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(54) **SMART MAILBOX**

(57) The present invention relates to a mail alert system attached with the mailbox which is operated in connection with mailbox accessories. The mailbox alert signal device has particular utility in connection with mailbox operated with the help of motion sensors.

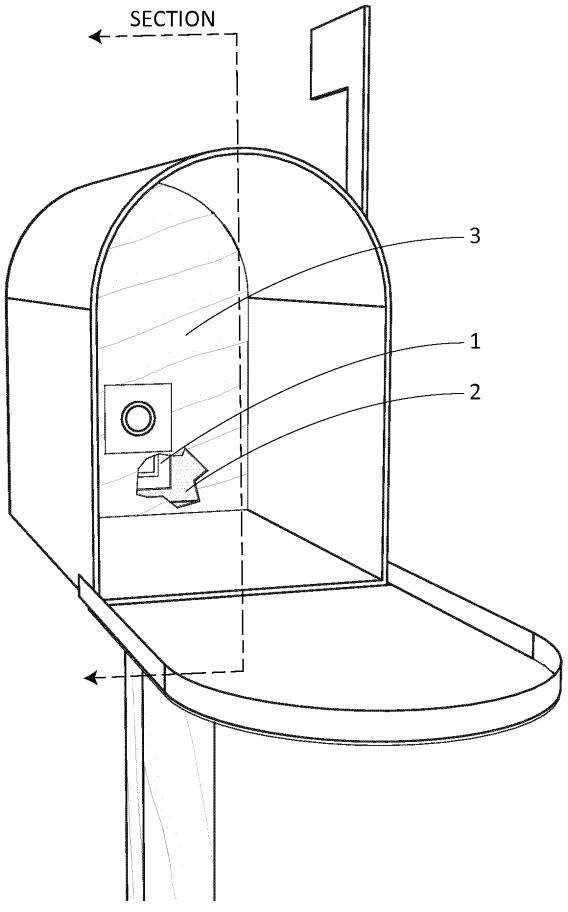

FIG. 1

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Description

Field of the Invention.

[0001] The present invention relates to a mail alert system attached with the mailbox which is operated in connection with mailbox accessories. The mailbox alert signal device has particular utility in connection with mailbox operated with the help of motion sensors.

Background of Invention.

[0002] A daily routine in almost every residence across the country is the waiting for the U.S. mail postal delivery. This routine is especially time wasting in households that have a curbside or rural mailbox. The resident must watch for the mail delivery and see if anything is placed in the box. If the person does not watch and just waits until the normal delivery time has passed, they are still not sure if anything was delivered or not other than by taking a trip to the mailbox. This is especially time consuming in hot, cold, and rain or snow conditions. Accordingly, there exists a need for a means by which the delivery of mail to a remote mailbox can be visually or audibly indicated to the resident located in a separate structure. The development of the invention herein described fulfills this need.

[0003] Several attempts have been made in the past to provide remote indication of the receipt of mail within a mailbox, particularly for those residences that are far away from the mailbox location. U.S. Pat. No. 6,694,580 in the name of Hatzold discloses a mail notification system comprising an activator attachment to an inner surface of a mailbox that opens to an extended position and emits radio waves to a receiver. Said receiver has a speaker to emit sounds and is attached to a word display. Unfortunately, the Hatzold device does not utilize a motion sensing device integral to a transmitter that is selectively installed with a mounting mechanism thereto an inner surface of a mailbox.

[0004] U.S. Pat. No. 5,950,919 issued in the name of Adams teaches a remote mail delivery system for signaling to the user when mail is being delivered by using an LED display or speaker and a pressure sensitive transmitter on the cornice of the floor of the mailbox. The present invention utilizes a different means of detection and is designed to be mounted on the sides or rear face of the interior of the mailbox.

[0005] U.S. Pat. No. 6,459,375 issued in the name of Wallace describes an electronic mail sensor for informing a user that something has been put into a mailbox. Unfortunately, the Wallace device differs from the present invention in that the transmitter device is installed therein the mailbox with a clip member as opposed to which enables the transmitter in the present invention to be mounted along any interior face within the mailbox, such that the motion sensing device is positioned to detect a mail delivery event. Additionally, there are no provisions in the Wallace device to provide a resetting function to deactivate an audible or visual indication of said mail delivery event.

