(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 2 362 052 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
15.11.2017 Bulletin 2017/46

(21) Application number: **11154843.4**

(22) Date of filing: **17.02.2011**

(51) Int Cl.:
E04F 10/06 *(2006.01)* ***E05F 15/00*** *(2015.01)*
E05F 15/71 *(2015.01)* ***E05F 15/77*** *(2015.01)*
E05F 15/79 *(2015.01)* ***E06B 9/68*** *(2006.01)*

(54) **Screening device control**

Sonnenschutz Steuerung

Contrôle de protection solaire

(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 RS SE SI SK SM TR

(30) Priority: **21.02.2010 DK 201000144**

(43) Date of publication of application:
31.08.2011 Bulletin 2011/35

(73) Proprietor: **VKR Holding A/S**
2970 Hørsholm (DK)

(72) Inventor: **Ebbe, Ulrik Vagn**
2670 Greve (DK)

(74) Representative: **Patentgruppen A/S**
Aaboulevarden 31, 4
8000 Aarhus C (DK)

(56) References cited:
WO-A2-2006/026682
JP-A- 2007 277 833
US-A1- 2006 150 511

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 2 362 052 B1

Printed by Jouve, 75001 PARIS (FR)

Description

Field

[0001] The exemplary and non-limiting embodiments of this invention relate generally to control of a screening device and more particularly to interruption of the controller.

Background

[0002] Buildings, windows and doors may use screening means like awnings, roller shutters, shades, blinds and other screening devices etc. Such screening devices may be motor driven and controlled based on sensor values. For example DE202006009694U shows a screening controller with a selector switch (531) for selecting the operation mode of the controller (fig. 2). WO 2006/026682 relates to operating window coverings, where a controller of generates control signals based on input, and a sleep mode is provided. A further screening device is disclosed in JP 2007 277833 A.

Summary

[0003] Controllers which control the operation of a screening device based on climate sensors are unpredictable and consequently have not been so widely adopted. A user can never predict when the screening will be operated and this is a drawback with regard to comfort, privacy and security etc. It would be desirable to provide screening device control which enhances the user comfort, privacy and security and further provides easy and sensible interruption of the operation of the controller.

[0004] Further is would be desirable to provide a screening device control which automatically resumes the operation so a user does not forget to enable the operation. A screening device may further be controlled to reduce the heat gain or heat loss (e.g. energy savings) and if a user forgets to enable the control of the screening device the result is energy loss and reduction of the thermal comfort. Likewise the security may be reduced if a user forgets to enable the screening control.

[0005] The user comfort may be disturbed by the noise generated by the motor driven screening device. It would be desirable to provide a user friendly and intuitive way to provide enhanced user comfort.

[0006] It is desirable that the controller controls the screening in a stable and logical manner even though the sensor measurements, manual user operations and controller interruptions may produce unforeseen situations. For solving the above-mentioned problems, there is provided a method of controlling a screening device according to the present claim 1, the method comprises:

- registering a climate characteristic based on a sensor,
- controlling the position of the screening device based on the registered climate characteristic,
- interrupt the control of the position of the screening device in accordance with a defined temporal scheme.

[0007] The first exemplary embodiment may further comprise a method wherein control of the position are commands changing the position of the screening device e.g. operate the screening to open and/or close. Furthermore, according to the present invention, the defined temporal interruption scheme is manually defined by a user.

[0008] The first exemplary embodiment may further comprise a method comprising displaying the scheme and providing editing of the scheme.

[0009] The first exemplary embodiment may further comprise a method wherein the defined scheme is predefined.

[0010] The first exemplary embodiment may further comprise a method wherein the defined scheme is predefined to interrupt the control of the position at night.

[0011] The first exemplary embodiment may further comprise a method wherein the scheme is a time scheme defined by periods of time where the control of the position is interrupted.

[0012] The first exemplary embodiment may further comprise a method according to the previous example wherein the scheme is continuous. Furthermore, according to the present invention, the scheme is defined by a countdown time period during which the control is interrupted.

