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EUROPEAN PATENT APPLICATION

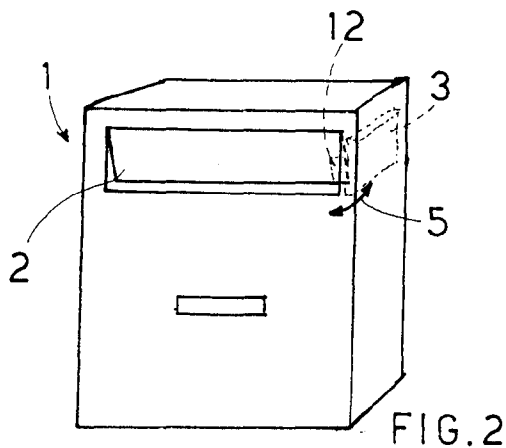
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43100 Parma (IT)(54) **Electronic device for remote-signalling the presence of post in a postbox, and signalling method**

(57) The invention relates to a device and a method for remote-signalling, in particular in the user's home, the presence of post in the postbox (1).

The device comprises a radiofrequency signal emitter (3), which is associated with the postbox (1) and can be activated when post is inserted, and a signaller (4)

which is situated in the user's home and activates a luminous emitter (8) and/or an acoustic emitter (9). According to the method, when said signal is received in the home of the postbox user, an acoustic signal and/or a luminous signal are/is emitted, said signal(s) having a duration greater than the duration of said received signal.

**FIG. 2****EP 0 791 319 A1**

Description

The present invention relates to an electronic device for remote-signalling the presence of post in a postbox and an associated signalling method.

Postboxes, which are situated outside in the vicinity of the road or under cover in the entry area of buildings, are periodically filled by the postman and emptied by the owners of the boxes themselves.

However, a particularly widespread need exists for a system allowing one to be informed when post is introduced into one's box.

At present there are no devices which perform this function and it is not possible to know whether one's postbox is empty or contains documents.

The object of the present invention is to eliminate the aforementioned drawbacks and provide a device and a method for signalling, in the user's home, the presence of post in the postbox of said user, whether said box be situated outside or within the entry area of the building.

Said objects are fully achieved by the device according to the present invention which is characterized by the contents of the claims indicated below and in particular by the fact that it comprises in combination: a signal transmitter associated with the postbox, which is activated when post is inserted into the box, emitting a radiofrequency signal; a signaller installed in the home of the postbox user, comprising a signal receiver, a luminous emitter and/or an acoustic emitter which is/are activated by the signal emitted by the transmitter and remains/remains active for a period of time greater than that required for emission of said signal.

The present invention also relates to a remote-signalling method whereby a radiofrequency pulse or microsignal is emitted when post is inserted into the postbox and said signal is received in the home of the postbox user, thereby causing emission of an acoustic signal and/or luminous signal having a duration greater than that of said received signal.

This and other characteristic features will emerge more clearly from the following description of some preferred embodiments illustrated, purely by way of a non-limiting example, in the accompanying illustrative plate, in which:

- Figures 1, 1a and 2, 2a show a perspective view of two types of postbox, respectively in the rest condition and the active condition when post is inserted;
- Figures 3 and 5 show, respectively, a front view and side view of the signalling device, in the rest conditions, corresponding to the condition of the postbox shown in Figures 1, 1a;
- Figures 4 and 6 show, respectively, a front view and side view of the signalling device, in the active conditions, corresponding to the condition of the postbox shown in Figures 2, 2a.

With reference to the figures, 1 denotes overall a postbox of a substantially known type, provided with a movable closing element 2 which, in accordance with that shown, consists of a swivel flap situated at the front of the box (Figure 1) or on the top thereof (Figure 1a). 3 denotes a signal emitter device which is housed inside the box and which, together with the movable activation element 2 and a corresponding signaller 4, forms the present device.

The signal emitter device comprises a microtransmitter operating at the frequency of 300 MHz, with an output power less than that for which a government-approved licence is required, coded via a 12-bit integrated circuit which allows 2048 different combinations and complete with the usual components for producing the clock frequency.

According to a variation of embodiment, the signal emitter device 3 may comprise a quartz oscillator again operating at a very low power in the frequency band of 400 MHz, at 436 MHz.

