

(19)



(11)

EP 2 390 854 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
06.07.2016 Bulletin 2016/27

(51) Int Cl.:
G08B 13/22 (2006.01)

(21) Application number: **10164171.0**

(22) Date of filing: **27.05.2010**

(54) **A method and a system for arming and disarming**

Verfahren und System zur Aktivierung und Deaktivierung

Procédé et système pour armer et désarmer

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO SE SI SK SM TR**

(43) Date of publication of application:
30.11.2011 Bulletin 2011/48

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(56) References cited:
US-A- 5 461 372

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Description

TECHNICAL FIELD

[0001] The invention relates to a method and a device for arming and disarming alarm systems. Alarm systems comprising detectors and gateways are commonly used in private houses and office premises. Alarm detectors more and more frequently are connected through wireless communication means to a base unit or gateway which in turn is connected to a central monitoring station. In case of an alarm situation the alarm detector transmits an alarm signal to the gateway and the gateway transmits an alarm signal to the central monitoring station, should the alarm system be in an armed state.

[0002] Besides being connected to the detectors the base station is provided with input means for receiving commands from a user. In various systems the base station is capable of receiving activation and deactivation, or arming and disarming, signals from remote control devices.

PRIOR ART

[0003] Prior art remote control devices exist in different forms. A first embodiment of a remote control device comprises a wireless communication unit and a simple switch used for sending an arming signal and a disarming signal, respectively, to the base station. Other devices include an RFID (Radio Frequency IDentification) which has the advantage that no battery or other power source needs to be included in the device. Normally, a more sophisticated second embodiment of a remote control device is intended to be present within a protected area. The second embodiment of the remote control devices can be wall mounted in the vicinity of a door opening and requires some authorization steps before disarming is allowed.

[0004] The use of different remote control devices for different purposes may lead to undesired situations where the system can be disarmed by unauthorized persons, should a remote control device be left unattended unintentionally.

[0005] An example of arming and disarming an alarm system is known from US 5 461 372.

[0006] Battery powered devices suffer from a general disadvantage related to battery drain. Different measures have been suggested to lower the power consumption of such devices. Among such measures can be mentioned more efficient radio communication means and other low power electronic circuits. More sophisticated remote control devices are less frequently used since low power failures are considered more risky in alarm systems.

SUMMARY OF THE INVENTION

[0007] The invention is defined in independent claims 1 and 7. An object of the present invention is to avoid the

drawbacks set out above and to provide an improved method of arming and disarming an alarm system with the use of remote control devices. The improvements mainly are related to the disarming function. The remote control devices are connected over a wireless link to a gateway, also referred to as a control panel or base station. Further advantageous features and improvements are described below.

[0008] In accordance with the invention at least two categories of remote control devices are used. A first category can be used unreservedly for both arming and disarming the alarm system. A second category is restricted from specific disarming functions.

[0009] The alarm system can be armed in different ways and into different alarm system states, such as "Disarmed", "Armed Home" and "Armed Away". If the system is set to "Disarmed" it will not alarm to perimeter or interior detectors. Still, fire detectors, other gas detectors, flooding events, power break down events and similar detectors normally will be armed also in the "Disarmed" state. If the alarm system is set to a first armed state referred to as "Armed Home" the alarm system will generate an alarm at the occurrence of a breach of a first group of selected detectors such as perimeter detectors and selected interior detectors, but not to a breach of the interior detectors in general. If the system is set to a second armed state referred to as "Armed Away" it will alarm to a breach of the perimeter or interior detectors and normally to all types of detectors.

[0010] The state of the system is determined by the needs of the occupants of the premises. If all of the occupants are leaving the premises then the alarm system should be set to "Armed Away". If the occupants will be staying within the premises for an extended period of time then the alarm system can be set to "Armed Home". This alarm setting can be appropriate for instance when the occupants are sleeping within the premises or are staying within a defined part thereof. For other scenarios the alarm system should be set to "Disarmed".

[0011] In the "Armed Home" state a selected group of detectors is armed. In various embodiments the selected group of detectors includes the perimeter detectors and interior detectors covering sections of the premises that are not used by the occupants. Each installation can be set up with different detectors included in the selected group.

[0012] A first category of remote control devices can be used for arming the system into either the "Armed Home" state or the "Armed Away" state. These devices also are allowed to disarm the system into the "Disarmed" state irrespective of the present armed state. Normally, remote control devices of the first category either are small portable units that can be carried together with keys in the pocket of a user, or wall mounted units arranged in the vicinity of door openings.

[0013] The small portable device normally does not require any code, identification or authentication, neither for arming nor for disarming the system. It is intended to

be carried by the user and not left available for unauthorized persons. To use the wall mounted units however, the user is required to provide some kind of authorization, code or authentication, at least for disarming the system. If this requirement can not be complied with no disarming function is allowed.

[0014] A second category of remote control devices is used for arming the system into the "Armed Home" state and for disarming the system from "Armed Home" to "Disarmed". These devices are disabled from disarming the system from "Armed Away". As a result the second category of remote control devices can be left unattended when a user has armed the system into the "Armed Away" state. Even if an unauthorised person would come into possession of the remote control device the system could not be disarmed. According to the present invention devices in the second category are disabled permanently from disarming from "Armed Away", so as not to be capable of changing properties even if it is found and tampered with by an unauthorized person.

[0015] Preferably, the second category of remote control devices also is limited to arming the system into the "Armed Home" state only. In various embodiments the limitation is fixed while in other embodiments it is possible to override the limitation by specific measures, for instance by pressing keys or buttons in a predetermined sequence.

[0016] In various embodiments of the invention a specifically designed remote control device is included in the second category of remote control devices. The specifically designed remote control device is disabled from disarming the alarm system from "Armed Away". As a result the specifically designed remote control device can be left within a protected or not protected area because an intruder will not be able to disarm the alarm system from "Armed Away".

[0017] Various embodiments of a remote control device in accordance with the invention are operable in two different modes. In a first sleeping mode only a minor part of electronic components and other means are active. In the sleeping mode the power consumption is very low resulting in an extending life time of batteries. In a second and active mode display means and communication means included in the remote control device are activated and all relevant functions are available.

[0018] In accordance with one aspect of the invention the mode of operation is changed when motion of the remote control device is detected and optionally when the gateway transmits selected alarm signals. After detecting such motion the remote control device will enter the active mode. When the display means is activated different types of information previously received and stored in the remote control device are displayed to the user. This information may include that a detector included in the alarm system has detected fire, that a door or a window has been opened or any other desired condition.

[0019] In the active mode it is further possible also to

arm and disarm the alarm system as set out below and to carry out voice information exchange with a central monitoring station. In the sleeping mode there still is a sporadic radio communication with the gateway so as to allow registration and indication of alarm conditions. The remote control device also may send an acknowledge signal to the gateway so as to confirm that it is operable.