[0013] The first exemplary embodiment may further comprise a method according to previous example wherein the defined scheme is initiated manually by a user and after the countdown time the scheme returns to a continuous scheme.

[0014] The first exemplary embodiment may further comprise a method wherein defining the countdown time period is provided by a manual input gradually increasing the time period.

[0015] The first exemplary embodiment may further comprise a method wherein defining the countdown time period is provided by a manual key input gradually increasing/decreasing the time period when pressed a number of times or long pressed. Furthermore, according to the present invention, the control is resumed after the interrupt.

[0016] The first exemplary embodiment may further comprise a method wherein the interruption scheme is predefined and dependent on a criterion indicative of the type of screening device.

[0017] The first exemplary embodiment may further comprise a method wherein the interruption scheme is predefined and dependent on a criterion indicative of the room name or type in which the screening device is located.

[0018] The first exemplary embodiment may further

comprise a method wherein commands controlling the position triggered during the interruption are executed when the control is resumed e.g. when the interruption ends.

[0019] The first exemplary embodiment may further comprise a method wherein control of the position of the screening pending during the interruption is executed when the control is resumed e.g. when the interruption ends.

[0020] The first exemplary embodiment may further comprise a method wherein the controller receives the position of the screening to establish when a manual operation is performed by a user.

[0021] The first exemplary embodiment may further comprise a method wherein the controller receives the position of the screening to verify the position matches the controlled position and the controller operates the screening to the correct controlled position.

[0022] The first exemplary embodiment may further comprise a method wherein controlling the position of the screening device are operations opening or closing the screening.

[0023] The first exemplary embodiment may further comprise a method wherein the sensor is a solar sensor and/or temperature sensor.

[0024] The first exemplary embodiment may further comprise a method wherein screening devices to be interrupted may be added and/or removed from the scheme, individually and/or in groups.

[0025] The first exemplary embodiment may further comprise a method with a first interruption scheme and a second interruption scheme where the first interruption scheme is continuous and reoccurring and the second interruption scheme is single and instant.

[0026] The first exemplary embodiment may further comprise a method with a first interruption scheme and a second interruption scheme.

[0027] The first exemplary embodiment may further comprise a method according to previous example where the first interruption scheme is defined by periods of time where the control of the position is interrupted and the second interruption scheme is defined by a countdown time period during which the control is interrupted.

[0028] The first exemplary embodiment may further comprise a method wherein the position is controlled to provide energy conservation by screening sunlight and blocking sunlight appropriately based on a climate characteristic.

[0029] The first exemplary embodiment may further comprise a method wherein the position is controlled to reduce heat gain and/or heat loss.

[0030] The first exemplary embodiment may further comprise a method wherein the position is controlled to provide privacy by screening when it is dark/evening.

[0031] The first exemplary embodiment may further comprise a method wherein the position is controlled to provide comfort by shading direct sunlight or strong sunlight.

[0032] As a second non-limiting exemplary embodiment there is provided a screening device controller comprising:

means configured to register a climate characteristic by a sensor, timer means;
means configured to control the position of a screening device based on the registered climate characteristic,
wherein the screening device controller is configured to control a screening device according the method of the first exemplary embodiment.

[0033] As a third non-limiting exemplary embodiment there is provided a computer program product comprising computer program code stored on a computer-readable storage medium which, when executed in a screening controller, carries out the method according to the first exemplary embodiment.

[0034] One non-limiting advantage that is gained by the use of the exemplary embodiments is, that based on these user friendly interruption schemes the user is less likely to disable the controller and when the controller remains active energy savings may be provided.

Brief description of the drawings

[0035] The foregoing and other aspects of the teachings of this invention are made more evident in the following description, when read in conjunction with the attached figures, wherein:

Fig. 1 shows an example of screening devices and controllers.
Fig. 2 shows an example of a controller.
Fig. 3 shows an example of interruption scheme definition.
Fig. 4 shows another example of interruption scheme definition.