The signal emitter device 3 is connected to a metal element (not illustrated) placed on the outside of the postbox from which it is insulated. The metal element has a length of about 10-15 cm and works as an antenna.

Activation of the microtransmitter 3 may be performed in the following way.

The signal emitter device 3 is activated automatically by means of the simple movement of the movable closing element 2 of the postbox, as in the example illustrated in Figures 1, 1a and 2, 2a, in which movement of the movable element 2 in the direction indicated by the arrows 5 produces activation of the microtransmitter 3.

In fact the movable element 2 during its travel displaces a permanent magnet 12 which is fixed to the inner side of said movable element and which, in a certain predetermined position, actuates a reed relay which, in turn, activates the microtransmitter 3, but only for a couple of seconds during which the reed relay is actuated.

However, a timer is also provided, said timer deactivating the transmitter after a few seconds.

This ensures that the microtransmitter does not remain activated if, for example, any bulky post should block the movable element 2 in the active position shown in Figures 2, 2a.

The microtransmitter 3 is powered by means of an incorporated 9V or 12V battery, which has a working life of more than one year.

The movable element 2, according to a variant, may actuate a mercury switch instead of the reed relay for triggering of the microtransmitter.

The signaller 4, which is installed in the user's home, comprises a receiver of the single-channel type, provided with an amplifier stage tuned for the receiving frequency, a decoding stage and a final stage.

The signaller 4 is housed inside a container 6 provided with a plug 7 for insertion into an electrical mains

socket from which power is drawn.

When the receiver receives the coded signal pulse emitted by the microtransmitter 3, it causes activation of a luminous emitter 8 (for example an LED) and an acoustic emitter 9 by means of which it produces a sound or a melody of a predetermined duration.

The luminous emitter 8 remains activated until the circuit is restored by means of operation of a reset push-button 10 positioned so as to be operated manually from outside the signaller 4.

According to a variation of embodiment, the signaller 4 may be provided only with an acoustic emitter 9 or only with a luminous emitter 8.

With the device according to the present invention it is possible to signal in a simple and economical manner the presence of post in any postbox.

The microtransmitter with which it is equipped emits the "post present" signal only for a few seconds and therefore for a very short period of time.

Momentary activation of the microtransmitter produces, on the other hand, permanent activation of the signaller which is interrupted manually by the user after the user him/herself has become aware of the fact that post has been introduced into his/her box.

Claims

1. Method for remote-signalling the presence of post in a postbox, characterized in that:

- a radiofrequency pulse or microsignal is emitted when post is inserted into the postbox;

said signal is received in the home of the postbox user, said received signal causing the emission of an acoustic signal and/or a luminous signal having a duration greater than the duration of said received signal.

2. Method according to Claim 1, wherein emission of the signal is produced by the movement of a movable element (2) or swivel flap of the postbox.

3. Method according to Claim 1, wherein said signal is emitted for a duration of less than 3 seconds.

4. Method according to Claim 1, wherein emission of the luminous signal continues until manual deactivation is performed by the user of the postbox via operation of a pushbutton.

5. Electronic signalling device for remote-signalling the presence of post in a postbox, characterized in that it comprises in combination:

- a signal emitter device (3) which is associated with the postbox (1) and activated when post is