[0020] In various embodiments the remote control device is arranged to arm and disarm the alarm system only at selected levels, such as perimeter protection. By arming the alarm system an internal state of the gateway is changed to armed. In the armed state reporting of an alarm signal from alarm detectors results in forwarding of alarm information to the central monitoring station. An alarm also may result in the generation of an alarm sound and/or other local indication of the alarm. The present state of the gateway can be transferred to selected or all alarm detectors. The remote control device preferably is designed to have a size and weight that will not encourage a user to bring it out of the premises.

[0021] In case of an emergency situation or if other circumstances are fulfilled it is possible to establish a voice connection between the remote control device and the central monitoring station. In various embodiments the connection is established through the gateway. If the emergency situation arises at the location of the remote control device the user initiates the connection by using input means of the remote control device. In a simple embodiment the input means in this respect is an alarm button. Emergency situations and also other reasons allow the central monitoring station to initiate voice communication.

[0022] An alarm signal also is transmitted to the central monitoring station to ensure that appropriate measures are taken. When the voice connection is established the user is able to inform personnel at the central monitoring station about the present situation and an output device will output voice information that is received from the central monitoring station. In a simple embodiment the output device comprises a loudspeaker.

[0023] The remote control device is provided also with other forms of output means. In various embodiments a graphic display unit is included and also symbol elements. The symbol elements can be provided with back-lighting means that are activated and lit when there is a transition from the sleeping mode to the active mode. In various embodiments the symbol elements may include symbols depicting fire, an open door and a locked door. The graphic display unit can also be provided with back-lighting means.

[0024] Besides an alarm button and/or other alarm activating means the input means in various embodiments include an arm and disarm button, or separate buttons for arming and disarming the alarm system, and a talk symbol indicating that voice communication is available.

[0025] The detection of motion of the remote control device can be provided by any type of accelerometer, including those based on piezoelectric effect, changes

in capacitance, piezoresistive effect and inertially responsive spring-mass systems. The term accelerometer is used herein for any device that will produce a signal responsive of tilting and/or moving the remote control device. In various embodiments the accelerometer is sensitive also to shock or freefall and capable of discriminating between a normal lift up of the device and a situation where the device is dropped or when a person carrying it is falling.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] In order that the manner in which the above recited and other advantages and objects of the invention are obtained will be readily understood, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings.

[0027] Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

- Fig. 1 is a schematic perspective view of an installation including one embodiment of a system in accordance with the invention,
- Fig. 2 is a schematic block diagram of an installation including an embodiment of the invention as shown in Fig. 1 and an associated central monitoring station, and
- Fig. 3 is a schematic block diagram of one embodiment of a remote control device in accordance with the invention.

DETAILED DESCRIPTION

[0028] The installation shown in Fig. 1 is arranged in a conventional manner in a room. A first category portable remote control device 10 is shown schematically as to be carried by a user. A second category remote control device 11 is shown schematically as suitable to be arranged on a table or similar device. The installation includes a plurality of wireless alarm detectors, including a smoke detector 14, a first perimeter alarm detector 16, a second perimeter alarm detector 18 and a first infrared detector 20 or similar photodetector. Alarm signals from smoke detector 14 and detectors for gas or water leakage normally result in an alarm state, irrespective of the alarm system being armed or not.

[0029] The first infrared detector 20 is an interior detector. Alarm signals from the detectors are transmitted to a wireless control panel or gateway 22. Detectors and the gateway form an alarm system. When the alarm system is armed the gateway will transmit an alarm signal to a central monitoring station (not shown) and normally also generate a sound alarm when an alarm signal from

a detector is received. Signals from the smoke detector 14 typically always will cause forwarding of an alarm signal irrespective of the mode of the gateway and will cause a sounder to be activated. Arming of the system normally is requested using a keypad 23 arranged by the door 12. Normally inputting of a code such as a PIN code is required to arm and to disarm the alarm system. The keypad 23 is a fixedly mounted first category remote control device.

[0030] The smoke detector 14 is mounted in the ceiling of the premises and the infrared detector 18 is mounted on a wall. The first perimeter alarm detector 16 is installed above a door 12 to detect when the door is opened. A corresponding second perimeter alarm detector 18 is installed by a window 13. In the shown embodiment the keypad 23 is arranged by the door 12. The gateway 22 is mounted in a room separated from the entrance of the premises. In the shown embodiment a second infrared detector 21 is arranged to cover the gateway 22, so as to ensure that an intruder cannot tamper with the gateway 22 when the system is armed. The second infrared detector 21 is an interior detector.

[0031] Preferably alarm system is armed into the "Armed Away" state by the keypad 23 only, or by the portable arming and disarming remote control device 10. Different arming states can be selected by pressing an associated button in connection with entering the code if the keypad 23 is used. Normally, the portable arming and disarming remote control device 10 is a more basic unit which is used for arming the system into a predetermined state, such as the "Armed Away" state, and for disarming the system from said "Armed Away" state into the "Disarmed" state. In the embodiment shown in Fig. 1 the first category portable remote control device 10 comprises a first arming button 13 used for arming the system into the predetermined state and a second disarming button 15 used for disarming the system into the "Disarmed" state. The first category portable remote control device 10 is designed to be carried in the pocket of a user, for instance in a key ring through a key ring hole 17.

[0032] The alarm system can be disarmed into a disarmed state from a first armed state, such as the "Armed Home" state, in which a selected group of alarm detectors have been armed and from a second armed state, such as the "Armed Away" state, in which an extended group alarm detectors comprising also alarm detectors that are not included in said selected group have been armed. The extended group alarm detectors can comprise all detectors of the alarm system.

[0033] The second category remote control device 11 is used for arming the system into the "Armed Home" state only and is intended to be used by the bed or otherwise in a more stationary way than other portable devices. If the alarm system has been armed to the state "Armed Away" the second category remote control device 11 cannot be used to disarm the system. Normally, smoke detectors and other similar alarm detectors are

active and will produce alarms when triggered irrespective of the present state of the alarm system.

[0034] The second category remote control device 11 has a size and thickness that makes it less suitable to be carried in a pocket. It is provided with a display 24 and further display symbols 26. Preferably the display symbols are indicators of higher priority, such as a fire symbol 28 and an open symbol 30 indicating that a door or window or other perimeter entrance has been or is opened. The display 24 can be used for indicating more detailed information or information of lower priority. In various embodiments the display is used to indicate whether the alarm system is in an armed or disarmed state. A further display symbol is a talk symbol 32 indicating that a voice connection to a central monitoring station is open. This function is further explained below. The display symbols may all or at least some of them be provided with backlight means, so as to be distinctively observable also without ambient light.