Detailed description

[0036] The disclosed embodiments will now be described more fully hereinafter with reference to the accompanying drawings, in which certain examples are shown. Like numbers refer to like elements throughout.

[0037] Fig. 1 illustrates a building with screening devices 1 and windows 2. Screening devices may for example be an awning 1a, roller shutter 1b or venetian blind 3c. Such screening devices may for example be controlled by integrated, wired or wireless controllers 3,4,5. Sensors 6 may measure the climate 7 both inside and/or outside in order to control the position of the screening devices in a logical manner. For example the climate sensors may be a temperature sensor, solar sensor, solar angle/direction sensor, wind sensor, rain sensor, light level sensor, air quality sensor etc. Based on the sensor(s) the controller may operate the screening to con-

serve the temperature e.g. reduce heat gain and heat loss. Hereby user comfort is increased and energy savings are provided. Based on the sensor(s) the controller may operate the screening to provide privacy by closing the screening when it is dark/evening.

[0038] Advantageously the controller is configured to provide energy savings and improve the thermal comfort. The energy savings are enhanced by a plurality of aspects, illustrated by the following examples: In one example the controller is preconfigured to interrupt the screening operation during night to provide silence and further configured to resume the screening operation the next day. Hereby the user does not experience disturbance and allows the controller operate, whereas a disturbing controller has the risk of being disabled by the user.

[0039] In one example the controller resumes normal operation either next day or after a countdown time. When the controller is manually interrupted the controller may resume normal operation, so there is no risk that the user forgets to enable the controller and waste of energy/thermal comfort. In one example the controller receives the position of the screening (for example by polling) and operates the screening if the position is not optimal. Hereby the energy savings and thermal comfort is improved, because a screening may be manually opened or closed by a user and the user may forget to return the screening to the optimal position. Likewise the screening may be manually operated during interruption and when the controller resumes the controller receives the position of the screenings to verify that the screenings are positioned correct and the controller operates the screenings if position is not correct.

[0040] The controller comprises a processor including one or more timers and possibly a calendar program. To control the position of the screening device the controller has a motor driver or communication facilities to a motor driver. Possibly the controller receives feedback of the position of the screening device(s). The controller receives climate sensor data by wire or wirelessly. Based on the climate data the controller may control the position of the screening to provide comfort, privacy and security. The controller may be one unit but also more units, like a wireless controller 4 (remote) and integrated device controller 5. A central home automation controller may also cooperate with plural terminals or remotes.

[0041] Fig. 2 illustrates an example of a controller 10 with a display 11 and input keys 12. As mentioned a controller may be wireless like for example a screening remote control. The display 11 provides navigation and allows the user to select one or more screening devices 13. The screening devices may also be arranged in groups or rooms, like shown in fig 2. "Bedroom 1" is selected and the display shows the screening devices from "Bedroom 1 ". The controller provides selection of a screening device 13 and allows setting a position 14 e.g. opening or closing the screening.

[0042] The screening controller has user input means. The controller input means may for example be a remote, a keypad, dial, a graphical user interface and the input may be provided through sensors configured to detect the user's gestures etc.

[0043] Fig. 3 illustrates one example of interruption scheme definition. In one example the period 15 like weekdays or weekends 15 may be selected. Then the start time 16 of the interruption and end time 17 of the interruption is configured. Other examples are possible, like each week day (Monday to Sunday) where interruption may individually be defined. The interrupt scheme may be continuous and employ start time 16 of the interruption and end time 17 of the interruption.

[0044] The interruption scheme may be predefined based on one or more criteria. For example the criterion "room name" may be used to provide different interruption schemes, because a bedroom and a garage have different needs, so comfort is more important for bedroom while security and energy savings in garage. So the interruption schemes may be predefined based on the room name. The room type/names may for example be kitchen, bathroom, toilet, bedroom, office, hall, living room, dining room, TV room, garage etc.