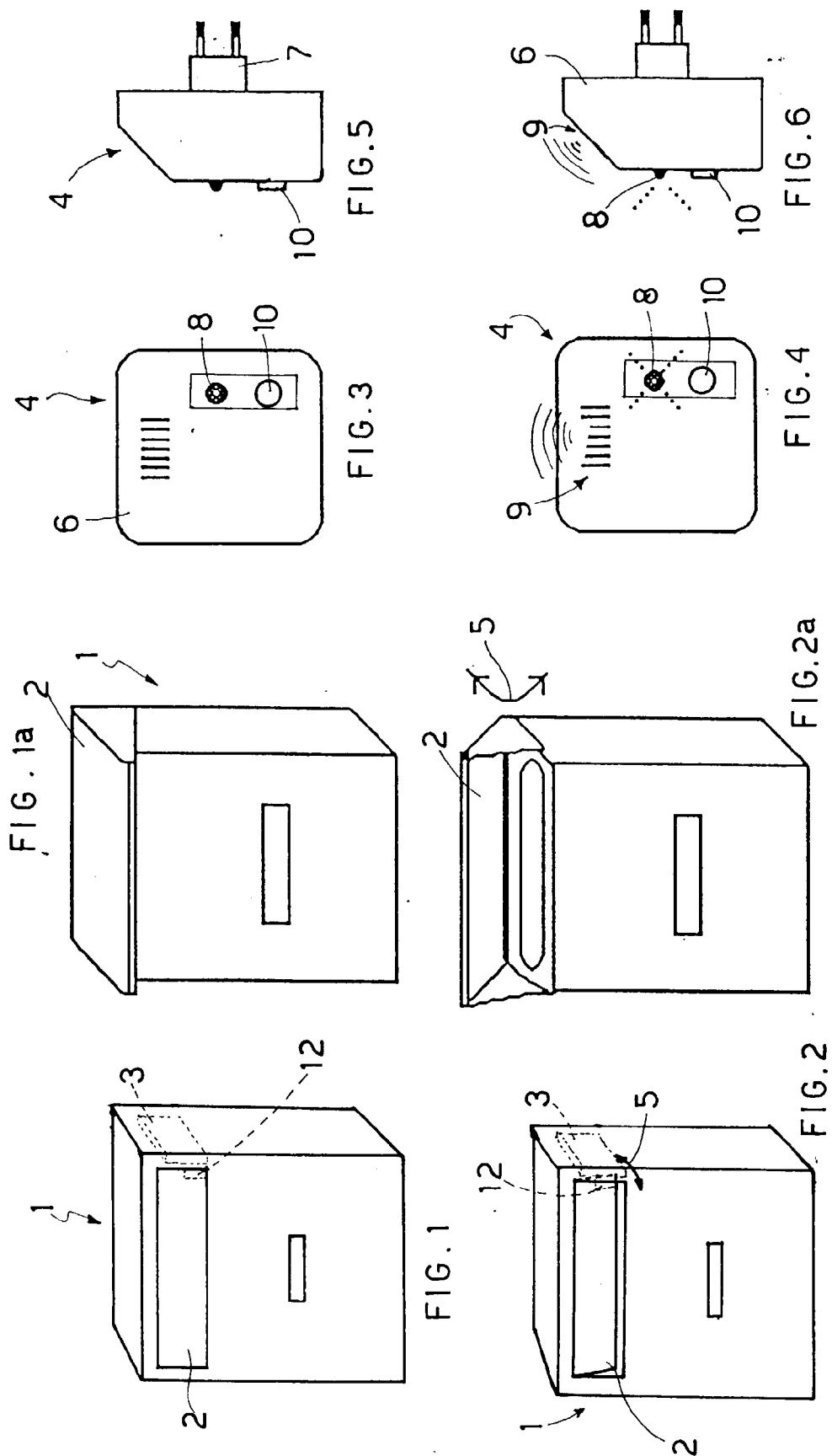
inserted into the box, emitting a coded radiofrequency signal;

- a signaller (4) for indicating the presence of post in the postbox (1) which is installed in the home of the user of the postbox (1) and comprises a signal receiver, a luminous emitter (8) and/or an acoustic emitter (9) which is/are activated by said signal emitted by the signal emitter device (3) and remains/remains active for a period of time greater than required for emission of said signal.

6. Device according to Claim 5, wherein the signal emitter device (3) comprises a permanent magnet (12) which only in a certain predetermined position actuates a reed relay which in turn activates a transmitter, but only for the period of time during which the reed relay is actuated or for a predetermined time of less than 3 seconds.

7. Device according to Claim 6, wherein the postbox (1) comprises a movable element (2) which is associated with the permanent magnet (12) for activation of the transmitter.

8. Postbox, characterized in that it comprises a device according to any one of Claims 5 to 7 or involves remote-signalling of the presence of post by means of a method according to any one of Claims 1 to 4.





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EUROPEAN SEARCH REPORT

Application Number
EP 97 83 0036

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 4 794 377 A (BENAGES) * column 3, line 16 - line 17 * ---	1-5,8	A47G29/12
X	DE 295 04 206 U (HAACK) * page 2, paragraph 6; claim 18 * * page 3, last line * * page 2, paragraph 6 *	1-3,5-8	
A	---	4	
X	US 4 868 543 A (BINKLEY) * column 5, line 43 - line 68 * * column 3, line 29 * -----	1,2,4,5,7,8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A47G
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 May 1997	Examiner Beugeling, G.L.H.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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