[0035] The second category remote control device 11 is provided with a set of input means including a panic or assault button 34. By pressing the panic button 34 an alarm signal is forwarded to the central monitoring station irrespective of the present state of the remote control device. The remote control device is further provided with an arming button 36 and a disarming button 38. In various embodiments the arming button 36 is combined with the disarming button 38 in a single button and the function is toggled between arming and disarming.

[0036] When the second category remote control device 11 is used for arming only one or a plurality of perimeter alarm detectors or another group of selected alarm detectors are armed. The alarm system will be armed to the "Armed Home" state. A group of selected alarm detectors may include one alarm detector only. By limiting the function of the remote control device as described it is ensured that the alarm system is not fully but partly armed when a user still is present in the premises. Furthermore, it is also ensured that an intruder will not be able to disarm the alarm from an "Armed Away" state even if the intruder gains access to the remote control device.

[0037] A lamp 40 can be used in emergency situations and when the second category remote control device 11 is operated in the night-time. A switch (not shown) can be used to manually switch on the light. In various embodiments the lamp is switched on automatically in case of fire and other high priority alarm situations. A separate power source, such as a battery, is connected to the lamp when power consumption is especially considered. Alarm signals and other sounds are generated in a loudspeaker 42. The loudspeaker 42 is used also during voice communication as described below. The remote control device is provided with a microphone 43 for capturing voice signals when a user talks. Display 24, display symbols 26, fire symbol 28, open symbol 30 and the loudspeaker are all indicating means used to inform a user of present conditions and status.

[0038] The second category remote control device 11 normally is placed in a horizontal position on a table such as a bedside table. When left in a stationary position for a predetermined and adjustable time period the remote control device enters a sleeping mode. All power consuming circuits and display units are switched off or put into a low power state to reduce the power consumption. Also when in the sleeping mode a wireless connection still is maintained with the gateway 22. The wireless connection during sleeping mode mainly is a short beacon signal to establish a confirmation that the second category remote control device 11 is operable.

[0039] In various embodiments a wireless connection is established during a short time period followed by a longer time period without any signalling. The short time period can have a duration of 4 ms while the longer time period can last for 2 seconds. During a previous phase, such as during installation, an accurate synchronization between the remote control device and the gateway is carried out. A similar synchronization can be carried out also between the gateway and the alarm detectors.

[0040] Should an alarm signal be sent from an alarm sensor to the gateway and the alarm system is in armed state a wake up signal is sent from the gateway to the remote control device. After receiving the wake up signal the remote control device will enter the active mode and display information regarding the present alarm situation. The displaying of information can include switching on the backlight means corresponding to the appropriate alarm symbol. High priority alarms, such as fire alarms, normally also result in activation of a sound alarm. In various embodiments also the lamp 40 will be switched on to facilitate movements in the premises.

[0041] The second category remote control device 11 also will change from sleeping mode to active mode when motion of the remote control device is detected. A motion corresponding to a lower level of acceleration, such as when the remote control device is lifted or tilted, will force the remote control device into the active mode and switch on backlight and display unit. A motion detector 60 is provided in the remote control device.

[0042] Status of alarm detectors and other information previously received from the gateway will be displayed during a predetermined time period. The lamp 40 can be switched on manually if desired. When a predetermined and adjustable time period has expired without any alarms or movements of the remote control device the status is reset to sleeping mode to save power.

[0043] In the embodiment shown in Fig. 2 the alarm system comprising a second category remote control device 11, a first perimeter alarm detector 16, a second perimeter alarm detector 18, an infrared detector 20 and a smoke detector 14 are operatively connected to a central monitoring station 44 through the gateway 22 and a network connection 46. In various embodiments a plurality of interconnected smoke detectors are provided. Interconnected smoke detectors will forward alarm signals to each other and thus improve the alarm signalling

throughout the premises. The network connection 46 can be the internet, a wired telephone connection, a cellular telephone connection or any other suitable connection or combination of connections. The gateway 22 is provided with a self-contained power supply such as a battery so as to ensure communication and operation generally also during power failures.

[0044] The second category remote control device 11 will change mode from sleeping mode to active mode when the panic button is pressed on the remote control device. When the panic button is pressed by a user 47 a panic alarm signal will be transmitted to the gateway 22 and then further on to the central monitoring station 44. The central monitoring station initiates a voice communication between a supervisor 48 or other personnel and the user 47. A voice channel between the central monitoring station and the remote control device can be established also during other conditions and in either direction.

[0045] In various embodiments the voice communication is a half-duplex communication system and communication will be possible in both directions, but only in one direction at a time. While the supervisor 48 is talking the communication system will transfer voice signals from the central monitoring station 44 to the second category remote control device 11. Sound signals will be emitted through the loudspeaker 42. In the shown embodiment the transfer of voice signals will go through the gateway 22. In other embodiments there will be a direct connection between the remote control device and the central monitoring station for the voice communication. An audio unit 50 at the central monitoring station 44 is used by the supervisor.

[0046] The user is invited to talk and to transfer voice information in the reverse direction when the talk symbol of the remote control device is switched on. Normally, the supervisor or the central monitoring station will control the direction of communication switch on the talk symbol. Voice signals from the user are captured by the microphone 43.

[0047] A basic configuration of the second category remote control device 11 is shown in Fig. 3. A central processing unit 52 is connected to an input unit 54 and an output unit 56. The input unit 54 is connected to the arming button 36, the disarming button 38 and the panic button. In the shown embodiment the input unit 54 also is connected to and receives voice signals from the microphone 43. In various embodiments the central processing unit 52 is arranged also to code and to decode voice signals during voice communication.

[0048] An output unit 56 is connected to the central processing unit 52 and also to the display 24 and to the display symbols 26. The output unit 56 also is connected to the talk symbol 32 and the loudspeaker 43. During voice communication the output unit 56 receives decoded voice signals from the central processing unit 52 or a separate voice handling unit (not shown).

[0049] All communication to and from the gateway 22

is handled in a wireless communications unit 58 connected to the central processing unit 52. In various embodiments the communications unit 58 comprises circuits and electronic devices that are suitable for radio communication at available frequencies, including circuits for coding/decoding, encryption/decryption, power adjustments. The communications unit 58 together with the central processing unit 52 are arranged to handle an authentication process between the wireless units, so as to ensure that wireless units not belonging to the alarm system interfere in or endanger the function of the alarm system.

[0050] A motion detector 60 is connected to the central processing unit 52 to give an alert signal when predetermined levels of motion of the remote control device are detected. In various embodiments the motion detector comprises an accelerometer that can be based on different physical properties. The accelerometer can include a solid state detector utilizing a piezoelectric effect, changes in capacitance, piezoresistive effect and inertially responsive spring-mass systems.