[0045] The screening device name may similarly be a criterion. Screening devices generate different amount of noise. For example a roller shutter makes more noise than an awning. For example and screening device mounted outside like awning makes less noise than a screening device mounted inside like venetian blind. So the predefined interruption scheme may take into account the name/type of screening device. (The noise criterion may also be stored in a device by the manufacturer, so a more precise interruption scheme may be offered.)

[0046] Criteria like the room name criterion and/or screening device name/type criterion may be used to suggest more relevant interruption schemes to the user. Alternatively the user may manually define a noise criterion for a room, a screening device or a group of screening devices and based on the user defined noise criterion the interruption scheme may be predefined.

[0047] Fig. 4 illustrates another example of defining the interruption scheme. An input 18 (Disable) in the main screen 11d allows quick and user friendly interruption. The input 18 may be a key pressed in a sequence or long pressed to gradually increase the interrupt scheme 19 (1 hour, 2hours, 6hours, 12hours, permanent). Hereby a single soft key 18 enables the user to disable, enable and interrupt the controller for defined time in a very easy and intuitive manner.

[0048] In one embodiment the controller has at least a first scheme and a second scheme, where the first scheme is explained in connection with fig 3 and the second scheme is explained with in connection with figure 4. Hereby the controller is flexible by allowing a user to set up the first continuous scheme (for example during night) and also providing the option to activate the second instant scheme when sudden interruption is desired.

[0049] The scheme may be continuous which is un-

derstood as reoccurring every period such as every day. The period may also be day, week, month, season etc. or based on a calendar. The continuous interrupt scheme may employ start time 16 of the interruption and end time 17 of the interruption.

Claims

1. A method of controlling a screening device, wherein the method comprises:

   - registering a climate characteristic based on a sensor (6),
   - wherein a controller (3, 4, 5, 10), controls the position of the screening device (1a, 1b, 1c, 1c, 13) based on the registered climate characteristic,
   - interrupting said control of the position of the screening device (1a, 1b, 1c, 1c, 13) in accordance with a defined temporal scheme,

   wherein the defined temporal interruption scheme is manually defined by a user,
   characterized in that the scheme is defined by a countdown time period during which the control is interrupted, and wherein the control is resumed after the interrupt.

2. A method according to claim 1, wherein the controller (3, 4, 5, 10) is a wireless controller (3, 4, 5, 10), such as a remote controller (3, 4, 5, 10).

3. A method according to any previous claims wherein the scheme is a time scheme defined by periods of time where the control of the position is interrupted.

5. A method according to any previous claims wherein said control of the position of the screening device (1a, 1b, 1c, 1c, 13) based on the registered climate characteristic is provided to conserve the temperature e.g. reduce heat gain and/or heat loss.

6. A method according to any previous claim wherein commands controlling the position triggered during the interruption are executed when the control is resumed e.g. when the interruption ends.

7. A method according to any previous claims wherein defining the countdown time period is provided by a manual input gradually increasing the time period.

8. A method according to any previous claims with a first interruption scheme and a second interruption scheme.

9. A method according to claim 8 where the first interruption scheme is continuous and reoccurring and the second interruption scheme is single and instant.

10. A method according to claim 8 or 9 wherein the first interruption scheme is defined by periods of time where the control of the position is interrupted and the second interruption scheme is defined by a countdown time period during which the control is interrupted.

11. A method according to any previous claims wherein the interruption scheme is predefined and dependent on a criterion indicative of the type of screening device and/or the room type in which the screening device is located.

12. A method according to any previous claims wherein the defined scheme is initiated manually by a user and after a countdown time the scheme returns to a continuous scheme.

13. A method according to any previous claims wherein the controller receives the position of the screening to verify the position matches the controlled position and the controller operates the screening to the correct controlled position.

14. A screening device controller (3, 4, 5, 10), comprising:

   means configured to register a climate characteristic by a sensor (6),
   timer means;
   means configured to control the position of a screening device based on the registered climate characteristic,
   wherein the screening device controller (3, 4, 5, 10), is configured to control a screening device according the method of claim 1.