[0006] U.S. Pat. No. 7,786,862 issued in the name of Campbell Eugene L relates to a method and system for remote notification of arrival of postal mail in a mailbox through a wireless transmitter and receiver. The system consists of a battery-powered motion sensor placed within an upper back portion of a standard, approved mailbox thereby a fastening means. When the mailbox door opens, the motion sensor is activated and automatically generates and transmits a wireless signal to a receiver located within a pre-determined proximity.

[0007] U.S. Pat. No. 5,499,014 issued to Greenwaldt, published Mar. 12, 1996 relates to a security alarm system includes a wireless transmitter unit, a portable control unit, and a receiver unit. The transmitter unit includes a sensor for detecting the opening of a door or window to a protected area and an alarm signal generator for providing an alarm signal wherein the alarm signal generator is controlled by the sensor. The control unit includes an arm signal generator for providing and transmitting an arm signal and a disarm signal generator for providing and transmitting a disarm signal. The receiver unit includes an alarm for indicating unauthorized opening of the door or window to the protected area, a first circuit for receiving the alarm signal from the transmitter unit and activating the alarm when the alarm is armed, a second circuit for receiving the arm signal from the control unit and arming the alarm, and a third circuit for receiving the disarm signal from the control unit and disarming the alarm and for turning the alarm off when the alarm is activated.

[0008] U.S. Pat. No. 5,060,854 issued in the name of Armstrong discloses a remote indicator system for determining at a remote location when incoming mail is present in a mailbox, comprising a light port that admits ambient light to shine on a photodetector on the bottom of the mailbox, which produces a signal when no mail is present and a signal when the light is interrupted, thereby indicating mail has arrived. Another photodetector disables the first signal when the ambient light is below a given intensity and a switching mechanism is attached to a manually operable flag for determining the difference between incoming and outgoing mail. Unfortunately, the Armstrong device differs in scope from the present invention in that the sensing device utilizes different principles and is mounted in a different location.

[0009] None of the prior art particularly describes a device to effectively notify a user of delivery and/or receipt of mail in a mailbox at a remote location. Accordingly, there is a need for a means by which the a sensing device is positioned such that it detects the presence of delivery of mail, generates a detection signal, transmits said detection signal, receives said detection signal at a remote location, and alerts said user.

BRIEF SUMMARY OF THE INVENTION

[0010] In the view of the foregoing disadvantages inherent in the known types of mail alerting devices now present in the prior art, the present invention provides an improved mail alert system attached with the mailbox. As such, the general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new and improved mail alert system attached with the mailbox which has all the advantages of the prior art and none of the disadvantages.

[0011] The present invention concerns with a new and improved mail alerting system used with structures and residences. The mail notification system comprises a motion sensor that is attached to an inner surface of a mailbox.

[0012] It is another object of the present invention to provide a mail alerting system with RF transmitter used for detection of signals.

[0013] It is another object of the present invention to provide a mail alerting system with a receiver for receiving signals in the home to alert home owner.

[0014] It is another object of the present invention to provide an audible or visual indication of mail delivery event.

[0015] It is another object of the present invention to provide a mail alerting system which may be easily and efficiently manufactured and marketed.

[0016] It is another object of the present invention to provide a mail alerting system which is durable and reliable construction.

[0017] It is yet another object of the present invention to provide a mail notification system which is economically affordable and available for the relevant market segment of the purchasing public.

[0018] In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

[0019] These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0020] The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

Figure 1 is a perspective view of curbside type mailbox, according to a preferred embodiment of the present invention; and,

Figure 2 is a crosss section view of a curbside type mailbox.

Figure 3 is a back perspective view of the battery compartment of the present invention.

Figure 4 depicts a perspective view of the receiver.