[0051] A first level of motions where the acceleration corresponds to lifting or tilting the second category remote control device 11 sets the remote control device into the active mode to energize backlight and other display functions. Arming of a selected group of alarm detectors is now possible. A second level of motions corresponds to dropping the remote control device or the acceleration that will be detected when a person carrying the remote control device falls. In various embodiments detection of the second level of motions results in transmitting a panic message to the central monitoring station and opening of the voice communication.

[0052] The central processing unit 52 comprises a clock circuit (not shown) that is used for timing purposes, such as determining time intervals between radio communications with the gateway when the remote control device is in the sleeping mode. A general power supply unit 62 is connected to all unit power consuming units of the second category remote control device 11. In various embodiments the general power supply unit 62 comprises a battery. As long as the remote control device is in the sleeping mode the total power consumption of the remote control device is very low and also standard batteries will last for at least one year and preferably at least three years at normal use.

[0053] An optional power supply 63 can be provided for the lamp 40. In accordance with such an embodiment the useful life of the general power supply will be more predictable. The optional power supply 63 can be a battery that is readily available through a cover of a housing of the remote control device.

[0054] While certain illustrative embodiments of the invention have been described in particularity, it will be understood that various other modifications will be readily apparent to those skilled in the art without departing from the scope of the invention as defined in the appended claims.

Claims

1. A method of disarming an alarm system into a disarmed state from a first armed state in which a selected group of alarm detectors have been armed and from a second armed state in which an extended group of alarm detectors comprising also alarm detectors that are not included in said selected group have been armed, **characterised by** the steps of enabling a first category of remote control devices (10; 23) for arming the alarm system into the first armed state and into the second armed state, enabling said first category of remote control devices (10; 23) for disarming the alarm system from the first armed state and from the second armed state, enabling a second category (11) of remote control devices for arming the alarm system into the first armed state, enabling said second category of remote control devices (11) for disarming the alarm system from the first armed state, and disabling said second category of remote control devices (11) for disarming the alarm system from the second armed state.
2. A method as claimed in claim 1, where information is exchanged through a wireless communication link, comprising the steps of sending activation instructions to at least one alarm detector and receiving and displaying data relating to status of at least said alarm detector in a wireless remote control device (11) included in said second category of remote control devices, detecting motion of said wireless remote control device, enabling the displaying of data after detecting the motion of the wireless remote control device, and enabling sending of instructions for disarming a selected group of alarm detectors after detecting the motion of the wireless remote control device.
3. A method as claimed in claim 1 or 2, also including the steps of determining acceleration of the wireless remote control device (11) and generating an alarm signal when a determined value of acceleration exceeds a predetermined value.
4. A method as claimed in claim 1 or 2, also including the step of activating backlight of display symbols (26) arranged on the wireless remote control device (11) when motion of said remote control device is detected.
5. A method as claimed in claim 1, also including the steps of receiving a control signal allowing reception of voice signals and transmitting radio signals carrying information corresponding to said voice signals.
6. A method as claimed in claim 1, also including the steps of receiving alarm signals generated in alarm detectors and activating associated indicating means arranged on the wireless remote control device (11) when an alarm signal is received.
7. An alarm system capable of entering a first armed state in which a selected group of alarm detectors have been armed and a second armed state in which an extended group of alarm detectors comprising also alarm detectors that are not included in said selected group have been armed, said alarm system comprising at least two alarm detectors (14; 16; 18; 20) and a gateway (22), **characterised by** a first category of remote control devices (10; 23) capable of arming the alarm system into the first armed state and into the second armed state, and of disarming the alarm system from the first armed state and from the second armed state, and a second category of remote control devices (11) capable of arming the alarm system into the first armed state, and of disarming the alarm system from the first armed state, and wherein said second category of remote control devices (11) is disabled from disarming the alarm system from the second armed state.
8. An alarm system as claimed in claim 7, wherein said second category of remote control devices (11) comprises wireless communication means (58), display means (24; 26), input means (34; 36; 38), motion detection means (60) operatively connected to said display means for displaying information received from the at least one detector (14; 16; 18; 20) when motion is detected, arming input means (36) for receiving arming instructions, wherein said arming input means (36) is operatively connected to said wireless communication means (58) and wherein said gateway (22) is set to a partly armed state upon receipt of an arming instructions forwarded by said wireless communication means (58), said gateway (22) in the partly armed state being arranged to generate an alarm signal upon receiving alarm signals from a selected group of detectors, and disarming input means (38) for receiving disarming instructions, wherein said disarming input means (38) is operatively connected to said wireless communication means (58) and wherein said gateway (22) is set to a disarmed state from said partly armed state only upon receipt of an disarming instructions forwarded by said wireless communication means (58).
9. An alarm system as claimed in claim 7, wherein the remote control device (11) of the second category is provided with a plurality of display symbols (26) and associated backlight means.

10. An alarm system as claimed in claim 8, wherein the motion detection means (60) is arranged to detect a first level of acceleration corresponding to lifting or tilting the remote control device (11) of the second category, and a second level of acceleration corresponding to dropping the remote control device of the second category.
11. An alarm system as claimed in claim 8, wherein the remote control device (11) of the second category is provided with a loudspeaker (42) and a microphone (43) operatively connected to a communication unit (58) providing voice communication between the remote control device (11) of the second category and the gateway (22).
12. An alarm system as claimed in claim 11, wherein said wireless communication means (58) comprises a half-duplex communication means arranged to allow a one way voice communication between the remote control device (11) of the second category and the gateway (22).
13. An alarm system as claimed in claim 11 or claim 12, wherein the remote control device (11) of the second category is provided with a talk symbol (32) that is activated when voice communication in the direction from the remote control device (11) of the second category to the gateway (22) is allowed.
14. A system as claimed in claim 8, wherein the selected group of alarm detectors consists of perimeter alarm detectors (16; 18).
15. A system as claimed in claim 7, wherein the remote control device (11) of the second category is provided with a lamp (40) and wherein the motion detection means (60) is operatively connected to said lamp, so as to activate the lamp when motion is detected.
16. A system as claimed in claim 15, wherein the remote control device (11) of the second category is provided with a separate power supply (63) supplying power to the lamp (40).

Patentansprüche

1. Verfahren zum Deaktivieren einer Alarmanlage in einen deaktivierten Zustand aus einem ersten aktivierten Zustand, in dem eine ausgewählte Gruppe von Alarmdetektoren aktiviert wurde, und von einem zweiten aktivierten Zustand, in dem eine erweiterte Gruppe von Alarmdetektoren aktiviert wurde, die ebenfalls Alarmdetektoren aufweist, die nicht in der ausgewählten Gruppe enthalten sind, **gekennzeichnet durch** die Schritte
Einschalten einer ersten Kategorie von Fernzugriffs-

steuereinrichtungen (10; 23) zum Aktivieren der Alarmanlage in den ersten aktivierten Zustand und in den zweiten aktivierten Zustand,
Einschalten der ersten Kategorie von Fernzugriffssteuereinrichtungen (10; 23) zum Deaktivieren der Alarmanlage aus dem ersten aktivierten Zustand und aus dem zweiten aktivierten Zustand,
Einschalten einer zweiten Kategorie (11) von Fernzugriffssteuereinrichtungen zum Aktivieren der Alarmanlage in den ersten aktivierten Zustand,
Einschalten der zweiten Kategorie von Fernzugriffssteuereinrichtungen (11) zum Deaktivieren der Alarmanlage aus dem ersten aktivierten Zustand, und
Ausschalten der zweiten Kategorie von Fernzugriffssteuereinrichtungen (11) zum Deaktivieren der Alarmanlage aus dem zweiten aktivierten Zustand.