15. A computer program product comprising computer program code stored on a computer-readable storage medium which, when executed in a screening controller, carries out the method according to any one of claims 1-13.

Patentansprüche

1. Verfahren zur Steuerung einer Abschirmvorrichtung, wobei das Verfahren umfasst:

   - Registrieren einer Klimaeigenschaft auf der Grundlage eines Sensors (6),
   - wobei eine Steuerung (3, 4, 5, 10) die Position der Abschirmvorrichtung (1a, 1b, 1c, 1c, 13) auf der Grundlage der registrierten Klimaeigenschaft steuert,
   - Unterbrechen der Steuerung der Position der

Abschirmvorrichtung (1a, 1b, 1c, 1c, 13) in Übereinstimmung mit einem festgelegten zeitlichen Schema,

wobei das festgelegte zeitliche Unterbrechungsschema durch einen Benutzer manuell festgelegt wird,
dadurch gekennzeichnet, dass
das Schema durch eine Countdown-Zeitdauer festgelegt wird, während der die Steuerung unterbrochen wird, und
wobei die Steuerung nach der Unterbrechung fortgesetzt wird.

2. Verfahren nach Anspruch 1, wobei die Steuerung (3, 4, 5, 10) eine kabellose Steuerung (3, 4, 5, 10) ist, wie beispielsweise eine Fernsteuerung (3, 4, 5, 10).

3. Verfahren nach einem der vorstehenden Ansprüche, wobei das Schema ein Zeitschema ist, das durch Zeitperioden festgelegt ist, in denen die Steuerung der Position unterbrochen wird.

5. Verfahren nach einem der vorstehenden Ansprüche, wobei die Steuerung der Position der Abschirmvorrichtung (1a, 1b, 1c, 1c, 13) auf der Grundlage der registrierten Klimaeigenschaft zur Erhaltung der Temperatur vorgesehen ist, z.B. zur Verringerung von Wärmezunahme und/oder Wärmeverlust.

6. Verfahren nach einem der vorstehenden Ansprüche, wobei Befehle, welche ausgelöst während der Unterbrechung die Position steuern, ausgeführt werden, wenn die Steuerung fortgesetzt wird, z.B. wenn die Unterbrechung endet.

7. Verfahren nach einem der vorstehenden Ansprüche, wobei das Festlegen der Countdown-Zeitdauer durch eine manuelle Eingabe bereitgestellt wird, welche die Zeitperiode schrittweise verlängert.

8. Verfahren nach einem der vorstehenden Ansprüche mit einem ersten Unterbrechungsschema und einem zweiten Unterbrechungsschema.

9. Verfahren nach Anspruch 8, wobei das erste Unterbrechungsschema kontinuierlich und wiederauftretend ist, und das zweite Unterbrechungsschema einzeln und unmittelbar ist.

10. Verfahren nach Anspruch 8 oder 9, wobei das erste Unterbrechungsschema durch Zeitperioden festgelegt ist, in denen die Steuerung der Position unterbrochen wird, und das zweite Unterbrechungsschema durch eine Countdown-Zeitperiode festgelegt ist, während der die Steuerung unterbrochen wird.

11. Verfahren nach einem der vorstehenden Ansprüche, wobei das Unterbrechungsschema vordefiniert und von einem Kriterium abhängig ist, das den Typ der Abschirmvorrichtung und/oder den Raum-Typ, in dem die Abschirmvorrichtung angeordnet ist, angibt.

12. Verfahren nach einem der vorstehenden Ansprüche, wobei das definierte Schema von einem Benutzer manuell initiiert wird und das Schema nach einer Countdown-Zeit zu einem kontinuierlichen Schema zurückkehrt.

13. Verfahren nach einem der vorstehenden Ansprüche, wobei die Steuerung die Position der Abschirmung erhält, um zu verifizieren, dass die Position mit der gesteuerten Position übereinstimmt, und die Steuerung die Abschirmung in die korrekte gesteuerte Position bringt.