DETAILED DESCRIPTION OF THE INVENTION

[0021] In the following detailed description, reference is made to the accompanying drawings which form a part hereof, and in which is shown by way of illustration specific embodiments in which the invention may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the invention, and it is to be understood that the embodiments may be combined, or that other embodiments may be utilized and that structural, logical and electrical changes may be made without departing from the spirit and scope of the present invention. The following detailed description is, therefore, not to be taken in a limiting sense, and the scope of the present invention is defined by the appended claims and their equivalents.

[0022] The mail alert system provides for the wireless notification of mail delivery to a curbside, apartment/office complex, home or rural area mailbox. The system **Fig. 1-3** comprising of a battery-powered transmitter/sensor **1** that is mounted inside a foam lined compartment **2** (behind a false back **3**) of a conventional mailbox (the foam lined transmitter/sensor compartment better protects the unit from weather while offering a level of protection against vibration); a receiver **Fig.4** that is located inside of a remote structure or residence, up to several hundred feet away; an indicator LED light and an audible alarm that sounds when the mail is delivered; an access door **4** to replace battery in sensor/transition; a switch is provided to turn the unit on/off or control the volume of the alert system. The use of the innovative system provides for the remote notification of mail delivery in an efficient manner. The mailbox **Fig. 1** is depicted as a rural, curbside type mailbox typically located in a user's front yard for purposes of illustration. However, other type mailboxes such as house mounted mailboxes, apartment style gang mailboxes, or gang mounted rural mailboxes mounted at an end of a street would work equally as well with the system and as such, should not be interpreted as a limiting factor of the present invention.

Fig. 2 depicts the cross section image of the mail box.

[0023] **Fig. 3** depicts the back view with the access to the batteries **4** that operated the motion sensor. These sensors are mounted behind a "false back" inside the mailbox, and insulated with foam.

[0024] **Fig. 4** is a front perspective view of a receiver which gives alert to the home owner in audio and visual manner. The receiver is placed inside the home which is approximately 4" in height and 3" wide with audible alarm and LED lights.

[0025] Generally a 9 volt battery is used which can be easily replaced via the small access panel. Power from a battery is utilized as a source of electricity for the RF transmitter/sensor of the present mail alert system.

[0026] It is to be understood that the above description is intended to be illustrative, and not restrictive. For example, the above-discussed embodiments may be used in combination with each other. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description.

[0027] The benefits and advantages which may be provided by the present invention have been described above with regard to specific embodiments. These benefits and advantages, and any elements or limitations that may cause them to occur or to become more pronounced are not to be construed as critical, required, or essential features of any or all of the embodiments.

[0028] While the present invention has been described with reference to particular embodiments, it should be understood that the embodiments are illustrative and that the scope of the invention is not limited to these embodiments. Many variations, modifications, additions and improvements to the embodiments described above are possible. It is contemplated that these variations, modifications, additions and improvements fall within the scope of the invention.

Claims

1. A system for notification of a mail delivery at a remote location comprising:

   a wireless transmitter;
   a motion sensing device integral with said transmitter and in electrical communication therewith;
   a receiver located inside of a remote structure or residence;
   a battery compartment located along a back surface of mailbox;
   one or more indicator LED light;
   at least one audible alarm; and
   at least one on/off switch for controlling power thereto.

2. The system of claim 1, wherein said receiver is 4" in height and 3" wide.

3. The system of claim 1, wherein said battery compartment further comprises 9 volt battery which acts as a power source for said RF transmitter and said sensor.

