozzle inside the tunnel. Figure 1 below is an illustration diagram of such scenario.

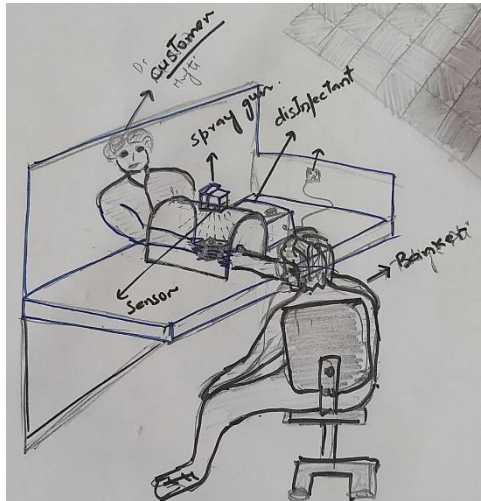


Fig1. Pictorial representation of disinfectant hand tunnel.

The application areas for this innovation can be all business establishments including banking cash transaction counters, grocery stores, pharmacy stores etc.