

Intelligent Letter Box

Innovator: Miss. Utkalika Patnaik

1. The context of use

Often in fully enclosed letter boxes without a see through window, it is difficult to know if a letter has been delivered and it is a cumbersome process to time and again open the letterbox to check for letters.

The innovator felt the need to build an effective mechanism to know if a letter is delivered, without opening the letterbox time and again

2. Working principle

The innovation consists of an electronic circuit, a letter receiving plate, which senses the fallen letter and triggers the circuit, green and red status indicator LEDs and a 3V battery to power the system.

The red LED flashes when the letterbox is empty and the green one flashes when a letter falls inside and actuates the plate and sequentially the electronic circuit.

3. Innovation highlights

The simple yet effective visual cue by using standard LED to indicate letter status is an innovative, practical and reliable solution

4. Compare innovation to competing products by efficiency, cost and utility

There are Post boxes with audio alarm, which are triggered by the letter being dropped. They have two type of arrangements, either the audio announcement will be single time or it will continue till the letter is removed from the box. In the first case, the alarm may be missed if the person is inattentive or out of range and in the second case, the continuous alarm, (which could be disturbing to non-users) , has to be manually cut off by the person after going to the post box.

The letterbox with light indicator does not have either of the two problems as it gives a continuous indication, yet is unobtrusive without the indication, causing disturbance to non-users. One needs to have a look toward the letter box anytime and do the action required.

5. List the current and proposed applications of innovation

This circuit would be of use in any application, which needs a visual cue that a certain event has happened.

6 Brief description of construction mentioning major parts

It consists of electronic circuit, two LEDs, viz. green and red, a plate and a three-volt battery. When a letter is dropped in the box it hits the plate, which, in turn completes the electrical circuit resulting in glowing of green light. When the box is empty, red light glows.

7. Current design shortcomings and further work planned

At the time whenever the letter is dropped, a three time audio chime can be incorporated so that the person inside the house can hear the chime that a letter has dropped. In that sense, it would combine the best features of visual and audio indication system.

8. List of accessories if any and their functions

The product has no accessories

9. What is the need/benefit of this product for local community?

Every home would require this product

10. Any special highlights of the innovation or additional information such as evolution-features of many prototypes over years, testing details etc

The prototype is being built after incorporating some refinements.