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(54) Wireless alarm system with radiofrequency transmission of coded signals

(57) Radiofrequency-based alarm sensors (2, 3) send their coded signals of possible intrusion to the alarm gear-case (1) which, even if it is switched off, is so set as to emit an acoustic and/or light signal of environmental control.

Once the alarm is switched on, the gear-case (1) receiving stimulation from the sensors, signals the intrusion causin the emission of the alarm.

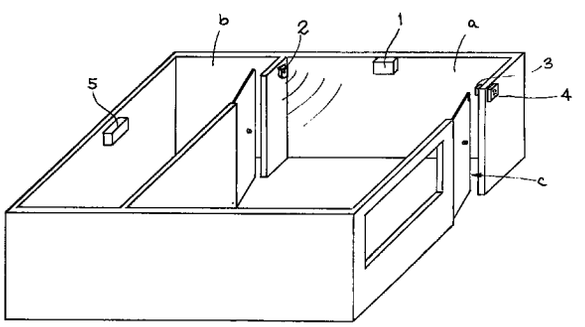

FIG. 1

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Description

[0001] The present invention relates to a wireless signal/alarm system with radiofrequency transmission of coded signals, whose sensors of possible intrusion, always switched on, sent their stimulations by means of coded radiofrequency to a monitored alarm gear-case designed to operate in two different conditions, namely with the alarm switched on or off.

[0002] In switched on conditions, the gear-case operates in a substantially conventional manner, causing the intervention of acoustic/and or light alarm signals; in off conditions, the same gear-case emits a discreet acoustic and/or light signal suitable to signal only the presence of movement in the protected environment.

[0003] In a different manner, it is possible to utilise different devices, entirely independent on the gear-case, positioned also in other environments, that can signal with discretion the reception of signals coming from remote sensors. In any case, the alarm gear-case of the additional device may be sectionalised, so as to switch them on only following signals received from predetermined sensors and not from all those present in the alarm system.

[0004] As is known there are at present available several so-called "anti-intrusion" systems wherein alarm sensors send their stimulations to the gear-case by means of radiofrequency coded signals.

[0005] These applications allow the installation of alarm systems without the necessity of connecting the sensors and the gear-case with wire electric circuits, which is often very difficult, or even impossible, is such systems are to be realised in existing building, without channels for such applications.

[0006] As is also known, in such systems the various anti-intrusion sensors, of either a volumetric or a peripheral type, are usually battery-fed, because of the absence of a physical connection able to supply them with the energy necessary for their working.

[0007] Another characteristic of said types of system is represented by sensors which are always switched on as the gear-case, being not directly connected to them, cannot switch them on or off. This means that, independently on the state of the gear-case, sensors send by radio their coded messages whenever they sense an event similar to an intrusion.

[0008] So, for instance, a magnetic sensor installed above a door sends to its gear-case an alarm signal each time the door is opened, independently on the gear-case being switched on or off. The same holds good for the volumetric sensors which as soon as they sense a movement within their protected area, emit alarm signals for the event taking place to their own gear-case. It is only the latter that, based on its on or off conditions, decides whether to switch on the alarm or to ignore the messages received.

[0009] The same principle holds good for any other type of sensor connected by radio to the gear-case.

[0010] Object of this invention is to utilise the always present signals emitted by said sensors and sent by radio to the gear case, to obtain not only an alarm indication when the gear-box is on, but also to obtain an event signal, without the necessity of switching on the alarm, in case of a switched off gear-case.

[0011] The invention, as is characterised by the claims, intends in fact to point out any event, such as for instance: door openings, movement in the inside of rooms, and so on, utilising radiofrequency signals emitted by the always switched on sensors which are usually utilised only to cause the intervention of the alarm signal.

[0012] To this aim, there may be utilised the alarm gear-case provided with a dedicated circuit which, even in switched off conditions, emits a discreet acoustic and/or light signal each time it receives a discreet acoustic or light signal from the remote sensors.

[0013] In an alternative manner, the same aim is obtained by using a dedicated control circuit, independent on the gear-case, possibly positioned also in another environment, able to discreetly signal the messages coming from the remote sensors. In both cases it is possible to sectionalise the gear-case or the additional device, so as to activate them only following signals received from predetermined sensors and not all those present in the alarm system.

[0014] The invention is described in the following according to an embodiment solely given by way of non limiting example, with reference to the attached drawing, wherein:

Fig. 1 shows schematically a signal and alarm system according to the invention applied in a shop with back-shop.

[0015] The figure shows a wireless signal/alarm system with radiofrequency transmission of the coded signal installed in a shop (a) with back-shop (b).

[0016] The system is composed by an alarm gear-case (1), a volumetric sensor (2), a magnetic sensor (3), applied in the inside of a shop (a), and a siren (4) applied on the outside. An additional control device (5) is located in the back-shop (b).

[0017] The control system (5) is so designed as to sense and signal both the codes received by the magnetic sensor (3), installed on the entry door (c) of the shop, and those coming from the volumetric sensor (2).

[0018] Also with the alarm switched off, sensors (2, 3) remain on and transmit their radiofrequency signals: the magnetic one (c) in case of door opening, the volumetric one in the presence of movement in the inside of the protected room (a).

[0019] When the shop-keeper has to pass to the back-shop (b), the control device (5) provides to signal, at any moment, the possible arrival of a new customer which enters the shop, opening the door and causing the intervention of sensor (3).

[0020] Should door (c) be already open, it is the volumetric sensor (2) that advises him that someone is moving in the inside of the shop (a).