2. Verfahren nach Anspruch 1, wobei Daten durch eine drahtlose Kommunikationsverbindung ausgetauscht werden, wobei das Verfahren folgende Schritte aufweist:

Senden von Aktivierungsbefehlen an mindestens einen Alarmdetektor und Empfangen und Anzeigen der Daten bezüglich des Status des mindestens einen Alarmdetektors in einer drahtlosen Fernzugriffssteuereinrichtung (11), die von der zweiten Kategorie von Fernzugriffssteuereinrichtungen umfasst ist,
Erfassen einer Bewegung der drahtlosen Fernzugriffssteuereinrichtung,
Einschalten des Anzeigens von Daten, nachdem die Bewegung der drahtlosen Fernzugriffssteuereinrichtung erfasst wurde und
Einschalten des Sendens von Befehlen zum Deaktivieren einer ausgewählten Gruppe von Alarmdetektoren, nachdem die Bewegung der drahtlosen Fernzugriffssteuereinrichtung erfasst wurde.

3. Verfahren nach Anspruch 1 oder 2, das ebenfalls folgende Schritte umfasst:

Bestimmen der Beschleunigung der drahtlosen Fernzugriffssteuereinrichtung (11) und
Erzeugen eines Alarmsignals, wenn ein bestimmter Beschleunigungswert einen vorbestimmten Wert überschreitet.

4. Verfahren nach Anspruch 1 oder 2, das ebenfalls den Schritt des Aktivierens einer Hintergrundbeleuchtung von Anzeigesymbolen (26) umfasst, die auf der drahtlosen Fernzugriffssteuereinrichtung (11) angeordnet sind, wenn die Bewegung der Fernzugriffssteuereinrichtung detektiert wird.

5. Verfahren nach Anspruch 1, das ebenfalls die Schritt-

te des Empfangens eines Steuersignals, das den Empfang von Sprachsignalen ermöglicht und das Übertragen von Funksignalen umfasst, die Daten übertragen, die den Sprachsignalen entsprechen.

6. Verfahren nach Anspruch 1, das ebenfalls die Schritte des Empfangens von Alarmsignalen, die in den Alarmdetektoren erzeugt wurden, und des Aktivierens von zugehörigen Anzeigemitteln umfasst, die auf der drahtlosen Fernzugriffssteuereinrichtung (11) angeordnet sind, wenn ein Alarmsignal empfangen wird.
7. Alarmanlage, eingerichtet zum Annehmen eines ersten aktivierten Zustandes, in dem eine ausgewählte Gruppe von Alarmdetektoren aktiviert ist, und eines zweiten aktivierten Zustandes, in dem eine erweiterte Gruppe von Alarmdetektoren aktiviert ist, die ebenfalls Alarmdetektoren aufweisen, die nicht in der ausgewählten Gruppe enthalten sind, wobei die Alarmanlage mindestens zwei Alarmdetektoren (14; 16; 18; 20) und eine Zugangseinheit (22) aufweist **gekennzeichnet durch** eine erste Kategorie von Fernzugriffssteuereinrichtungen (10; 23), die geeignet sind, die Alarmanlage in den ersten aktivierten Zustand und in den zweiten aktivierten Zustand zu aktivieren, und die Alarmanlage aus dem ersten aktivierten Zustand und aus dem zweiten aktivierten Zustand zu deaktivieren und eine zweite Kategorie von Fernzugriffssteuereinrichtungen (11), die geeignet sind, die Alarmanlage in den ersten aktivierten Zustand zu aktivieren und die Alarmanlage aus dem ersten aktivierten Zustand zu deaktivieren und wobei die zweite Kategorie von Fernzugriffssteuereinrichtungen (11) **durch** das Deaktivieren der Alarmanlage aus dem zweiten deaktivierten Zustand ausgeschaltet wird.
8. Alarmanlage nach Anspruch 7, wobei die zweite Kategorie von Fernzugriffssteuereinrichtungen (11) drahtlose Kommunikationsmittel (58), Anzeigemittel (24; 26), Eingabemittel (34; 36; 38), Bewegungserfassungsmittel (60), die wirksam mit den Anzeigemitteln zum Anzeigen von Daten verbunden sind, die von dem mindestens einen Detektor (14; 16; 18; 20) empfangen werden, wenn eine Bewegung erfasst wird, Aktivierungseingabemittel (36) zum Empfangen von Aktivierungsbefehlen, wobei die Aktivierungseingabemittel (36) wirksam mit den drahtlosen Kommunikationsmitteln (58) verbunden sind, und wobei die Zugangseinheit (22) bei Empfang von Aktivierungsbefehlen, die durch die drahtlosen Kommunikationsmittel (58) weitergeleitet wurden, in einen teilweise aktivierten Zustand versetzt wird, wobei die Zugangseinheit (22) in dem teilweise aktivierten Zustand dazu eingerichtet ist, bei Empfang von Alarmsignalen von einer ausgewählten Gruppe von De-

tektoren ein Alarmsignal zu erzeugen, und Deaktivierungseingabemittel zum Empfang von Deaktivierungsbefehlen aufweisen, wobei die Deaktivierungseingabemittel (38) wirksam mit den drahtlosen Kommunikationsmitteln (58) verbunden sind und wobei die Zugangseinheit (22) beim Empfang von Deaktivierungsbefehlen, die durch die drahtlosen Kommunikationsmittel (58) weitergeleitet wurden, aus dem teilweise aktivierten Zustand in einen deaktivierten Zustand versetzt wird.