14. Abschirmungsvorrichtungssteuerung (3, 4, 5, 10), umfassend:

Mittel, die konfiguriert sind, eine Klimaeigenschaft mittels eines Sensors (6) zu registrieren, Zeitschaltmittel,
Mittel, die konfiguriert sind, die Position einer Abschirmvorrichtung auf der Grundlage der registrierten Klimaeigenschaft zu steuern,
wobei die Abschirmvorrichtungssteuerung (3, 4, 5, 10) konfiguriert ist, eine Abschirmvorrichtung gemäß dem Verfahren nach Anspruch 1 zu steuern.

15. Computerprogrammprodukt, das Computerprogrammcode umfasst, der auf einem computerlesbaren Speichermedium gespeichert ist, der, wenn er von einer Abschirmungssteuerung ausgeführt wird, das Verfahren nach einem der Ansprüche 1-13 durchführt.

Revendications

1. Procédé de commande d'un dispositif de protection, dans lequel le procédé comprend :

- l'enregistrement d'une caractéristique de climat sur la base d'un capteur (6),
- dans lequel un élément de commande (3, 4, 5, 10) commande la position du dispositif de protection (1a, 1b, 1c, 1c, 13) sur la base de la caractéristique de climat enregistrée,
- l'interruption de ladite commande de la position du dispositif de protection (1a, 1b, 1c, 1c, 13) selon un schéma temporel défini,

dans lequel le schéma d'interruption temporel défini est défini manuellement par un utilisateur,

caractérisé en ce que
le schéma est défini par une période de temps de décompte, pendant laquelle la commande est interrompue, et
dans lequel la commande est reprise après l'interruption.

2. Procédé selon la revendication 1, dans lequel l'élément de commande (3, 4, 5, 10) est un élément de commande (3, 4, 5, 10) sans fil tel qu'un élément de commande à distance (3, 4, 5, 10).

3. Procédé selon une quelconque revendication précédente, dans lequel le schéma est un schéma temporel défini par des périodes de temps où la commande de la position est interrompue.

5. Procédé selon une quelconque revendication précédente, dans lequel ladite commande de la position du dispositif de protection (1a, 1b, 1c, 1c, 13) sur la base de la caractéristique de climat enregistrée est fournie pour maintenir la température, par exemple réduire le gain de chaleur et/ou la perte de chaleur.

6. Procédé selon une quelconque revendication précédente, dans lequel des commandes commandant la position déclenchée pendant l'interruption sont exécutées lorsque la commande est reprise, par exemple lorsque l'interruption se termine.

7. Procédé selon une quelconque revendication précédente, dans lequel la définition de la période de temps de décompte est fournie par une entrée manuelle augmentant progressivement la période de temps.

8. Procédé selon une quelconque revendication précédente, avec un premier schéma d'interruption et un second schéma d'interruption.

9. Procédé selon la revendication 8, dans lequel le premier schéma d'interruption est continu et récurrent et le second schéma d'interruption est unique et instantané.

10. Procédé selon la revendication 8 ou 9, dans lequel le premier schéma d'interruption est défini par des périodes de temps où la commande de la position est interrompue et le second schéma d'interruption est défini par une période de temps de décompte, pendant laquelle la commande est interrompue.

11. Procédé selon une quelconque revendication précédente, dans lequel le schéma d'interruption est prédéfini et dépendant d'un critère indiquant le type du dispositif de protection et/ou le type de pièce, dans lequel le dispositif de protection est situé.

12. Procédé selon une quelconque revendication précédente, dans lequel le schéma défini est initié manuellement par un utilisateur et après un temps de décompte, le schéma revient à un schéma continu.

13. Procédé selon une quelconque revendication précédente, dans lequel l'élément de commande reçoit la position de la protection pour vérifier si la position correspond à la position commandée et l'élément de commande actionne la protection pour qu'elle soit dans la position commandée correcte.