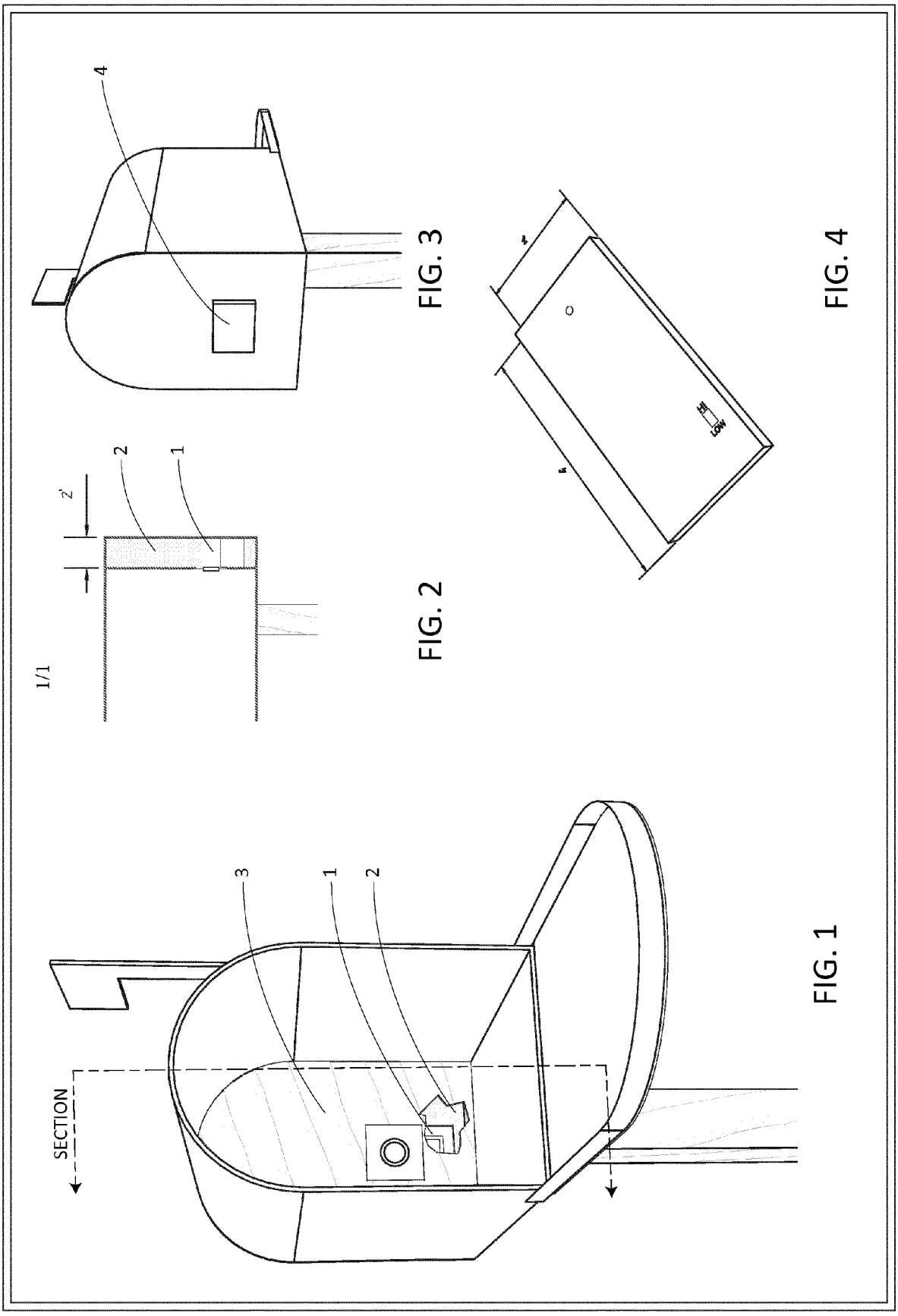

FIG. 3

FIG. 2

FIG. 4

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 15 19 9364

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	US 7 786 862 B1 (CAMPBELL) 31 August 2010 (2010-08-31) * figures 3, 4 * -----	1-3	INV. A47G29/122
A	US 501 270 A (FITZGERALD) 11 July 1893 (1893-07-11) * page 1, line 35 - line 38; figures * -----	1-3	
A	EP 2 243 404 A1 (HAMMOUD) 27 October 2010 (2010-10-27) * paragraph [0027]; figure 5 * -----	1-3	
			TECHNICAL FIELDS SEARCHED (IPC) A47G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	26 October 2016	Beugeling, Leo

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 19 9364

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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26-10-2016

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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