9. Alarmanlage nach Anspruch 7, wobei die Fernzugriffssteuereinrichtung (11) der zweiten Kategorie mit einer Mehrzahl von Anzeigesymbolen (26) und zugehörigen Hintergrundbeleuchtungsmitteln versehen ist.
10. Alarmanlage nach Anspruch 8, wobei die Bewegungserfassungsmittel (60) eingerichtet sind, einen ersten Grad an Beschleunigung, der dem Anheben oder Verdrehen der Fernzugriffssteuereinrichtung (11) der zweiten Kategorie entspricht und einen zweiten Grad an Beschleunigung zu detektieren, der dem Herabfallen der Fernzugriffssteuereinrichtung der zweiten Kategorie entspricht.
11. Alarmanlage nach Anspruch 8, wobei die Fernzugriffssteuereinrichtung (11) der zweiten Kategorie mit einem Lautsprecher (42) und einem Mikrofon (43) versehen ist, die wirksam mit einer Kommunikationseinheit (58) verbunden sind, wodurch eine Sprachkommunikation zwischen der Fernzugriffssteuereinrichtung (11) der zweiten Kategorie und der Zugriffseinheit (22) bereitgestellt wird.
12. Alarmanlage nach Anspruch 11, wobei die drahtlosen Kommunikationsmittel (58) Halbduplex-Kommunikationsmittel aufweisen, die dazu eingerichtet sind, eine einseitig gerichtete Sprachkommunikation zwischen der Fernzugriffssteuereinrichtung (11) der zweiten Kategorie und der Zugriffseinheit (22) zu ermöglichen.
13. Alarmanlage nach Anspruch 11 oder Anspruch 12, wobei die Fernzugriffssteuereinrichtung (11) der zweiten Kategorie mit einem Sprachsymbol (32) versehen ist, das aktiviert wird, wenn die Sprachkommunikation in Richtung von der Fernzugriffssteuereinrichtung (11) der zweiten Kategorie und der Zugriffseinheit (22) ermöglicht ist.
14. Anlage nach Anspruch 8, wobei die ausgewählte Gruppe von Alarmdetektoren aus Perimeter-Alarmdetektoren (16; 18) besteht.
15. Anlage nach Anspruch 7, wobei die Fernzugriffssteuereinrichtung (11) der zweiten Kategorie mit einer Lampe (40) versehen ist und wobei die Bewe-

gungserfassungsmittel (60) wirksam mit der Lampe verbunden sind, um die Lampe einzuschalten, wenn eine Bewegung detektiert wird.

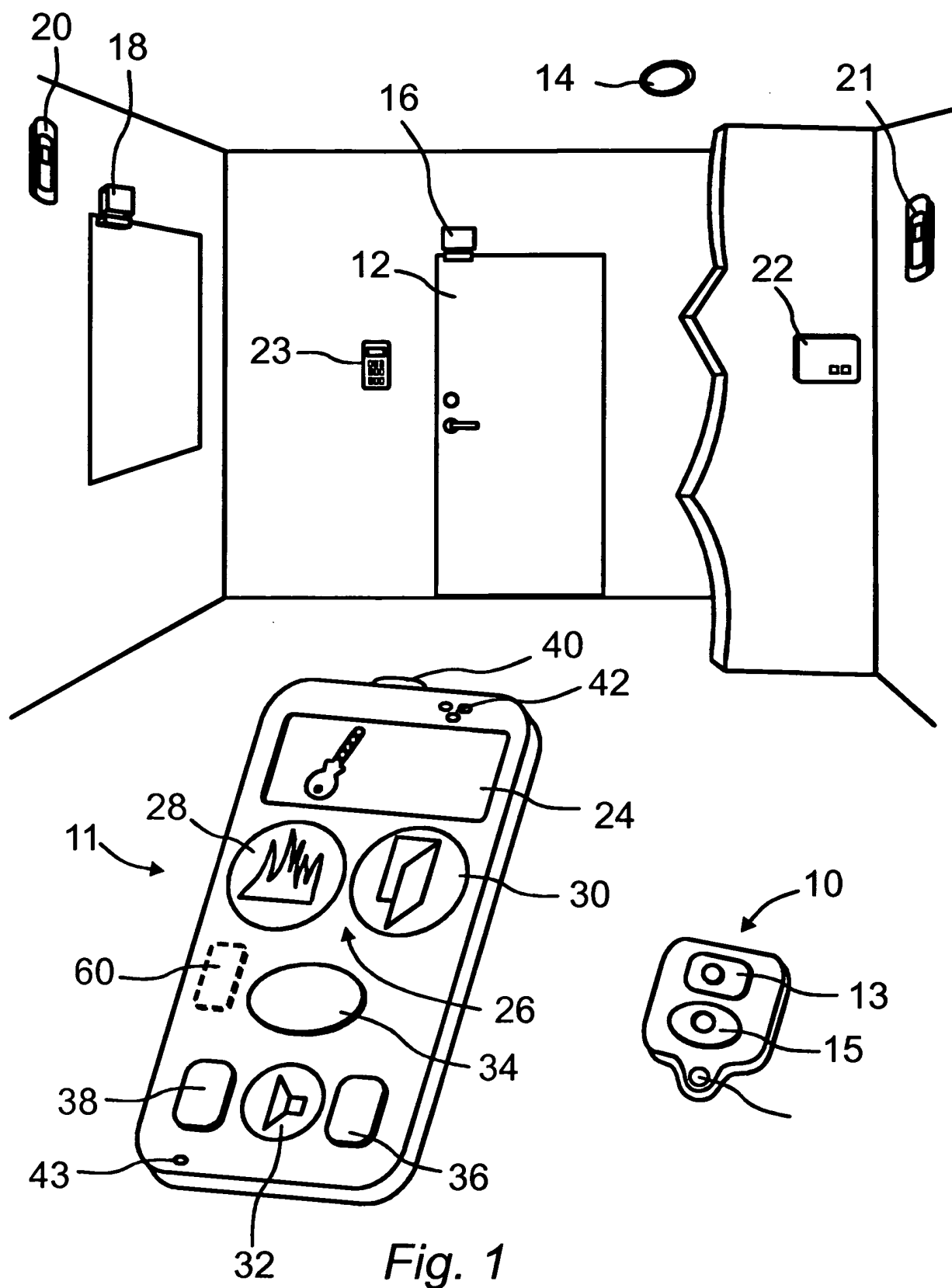
16. Anlage nach Anspruch 15, wobei die Fernzugriffssteuereinrichtung (11) der zweiten Kategorie mit einer getrennten Stromversorgung (63) versehen ist, die die Lampe (40) mit Strom versorgt.