14. Élément de commande de dispositif de protection (3, 4, 5, 10), comprenant :

des moyens configurés pour enregistrer une caractéristique de climat par un capteur (6), des moyens de minuterie ;
des moyens configurés pour commander la position d'un dispositif de protection sur la base de la caractéristique de climat enregistrée,
dans lequel l'élément de commande de dispositif de protection (3, 4, 5, 10) est configuré pour commander un dispositif de protection selon le procédé selon la revendication 1.

15. Produit de programme informatique comprenant un code de programme informatique enregistré sur un support de stockage lisible par ordinateur qui, lors de l'exécution dans un élément de commande de protection, réalise le procédé selon l'une quelconque des revendications 1 à 13.

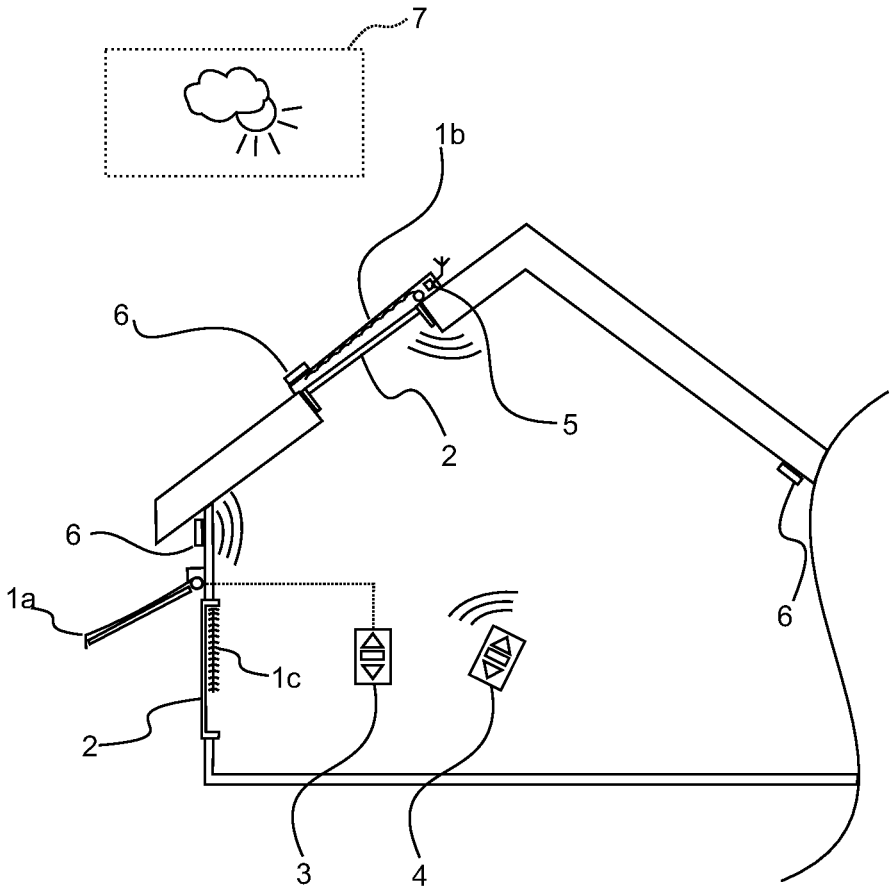


Fig. 1

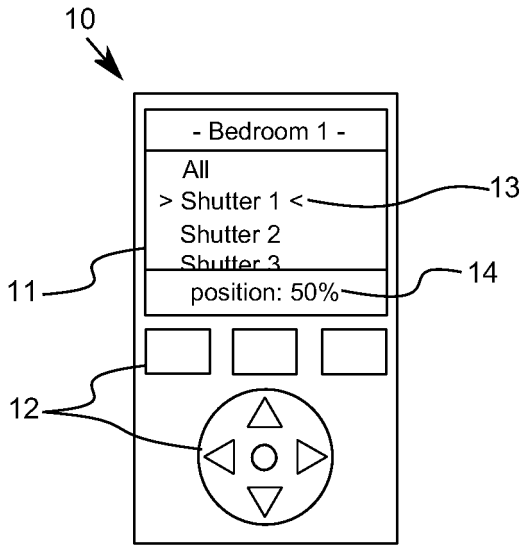

10
- Bedroom 1 -
All
> Shutter 1 <
Shutter 2
Shutter 3
position: 50%
11
12
13
14

Fig. 2

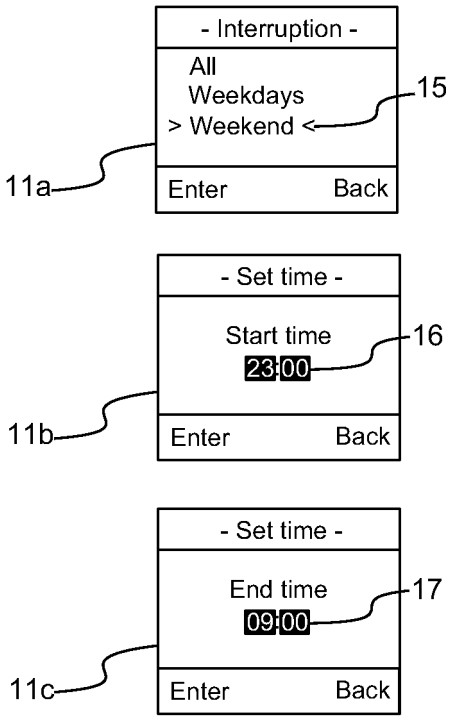

- Interruption -
All
Weekdays
> Weekend <
15
11a
Enter
Back
- Set time -
Start time
23:00
16
11b
Enter
Back
- Set time -
End time
09:00
17
11c
Enter
Back

Fig. 3

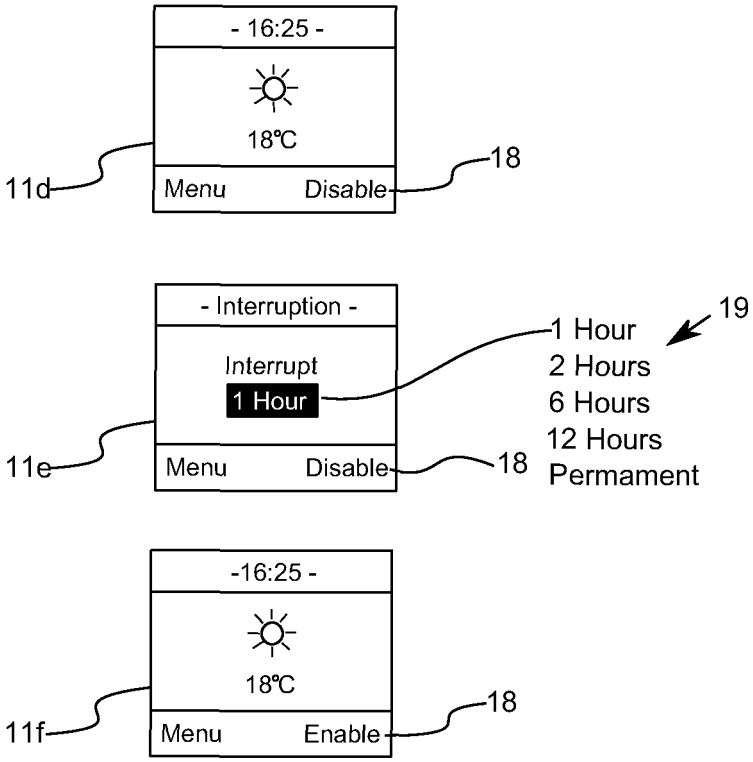

- 16:25 -
18°C
Menu
Disable
11d
18
- Interruption -
Interrupt
1 Hour
Menu
Disable
11e
18
19
1 Hour
2 Hours
6 Hours
12 Hours
Permament
-16:25 -
18°C
Menu
Enable
11f
18

Fig. 4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 202006009694 U **[0002]**
- WO 2006026682 A **[0002]**
- JP 2007277833 A **[0002]**