[0021] When, instead, the alarm is switched on, it is the gear-case (1) that, receiving the stimulations from the same sensors, signals the intrusion by causing the alarm to switch on and activate the siren (4).

[0022] It is obvious from what has been described and illustrated that the control system (5) may also be sectionalised in such a way as to signal, for instance, only the opening of the door (c), receiving the signals emitted by the magnetic sensor (3) and ignoring the movement of other possible persons already present in the inside of the shop (a).

[0023] The same control device (5) may be incorporated, should one so wish, in the inside of the gear-case (1). So, as an alternative, also the number and type of sensors utilised may be any whatever.

[0024] In any case, the basic principle of the invention is that of utilising parts of a conventional alarm system, comprising remote sensors which send their findings to an alarm gear-case, through radiofrequency coded signals, to realise a function of environmental control.

Claims

1. A wireless system of signal/alarm with transmission of radiofreqency coded signals comprising one or more already switched on sensors (2, 3), associated to a gear-case (1, 4), characterised in that it comprises a control device (5), which can receive the coded signals of said remote sensors and emit discrete acoustic and/or light signals.

2. The system according to claim 1, characterised in that the control device (5) is associated to one only remote sensor or to two or more or all the sensors of the same system.

3. The system according to claims 1 and 2, characterised in that the control device (5) is applicable in the same environment or in an environment other than that where the remote sensors and/or the gear-case (1) are present.

4. The system according to claims 1-3, characterised in that the control device (5) is independent on or incorporated in the inside of the gear-case (1).

5. A wireless system of signal/alarm with transmission of radiofreqency coded signals as described and illustrated, according to the preceding claims and for the purposes specified.

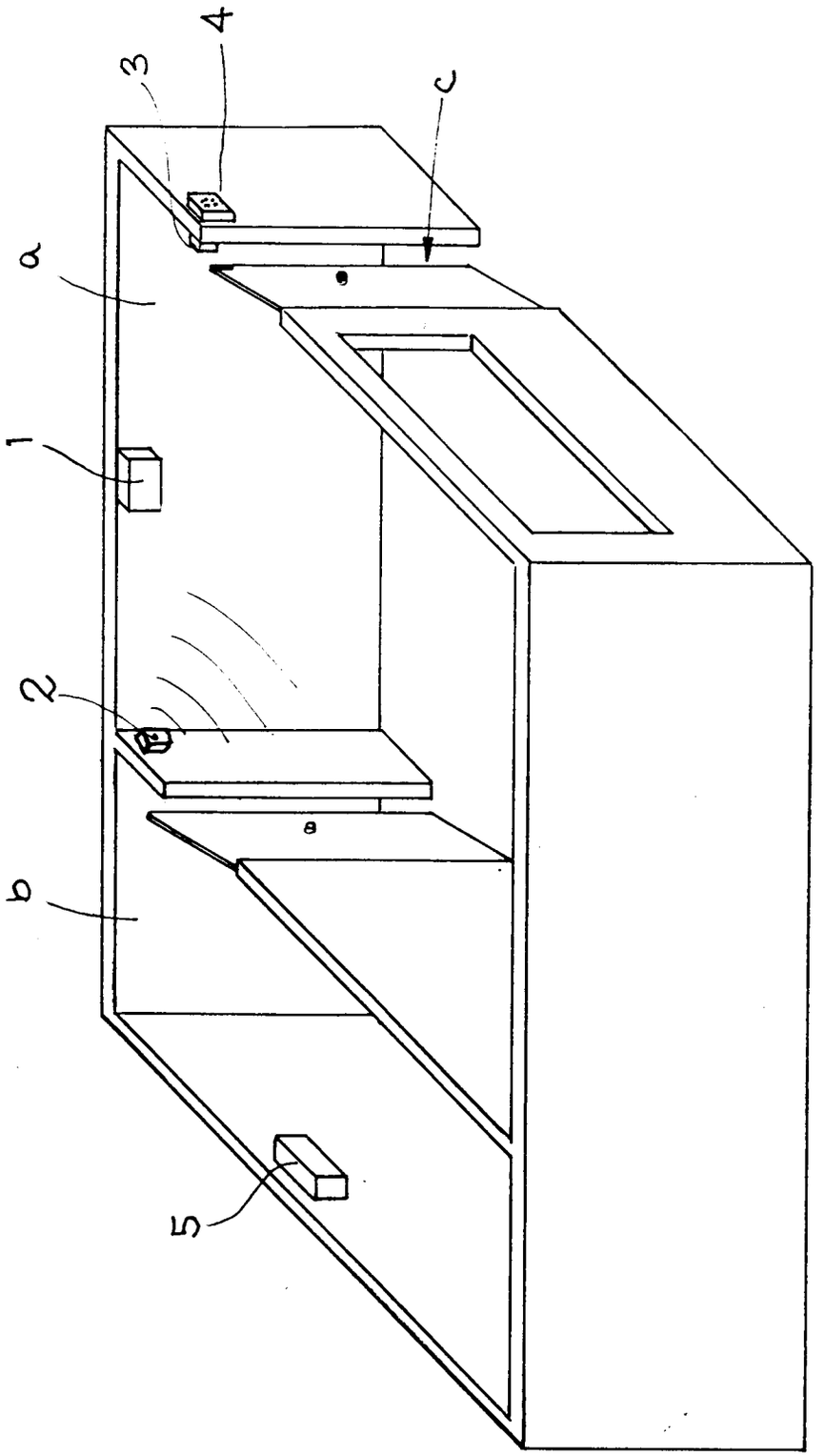

FIG. 1