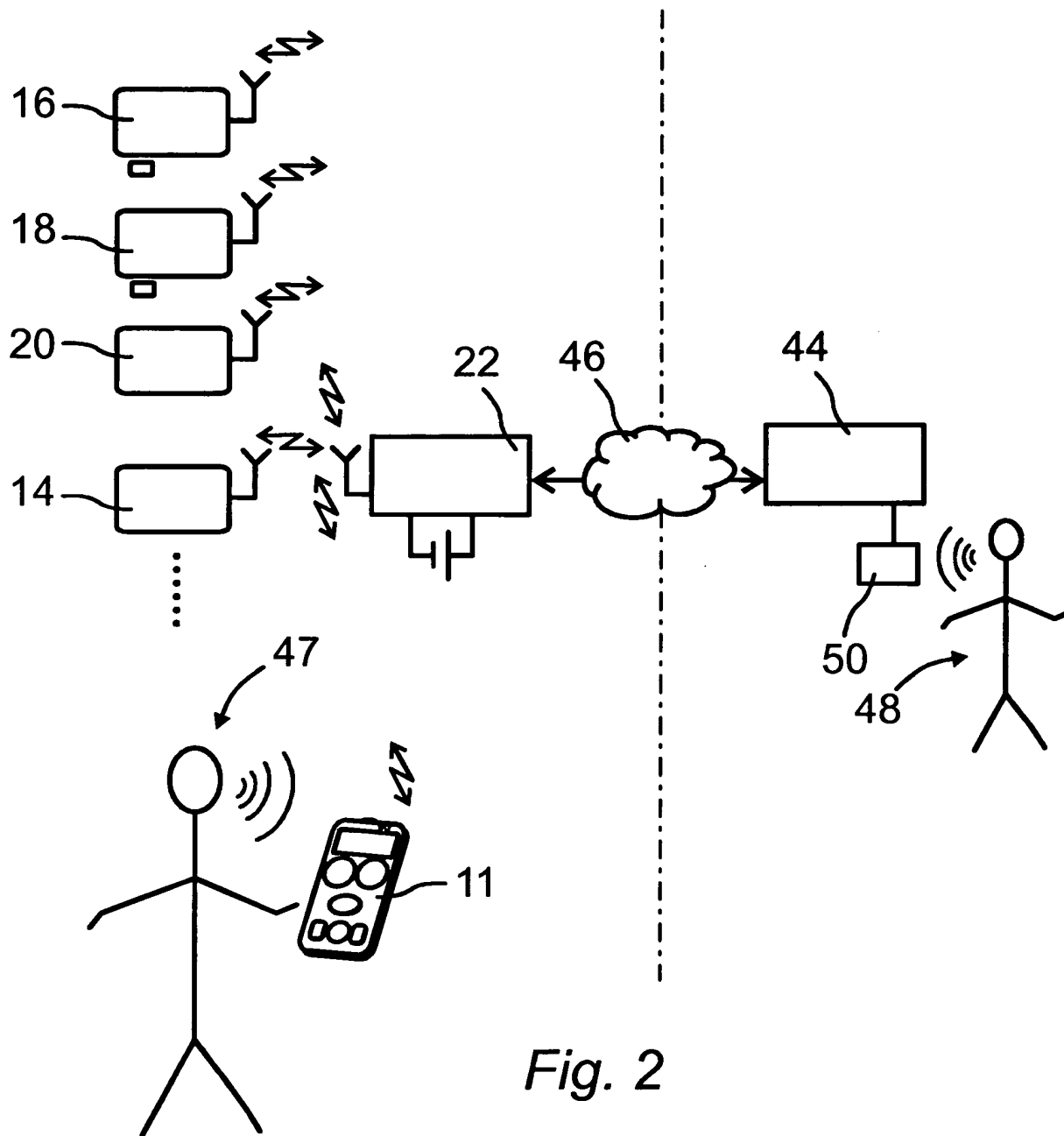
Revendications

1. Procédé de désarmement d'un système d'alarme vers un état désarmé à partir d'un premier état armé dans lequel un groupe sélectionné de détecteurs d'alarme ont été armés et à partir d'un deuxième état armé dans lequel un groupe étendu de détecteurs d'alarme comprenant également des détecteurs d'alarme qui ne sont pas inclus dans ledit groupe sélectionné ont été armés, **caractérisé par** les étapes consistant à activer une première catégorie de dispositifs de commande distants (10 ; 23) pour armer le système d'alarme dans le premier état armé et dans le deuxième état armé, activer ladite première catégorie de dispositifs de commande distants (10 ; 23) pour désarmer le système d'alarme à partir du premier état armé et à partir du deuxième état armé, activer une deuxième catégorie (11) de dispositifs de commande distants pour armer le système d'alarme dans le premier état armé, activer ladite deuxième catégorie de dispositifs de commande distants (11) pour désarmer le système d'alarme à partir du premier état armé, et désactiver ladite deuxième catégorie de dispositifs de commande distants (11) pour désarmer le système d'alarme à partir du deuxième état armé.
2. Système selon la revendication 1, dans lequel des informations sont échangées sur une liaison de communication sans fil, comprenant les étapes consistant à envoyer des instructions d'activation à au moins un détecteur d'alarme et recevoir et afficher des données se rapportant à un état d'au moins ledit détecteur d'alarme dans un dispositif de commande distant sans fil (11) inclus dans ladite deuxième catégorie de dispositifs de commande distants, détecter un mouvement dudit dispositif de commande distant sans fil, activer l'affichage des données après la détection du mouvement du dispositif de commande distant sans fil, et activer l'envoi des instructions pour désarmer un groupe sélectionné de détecteurs d'alarme après la détection du mouvement du dispositif de commande distant sans fil.

3. Procédé selon la revendication 1 ou 2, incluant également les étapes consistant à déterminer une accélération du dispositif de commande distant sans fil (11) et générer un signal d'alarme lorsqu'une valeur déterminée d'accélération dépasse une valeur prédéterminée.
4. Procédé selon la revendication 1 ou 2, incluant également l'étape consistant à activer un rétroéclairage de symboles d'affichage (26) disposés sur le dispositif de commande distant sans fil (11) lorsqu'un mouvement dudit dispositif de commande distant est détecté.
5. Procédé selon la revendication 1, incluant également les étapes consistant à recevoir un signal de commande permettant la réception de signaux vocaux et transmettre des signaux radio transportant des informations correspondant auxdits signaux vocaux.
6. Procédé selon la revendication 1, incluant également les étapes consistant à recevoir des signaux d'alarme générés dans des détecteurs d'alarme et activer des moyens d'indication associés prévus sur le dispositif de commande distant sans fil (11) lorsqu'un signal d'alarme est reçu.
7. Système d'alarme capable d'entrer dans un premier état armé dans lequel un groupe sélectionné de détecteurs d'alarme ont été armés et un deuxième état armé dans lequel un groupe étendu de détecteurs d'alarme comprenant également des détecteurs d'alarme qui ne sont pas inclus dans ledit groupe sélectionné ont été armés, ledit système d'alarme comprenant au moins deux détecteurs d'alarme (14 ; 16 ; 18 ; 20) et une passerelle (22), **caractérisé par** une première catégorie de dispositifs de commande distants (10 ; 23) capables d'armer le système d'alarme dans le premier état armé et dans le deuxième état armé, et de désarmer le système d'alarme à partir du premier état armé et à partir du deuxième état armé, et une deuxième catégorie de dispositifs de commande distants (11) capables d'armer le système d'alarme dans le premier état armé, et de désarmer le système d'alarme à partir du premier état armé, et dans lequel ladite deuxième catégorie de dispositifs de commande distants (11) est désactivée à partir du désarmement du système d'alarme à partir du deuxième état armé.
8. Système d'alarme selon la revendication 7, dans lequel ladite deuxième catégorie de dispositifs de commande distants (11) comprend un moyen de communication sans fil (58), un moyen d'affichage (24 ; 26), un moyen d'entrée (34 ; 36 ; 38), un moyen de

- détection de mouvement (60) connecté fonctionnellement audit moyen d'affichage pour afficher des informations reçues à partir du au moins un détecteur (14 ; 16 ; 18 ; 20) lorsqu'un mouvement est détecté, un moyen d'entrée d'armement (36) destiné à recevoir des instructions d'armement, dans lequel ledit moyen d'entrée d'armement (36) est connecté fonctionnellement audit moyen de communication sans fil (58) et dans lequel ladite passerelle (22) est initialisée à un état partiellement armé lors de la réception d'instructions d'armement retransmises par ledit moyen de communication sans fil (58), ladite passerelle (22) dans l'état partiellement armé étant prévue pour générer un signal d'alarme lors de la réception de signaux d'alarme à partir d'un groupe sélectionné de détecteurs, et un moyen d'entrée de désarmement (38) destiné à recevoir des instructions de désarmement, dans lequel ledit moyen d'entrée de désarmement (38) est connecté fonctionnellement audit moyen de communication sans fil (58) et dans lequel ladite passerelle (22) est initialisée à un état désarmé à partir dudit état partiellement armé seulement lors de la réception d'instructions de désarmement retransmises par ledit moyen de communication sans fil (58).
9. Système d'alarme selon la revendication 7, dans lequel le dispositif de commande distant (11) de la deuxième catégorie est doté d'une pluralité de symboles d'affichage (26) et d'un moyen de rétroéclairage associé.
10. Système d'alarme selon la revendication 8, dans lequel le moyen de détection de mouvement (60) est prévu pour détecter un premier niveau d'accélération correspondant au levage ou à l'inclinaison du dispositif de commande distant (11) de la deuxième catégorie, et un deuxième niveau d'accélération correspondant à la chute du dispositif de commande distant de la deuxième catégorie.
11. Système d'alarme selon la revendication 8, dans lequel le dispositif de commande distant (11) de la deuxième catégorie est doté d'un haut-parleur (42) et d'un microphone (43) connectés fonctionnellement à une unité de communication (58) permettant une communication vocale entre le dispositif de commande distant (11) de la deuxième catégorie et la passerelle (22).
12. Système d'alarme selon la revendication 11, dans lequel ledit moyen de communication sans fil (58) comprend un moyen de communication semi-duplex prévu pour permettre une communication vocale unidirectionnelle entre le dispositif de commande distant (11) de la deuxième catégorie et la passerelle (22).
13. Système d'alarme selon la revendication 11 ou la revendication 12, dans lequel le dispositif de commande distant (11) de la deuxième catégorie est doté d'un symbole de parole (32) qui est activé lorsqu'une communication vocale dans la direction du dispositif de commande distant (11) de la deuxième catégorie vers la passerelle (22) est permise.
14. Système selon la revendication 8, dans lequel le groupe sélectionné de détecteurs d'alarme consiste en des détecteurs d'alarme périmétriques (16 ; 18).
15. Système selon la revendication 7, dans lequel le dispositif de commande distant (11) de la deuxième catégorie est doté d'une lampe (40) et dans lequel le moyen de détection de mouvement (60) est connecté fonctionnellement à ladite lampe, de manière à activer la lampe lorsqu'un mouvement est détecté.
16. Système selon la revendication 15, dans lequel le dispositif de commande distant (11) de la deuxième catégorie est doté d'une alimentation séparée (63) alimentant la lampe (40).





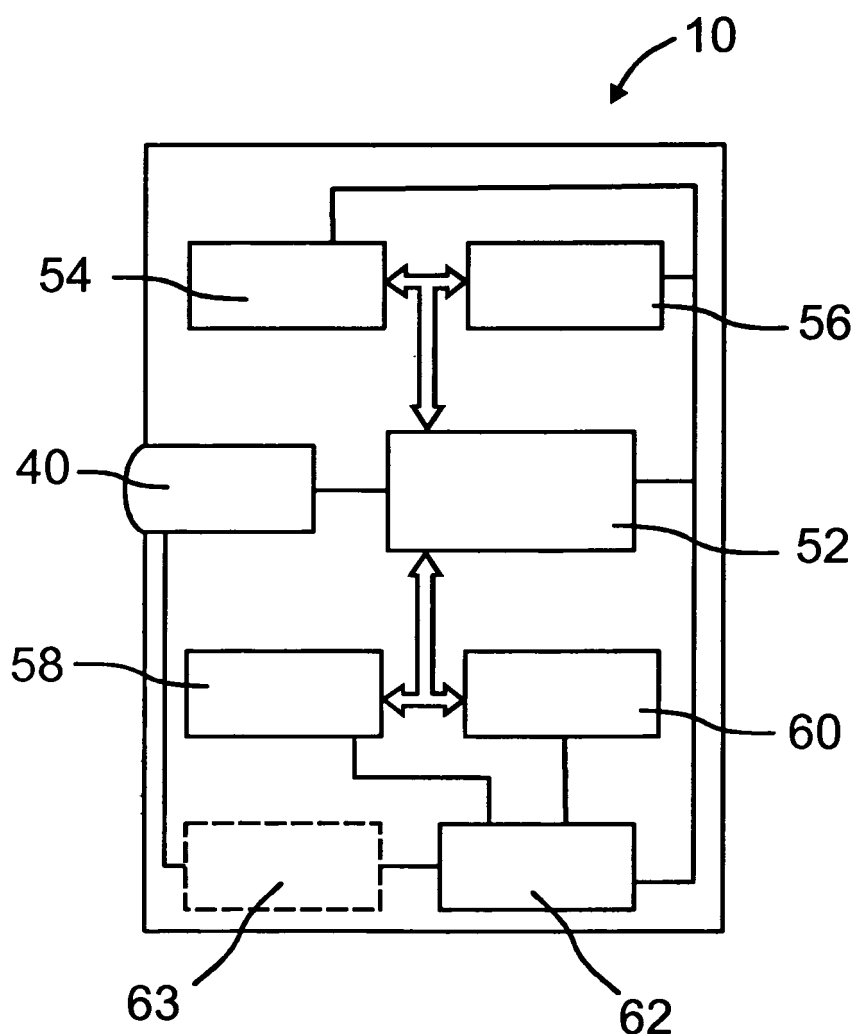


Fig. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 5461372 A [0005]